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MEATH
COUNTY COUNCIL

ARCHAEOLOGICAL
CONSULTANCY
SERVICES LTD.

M3 Clonee-North of Kells

Contract 2 Dunshaughlin – Navan

Report on the Archaeological Excavation of
Roestown 2, Co. Meath

Ministerial Directions No.
A008/002
E3055

Robert O'Hara
June 2009

Text
Final

PROJECT DETAILS

Project	M3 Clonee–Kells Motorway
Site Name	Roestown 2
Ministerial Direction Number	A008/002
Registration Number	E3055
Senior Archaeological Consultant	Donald Murphy
Site Director	Robert O'Hara
Excavated	19 September 2005–30 March 2007
Client	Meath County Council, National Roads Design Office, Navan Enterprise Centre, Navan, County Meath

Townland	Roestown
Parish	Dunshaughlin
County	Meath
National Grid Reference	295792, 253807
Chainage	20770 – 21000
OD	105.07m

Report Type	Final
Report Status	Submitted

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Report by	Robert O'Hara

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This report has been prepared by Archaeological Consultancy Services Ltd on behalf of Meath County Council National Roads Design Office (NRDO) and the National Roads Authority (NRA). The excavation was carried out under Ministerial Directions issued by the Department of the Environment, Heritage and Local Government (DOEHLG) in consultation with the National Museum of Ireland (NMI).

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NON-TECHNICAL SUMMARY

This site at Roestown 2 was excavated by Archaeological Consultancy Services Ltd (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council NRDO and the NRA. The excavation was carried out between 19 September 2005 and 30 March 2007 under Ministerial Direction Number A008/002 issued by DoEHLG in consultation with the NMI. The museum registration number was E3055. Excavations revealed extensive evidence for early medieval settlement that may have originated in the mid-sixth century AD and probably continued as a settlement into the 11th century AD. Activities such as carpentry and ironmongery are likely to have been part of daily life, but other crafts were also practised; particularly bone working and textile weaving. This was borne out through the archaeological evidence. There was strong evidence for fine metalworking during the seventh century. The principal enclosure was re-cut on at least two successive occasions between the eighth and 10th centuries AD, with the character of the enclosure changing noticeably on each occasion. The surrounding landscape was also in a state of flux; continually varying enclosed units or field systems formed the backdrop to a thriving mixed economy, with evidence for cereal processing and animal husbandry, in particular cattle rearing. A large quantity of animal bone survived, as well as metal, bone and glass artefacts, and where waterlogged deposits allowed for the preservation of organic material, wood, pollen and insect remains were collected. The excavation of Roestown 2 presented an opportunity to compare the relative wealth and economy of a prosperous early medieval settlement with that of Lagore crannog, excavated in the 1930s by H. O'N. Hencken, located less than 2km to the southeast, with contemporary settlement sites excavated on the M3 at Castlefarm, Baronstown, Dowdstown, and Ross, among others, as well as an array of other early medieval sites excavated within Brega in recent years.

TABLE OF CONTENTS

APPENDICES

Archival

APPENDIX 1: *Context Details*: *Ken Smith*

APPENDIX 2: *Finds List*: *Maria Lear*

APPENDIX 3: *Sample List*: *Maria Lear*

APPENDIX 4: *Topsoil Assessment: Maria Lear & Stuart Rathbone*

APPENDIX 5: *Radiocarbon Dates*: *Beta Analytic*

APPENDIX 6: *Animal bone analysis: Rachel Sloane*

APPENDIX 7: *Osteological Report: Jennie Coughlan*

Environmental

APPENDIX 8: *Wood identification: Ellen O'Carroll*

APPENDIX 9: *Insect Report: Eileen Reilly*

APPENDIX 10: *Charred plant, charcoal and cremated bone analysis: Durham University*

APPENDIX 11: *Pollen analysis: Durham University*

APPENDIX 12: *Bird Bone: Sheila Hamilton-Dyer*

Artefactual

APPENDIX 13: *Wooden identification: Lorna O'Donnell*

APPENDIX 14: *Lithics report: Farina Sternke*

APPENDIX 15: *Worked bone: Ian Riddler and Nicola Trzaska-Nartowski*

APPENDIX 16a: *Worked stone: Anne Carey*

APPENDIX 16b: *Worked stone: John Stirland*

APPENDIX 16c: *Spindle Whorls: Richard O'Brien*

APPENDIX 17: *Glass beads: Cecily Cropper*

APPENDIX 18: *E-ware pottery: Ian Doyle*

APPENDIX 19: *Medieval pottery: Niamh Doyle*

APPENDIX 20: *Slag report: Angela Wallace*

APPENDIX 21: *Coin report: John Stafford Langan*

LIST OF FIGURES

LIST OF PLATES

LIST OF ILLUSTRATIONS

1 INTRODUCTION

Roestown 2 (Figures 1–6) was located northwest of Dunshaughlin, Co. Meath, towards the edge of a slight northeast–southwest terrace (Plate 1). The land fell away gently to the northwest–southeast and moderately to the west. To the east and northeast the land was relatively flat but rose gently to the north. The Dublin–Navan Road (N3) passed through this terrace. To the east of the site was a reclaimed marsh known as Redbog and prior to the introduction of modern drainage systems, much of the area around the site would probably have been waterlogged, perhaps seasonally. Two areas of activity were noted on the terrace, on either side of the existing N3 (Areas A and B).

The site at Roestown 2 was identified during advance geophysical survey carried out by GSB Prospection in 2000/1 (Shiel et al 2001). Two areas of activity were noted (Areas A and B, as mentioned above): the first comprising a substantial, U-shaped enclosure (50m east–west by 20m north–south) with internal ditched subdivisions and traces of a field system to the south and east. A possible trackway was represented by a northeast linear feature. Pit-like anomalies, both internal and external to the enclosure, were also noted. The second area of activity was located on the opposite side of the N3 and was represented by a large, D-shaped enclosure with internal subdivisions, an internal C-shaped division (20m east–west by 18m NNW–SSE), an annexe and radial linear features most likely representing a field system. Ferrous disturbance was noted around the existing metal fences and gates.

A Topsoil Assessment consisting of two phases of metal detection and a third phase of test pitting was conducted in 2005 (Appendix 4). Initial metal detection produced 47 finds (A008/002:1:1–47) and 20 'hits' while the second phase, completed after the sod was removed and therefore testing only the topsoil, located a further 72 artefacts (A008/002:2:1–72). Field walking in the area resulted in the additional collection of 28 finds (A008/002:1:73–100). All of the finds recovered were of modern date (nails, nuts/bolts, wires and modern pottery/ceramic). A total of 43 test pits were excavated and five flint finds were recovered (A008/002:3:1–5).

Archaeological testing carried out by Jonathan Dempsey in 2004 (04E0415) confirmed the presence of the abovementioned archaeological features revealed during the geophysical survey and identified further pits, gullies, spreads of burnt material, two cobbled surfaces, and linear features (Dempsey 2004). Animal bone, charcoal and several artefacts included two iron nails or pins (04E0415:2–3) were recovered. An early medieval date was suggested for Roestown 2, Area A, the U-shaped enclosure, the western end of which had been destroyed by the present N3. The enclosure in Area B was tentatively identified as a ringfort, or an enclosure in that tradition, with an ancillary enclosure to the southeast. Evidence for limited occupation during the 13th century was also observed.

Full resolution of the site occurred between 2005 and 2007 and the total area of excavation extended to approximately seven acres (200m north–south by 140m east–west).

1.1 Development

Meath County Council is constructing 49km of two-lane, dual-carriageway motorway between Clonee and Kells and 10km of single carriageway from Kells to just north of Kells alongside additional road upgrades, realignments and associated ancillary works. The scheme has been subdivided into five separate sections as follows: Clonee to Dunshaughlin (Contract 1), Dunshaughlin to Navan (Contract 2), the Navan Bypass (Contract 3), Navan to Kells and the N52 Kells Bypass (Contract 4), and Kells to North of Kells (Contract 5). This section of the scheme (Contract 2) commences at Dunshaughlin and progresses to Navan. The immediate area is dominated by the River Boyne and the Hill of Tara, which has been the focus of extensive research projects in recent years by The Discovery Programme, and the number of previously known monuments in this hinterland is high.

The desk-based study and the field survey for the whole scheme, carried out in 2000–2001, were divided into sections which were investigated by Valerie J Keeley Ltd and Margaret Gowen and Company Ltd. The Record of Monuments and Places, the Sites and Monuments Record, Topographical files, and literary sources were all consulted. This information was augmented by geophysical testing conducted by Bartlett-Clark Consultancy who undertook a magnetometer survey across sample transects which was then supplemented by magnetic susceptibility, and also by GSB Prospection who undertook gradiometer scanning and a detailed gradiometer survey. The Environmental Impact Survey (EIS) compiled this data set to identify approximately 100 sites of interest either along the route or in its proximity (500m of the landtake). Advance archaeological testing was completed in 2004 by ACS and Irish Archaeological Consultancy Services Ltd (IAC). Excavation of the sites identified during testing was conducted by ACS and IAC on behalf of Meath County Council, and the NRA under directions issued by the Minister for the Environment, Heritage and Local Government following consultation with the Director of the National Museum of Ireland.

2 EXCAVATION

Excavation occurred between 19 September 2005 and 30 March 2007 under Ministerial Direction Number A008/002 issued to Meath County Council NRDO. The work was carried out by Robert O'Hara on behalf of ACS. The museum record number was E3055. Roestown 2 was situated on an elevated terrace, formed by the underlying shale bedrock, which was cut through by glacial deposits. A stream, significantly widened in the 20th century, delimited the site to the south and formed the townland boundary with Cooksland. There was no surface indication of archaeological remains. Area A was located to the east of the N3 and measured approximately 120m north–south by 60m east–west (Figure 7). Area B, on the west side of the road, measured 120m north–south by 100m east–west (Figure 8). Topsoil (F2 (as per Topsoil Assessment): 0.30m and 0.50m deep) was removed by machine equipped with a grading bucket in both areas.

In Area A, a disturbed lower topsoil layer (F100: 0.40m deep) containing a significant quantity of animal bone and artefacts (see Appendix 2) was revealed and subsequently removed by hand. In Area B any residual areas of topsoil (F400) were also manually removed, which resulted in a large number of finds being recovered (see Appendix 2). Clean back in Area B revealed a thin topsoil-like deposit concealing the later deposits of Enclosure 1. This was given a separate was given a separate number (F401). It contained a number of artefacts including flint flakes (A008/002:401:5, 6, 9), a core (A008/002:401:8) and flint and chert arrowheads (A008/002:401:3, 12; Illustration 1; Appendix 14). Fragments of copper-alloy (A008/002:401:4; 15; 16) and iron (A008/002:401:2) pin fragments were also found, along with assorted iron knives (A008/002:401:13, 14), and fragments (A008/002:401:7, 10 see Appendix 2 and section 2.2.1 for a catalogue of conserved metal objects). Medieval pottery (A008/002:401:1, 18; Appendix 19), a rounded stone (A008/002:401:17), bone trial pieces (A008/002:401:19, 21; Appendix 15) and a stone gaming board (A008/002:401:20) were also recovered.

One metal object requires further elaboration. An iron object (A008/002:401:11) formed by a U-shaped iron strip, the ends of which were bent together and formed into a pointed tang, is commonly encountered on early medieval excavations and has been described as a slotted punch. They are known from the assemblages at Cahercommaun and Lagore (Hencken 1938; 1950), Carraig Aille II (Ó Ríordáin 1949), Oldcourt, Co. Cork (Ó'Cuileanáin & Murphy 1961) as well as from Scottish (Dunadd) and Pictish (Keiss broch, Scalloway[1], Birsay) sites in Scotland (Curle 1982). To date no practical function has been assigned to this tool.

[1] An Iron Age–Medieval site on Shetland Island. A catalogue of metal artefacts from the site can be viewed at www.cf.ac.uk/hisar/archaeology/reports/scalloway/catmetal.html

O'Ríordáin (1949) suggested they may have served as boring tools, and Hencken (1950) suggested they have been used in making rush matting. The tang must indicate it was hafted onto a handle and therefore the functional opart of the object was the slot. The object was included as a grave good in a ninth-century AD, Viking burial at Islandbridge, Dublin (see Edwards 1990; Ill. 91), which O'Floinn (1998) cautiously proposed as a firesteel. Given that Viking Age firesteels more closely resembled the triangular-shaped objects (A008/002:643:2; A008/002:161:5) found elsewhere within the site (see section 2.2.1 below), an alternative function is more likely.

Subsoil (F171) across the site was highly variable and comprised shale, limestone or conglomerate bedrock overlain by glacial tills. There was evidence to suggest that the distinctive petal- or D-shape of Enclosure 1 was due to the presence of limestone at shallow depths around the site.

All archaeological features exposed were recorded and excavated by hand using the single context method. Each feature was assigned a context number. Where appropriate, samples were retrieved in an attempt to obtain evidence for the date and function of these features (Appendix 3). Unless otherwise stated, the features have been measured length-width-depth. All measurements are in metres. All finds were numbered according to the requirements of the National Museum of Ireland from 1 onwards consistent with licence and feature number. The artefacts recovered from the site underwent an initial archaeological assessment and where deemed appropriate, further specialist analysis was carried out on each artefact type. All radiocarbon dates are given from the OxCal Calibration programme and are quoted to two sigma (see Appendix 5). Note that none of the burnt bone from the site could be identified to species (see Appendix 10), and there is no attempt to expand on the general description.

2.1 Results

Only the principal archaeological features of Roestown 2 will be discussed within this report; full details of all these, and further, contexts are located in Appendix 1.

2.1.1 Enclosure 1

The particular D-shape of the principal enclosure in Area B was formed during the initial construction and was largely retained with little alteration in subsequent re-cuts (Figure 8). Approximately one fifth of the enclosure remained outside the western limit of excavation. As far as could be determined this ditch (F405) was the stratigraphically earliest feature within the site, and survived rather well despite being truncated by a number of later features, primarily F404 and F450 (later re-cuts; see below), with its original profile remaining intact at the entrance to the enclosure where later damage was at a minimum. The original ditch was a completely excavated circuit without an entrance gap or causeway. A stepped inner slope of the ditch marked the northeast facing entrance (Plate 3) and though in later phases a causewayed entrance was adopted, the entrance location remained the same.

2.1.1.1 Initial cut F405

F405 had a U-shaped profile (2.20m wide (top); 1.00m wide (base); 1.30m mean depth). The maximum internal dimension of the enclosure in this phase was 76m north–south x 53m east–west. No evidence for an associated bank survived. This wasn't surprising, as any associated bank would have have been removed by either F404 or F450 in succeeding phases. Approximately 24 recognisable deposits were recorded; representing naturally accumulated sediments or intentionally dumped deposits (F409, F412–F414, F424–F430, F441, F456–F461, F467, F468, F470–F472, F490; Figures 21–24). A bone pin (A008/002:414:3) and bone motif pieces (A008/002:412:1, A008/002:414:14; Appendix 15) were recovered along with an iron blade (A008/002:429:3); a copper-alloy ringed pin (A008/002:429:1), fragments of iron and copper-alloy objects (A008/002:414:2, A008/002:426:1, A008/002:429: see section 2.2.1), and struck flint (A008/002:414:1, A008/002:429:4; Appendix 14).

An articulated cow (*Bos taurus*) vertebra in F427 provided a radiocarbon date of AD 441–652 (Beta 220115; Appendix 5) suggesting an origin for the settlement between the mid-fifth and mid-seventh century AD. Significant quantities of animal bone survived (F412–F413, F424–F429, F441, F456, F457, F459, F461, F472, F490; see Appendix 6), with smaller quantities of burnt animal bone recovered also (F413, F424, F476). Anaerobic condition within F490 preserved organic material (insect remains; Appendix 9). F456, F457 and F490 preserved fragments of unworked wood (Appendix 8), while other material recovered from F405 included slag (F414, F428; Appendix 20), charcoaled hazel (F427), and mollusca (F412, F425; Appendix 10).

The overall insect assemblage indicated an open body of water in this ditch in this period, which probably filled with plant detritus from plants growing in the ditch and on the bank. Recently disturbed ground, possibly in the aftermath of the construction of the ditch and bank, may have provided a suitable habitat for many of the insects recovered in the assemblage, while a number of beetle species indicated the presence of pasture in the surrounding landscape with some wetland/carr woodland also suggested. Specific indicators of on-site activities (domestic rubbish, food processing) were not present in any significant numbers in this particular assemblage (see Appendix 9).

2.1.1.2 First re-cut F404

The next phase of Enclosure 1 (F404) retained the overall shape of F405, but was excavated within the limits of its predecessor, and thus had a slightly reduced internal area (70m north–south x 57m east–west). This ditch was generally U-shaped (2.50m wide (top), 1.20m wide (base), 1.20m (deep). There was a tendency to alternate between V-shaped and U-shaped depending on whether the recieving subsoil was stone or clay. Approximately 23 recognisable deposits survived, representing naturally accumulated sediments or intentionally dumped deposits (F415–F420, F431–F435, F442, F445, F446, F451, F452, F462, F467–F469, F491, F492, F494, F497, and F535). An unknown number of deposits were removed due to truncation by F450 in a subsequent phase (see Figures 21–24). Large amounts of animal bone were recovered (F415–F420, F431–F435, F442, F446, F452, F462, F469, F491–F494, F535; Appendix 6) with smaller quantities of charcoal (oak and alder; F535), mollusca (F415, F491, F535; see Appendix 10) and metallic waste (F420; Appendix 20).

A radiocarbon date of AD 690–946 (Beta 220114; Appendix 5) from an articulated dog skeleton (*Canis familiaris*) buried within F418 (Plate 5) indicates a broad range from the late seventh to early 10th century AD for this phase.

There were a number of early medieval artefacts within these deposits, some of which may have been disoplaced from F405. Bone objects included waste material from pin production (A008/002:432:1); a spearhead (A008/002:491:4); and motif pieces (A008/002:432:3, A008/002:535:1; see Appendix 15 for detailed analysis of the previous objects). The motif pieces may have been residual from F405 (see discussion below). Glass beads (A008/002:491:2, A008/002:491:3, A008/002:492:1; Appendix 17) and a stone ingot mould

(A008/002:432:2; Appendix 16b) were recovered along with a number of metal objects, including a tinned copper-alloy stud (A008/002:416:1), a copper-alloy pin shaft fragment (A008/002:491:1), an iron knife (A008/002:417:1) and an iron pin shaft (A008/002:417:2; see section 2.2.1). An Early Mesolithic flint flake was also recovered (A008/002:492:2; see Appendix 14).

This phase saw a change to the entrance layout, with a causewayed entrance adopted in the same location as the previous F405 entrance. The causeway was approximately 2.00m wide and consisted of basal layers of previously dumped deposits (into F405), which were consolidated by a layer of tightly packed stones secured within a revetment of large angular boulders (F493; see Plate 4). A single large posthole located close to this entrance could have been an associated gate structure (F1553).

The insect assemblage within this ditch suggested it was a wet environment if not neceesarily open water. Pasture and animal husbandry was clearly indicated with plant-feeding and dung-feeding beetles dominating the assemblage. Human waste was tentatively indicated by some key beetle species, which suggested the northern part of the Enclosure 1 ditch was used as a general dump for household/latrine and/or animal pen waste (see Appendix 9).

2.1.1.3 Second re-cut F450

The second major re-cut of the enclosing ditch (F450) began approximately 15m northeast and 10m southwest of the Phase 2 entrance, which had already become obsolete due to the deliberate in-filling of F404 either side of the causeway. It enclosed a marginally larger area than F404 (73m north–south x 54m east–west), but was still smaller than the initial ditch F405. The ditch was generally U-shaped (2.30m wide (top), 1.20m wide (base), 1.40m (deep)) and contained 36 recognisable contexts (F436–F440, F443, F447, F448, F453–F455, F463–F465, F473–F489, F495, F496, F498, F499, F536, F537), again representing naturally accumulated sediments or intentionally dumped deposits, some of which were waterlogged in particular areas on the site (Figures 21–24; Plate 6).

The overall insect assemblage of this ditch suggested a complex environment of open stagnating water, dumped household rubbish, dung and naturally occurring plants. The meadowland plant indicators could have been incorporated into the assemblage through ‘stable manure’ and there are almost no ‘disturbed ground/arable’ indicators (see Appendix 9).

Animal bone was abundant (F436–F440, F442, F448, F454, F455, F463–F466, F473–F476, F478, F479, F482–F484, F492, F496, and F499; see Appendix 6); with lesser quantities of slag (F447, F448; see Appendix 20) and charcoal (hazel, alder, cherries, Salicaceae (F448)). A single charred barley grain was identified (F448).

There was an abundance of early medieval artefacts from this ditch, some of which were likely to have been displaced from either F405 and/or F404. These included iron knives (A008/002:438:6, A008/002:455:1, A008/002:476:3), a horseshoe fragment (A008/002:447:1), an iron ring (A008/002: 473: 2) a possible door fitting (A008/002:473:7; see section 2.2.1), as well as unidentified fragments of objects (A008/002:437:1, A008/002:438:1–3, A008/002:440:1, A008/002:453:1, A008/002:455:2–4, A008/002:473:1, 3, A008/002:476:4; Appendix 2). Non-ferrous objects included a copper-alloy belt fitting (A008/002:438:7), a copper alloy pin shaft fragment (A008/002:473:9) and a polyhedral headed pin shaft (A008/002:476:2; see section 2.2.1) and an unidentified fragment (A008/002:438:8) Stone objects included a whetstone (A008/002:437:2; Appendix 16b), lignite bracelet fragments (A008/002:438:3, A008/002:484:2), and a stone spindle whorl (A008/002:473:4; Appendix 16c). Two wooden staves (A008/002:484:1, A008/002:484:3) were recovered in an organic deposit (F484) at the base of F450. The staves were made from yew and oak (see Appendix 13). A008/002:484:1 had two disc-locating grooves, suggesting the presence of a base and lid disc. Termed stave-built casks, these items were used for home storage, domestic chores and the commercial storage and transportation of goods, or could be re-used as water-butts and cisterns. The staves compare well with other staves from early medieval or medieval contexts, including a variety of yew staves excavated at Lagore (Hencken 1950) and elsewhere on the M3 at Castlefarm 1 (A017/001; O'Connell 2009) and Baronstown 1 (A008/017; Stephen Linnane pers. comm.).

A residual flint assemblage included flakes (A008/002:438:4 (Early Mesolithic), A008/002:453:2, A008/002:473:5) and a Neolithic hollow scraper (A008/002:473:6; Appendix 14).

A second articulated dog skeleton (*Canis familiaris*) buried within F484 (Plate 7) was radiocarbon dated to AD 725–976 (Beta 220116; Appendix 5). Two fragments Late Medieval pottery; Leinster Cooking Ware (A008/002:473:8) and Merida-type pottery, (A008/002:473:10), were found in the latest deposit (F473). Leinster Cooking Ware has an approximate date C12th–C14th AD, with Meridia type-ware dating from at least the C13th AD. There is stratigraphical evidence that F450 was completely backfilled in places by the eleventh century AD (see section 2.1.1.4 below), these finds suggest that parts of the ditch may only have become fully backfilled by the thirteenth or fourteenth century AD or after (see Enclosure 5 below).

2.1.1.4 Bank material

Evidence for an internal clay bank (F1521) was found along the inner edge of F404/F450 in the northwest corner of Enclosure 1. It was probably a combination of banks associated with the re-cut ditches. It survived for 12.00m and consisted of compact sandy clay 2.40m wide x 0.20m deep. It was cut by later features including linear drains (F362, F366), a pit (F364) and a posthole (F368).

2.1.1.5 Later re-cuts to F450

Following the infilling of F450, two shallow ditches (F403, F894/F820) were excavated at opposite ends of the site that were approximately coterminous with F450. F403 (31.00m x 0.90m x 0.40m; Figures 21, 24) was located inside the northern edge of the enclosing ditch contained a single fill (F408), with small fragments of animal bone (Appendix 6), iron slag (Appendix 20) and an unidentified iron object (A008/002:408:1; Appendix 2).

F894 (4.50m min x 0.32m x 0.17m) and its re-cut F820 (34.00m x 0.50m x 0.20m) were located inside the southern edge of the enclosing ditch. Both ditches contained small amounts of animal bone (Appendix 6). An unidentified fragment of copper alloy (A008/002:893:2) was recovered (see section 2.2.1). Both ditches ceased within metres of the terminals of F450, which suggested they were delimiting the former extent of F450. Enclosure 1 was unlikely to be discernible as a separate entity at this stage and may have been integrated into a wider field system by this point. Both ditches are undated; however, they could be contemporary with a number of large refuse pits (F411, F1310; cut into the upper fills of F450 and F550, respectively) that are dated to the tenth to early eleventh century by single-sided composite combs (see Appendix 15).

NOTE: THE FOLLOWING ENCLOSURES (ENCLOSURES 2–9) WERE LOCATED IN AREA A

2.1.2 Enclosure 2

2.1.2.1 Ditch F282 etc

The earliest recognisable activity within Area A was an oval-shaped, penannular ditch (F282) possibly open to the southeast, enclosing an area 35m north–south x 20m east–west (Figures 7, 9, 25; Plate 8). It contained a number of dumped or accumulated deposits (F131, F221, F222, F268, F271, F290, F291), some of which (F131, F221) contained animal bone (Appendix 6) and charcoal (hazel and oak). The ditch was better preserved on its western side where a V-shaped profile was noted (0.7–2.2m width x 0.40m depth); however, deep ploughing had removed much of this cut to the east where the original ground surface was slightly higher.

Finds from this ditch included a double-sided composite comb fragment (A008/002:131:1) of Dunlevy's Class D (Dunlevy 1988, 358-61), decorated with several irregular rows of single ring-and-dot motifs. A second bone object (A008/002:131:4) is tentatively proposed as a bone-skate. It is cattle radius midshaft, is smoothed and heavily polished on one side. Bone skates were found during the Wood Quay excavations in Dublin, and could be expected elsewhere in early medieval Ireland (see Appendix 15 for a fuller discussion). Two body sherds (A008/002:131:2–3) of imported Gaulish pottery (E-ware) were also recovered. This coarse, unglazed, wheel-thrown pottery originated in France and has a widespread distribution in late sixth–late seventh centuries AD deposits (Campbell 2007, 46). The pottery was found in association with Phoceaen Red Slipped Ware at Collierstown 1 (O'Hara 2008a) in early sixth-century AD deposits. A sixth century date for this feature seemed likely, being broadly contemporary F405 (Enclosure 1; AD 441–652; Beta 220115) and approximately contemporary with Enclosures 5 and 6 also (the latter enclosure dating to AD 605–769; Beta 219003; Appendix 5).

E-ware has traditionally being described as high-status table or kitchenware, as the native ceramic tradition in this period was still based on coarse handmade vessels more suited to storage of foodstuffs or cooking (Ryan 1973). Wooding (1996) reasoned the stratified society of early medieval Ireland might have required different ranks of nobleman to use vessels appropriate to their rank. It had a restricted distribution in Ireland until quite recently, being predominantly found in Eastern Ulster (reflecting a greater number of excavations there in the 1950's–1980's). There was a high density of find locations in Co. Down (Ballyfounder (Waterman 1958a), Downpatrick (Proudfoot 1954), Gransha (Lynn 1985), Lough Faughan (Collins 1955), Rathmullen (Lynn 1981–82), Spittal Ballee (Waterman 1958b)), but it is now found quite extensively across Ireland, for example Langford Lodge, Co. Antrim (Waterman

1963), Cathedral Hill, Co. Armagh (Gaskell Brown & Harper 1984), Ballycatteen (Ó Ríordáin & Hartnett 1943), Garranes (O'Ríordáin 1942), Garryduff (O' Kelly 1963), Lisleagh, Co. Cork (Monk 1995); Dalkey Island (Liversage 1968), Cabinteely, Co. Dublin (Conway 1999), Gracedieu, Co. Dublin (Gowen 1989a), Rathgurreen, Co. Galway (Comber 2002) and Killederdadrum, Co. Tipperary (Manning 1984). It has been found elsewhere in Meath at Lagore (Hencken 1950), Moynagh Lough (Bradley 1991; 1995; 1996), Smithstown (Gowen 1989b), Colp West (Gowen 1989c, Murphy & Clarke 2001) Painestown (O'Hara 2008c), and Ninch (McConway 2003; 2004) and Collierstown (O'Hara 2008a; see Appendix 18 for a full discussion of the E-ware pottery from this and other M3 sites).

The enclosure wasn't associated with any recognisable structural remains, although any such remains, had they existed, may not have survived cultivation during the post-medieval era. The recovery of E-ware and comb fragments suggests it may have been more than a simple livestock corral. There were two shallow curvilinear features (F276 and F285) in this area that may originally have been part of F282, but any original relationship between these features and Enclosure 2 was removed by ploughing. A minor re-cut (F250) at the eastern end of F282 contained alder charcoal, as well as an iron object, possibly a stylus (A008/002:251:1) and fragments of two iron knives (A008/002:251:2–3; see section 2.2.1)

2.1.2.2 Ditch F102

F102 represents a major re-cutting of F282 but was extensively truncated by later ploughing. It was V-shaped (up to 1.40m wide x 0.40m deep max) with six intact deposits (F101, F105, F109, F220, F269, F284; Figure 25). It retained the shape of the previous ditch (approximately 35m east–west x 20m north–south) with tentative evidence for an opening to the southeast. Animal bone was recovered (F101, F105, F109, F220; Appendix 6) along with charred oats and barley (F109, F220, F284) with occasional burnt hazelnut fragments (F109; see Appendix 10). Clinker and semi-vitrified fuel waste in F109 could indicate metalworking (see Appendix 10).

A bone pin or needle fragment (A008/002:109:1; Appendix 15) was recovered along with two iron artefacts, a key (A008/002:220:1; see section 2.2.1) and an unidentified fragment (A008/002:101:1; Appendix 2).

2.1.3 Enclosure 3

Enclosure 3 (42m north–south x 45m east–west) represented a considerable expansion of activity within Area A that replaced all previous activity relating to Enclosure 2 (Figures 7, 9, 26; Plate 8). It extended beyond the eastern limit of excavation; however, its full extent could be reconstructed from the pre-excavation geophysical survey. As the circuit of the ditch was not fully uncovered during excavation, the northern (F113) and southern arms (F326) of the ditch were recorded separately.

2.1.3.1 Ditch F113 & re-cut F239

F113 had a U-shaped profile (45m x 1.95m x 1.1m) in which three original deposits survived (F108, F152, F154; Figure 26). These contained traces of charcoal (alder, hazel, ash, Maloideae, cherry, oak, elder) and snail shell (see Appendix 10), as well as significant quantities of animal bone (F108, F152, F154; Appendix 6). An articulated bird skeleton (*Gallus gallus*) from the primary deposit (F108; Plate 9) was radiocarbon dated to AD 647–775 (Beta 219002; Appendix 5). Artefacts included a bone awl (A008/002:108:3; Appendix 15) and two stone objects, an incised gaming board (A008/002:108:1) and a hone stone (A008/002:108:2; Appendix 16b). The gaming board was one of three examples forund at the site. This example (along with A008/002:151:2) was a *–tafl* game, with crudely incised gridlines scratched onto an irregular, flat slab of limestone. Thirteen full squares were discernible on its intact surface. Such boards are occasionally found in early medieval contexts, usually on stone or, where preservation allows its recovery, on wood. The closest parallels for the objects can be found at at Garryduff I, where an incised pattern on flat sandstone was uncovered from an eighth-century deposit (O'Kelly 1963) or a recently excavated example from Borris-in-Ossory, Co. Laois (Michael O'Droma, pers. comm.).

The ditch was re-cut (F239: 45m x 1.80m x 0.75m) and eight deposits were recorded (F107, F110, F144, F145, F147, F151, F157, F182; Figure 26). These had inclusions of charcoal (alder, hazel, ash, Maloideae, Salicaceae, cherry, oak and elder; F110, F144, F145, F151) and charred oat, barley and wheat grains (F107, F110, F144; see Appendix 10), as well as a large collection of animal bone (F110, F144–F147, F151, F157, F184; Appendix 6). Semi-vitrified fuel waste and hammerscale within the feature indicated ironworking (see Appendix 10). An articulated pig (*Sus* sp.) metatarsal bone from F144 was dated to AD 580–765 (Beta 219005; Appendix 5). Artefacts included a second game board (A008/002:151:2; see Illustration 6), an irregular slab of limestone with an inscribed grid of squares (Appendix 16b). Bone objects included pin or needle fragments (A008/002:144:1, A008/002:144:3), while iron knives (A008/002:110:1; A008/002:145:2), and various unidentified fragments (A008/002:144:2;

A008/002:145:3; A008/002:145:4; A008/002: 151:1) were found. A flint blade (A008:002:145:1) was also recovered.

2.1.3.2 Ditch F326 & re-cut F319

F326 (1.60m wide x 1.00m deep) was the equivalent ditch to F113 on the southern side of Enclosure 3. It was almost completely removed by two later re-cuts (F319 and F164) and was visible in one section along the eastern limit of the excavation area (Figure 26). It contained six deposits (F327–F332), which due to their later truncation provided little information. No artefacts, animal bone or environmental samples were recovered. F319 was a localised re-cutting of F326, and may originally have encompassed the entire eastern return of the ditch along the marsh edge. It contained a number of deposits (F320, F321, F323, F325) but was only visible in the section along the eastern limit of excavation, the remainder of the ditch removed by F164 (see below). It may correspond to F239 on the northern side of Enclosure 3.

2.1.3.3 Ditch F264

Also currently assigned to this group of features is F264 (17m x 2.00m x 1.00m deep), a ditch located at the western edge of Area A (Figures 7, 9, 26; Plate 10). It was severely impacted upon by a modern quarry (F266) and the scarped edge of the current N3. It had a V-shaped profile and contained four broadly similar deposits (F267 and F313–F315) none of which contained artefacts, while animal bone and charcoal were only present in trace amounts. The quarry removed any direct relationship between F264 and Enclosure 3.

2.1.3.4 Ditch F114

A second re-cut of Enclosure 3 enclosed a slightly larger area (42m north–south by 52m east–west). As the entire circuit was not fully uncovered during excavation, the northern (F114) and southern (F164) arms were recorded separately. F114 (45m x 2.95m x 1.00m) was located immediately inside of, and slightly truncated, its predecessors F113/F239 (Figures 7, 9, 26). It contained nine dumped or accumulated deposits (F106, F111, F112, F148–F150, F153, F156, F181) that were characterised by high quantities of animal bone (F106, F111, F112, F150; Appendix 6), with charcoal (alder, hazel, ash, Salicaceae, cherry, oak and elder), snail shell and charred oats and barley grains (F106, F111, F112, F150; see Appendix 10).

Finds from this ditch included an iron knife (A008/002:153:2) and an unidentified iron object (A008/002:181:1). A selection of prehistoric flints included a Late Neolithic flake, (A008/002:150:1) and concave scraper (A008/002:153:1), as well as an undiagnostic blade (A008/002:106:1) and debitage (A008/002:181:2).

2.1.3.5 Ditch F164

F164 (38m x 3.0m wide x 0.90m) was the southern equivalent of F114. It was dug through F326, removing much of that feature (Figures 7, 9, 26), the result of which was it's profile was less well defined than F114.

Each of its fills (F160–F163) contained large amounts of animal bone (Appendix 6), as well as quantities of charcoal (Hazel, ash, oak, elder, elm; F160, F161), mollusc (F160–F162), snail shell (F162), charred oats and barley grains (F160, F162; see Appendix 10) and slag (F160–F162; Appendix 20).

There was a varied assemblage of artefacts from this ditch. A selection of bone/ antler objects included pin fragments (A008/002:160:2; A008/002:162:3–4), antler (A008/002:160:1) and bone (A008/002:161:7) stamps, and a bone spearhead (A008/002:161:3). Stamps were intended to score the surface of an object, decorating it with parallel, combed lines. The complete bone stamp (A008/002:161:7) tapered to an indented oval terminal at one end and had three short teeth cut at the other end (see Appendix 15). The presence of designs at both ends of the object classes it as a Group 2 stamp (Knaut 1987, 467-70). Group 2 stamps are quite rare though examples are known from eighth to tenth century AD deposits in Britain, Holland and Germany. The second implement (A008/002:160:1; see Appendix 15) was a hollowed-out antler tine with a facetted pentagonal section. The narrow end has two diagonal lines incised into it. The resultant pattern from this object would have a domed centre with four lines radiating from it (see Appendix 15 for a full discussion).

Other objects included lignite (A008/002:161:1), a stone lamp (A008/002:162:2; Appendix 16b), an iron firesteel (A008/002:161:5), and an unidentified iron object/ fragment (A008/002:161:5). A firesteel was used in conjunction with flint to produce a spark and thus fire. The example from Enclosure 3 was a triangular-shaped piece of iron with up-turned ends (only one was extant however). An identical object was found within Enclosure 1 (A008/002:643:2; see Plate 70). These objects resemble two examples from Garryduff I (O'Kelly 1963), which closely resemble more decorative types found at Viking Age sites across Scandinavia and the Baltic (Peterson 1951). Further Irish examples are known from Ballinderry 1 (Hencken 1936) and Garranes (O'Ríordáin 1942) were mistakenly identified as a belt runner and a door fitting in their respective reports.

Non-ferrous objects included an offcut fragment of silver (A008/002:161:2), a decorated copper-alloy binding strip, with raised chevron decoration on its upper face (A008/002:162:1;

see section 2.2.1). Silver was used throughout the early medieval period, but was most common during the mid-ninth–10th century AD, when it was circulated as coinage, ornaments, ingots, and hack silver (Ó Floinn 1998) and was readily available through trade, tribute and exchange with Viking settlements at Dublin, Waterford and elsewhere (Graham-Campbell 1998; Sheehan 1998, Valante 2000).

2.1.3.6 Spread F119

A spread of charcoal-rich humic clay (F119: 6.5m x 5m x 0.15m.) with inclusions of burnt bone (Appendix 10) and fragments of bone pins or needles (A008/002:119:1–4) sealed a short linear gully (F274: 4.1m x 0.5m x 0.3m; Figures 9, 30). Alder from F119 was dated to AD 684–887 (Beta 229293; Appendix 5). Two pin fragments (A008/002:119:1–2) represent an early type of pin, with a characteristic swollen shaft, set above a taper to a sharp point. This is a feature of pins known from contemporary deposits in Ireland, England and Scotland (see Appendix 15 for full details). Both Foster (1990, 151) and MacGregor (1985, 121) have noted such pins (less than 70 mm in length, with hipped or swollen shafts) don't appear until the seventh century AD though possibly extending to the mid-eighth century AD (Riddler *et al* forthcoming).

2.1.4 Enclosure 4

Enclosure 4 (13m northeast–southwest x 10m northwest–southeast) was positioned centrally within Enclosure 3 in the medieval period suggesting that Enclosure 3 may have remained visible for some time (Figures 7, 9, 10, 27; Plates 8, 11). The enclosing ditch F134 had a V-shaped profile (1.60m x 0.60m) and enclosed a rectangular area approximately 130m^2. If an internal bank of 1.50m width were presumed, the usable internal area would have been reduced to around 70m^2. There was no obvious entrance point. The ditch contained four deposits (F135, F136, F158, and F159), the stratigraphy of which suggested a short occupation followed by a prolonged period of natural silting (Figure 27).

F135 was primarily a prolonged accumulation of homogenous silt, with limited evidence for occupation in the form of three iron objects (A008/002:135:1–2, A008/002:135:4) and a bodkin-style javelinhead (A008/002:135:3) close to the base of the deposit (Plate 12). A sherd of 13th-century Dublin-type ware (04E0415:1) was retrieved from this deposit during the testing phase (McCutcheon 2005b). A further sherd of Dublin-type ware (A008/002:136:1, Appendix 19), and small amounts of animal bone (Appendix 6), charcoal (oak; F136) and snail shell (F135, F136, F158; Appendix 10) were also recovered. An articulated horse (*Equus caballus*) phalange from this feature was radiocarbon dated to AD 1450–1635 indicating the ditch was possibly still silting up as late as the 17th century (Beta 219004; Appendix 5).

A sub-circular pit (F178: 2.45m x 2.30m x 0.48m) was situated within this enclosure although it is highly probable that further remains were ploughed out in later periods. The indurated natural deposit into which this pit was cut resulted in irregular sides and base (Figures 10, 27; Plate 13). A large quantity of bone was recovered from the fill (F175), some of which was burnt, along with charcoal and charred seeds (Appendix 10). Two complete bone pins (A008/002:175:1, A008/002:175:5; Appendix 15), an iron blade fragment (A008/002:175:2; see section 2.2.1) and Local fine-ware (A008/002:175:4; Appendix 19) were recovered along with a retouched flint object (A008/002:175:3), a hone stone (A008/002:175:6) and a possible saddle quern fragment (A008/002:175:7).

The recovery of Dublin-type or Local fine ware from both features indicates a 13th- or 14th-century AD date. One of the bone pins (A008/002:175:1) had a simple globular head that resembles early twelfth century AD pins date from Waterford (see Hurley 1997, 672; fig 175.42). An early twelfth century AD date for this pit is probably too early, considering the pottery evidence.

2.1.5 Enclosure 5

A sub-circular enclosure of approximately 20m diameter abutted the southeastern side of Enclosure 2, and survived as three shallow, discontinuous and curvilinear ditches: F225 (10m x 0.60m x 0.35m), F288 (9m x 0.90m x 0.30m) and F335 (9m x 1.20m x 0.25m), each of which was truncated by one or more later features. A terminal of F288 changed direction to avoid truncating F282, suggesting they were contemporary (Figures 7, 9, 28; Plates 8, 14). Charcoal from these features included alder and hazel, while charred oats and barley were also recovered (see Appendix 10)

2.1.6 Enclosure 6

Ditch F132 (21m x 1.63m x 0.54m) was open to the southwest and enclosed an area 10m NE–SW x 17m NW–SE (Figures 9, 11, 28; Plates 8, 15). It may have functioned as a livestock corral. It was truncated by Enclosure 3 (see above), and was likely to be associated with Enclosure 2 (either F282 or F102). It contained two fills (F103 and F116, essentially the same despoit either side of the Enclosure 3 truncation). Both had inclusions of animal bone (Appendix 6), while a single flint object, a convex end scraper (A008/002:116:1) was recovered. An articulated skeleton of a dog (*Canis familiaris*) was placed on the base of F132 and was radiocarbon dated to AD 605–789 (Beta 219003; Appendix 5; Plate 16). There was no cut associated with this burial, nor was any disturbance noted to the cut or base of F132, which suggests it was laid directly on the base of an open ditch and covered with soil.

2.1.7 Enclosure 7

An arcing ditch (F172: 16m x 0.75m x 0.55m) may have originally linked Enclosure 2 with Enclosure 6 (Figures 7, 9, 28; Plate 8). It was truncated to the north by Enclosure 2 (F114) and to the south by F212. Its single fill (F137) had inclusions of charred barley grain, and charcoal (hazel, oak). A number of features were recorded within this arcing ditch, particularly two disturbed human burials (Burials I and II: see below), but also a number of gullies (F203, F204, and F214; Figures 7, 9, 30); however, these features were not stratigraphically related and could not be determined to be contemporary.

2.1.8 Enclosure 8

The full extent of this enclosure was not present within the limit of excavation. Formed by a V-shaped ditch F230 (20m x 1.40–2.20m x 1.25m), it extended southeast from F326 beyond the western limit of excavation (Figures 7, 12, 29; Plates 8, 17). It pre-dated F164 and Enclosure 9 and was presumably been backfilled to facilitate an expansion of the site to the south with the excavation of Enclosure 9 (see below). The deposits within F230 (F192, F227–F229) had a high quantity of animal bone and included a proportionately high number of cattle skulls (see Appendix 6). Fragments of a double-sided composite comb (A008/002:227:1–3) of Dunlevy's Class D (Dunlevy 1988, 358–361) were recovered. The side plates were decorated with paired diagonal lines forming a continuous chevron pattern, a common patterning around the ninth–tenth century AD. Similar decoration occured on a comb from Killickaweeney, Co. Kildare (Riddler and Trzaska-Nartowski 2008; see Appendix 15 for a full discussion).

2.1.9 Enclosure 9

This sub-rectangular enclosure was formed by two slightly curvilinear ditches (F187 and F196), both of which were subsequently re-cut (F345, F195); however, the point at which they intersected was truncated by a later ditch (F254/F272; Figures 7, 12, 29; Plate 8). The relationship between F187 and F164 was located beyond the eastern limit of excavation, where it was traced on the 2001 geophysical survey.

It enclosed an approximate minimum area of 15m north–south x 34m east–west and presumably a western return exists beneath the current N3. These ditches contained generally less animal bone than earlier features, perhaps an indication of changing agricultural practices within the farmstead in this later period. Small quantities of animal bone were encountered (F186, F195, F197, F198'; Appendix 6); while a flint flake (A008/002:186:1) and two pieces of debitage (A008/002:186:2, A008/002:197:1) were also recovered.

NOTE: THE FOLLOWING ENCLOSURES (ENCLOSURES 10–16) WERE LOCATED IN AREA B

2.1.10 Enclosure 10

A small annexe enclosure on the east side of F405, located immediately south of the entranceway. It began as shallow, slightly curving ditch (F935: 27m x 0.85m x 0.60m, Figures 8, 13, 31; Plate 18) detached from, but approximately concentric to, Enclosure 1. It was replaced by a rectangular-shaped annexe formed by ditches F936 (26m x 0.95m x 0.37m; Figures 8, 13, 31) and F1065 (23m x 0.90m x 0.47m; Figures 8, 13, 31) with a narrow causeway between the terminals of each ditch presumably for access towards enclosures or features located to the east.

F936 did not extend as far the outside edge of F405. The gap between these features may represent an entrance. Both ditches contained animal bone (F941, F952, F961, F962, F1064; Appendix 6) with limited amounts of burnt bone (F1064) and charred oats, barley and wheat grain (F952; Appendix 10). The approximate size of this annexe at this stage was 25m NW–SE x 17m NE–SW. It may have enclosed a small circular structure (Structure D; Plate 19; see below). A crucible fragment (A008/002:1172:1) used in non-ferrous metalworking was associated with this potential structure. A number of bone motif pieces were recovered from adjacent deposits within Enclosure 1 (F412, F414; see Appendix 15), suggest this annexe may have been involved in industrial activity associated with fine metalworking. Enclosure 10 was later replaced by the expansion of Enclosure 13 to the south.

2.1.11 Enclosure 11

The principal ditch/ annexe enclosure associated with F405 was the long deep ditch F1000 (63m x 2.10m x 1.34m), which extended from the southeast edge of F405 in a southwest direction before curving slightly northwards at the western limit of excavation (Figures 8, 14, 31; Plate 20). The fills within this ditch (F930, F1016, F1018, F1019, F1020, F1044, F1223, F1224, F1225, F1228) were generally quite sterile, with very occasional inclusions of animal bone in some deposits (F930, F1016, F1018, F1020, F1044; Appendix 6).

There was evidence for at least four minor re-cuts (F1011, F1015, F1017, F1025) prior to a major re-cut F901 (60m x 2.17m x 0.75m), which also contained a number of relatively sterile deposits (F929, F931, F1003, F1004, F1006, F1007, F1008, F1009), with only occasional inclusions of animal bone (F929; Appendix 6), charred oats and barley grains and charcoal (ash; F931, F1023; see Appendix 10). Maximum dimensions for this enclosure are not possible as much of it lay beyond the limit of excavation. The geophysical survey was no help in tracing the course of this ditch, as the survey readings for this part of the site were inconclusive. It's possible the ditches continued west for some distance and stopped, or returned to rejoin F405 in its western side.

2.1.12 Enclosure 12

This was a multiphased annexe approximately 35m in diameter that abutted Enclosure 1 to the southeast (Figures 8, 15; Plate 21).

2.1.12.1 Ditches F645, F1250 & F1330

It was formed by F645 (10m (min.) x 1.35m x 0.60m; Figure 32) and F1250 (46m x 0.30m x 0.15m; Figure 32), both of which contained a number of deposits (F644, F661, F964, F1145), bearing frequent inclusions of animal bone (F644, F661, F964; Appendix 6). F1330 (20m x 2.70m x 0.90m; Figures 8, 15, 32) was on the same alignment as F1250, but was separated by a thick outcrop of bedrock and it could not be determined if they were actually the same cut. F1330 contained a single fill (F1331) with frequent animal bone inclusions (Appendix 6). The enclosure was in use across a number of settlement phases, it was contemporary with both F405 and F404 and was, in its later stages, contemporary with Enclosures 10, 13 and 14.

2.1.12.2 Re-cut F945 & F1547

Enclosure 12 was re-cut by F1547 (6.00m x 0.45m x 0.15m) and F945 (28m x 1.50m x 0.40m) with a further possible re-cut F1248 (18m x 0.70m x 0.17m) at some stage to F945. Of these later ditches, F945 contained a significant amount of animal bone (F862, F963; Appendix 6), some of which was burnt (F963; Appendix 10).

Artefacts included iron knives (A008/002:862:1, A008/002:963:2; see section 2.2.1) and a fragment of a corroded iron object (A008/002:963:1; Appendix 2). An articulated cervical vertebrae from a cow (*Bos taurus*) from F963 was radiocarbon dated to AD 343–542; Beta 231959; Appendix 5) may be a little early for this particular ditch, however the bone could have been displaced from the initial deposits in F645 etc or possibly from the ditch F1315 (see below). This date may confirm an early to mid-sixth-century date for the initial phase of enclosure at Roestown 2, and that Enclosures 1 and 12 were conceivably constructed at approximately the same time. The southern side of this enclosure did not survive. Drainage and reclamation works in the last century involved significant widening and deepening of the stream forming the towland boundary to Cooksland, and was responsible for the build up of reclamation deposit F932 (see Appendix 1).

2.1.12.3 F1315 & Enclosure 12

The development of Enclosure 12 was very much linked with a curvilinear ditch F1315 (35m x 2.00m x 1.30–2.00m), which was located southeast of Enclosure 1 (Figures 8, 15) and which was only recorded for a short distance as it extended eastwards under the existing N3 and southwards, where it was removed by the modern reclamation outlined above. The ditch contained two largely sterile fills (F1316, F1320), with degraded flecks of animal bone present. It was re-cut by F1404 (17m x 0.50m x 0.50m) and contained similarly sterile deposits (F1313, F1314, F1405). The ditch was backfilled and cut by F945 (Plate 22) and also sealed beneath metalled surface F960 (Plate 23).

The ditch is undated, but could potentially pre-date Enclosure 1. The relationship between F1315 and Enclosure 12 has important implications for overall phasing the site. It could not be determined whether F1330 to the south of F1315 was contemporary with F1250, it whether it was a later addition onto F945. The re-cut Enclosure 12 maigt only have become circular in this later phase, having originated as an annexe ditch onto an ancillary enclosure (i.e. F1315/F1404).

An alternative interpretation would be that F1315 pre-dated Enclosure 12. Allowing that Enclosure 1 and Enclosure 12 originated at approximately the same time, this could make F1315 the earliest feature on site. No conclusive evidence for pre-sixth century AD deposits was uncovered during the excavation, although there was an extensive assemblage of prehistoric chipped stone artefacts.

2.1.13 Enclosure 13

A small enclosure (12m x 15m) was created by shallow ditch F951 (17.40m x 0.90m x 0.35m) with sterile fills (F983, F1232) between Enclosures 10 and 12 (Figures 8, 12, 32). The enclosure was later extended (28m x 15m) through a backfilled Enclosure 10 by the addition of F934 to the north end F951.

F934 (30m x 1.20m x 0.50m) drained into F405, indicating both features were contemporary. Its fills (F946–F948) contained some animal bone (F946, F947; Appendix 6) and an unidentified iron object (A008/008:946:1; see Appendix 2).

2.1.14 Enclosure 14

This was a complex series of re-cut ditches. A minimum of 12 ditches was identified (F745, F748, F751, F764, F766, F900, F905, F1034, F1039, F1142, F1288, and F1326); however, the actual number was likely to have been much higher. Together they formed a rectangular enclosure abutting the southern side of Enclosure 1. It measured approximately 25m north–south x 18m east–west (Figures 8, 14, 33; Plate 24) and extended upto the western side of Enclosure 12. It wasn't clear whether it was contemporary with the initial Enclosure 12 ditches or the later re-cut ditches. The earliest surviving ditches in this sequence were F745 (23.50m x 2.77m x 0.72–0.97m), F764 (22.00m x 1.30m x 0.80m) and F1039 (9.00m x 0.90m x 0.70 m), but the chronological development of the enclosure was obscured by the large quantity of later re-cuts, many of which appeared to be haphazardly placed, and many bore no discernible association with adjacent re-cuts. Faint traces of shallow plough marks (Plate 69), indicating the cross ploughing technique, recorded within this enclosure could be contemporary and may reflect its use as an arable field. Animal bone was recovered from several deposits (F742, F744, F747, F750, F751, F753, F763, F765, F913, F1037, F1060, F1061, F1085; Appendix 6) but in limited quantities, with just trace amounts of charcoal (F987) and burnt bone (F744, F747, F987; see Appendix 10). Charred oats and wheat were identified recovered (F987).

Finds from these features included a possible quartz core (A008/002:747:1) and an Early Mesolithic flint flake (A008/002:998:1; Appendix 15) and a copper alloy mount (A008/002:765:1; Plate 71) in the shape of a ringed cross. This motif is commonly found in pre-Christian contexts of many cultures, but was adopted as the cross of the Celtic church in the early medieval period. It bears some resemblance to cross symbols on ninth-century croziers from Co. Antrim and Clongowes Wood, Co. Kildare (Henry 1967; Bourke 1987;). The closest parallel for this object is an item (NMI W1) found during turf cutting in a bog close to Aughrane or Castle Kelly, Co. Galway in the mid-19th century AD and sketched by Worsaae[2]. It is described as 'a bronze ring-mail object with a pair of distributor rings' (85mm in diameter), each of which bears some resemblance to the Roestown 2 object. There is some similarity to the ?brooches worn by the ecclesiastical figure gracing the Corp Naomh (Henry *ibid*). McRoberts (1960–61) draws parallels between the Corp Naomh depiction and a carved stone inserted into a church wall at Invergowrie, Scotland where two clerics wear chasubles fastened at the shoulder by cross-marked disks (Boyle 1937–38). This Christian iconography of the piece cannot be overlooked, and might suggest the site had an ecclesiastical connection, at least during the ninth century AD.

[2] See Item #11 on Drawing IV at Retracing Irelands Lost Archaeology. Available at www.ucc.ie:8080/cocoon/doi/worsaae [Accessed 20 March 2009]

2.1.15 Enclosure 15

This rectangular enclosure (10m north-south x 30m east-west) on the southern side of Enclosure 1 replaced Enclosures 12 and 14 (Figures 8, 14, 16, 33, 34; Plate 24). The earliest surviving ditches F653 (20.70m x 1.20m x 0.70m), F955 (20.50m x 0.90m x 0.50m) and F958 (14.00m × 0.70m × 0.17m) were later re-cut by F649, F684, F688, F691, F711, F762, F861, F954, F959 and F1290)

Animal bone was recovered in small quantities from a number of deposits (F650–F652, F683, F685, F686, F690, F713, F966, F969, F972; Appendix 6). Charcoal (F713, F996; alder, oak) and burnt bone (F647) was rare. There was an eclectic collection of objects from this enclosure, and included metal objects such as iron knifes (A008/002:686:1; A008/002:1291:2), a D-shaped copper-alloy buckle (A008/002:966:1) and a pin fragment (A008/002:972:1), a possible hollow scraper (A008/002:1291:3) and number of carved bone motif pieces (for what follows see Riddler and Trzaska-Nartowski; Appendix 15). The motif pieces included small fragments of cattle-bone (A008/002:685:1-3), with three carved motifs, including butterfly interlace motif and a narrow interlace panel with winged terminals and are likely to date to the eighth–early ninth century AD. The finest example however, was a horse radius (A008/002:1291:1):

- The anterior face has nine complete panels of designs, and several incomplete or four incised patterns. The patterns were chip-carved and included five triquetras, two interlace panels with winged terminals, a butterfly interlace panel and a rectangular panel of interlace with blunt ends. There were two panels of unfinished chip-carved interlace patterns and two areas with very vague incised outlines. Several lightly inscribed lines were initial outlines for triquetras.

- The medial face had two complete chip-carved panels of interlace. A lightly inscribed lines and markings are also visible. Two rectangular interlace panels with winged terminals and a butterfly interlace panel were also recorded. One of the motifs was polished from wear or handling and was scorched from where a hot implement had rested on the bone.

Triquetras, butterfly-interlace panels and two-strand panels with blunt ends all appear on a motif piece from Lagore (Hencken 1950, fig 95.324). The range of design and the execution of the patterns link the Lagore and Roestown objects quite closely.

2.1.16 Enclosure 16

A small addition (8m x 15m) to the east end of Enclosure 15 (Figures 8, 16, 34). It may be an additional enclosure abutting F955, or an extension of Enclosure 15 following the infilling of F955. It was formed by F954 (17.00m x 0.80m x 0.60m) and F959 (13.50m x 0.80m x 0.34m), the former containing small amounts of animal bone (F984), the latter unidentified charcoal and charred oat grains (F996; see Appendix 10).

2.1.17 Ditches F933, F254 & F343 and later re-cuts

2.1.17.1 Ditch F933 etc

F933 was an east–west ditch (19.00m x 2.00m x 0.90m), which ran extended eastwards from the outer edge of Enclosure 1, replacing Enclosure 13 (Figures 8, 13, 35; Plate 25). This probably occurred around the time of the second re-cut (F404), or possibly even during the final stages of F405. F933 began a sequence of ditch excavation (followed by F726, F784, F808, F811, F863, F864, F888, F1113, F1107, F1126, F1341) that continued into subsequent phases, with each re-cut generally shallower than preceding ditch. The ditches generally contained two or less deposits and had small quantities of animal bone (F792, F793, F887; Appendix 6) and some fragments of slag (F809; Appendix 20). This sequence of ditches was important when delimiting the backfilling of F404 prior to the re-cutting of Enclosure 1 (F450). F404 was partially backfilled south of the causewayed entrance prior to the excavation of re-cut ditch F450, but during this period, F808 (19m x 1.85m x 0.60m) truncated deposits within F404, before being subsequently cut by F450.

Finds included a translucent monochrome blue glass bead (A008/002:1081:1; Appendix 17), a copper-alloy loop-headed pin shaft (A008/002:809:1) and a detached twisted spiral ring (A008/002:809:2). These items weer found separately but are very likely to be part of the same original object. Others included a copper-alloy clasp bent around a small iron fragment (A008/002:1105:1) and a flint blade (A008/002:968:1).

F1531 (11.50m x 3.40m x 1.30m) was an easern extension onto the original terminus of F933, extending beneath the existing N3. The location and orientataion of these features are the first tangible evidence for enclosure between Areas A and B and could be evidence for the beginnings of integration between both areas. It is likely that the construction of F1531 was contemporary with the excavation of F254 and F342 in Area A (Figure 30, Plates 8, 26). F254 and its re-cut F272 were undated ditches that post-dated but respected the ditches associated with Enclosure 9.

2.1.17.2 Ditches F254 & F343 etc

F254 (30m x 2.00m x 0.70m) extended south from F345/F195 for a distance of 25m before turning eastward, beyond the limit of excavation. It contained three sticky clay deposits (F258, F260 and F262), each containing small amounts of fragmented animal bone. F272 (30m x 1.40m x 0.45m) contained two fills (F259 and F261). It is possible that F1531 extending eastwards from Area B was connected with the expansion exemplified by F254.

F343 was an irregular cut (6.00m (min.) x 1.44m x 0.60m; Figure 23) that extended westward beneath the N3 from the western end of F114. The ditch cut into deposits within F114, however this feature must have still been identifiable as aboundary if F343 was intended to extend the enclosure westward (Plate 26). It contained three sticky clay deposits (F301–F303). It was re-cut by F341 (16m (min.) x. 2.14m wide x 0.49m), which contained largely similar fills (F299 and F300). Neither ditches contained artefacts or animal bone, possibly due in part to poor preservation conditions presumably related to the nature of the underlying subsoil.

2.1.18 Souterrain

A souterrain was centrally situated within Enclosure 1 (Figures 8, 17, 18, 36, 37; Plate 27). It comprised three dry-stone beehive chambers (Chambers 1–3), interconnected via three short passages (Passages 1–3). The structure incorporated a number of structural and defensive features common to this type of construction, which is well represented within the early medieval kingdom of Brega. The beehive style of souterrain construction has been long acknowledged to occur with high frequency in the greater Meath area, for example Bective, Kiltale, Knowth, Loughcrew and Newrath Big (see Clinton 2001). Recently excavated examples have been noted at Lismullin 1 (A008/021; O'Connell forthcoming), Painestown (O'Hara 2008c) and Ninch (Mc Conway 2003, 2004) in Co. Meath, and Balrothery in north County Dublin, where seven individual structures were recorded within or adjacent to an early medieval site at Rosepark (Ken Wiggans pers. comm).

Set within a deep cut F501, the builders purposely undercut the chamber walls in places to receive the dry-stone walls F503 and backfill F502. The passages tended to be straight-sided trenches. The entire structure would originally have been capped with large flagstones, but many of these had been deliberately removed with only nine capstones remaining in-situ at the time of excavation (The cahmabers and passages were numbered in the sequence in which they were excavated on-site).

2.1.18.1 Chamber 1

Chamber 1 was situated at the north end of Passage 1 and survived to a depth of 1.30m (Figures 36, 37; Plates 28, 29). The dry-stone walling was a random, uncoursed construction built on a bed of 23 large, angular, limestone boulders (mean dimensions 0.20m x 0.33m x 0.44m), including two vertically set, rectangular blocks (approximately 0.52m x 0.29 x 0.21m), which marked the junction/ entrance with Passage 1. The entrance was tapered, decreasing in width from 0.68m (top) to 0.83m (base). The chamber walls rose vertically to a height of 0.50m, where the diameter of the chamber was 2.50m east–west x 2.20m north–south. It is estimated that to seal the chamber at the recorded corbelling rate of 0.40m horizontally for 0.80m vertically (1:2), would have resulted in a disproportionately high chamber. The depth of corbelling must therefore have increased significantly above 1.30m.

The floor area within this chamber was 2.45m north–south x 2.95m east–west and comprised a natural clay surface, into which a circular pit F509 (0.30m x 0.25m) was cut. The fill of this feature was indistinguishable from the later backfill deposits above. The chamber floor was slightly domed at its centre, presumably to assist drainage by directing water to the side of the chamber.

The floor was sealed beneath loose black clay F507 (0.05m deep), which had animal bone (Appendix 6), charcoal and charred seeds inclusions (Appendix 10). This build up of occupation debris was sealed beneath successive layers of backfill (F506 and F500). F506 was the initial backfilled deposit and included a number of collapsed wall stones as well as occasional larger stones, presumably displaced capstones. Among this collapsed superstructure were animal bones (Appendix 6) and fragments of iron objects (A008/002:506:1–2; Appendix 2). It was sealed by F500, loose clay similar to topsoil and containing further animal bones (Appendix 6), charcoal (Appendix 10), and a small fragment of copper alloy (A008/002:500:1), probably debris from bronze working).

2.1.18.2 Chamber 2

Chamber 2 was located 5.20m south of Chamber 1 at the southern end of Passage 1. It was a sub-circular shape, 2.90m north–south x 3.00m east–west and survived to a maximum height of 1.39m, at which height the chamber diameter was was 2.50m north–south x 2.55m east–west. The trench for Chamber 2 was intentionally undercut and the walls built into a naturally corbelled cut. A basal course of 21 large boulders ranged from 0.25m x 0.10m to 0.50m x 0.50m. The stones became progressively smaller towards the apex of the structure. As elsewhere, the wall was a random, uncoursed construction. The entrance was marked by jambstones formed by two large, vertically set rectangular blocks placed on end (0.19m x 0.53m x 0.30m; 0.40m x 0.63m x 0.42m). At the point where corbelling for the roof began (at a height of approximately 0.52m), a stone-lined air vent (F534) was recorded, comprising six angular limestone blocks forming a narrow channel to the southwest (Figures 36, 37; Plate 32). The vent was 0.50m long, but may have been originally much longer. A single pit (F533: 0.40m x 0.40m) was cut into the floor. Again, its fill (F532) was broadly identical to the lowest backfill deposit above it (F531). Above this layer, F530 appeared to be water-borne sediment washed down from Passage 1. F529 was a compact deposit containing collapsed superstructure from F503. Above this were later backfill deposits (F525, F526, F527, F529).

2.1.18.3 Chamber 3

Chamber 3 was located at the east end of Passage 2 (Plate 35). It was the most intact of the three chambers, retaining the lintel stone above the entrance and probably missing just one corbelling layer and the final capstone (Figures 36, 37; Plate 36), all of which were removed from the backfill within the chamber. It was the smallest of the three chambers, measuring 1.60m east–west x 1.80m north–south and surviving to a height of 1.30m, at which point the chamber was 1.30m east–west x 1.20m north–south. Fifteen large boulders (0.40m x 0.25m–0.60m x 0.60m) was formed the base of the chamber. The wall above this was random, uncoursed angular stone. The entrance was 0.55m wide and 1.00m high and covered by a capping lintel (0.80m x 0.40m x 0.15m). Within the chamber, corbelling began 0.70m above ground level and inclined 0.20m in the following 0.50m. The floor was a beaten natural surface into which was cut an oval-shaped pit (F519: 0.60m x 0.50m) that contained two fills (F520, F521). The pit was quite large in relation to the available floor space and may have been a storage pit. The floor was sealed by F518 (0.20m thick), compact clay with animal bone (Appendix 6), burnt bone, charcoal (Appendix 10), and a number of heavily corroded iron objects (A008/002:518:1–7; Appendix 2). This deposit may be related to the occupation phase and was sealed by later backfill deposits F516 and F517, the latter containing moderate amounts of displaced superstructure, including two large capstones (0.80m x 0.50m; 0.75m x 0.48m).

2.1.18.4 Passage 1

Passage 1 linked Chamber 1 and Chamber 2 to the south. It was 5.20m long and tapered in width from the top (0.49–0.70m) to the base (0.82–0.95m). Its maximum depth was 1.28m. The northern half of the passage was roofless; however, south of the junction with Passage 2 eight capstones F504 remained in situ (Figures 36, 37; Plates 30, 31). These large, flat, angular, limestone slabs spanned the passage, resting on either wall and secured with smaller packing stones then sealed with F502. The preservation of F504 at this location may be due to the passage becoming deeper from this point, descending 0.47m from the junction with Passage 2 to the entrance to Chamber 2. The roughly coursed walls were constructed with limestone blocks ranging from up to 0.35m x 0.20m. The walls were generally well preserved, however some displacement or localised collapse had occurred along the western wall close to Chamber 1. Approximately 1.60m south from the entrance to Chamber 1 was a junction with a second passage (Passage 2). This ran east–west and linked Passage 1 with Chamber 3. The entrance to Passage 2 was accessed via a trapdoor feature; hence the break in the east wall for Passage 1 was not tapered, but rather was a uniform 0.84m wide at the top and base.

Backfilled deposits F506 and F500 filled Passage 1 as far as the junction with Passage 2 where the capstones remained in place. South of this point they petered out until the entrance to Chamber 2, where it merged with backfill deposits from that chamber. Finds from F506 within Passage 1 included two fragments of iron objects (A008/002:506: 1–2).

2.1.18.5 Passage 2

Passage 2 linked Passage 1 and Chamber 3. It ran east–west for a distance of 3.87m and incorporated a trapdoor feature at the junction with Passage 1. The walls survived to roof level, although most of the capstones had been removed, a single slab (0.51m x 0.53m) remained in situ over the trapdoor feature. The passage had a maximum depth of 0.86m at the east end, narrowing to 0.52m at the trapdoor feature. The lowering of the roof at this location was part of a complex of defensive features that focused on Passage 2 (and included a constriction and step at the junction of Passages 2 and 3, and a trapdoor at the junction of Passages 1 and 2). The trapdoor feature (Figures 36, 37; Plate 33) was 0.54m deep. The hole was 0.68m wide, with a ledge of 0.10m between each side and the wall of the passage. This may have formed the base for a timber door or frame sealing the trapdoor as has been suggested for examples elsewhere (see Clinton 2001). The junction with Passage 1 was marked by larger stones at the base but was not as obviously demarcated as passage/chamber junctions (Plate 34). It was filled with F506 and F500. There had been some collapse of F503 along the northern side of the passage at the junction with Passage 3 probably caused by a post-medieval furrow (F701).

2.1.18.6 Passage 3

Passage 3 was the ramped entry passage into the souterrain. At the entry point, at its northern end where the height was 0.60m and which descended to 1.40m at the southern end. Access was presumably through a gap in the capstones. The passage ran north–south from Passage 2 for a distance of 4.25m and tapered in width from 0.75m at the top to 0.89m at the base (Figures 36, 37; Plate 37). The walls were preserved intact up to roof level; the eastern wall contained a small cubbyhole feature (F524: 0.58m x 0.52m; Plate 38). The southern end of the passage incorporated a width constriction, whereby the western wall tapered inwards reducing the width of the passage from 0.89m to 0.62m (see Plate 39).

This constriction was accompanied by a 0.85m long shelf on either side of the passage. The shelf was 0.16m wide on both sides and at a height above floor level of 0.74m. The purpose of this shelf must have been to hold in place some form of roofing element, a large flat stone potentially, and possibly removed with the original capstones. A timber structure was also possible. Clearly a constriction to the height and width of the passage at this juncture would have significantly impeded movement into the souterrain, and was further obstructed by a 0.40m high step at floor level at the end of the passage.

The passage contained the same type of floor found elsewhere in the souterrain. It was sealed by a 0.20m thick deposit F514 containing animal bone and charcoal that could be a mixture of occupation debris and post-occupation accumulation. Above this layer was a 0.12m thick deposit F513 containing animal bone (some of which was burnt) and charcoal (Appendiox 6; Appendix 10). A small pit or posthole (F523: 0.34m x 0.36m x 0.20m) was located at the northern end of Passage 3.

A stick pin (A008/002:513:2) of O'Rahillys Class 8 (O'Rahilly 1998) was notable among the finds from this layer. The pin can be dated to the eleventh century AD and provides a possible indication of when the structure was backfilled. Other finds included a flint blade (A008/002:513:1), a fragment of iron (A008/002:513:4) and a perforated slate tile (A008/002:513:3), which resembles similar examples from stratified earlye medieval contexts at Ballycatteen, Co. Cork (Ó Ríordáin & Hartnett 1943), which could potentially have been used to roof a structure in the vicinity of the souterrain. Unfortunately just one such example was recovered from Roestown 2, while the Ballycatteen assemblage ran to many hundreds. The paucity of further roof tiles may reflect collection and re-use of stone building materials for use elsewhere and fits in with the removal of capstones.

A disarticulated human cranium fragment was recovered from the backfill in this passage (see Appendix 7). The only evidence for human burial within the site came from Area A, where two heavily disturbed skeletons were identified. No evidence for burial was recorded within Area B and the original context for this bone is unknown.

2.1.19 Structures

Overall the evidence for structural remains was quite poor. A number of curvilinear gullies in the southern half of the site may potentially have been drip gullies associated with small domestic structures or workshops, while a cluster of postholes in the northwest corner of the site may suggest more robust structures in this area. It may be the case that the main habitation area was located elsewhere beyond the limit of excavation, or that it was situated on a higher piece of land that was subsequently been removed by ploughing or other activity. Currently, most of the potential structures are broadly dated to Area B: Phase 1 (see below), the artefacts from which suggest the site was supporting skilled craftsmen (bone motif pieces) and using imported continental pottery (E-ware), both of which are generally understood to be indicators of a high-status settlement. The structures conform to circular and rectangular types commonly encountered on excavation within this period.

2.1.19.1 Structure A

A curvilinear drip gully F387 (0.25m wide x 0.20m deep) enclosed an area approximately 7m east–west x 6m north–south and was interpreted as a drip gully surrounding a post-built structure (see Figures 8, 17, 38; Plate 40).

A great deal of the central and eastern portion of the feature was significantly truncated by later drains (particularly F383, F391, F622, F1361). Where the gully survived intact, two sterile deposits (F386, F1507) were identified, each containing small fragments of animal bone. Within this gully, and potentially associated with it, was an arrangement of six postholes (F350, F370, F374, F378, F1463, F1556) forming a roughly concentric pattern to F387. Unfortunately none of these posts could be dated. Further postholes (F360, F372, F1459) were located to the north of F387 that could be associated with Structure A. (This was not conclusive as another potential structure, the later Structure E (see below) was located adjacent to Structure A. Two later postholes (F393, F395) cut F387 highlighting the potential for stratigraphically isolated postholes in this area to derive from different phases of activity.

2.1.19.2 Structure B

A truncated semi-circular drip gully F885 (0.36m wide x 0.21m deep) enclosed an area approximately 4m in diameter, and was interpreted as a small structure, possibly a small workshop (Figures 8, 19, 38; Plate 41). No associated features (postholes, stakeholes etc) were recorded. It pre-dated the internal subdivision of Enclosure 1, as it was truncated by ditch F603 (see Plate 42; see section 2.2.1? below)).

There was no obvious entrance, nor were there any associated artefacts. A small quantity of bone was recovered from its fill (F884; Appendix 6), which was otherwise devoid of environmental remains. It was potentially associated with shallow gullies gullies (F823 F825, F1112, F1162), probably representing small pens abutting the bank of F405. Surrounding these features were sporadic stone surfaces F817 (0.90m x 0.60m), F837 (1.0m x 1.50m), F1187 (3.3m x 2.4m) and F1188 (0.50m x0.50m). These deposits may represent the truncated remains of former, more extensive, paths or surfaces. Fragments of E-ware recovered from F772 (A008/002:772:1) and F805 (A008/002:805:1) may be residual objects from this phase of activity (see 2.1.2.1 above).

2.1.19.3 Structure C

A collection of gullies F591 (4.10m x 0.38m x 0.14m), F667 (4.47m x 0.56m max x 0.13m), F834 (0.59m x 0.22m x 0.12m), and F843 (1.60m x 0.30m x 0.11m), formed a roughly rectangular pattern 7.00m NW–SE x 6.50m NE–SW, and may have been a drip gully around a non-extant structure (Figures 8, 19, 38; Plate 43). No postholes were recorded in association with these gullies. A significant portion of the internal area was truncated by later features (F570, F593, F595, F677), post-medieval furrows, and a test trench from an earlier phase of archaeological investigation, each of which had the potential to remov evidence for associated features.

Animal bone was recovered from F590 and F665; however, environmental sampling failed to yield further remains. Finds from these gullies included a copper-alloy pin fragment (A008/002:590:1; see section 2.2.1) and an iron nail (A008/002:665:1; Appendix 2). The structure is potentially associated with linear F564 (9.50m x 0.80m x 0.24m), in which small quantities of animal bone were identified (F562, F563).

2.1.19.4 Structure D

Two semi-circular drip gullies F707 (0.96m x 0.41m x 0.26m) and F1216 (4.85m x 0.47m x 0.27m). Together they may have defined a small circular structure approximately 4m diameter (Figures 8, 13, 38; Plate 44). It may have functioned as a workshop beyond Enclosure 1, and was potentially involved metalworking (a crucible fragment was recovered from one gully; A008/002:1172:1). Bone trial pieces were recovered from contemporary deposits within F405 (A008/002:412:1; A008/002:414:4; see Appendix 15) immediately west of this structure, further suggesting the structure/area was associated with metalworking. The potential structure was within the annexer enclosure Enclosure 10 (see above). The gullies were truncated by later features (F934, F1241).

2.1.19.5 Structure E

An arrangement of postholes was located immediately northwest of Structure A (Figures 8, 17, 38; Plate 45). It consisted of approximately eight circular postholes (F352, F356, F368, F1472, F1474, F1476, F1478, F1480) forming a definite L-shape and interpreted as a structure abutting the enclosing bank. Each posthole cut F1521, bank material associated with F404 and/or F450. This suggested Structure E was later in the site sequence than Structure A. A small pit F364 was potentially associated with this structure, the fill of which (F363) contained animal bone (some of which was burnt) and charcoal fragments (see Appendix 10).

2.1.20 Kilns

Four cereal-drying kilns (F677, F698, F776, and F832) were excavated within Area B, three of which were situated within the southern half of Enclosure, although from different phases of activity, while a fourth was south of the main enclosure within Enclosure 11. The kilns could be further distinguished based on the shape, with three of the kilns identified as 'figure-of-eight' or 'dumbbell' kilns, and the fourth being a 'keyhole' or 'tobacco pipe' kiln.

2.1.20.1 Kiln F667

F677 was a 'keyhole' or 'tobacco pipe' kiln, comprising a sub-circular pit approximately 2.20m x 1.70m x 0.90m with steep vertical sides and an irregular flat base (Figures 8, 19, 39; Plate 46). It was radiocarbon dated to AD 687-937 (Beta 246966; Appendix 5). A 2.10m long flue exited this cut from the south, running in a north–south direction, however the southern end of the flue, presumably where the fire spot was located, was truncated by modern ditch (F577). Seven deposits (F654–F656, F670–F673) survived intact within the kiln, though there was some truncation bay a later pit (F682), which cut through the deposits, an event that signalled the end of F677 as a working kiln (see Plate 47).

The deposits within the feature suggested a well-constructed kiln, the interior of which was lined by a thick band of clay (F672, F673), perhaps to improve insulation within the drying chamber. Both deposits contained moderate amounts of animal bone, which may have been intentionally included to act as temper. Above this lining, successive slumped deposits (F654, F655, F656, F670, F671) may have originally formed part of the kiln superstructure that collapsed into the kiln. These deposits contained quantities of animal bone (F654, F655, F670, F671; Appendix 6), burnt bone (F655, F656, F670) and charcoal (F655, F656, F670; Maloideae, cherry; see Appendix 10) and included an iron knife (A008/002:656:1) and unidentified iron object/fragment (A008/002:671:1; see section 2.2.1), and a flint flake (A008/002:654:2). These objects could be residual artefacts from earlier phases of activity, but may also indicate that the collapsed kiln was subsequently used for rubbish disposal.

An interesting feature of this kiln was a roughly circular cut (F682) through the collapsed deposits at the centre of the kiln, through the clay lining, to the floor of the kiln. This has been interpreted as an effort at salvaging a drying crop following collapse of the kiln. Unfortunately, a number of environmental samples (F655, F656, F670, and F671) yielded animal bone and charcoal, but just two charred barley grains. This is unusual as one may expect to find charred plant matter from previous usage and it may indicate the kiln was exceptionally maintained throughout its life, or that it served some function other than cereal drying. Animal bone within F577 and F682 may reflect the temporary use of the kiln as a dump. The kiln was most likely contemporary with re-cut Enclosure 1 ditch F404 and internal division ditch F642 (see below). It cut Structure C and was truncated by the internal division ditch F571 (see below).

2.1.20.2 Kiln F698

F698 was a form of ‘figure-of-eight’ kilns, with the kiln was contained within an oval cut 2.51m x 1.58m x 0.20–0.40m (Figures 8, 14, 39; Plate 48). It had irregular sides, being steep and concave along the northern edge, yet more gradual and to the south, east and west. It contained three deposits (F695–F697). The west end had a burnt deposit (F697) with inclusions of charcoal (hazel/ alder) and charred oats and barley grains overlay a partially oxidised base. An associated flue was imperceptible, perhaps as a result of later disturbance, while further charred grains were found in the deposit (F696) at the east end of the feature. This feature was located outside Enclosure 1 and was radiocarbon dated to AD 546-656 (Beta 246967; Appendix 5)

2.1.20.3 Kiln F776

F776 was a ‘figure-of-eight’ kiln (2.60m x 1.00m x 0.50m) comprised of two conjoined circular chambers separated by a slight ridge along the base (Figures 8, 19, 39; Plate 49). The feature had vertical sides with a concave base and was orientated east–west. The base of each chamber was heavily oxidised and the presence of a stone socket at the midpoint perhaps indicated the former presence of a baffle stone, used to prevent sparks from the fire spot reaching the drying rack, which in this instance seemed to be positioned over the eastern chamber. It contained four deposits (F773–F775, F777), with a significant quantity of charred oats and barley (see Appendix 10) sieved from F777, the primary fill within the kiln, and primarily collected from the eastern chamber. This feature was radiocarbon dated to AD 573-688 (Beta 246968; Appendix 5). This kiln suggests some cereal processing was carried out within Enclosure 1 in its early phases.

2.1.20.4 Kiln F832

F832 was also ‘figure-of-eight’ shaped, with the characteristic narrowing of its midpoint (Figures 8, 19, 39; Plates 50, 51). It was orientated north–south (2.50m x 0.40–0.75m x 0.26m) and contained four deposits (F828–F831), the lowest of which (F830, F831) were present only within the northern chamber and contained a small quantity of charred oats and barley. The fire spot was located within the southern half of the feature, which was partially truncated by F821, a late ditch post-dating but approximately coterminous with F450 (see above). Allowing for its proximity to the inner edge of F404, it is more likely that this kiln was contemporary with the initial Enclosure 1 ditch F405, perhaps associated with gullies F825 and F1112.

2.1.21 Subdivision of Enclosure 1

The interior of Enclosure 1 was divided into smaller units by a number of ditches. Subdivision of the interior may have been undertaken from the initial phase of enclosure (see section 2.1.21.1 below), but the interior of was clearly in a state of flux, and the total area partitioned within Enclosure 1 expanded and contracted over the lifetime of the settlement.

2.1.21.1 F1271, F1267 & F735

Two successive ditches (F1271, F1267) were identified along the western limit of excavation. Both were extensively truncated by F550 (see 2.1.21.2 below), and further exploration of their position in the site stratigraphy was hindered by their location at edge of excavation (Figures 8, 17, 40; Plate 52). It is likely that they preformed some partiton function, prior to the excavation of F550 during the ninth century AD (see below).

- The earliest of these features was F1271, a north–south ditch (23m x 1.10m x 0.28–0.55m) with a U-shaped profile. It contained two fills (F1272, F1273), the latter of which contained some burnt animal bone (Appendix 10) and Late Mesolithic flint flake (A008/002:1273:1; Appendix 14).

- It was succeeded by F1267 (14.40m x 1.25m x 0.45m), markedly more curvilinear than F1271, it had a U-shaped profile and contained three fills (F1268–1270), none of which contained any artefacts. It extended beyond the western limit of excavation to the south, while to the north it was truncated by F735, a deep section of ditch that was exposed for a short distance before running beyond the limit of excavation.

- F735 contained four fills (F736, F1182–F1184), each of which contained animal bone (Appendix 6) and a number of common early medieval artefacts, including a translucent light grey-blue glass barrel bead (A008/002:1182:1; Appendix 17), fragments of lignite (A008/002:736:1–2), an iron knife (A008/002:736:3; see section 2.2.1) and an iron bar (A0087/002:1183:1; see Appendix 2). The evidence for the relationship between F735 and F550 was removed by F1319 (see below).

2.1.21.2 Ditch F550

These earlier ditches were replaced during the ninth century by F550 (Beta 246965; AD 889–1022; see Appendix 5). This was re-cut on two successive occasions (F1319, F770). F550 (32m x 1.70–3.20m x 1.40m) was C-shaped ditch with a V-shaped profile, steep sides and a concave base that enclosed an area approximately 18m x 20m (based on an amalgamation of measurements from excavations and the geophysical survey; see Figures 8, 17, 40; Plates 53–55). It was located close to the western limit of the site; so much of the area it enclosed was beyond the current area of excavation. No obvious means of access into this enclosure was recorded, though any entrance might have been located in the unexcavated area

The lower deposits within F550 remained largely intact despite later re-cuts. Six deposits were recorded (F549, F551, F552, F733, F1208, F1298), in which quantities of animal bone (F549, F733; Appendix 6), charcoal (alder, hazel, oak; F549, F1298) and burnt bone (F549; Appendix 10) was identified. A copper-alloy needle (A008/002:733:1; see section 2.2.1) and a double-segmented or 'dumb-bell' bead (A008/002:552:1), one of two from the site (the other being A008/002:400:44), with one further example from the scheme generally (at Castlefarm, see Appendix 17). These types of bead are well represented in Ireland and examples were ercovered from Lagore (Hencken, 1950, p.139, Fig.67, no.1471). Hencken (1942, 51) considered them buttons or toggles rather than beads.

F550 was potentially contemporary with F1194 (5.50m x 1.10m x 0.40m), a drain that extended northeast from the outer edge of F770, a re-cut of F550. Whether it was contemporary with F550 was not clear. It contained two fills (F1193, F1194), both of which produced trace amounts of animal bone (Appendix 6). F1260 (5.30m x 1.20 x 0.50m) was a re-cut of F1194. F1191 (6.20m x 1.10m x 0.45m) was a further re-cut of the feature.

2.1.21.3 Ditch F1319

F1319 (16.50m x 1.00–3.15m x 1.00m) was the first re-cut of F550. This U-shaped ditch contained six deposits (F547, F548, F1299, F1303, F1304, F1305, F1312), in which small amounts of animal bone (F547, F1305, F1312; Appendix 6), burnt bone (F545) and charcoal (F547, F548, F1299, F1312) were recovered (Appendix 10). An unidentified iron object (A008/002:1312:1; Appendix 2) was the recovered artefact. Charred grain from the lowest deposit in F1319 was radiocarbon dated to AD 783–1018 (Beta 246964; Appendix 5). There is some overlap with the date from F550 (see above), but both serve to confirm the general use of this feature between the eighth to 11th century AD.

2.1.21.3 Ditch F770

F770 (16.50m x 2.30m x 0.53m) was a further re-cut, shallow and U-shaped ditch, with five fills (F542, F545, F546, F771, F1321). Animal bone (F546, F771, F1321; Appendix 6), burnt bone (F545), charcoal (hazel, ash, oak; F545, F546) and charred oats, barley and wheat graina (F545, F546) were recovered (see Appendix 10). Snail shell was recovered from F771. Following the infilling of F770, a large pit F1310, which contained fragments of iron objects (A008/002:1301:1–2; Appendix 2), animal bone (Appendix 6) and slag (Appendix 20) was cut through it.

Artefacts included an iron knife (A008/002:545:1–3; see section 2.2.1), a pierced copper-alloy belt plate (A008/002:771:1; see section 2.2.1) and a fragmentary but largely complete single-sided Class B bone comb (A008/002:1321:1–20; see Appendix 15; Plate 56). The large comb has broad, D-shaped side plates, that curve and taper towards each end. The decorative motifs adorn each side and comprised bands of vertical and diagonal lines set in two registers and bounded by vertical incised lines (see Appendix 15). The comb is of a style that occured across most of northern Europe in the later 10th and early 11th century AD (Tempel 1969, 92-9), though aspects of its design (iparticularly the presence of prominent saw marks) suggested the comb was locally made. It compares well with several combs from Dublin, Lincoln and York (Riddler and Trzaska-Nartowski forthcoming; White 1981, fig 6; MacGregor 1982, fig 49.528; see Appendix 15 for a full discussion of this comb).

2.1.21.4 Ditch F603

The southeast corner of Enclosure 1 was also partitioned by a series of curvilinear ditches in what seemed to be a deliberate effort of segregate the remainder of the interior from the agricultural activities that developed there during Phase 2 (see Figures 8, 19, 41; Plate 57). F603 was the first ditch in this sequence. It was a steep-sided curvilinear cut but was largely removed by a later re-cut F642. Just two original deposits survived (F600, F601). Finds included interlocking copper-alloy rings (A008/002:601:1) and an iron awl (A008/002:601:2; see section 2.2.1). Each had small quantities of animal bone (Appendix 6).

2.1.21.5 Ditch F642

F642 (35m x 0.60m x 0.80m) was a steep sloped curvilinear ditch that replaced F603. It contained eight deposits (F643, F676, F723, F800, F803–F805, and F847), in which an eclectic array of artefacts was noted. These included wrought iron pin shafts (A008/002:643:5, A008/002:643:11), a ‘latch-lifter’ (A008/002:643:7; description after Ó’Ríordáin 1949; see section 2.2.1), an iron loop (A008/002:643:3), an iron knife

(A008/002:643:4), an iron nail (A008/002:643:10) and assorted iron objects (A008/002:643:2, A008/002:643:6, A008/002:643:8–9, A008/002:643:12–13; see Appendix 2). Non-metal finds included a rim sherd of an Ei jar (A008/002:805:1; Appendix 18) and a bone needle (A008/002:643:1; Appendix 15). Quantities of animal bone (F600, F601, F643, F676, F800, F803–F805; Appendix 6) were recovered, some of which was burnt (F643, F676, F800). Charcoal (alder, hazel, ash, Maloidaea, cherry, Salicacaea, elder, oak; F643, F800), charred hazelnuts, oats and barley grains (F643, F800; see Appendix 10) and slag (F643; Appendix 20) were also recovered.

2.1.21.6 Ditch F1104

F1104 (30m x 0.50m x 0.40m) replaced F642. It was a shallow U-shaped ditch that followed the line of the earlier ditch, but was slightly shorter. It contained two deposits (F566, F858). Both deposits contained animal bone (Appendix 6) and burnt bone (Appendix 10), while F566 had inclusions of charred oats and barley, hazelnut shells and charcoal (alder, hazel, ash, Maloidaea, cherry, Salicacaea, elder, oak; see Appendix 10).

An interesting mixture of artefacts was recovered. Iron objects included knives (A008/002:566:4, 24), a socketed blade (A008/002:566:19–21), buckle fragments (A008/002:566:2, 22), a needle (A008/002:566:1) and assorted unidentified fragments (A008/002:566: 5–7, 9, 10, 12, 14). A complete copper alloy ringed pin (A008/002:566:15) with a distinctive twisted/ribbed spiral ring was also recovered (see section 2.2.1).

Non-metal objects included a bone pin or needle (A008/002:566:18; Appendix 15), a fragment of lignite (A008/002:566:23), a crucible fragment (A008/002:566:8), a partial opaque yellow bead (A008/002:566:3; Appendix 17). Three Early Mesolithic flint flakes (A008/002:566:13, 16, 17) were also recovered (see Appendix 14).

2.1.21.7 Adjustments due to re-cutting of Enclosure 1

Each of these ditches (F603, F642 and F1104) appeared to respect the inner edge Enclosure 1 (in this period likely to be F404). Each stopped approximately 5m west of this inside edge, suggesting these ditches had extended up to the bank associated with F404 (surviving elsewhere as F1531; see above). There may have been an entrance at this point.

The eastern terminal of F1104 was re-cut by F675, this feature extending upto the edge of the Enclosure 1 ditch. The excavation of F675 can only have taken place when the associated bank with Enclosure 1 (F404) was not there. The implication being that at some period between the excavation of F1104 and F675, the bank inside the Enclosure 1 ditch was removed allowing for the extension of the subdivision ditch as far as the cut edge of Enclosure 1. It has already been shown that F404 was partially backfilled prior to the excavation of F450. This is certainly the period in which this alteration took place.

This small area of the site is a key piece of evidence in the extension of the siote in the period between Phases 2 and 3, a period which witnessed important morphological changes in the both parts of the settlement, and ultimately the amalgamation of previously separate portions of the site the site into an overall, unified complex.

2.1.21.8 Ditch F571

The above partition eventually became redundant and was replaced by F571 (23.70m x 0.80m x 0.40m), a curvilinear ditch that enclosed a smaller area (15m north–south x 12m east–west) than its predecessor (F603/F642/F1104; see Figures 8, 19, 41; Plate 57). Its single fill (F570) had inclusions of animal bone (Appendix 6), charcoal (ahzel, ash) and charred oats (Appendix 10). Artefacts included a limestone pounder (A008/002:570:1), characterised by a pitted work surface at one end. Stone tools are poor chronological indicators and this object cannot be accurately dated. A small fragment of amber (A008/002:570:2; see Plate 75) may have been part of a bead or pendant.

The Vikings imported amber from the Baltic region; however, Irish merchants may have traded for amber prior to the ninth century (Edwards 1990). Amber was used sparingly in pre-ninth century AD contexts, only becoming more widespread following the establishment of Viking settlements in Dublin and elsewhere. Nearly 4000 pieces of amber were recovered from Hiberno-Norse levels at Wood Quay (Harvey 2006). That amber was a rare and valuable commodity in pre-Viking Age deposits can be inferred from its general absence from the excavated assemblages of otherwise wealthy secular settlements or its scarcity among the assemblages of other high status sites. Ballycatteen (Ó Ríordáin & Hartnett 1943), Carraig Aille I (Ó Ríordáin 1949) and Garryduff I (O'Kelly 1963) each produced single, fragmented items, with Ballinderry 2 (Hencken 1942) and Lagore (Hencken 1950) notable for having 14 and 16 beads respectively, probably indicating the relative wealth of these sites in the period, Lagore recorded as the seat of the kings of Southern Brega. F571 was never re-cut, although F593 and F595 could indicate attempts at restructuring or expanding the area, albeit minimally (see Figures 8, 19). Cereal-drying kiln F776 (see above) was located within this area and could be a contemporary feature.

2.1.22 Metalled Surfaces

Within Area A, disturbed areas of metalling were recorded at different locations. Most were tiny, less than 0.30m in diameter. The largest area F255 (7.00m x 3.00m) may perhaps have been more extensive, as many of the features in this area of the site were badly truncated by later agriculture (Plate 58). F255 was sealed by the deposit of occupation debris (F119; see above). F119 could represent a build up of occupation debris over a floor surface. Other areas of metalling (F179, F180) were noted beneath the remains of the two, undated, very disturbed human burials.

Within Enclosure 1 there were notable concentrations in the vicinity of Structures C and D (F706: 2.00m x 1.65m; 2.25m x 1.15m; F817: 0.95m x 0.60m (Plate 59); F837: 1.50m x 1.00m; F1170: 2.50m x 0.40m; F1187: 3.30m x 2.40m; F1188: 0.50m x 0.40m (Plate 60)). These were probably paths between, or around structures. Again, they were very patchy and certainly more extensive in antiquity. Larger areas of metalling that may have been work or yard surfaces.

F492 was a stone surface that was laid on top of F438 within F450 (Plate 61). It extended for a distance of approximately 15m and was 2.50m wide (max.). The deposit of small–medium, subangular stones appeared to be a path rather than a floor or working surface, but was not noted beyond this section of ditch. As it sealed F450, it was potentially quite late in the site sequence. Animal bone was recovered from the top of this deposit, but could be residual. A blue barrel bead (A008/002:492:1) was recovered (see Appendix 17). Blue, segmented glass beads are relatively common on early medieval sites in Ireland, having been found at Lough Gur (O Riordain, 1949, p.90, Fig.19, no.91), Lagore (Hencken, 1950, p.141; Fig.67, nos.51, 680, p.139), Garryduff (O'Kelly, 1963, p.69, Fig.13, nos. 484,485; p.76) and Deer Park Farm, Co. Antrim (Hamlin & Lynn, 1988, p.47, Fig.56). However, only two were identified at Roestown, and nowhere else along the M3 scheme. An Early Mesolithic flint flake (A008/002:492:2; Appendix 17) was also embedded in the surface.

F960 (8.00m x 7.00m) was the most extensive area of metalling within the site (Plate 62). It sealed ditch F1315 and was within the area enclosed by Enclosure 12. The surface was sealed by F993, a dark occupation deposit with frequent animal bone inclusions (Appendix 6), and iron objects, including a chisel (A008/002:993:1), a bracket (A008/002:993:2) and fragment of an object (A008/002:933:3). A flint flake and retouched object (A008/002:993:4–5) were also recovered.

A smaller area of metalling F994 (2.10m x 1.40m) approximately 10m north of F960 may also be contemporary. F1337 (10.50m x 4.50m) was located beyond the main enclosure ditch and immediately south of an annexe ditch F1485 and was cut by a later ditch F1336 (Plate 63). It may represent a work surface or small yard.

2.1.23 Human remains

Two poorly preserved inhumations had been truncated by post-medieval ploughing. A partial grave cut (F166) survived around Burial 1. Both burials were laid on metalled surfaces (F179 and F180). Burial 1 was possibly laid out in a supine manner on a west–east orientation. The preservation of bone in both burials was too poor to permit radiocarbon dating. There was no further evidence of formal human burial within the remaining excavated portion of the site although a disarticulated human cranium fragment was also found in backfill deposits within the souterrain in Area B (see Plate 66; and Section 2.1.18 above).

- Burial 1 was the remains of a juvenile (approximately 10–12 year old) of indeterminate sex. It survived as a number of skull fragments, including portions of the frontal lobe and mandible. Fragments of the left humerus were also present (Plate 64).

- Burial 2 was the remains of an adult of undetermined sex (Plate 65). It consisted of skull fragments, as well as bones from the left (metacarpals and phalanges) and right hands (a phalanx). The poor preservation of the remains limited the pathological analysis that could be undertaken; however, both burials presented evidence of iron deficient anaemia (see Appendix 7).

2.1.24 Hearths

Hearths were not commonly identified and were found exclusively beyond the main enclosure. A case may be made for them being truncated cereal drying kilns, as they all had a high number of charred grains. The date of these features is not clear but the proportions of barley and oats in them indicate they are probably early medieval. A small area of oxidsed clay in Area A (F256: 1m x 0.3m) and two further deposits (F1076, F1077) in Area B survived as small areas of oxidised subsoil (see Plates 67, 68).

F1311 (1.13m diameter x 0.22m deep) was a more substantial circular cut containing three deposits (F1307–F1309; Plate 69) with inclusions of charcoal (oak) and charred oats and barley grains (see Appendix 10).

2.1.25 Additional ditches within Enclosure 1

The northwestern area of Enclosure 1 was a confusion of intercutting ditches, gullies and drains, the interpretation of which was never satificatorily resolved. Many of the features were re-cut during their use (see Figures 8, 17, 42, 43). Full details of these features are available in Appendix 1.

- F1490 (5.2m (min.) x 0.80m x 0.58m) was a truncated arcuate ditch largely removed by F403 and F389 (6m x 0.55m x 0.30m), the later probably intended as a re-cut of F1490. Its truncation by F403 places both F1490 and F389 between Phases 1–3. F389 was later truncated by F1365 and F1379.

- F1365 (12.00m x 0.65m x 0.35m) was a curvilinear ditch that ran south from the southern terminal of F389. It pre-dated a similar orientated ditch F1361 (13.40m x 1.20m x 0.65m), located immediately to the west. F1361 may have replaced F1365 but it is noteworthy that they were stratigraphically separated by a small gully F366. As F1365 cut F389, a Phase 2 or 3 was likely.

- F1368 (4.00m x 0.85m x 0.60m) and its re-cut F1371 (4.50m x 0.72m x 0.25m) were short curvilinear gullies that were instrumental in tying together a number of disparate stratigraphies in this area.

- F1368 truncated both F1361 and F383 (7.00m x 0.50–0.70m x 0.40m), the latter is noteworthy for truncating F387 (part of Structure A; Phase 1).

- F1371 was cut by F1393 (10.50m (min.) x 0.90m x 0.42m), the earliest feature in a sequence of east–west ditches located between F550 and F660. F1393 was replaced by F1279 (7.80m x c.0.80m x 0.45m)

- F1279 was largely truncated by F607 (8.65m x 1.00m x 0.50m). A bone pin (A008/002:689:1) was found in F607.

- F1400 (4.60m x 0.50m x 0.10m), a short gully, truncated F383 and F550, removing the relationship between these two features.

- F629 (10.80m x 1.15m x 0.42m) was a shallow ditch that cut F1393 and F1371, but was truncated F1279. Unusually, F629 had two large pits (F638, F1397) cut into its base. There were no indications this was part of a fence or structure, and while one other instance of a similarly large pit was found on the site (F1414), there was no surviving evidence that they were related.

- F581 was among the latest features in the F1393 sequence, its single fill (F580) containing a bone pin or needle fragment (A008/002:580:1). It was cut by pit F1294 (2.42m x 1.66m x 0.50m). F581 was pre-dated F1194 and its re-cuts (F1191, F1260), all of which were potentially associated with F550.

- F366 (14.50m x 1.00m x 0.40m) was a NNW/SSE running curvilinear drain containing three fills (F367, F1497, F1498) each producing some animal bone. It post-dated F1365, F1492 and residual bank material F1521. It was cut by later drains F1361 and F362, the latter (6.00m x 0.80m x 0.28m) could potentially be a re-cut of this feature. It also contained animal bone and an iron pin fragment (A008/002:363:1).

- Ditch F660 (19.00m x 1.50m x 0.80m) contained glassy residue, possibly from glass working and an iron knife (A008/002:1266:1; see section 2.2.1). A later re-cut F622 (22.00m x 1.50m x 0.45m) contained fragments of a copper-alloy pin shaft (A008/002:620:1; see section 2.2.1), a number of corroded iron objects (A008/002:620:3, A008/002:620:5; see Appendix 2), a partially completed loom weight (A008/002:620:2; see Appendix 16b), a bone pin or needle (A008/002:620:4; Appendix 15) and finally flint debitage (A008/002:619:1; Appendix 14).

2.2 Finds

Preservation at the site was was suffiecient enough to ensure the survival of iron, copper alloy, glass, bone and wood, and consequently a diverse collection of objects were recovered from the site. Objects subsequently deemed non-aqrchaeological are not included in the table below (see Appendix 2 for the complete list of artefacts from the site).

Artefact type	Approximate No.
Ferrous metal	178
Non-ferrous metal	31
Lithics	140
Bone/ Antler objects	47
Stone objects	36
Glass/ Amber (Beads)	11
Wooden objetcs	2
Crucibles	3
E-ware	5
Medieval pottery	34
Post-medieval pottery	62
Clay pipe	20

Table 1: Breakdown of artefacts from Roestown 2

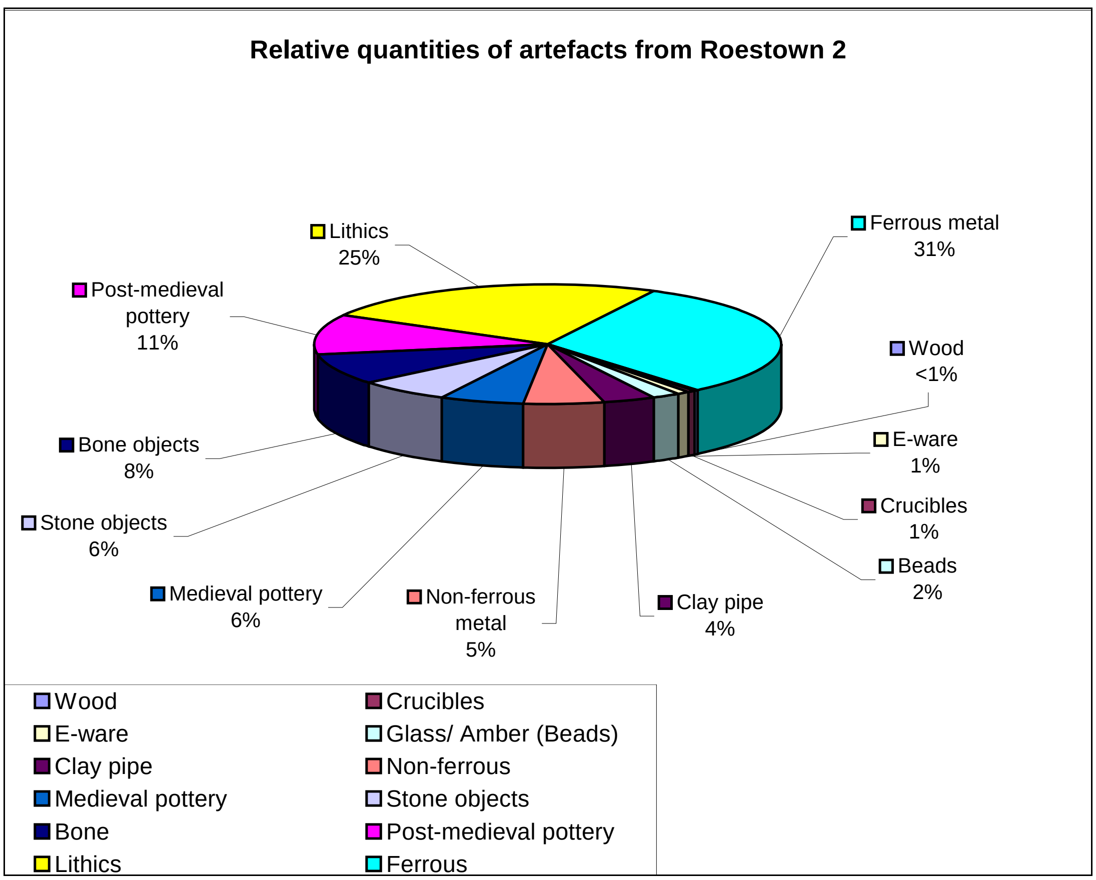

Table 2: Breakdown of artefacts from Roestown 2 by type and quantity.

2.2.1 Catalogue of conserved metal artefacts

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
Dress Accessories							
A008/002:135:1	?Pin	Fe	Ditch F134	A/ 6a	C13th-C14th	L33mm. Formed by single strand of iron doubled up tp form the shaft with the strands separating into individual elements to form a figure-of-eight head (10mm x 7mm) which projects out from the shaft.	Complete object
A008/002:400:17	Pin shaft	Cu Alloy	Topsoil: Area B	n/a	unknown	Shaft bent slightly below midpoint. L102mm. Shaft circualr cross-section 2mm tapers into fine point. Circular loop 4mm diameter.	Ring absent
A008/002:400:51	Pin shaft	Cu Alloy	Topsoil: Area B	n/a	unknown	Shaft fragment. L50mm x 2mm diameter	Tip present
A008/002:400:64	Pin shaft	Fe	Topsoil: Area B	n/a	unknown	L60mm. Diameter 2mm. Tapers.	Both ends broken
A008/002:400:65	Pin shaft	Cu Alloy	Topsoil: Area B	n/a	unknown	L50mm. Diameter 2mm. Beginnings of loop head visible at top of shaft	Both ends broken
A008/002:400:76	Pin shaft	Fe	Topsoil: Area B	n/a	unknown	L68mm. Diameter 2mm. Tapers.	Both ends broken
A008/002:400:83	Ringed pin	Fe	Topsoil: Area B	n/a	unknown	L78mm. Shank diameter 2mm. Tapers to fine point. Flattened twisted looped head approx 11mm in diameter.	Similar object found at Castlefarm
A008/002:400:92	Pin shaft	Fe	Topsoil: Area B	n/a	unknown	L40mm. Diameter 2mm. Bent at 90 degrees.	Both ends broken
A008/002:401:4	Pin shaft	Fe	Lower topsoil: Area B	n/a	unknown	L40mm. Shank diameter 2mm. Broken. Tip not present. Loop headed. 4mm diameter.	Tip broken. Ring absent
A008/002:401:15-16	Pin shaft	Cu Alloy	Lower topsoil: Area B	n/a	unknown	L44mm. Diameter 2mm. Circular cross section	Tip present. Piece broken in two.
A008/002:401:22	Pin shaft	Cu Alloy	Lower topsoil: Area B	n/a	unknown	Shaft fragment. L55mm x 2mm diameter	Tip present
A008/002:417:2	Pin shaft	Fe	Ditch F404	B/ 2a	C8th-C9th	L90mm. Diameter 3mm. Tapers to fine point. Loop headed.	Loop broken
A008/002:429:1	Ringed pin	Cu Alloy	Ditch F405	B/ 1a	C6th	Shaft bent slightly above midpoint. L80mm. Shaft oval cross section 3mm x 2mm tapers into blunt point. Circular loop 3mm diameter. Plain ring 14mm in diameter.	Complete
A008/002:438:7	Belt fitting	Cu Alloy	Ditch F450	B/ 3a	C10th	12mm x 12mm x 1mm. Pierced CU alloy plate.	Fragment
A008/002:473:9	Pin shaft	Cu Alloy	Ditch F450	B/ 3a	C10th	Shaft fragment. L20mm x 2mm diameter	Both ends broken

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
A008/002:476:2	Pin shaft	Cu Alloy	Ditch F450	B/ 3a	C10th	Polyhedral head with collar, decorated with well-worn raised beading (bramble). Shaft bent below midpoint. Two sockets on side of head. L112mm. Head 8mm x 7mm. Sockets 3-4mmin diameter.	Similar to finds from Dublin dated to early C11th AD (Fanning 1994, 111, fig. 93)
A008/002:491:1	Pin shaft	Cu Alloy	Ditch F404	B/ 2a	C8th-C9th	Shaft fragment. L39mm x 2mm diameter	Both ends broken
A008/002:513:2	Stick pin	Cu Alloy	Souterrain	B/2		L80mm. 3mm diameter tapers into fine point. Watchwinder decoration on stud head Class 8 (O'Rahilly 1998, 28; fig. 12).	Complete. Examples from Dublin dated to C11thC13th. Found in backfilled souterrain
A008/002:566:15	Ringed pin	Cu Alloy	Ditch F1104	B/2c	C8th-C9th	Shaft bent slightly above midpoint. L55mm. 3mm diameter tapers into blount point. Head flattened and expanded to form circular loop 3mm diameter. Spiral ring 15mm in diameter of twisted copper alloy wire giving a distinctive ribbed appearance.	Complete.
A008/002:615:1	Pin shaft	Cu Alloy	Linear F616	n/a	unknown	L85mm. Shaft has oval cross-section 3mm x 2mm tapering to fine point. Bent at tip. Shaft flattens towards looped head 5mm in diameter.	Complete shaft. Ring missing
A008/002:620:1	Pin shaft	Cu Alloy	Ditch F622	n/a	unknown	Shaft fragment. L45mm x 2mm diameter	Both ends broken
A008/002:643:5	Pin shaft	Fe	Ditch F642	B/2b	C8th-C9th	L93mm. Shaft has square cross-section 3mm x 3mm tapering to fine point. Bent at tip. Crook-loop headed	Complete shaft. Ring missing
A008/002:643:11	Pin shaft	Fe	Ditch F642	B/2b	C8th-C9th	L50mm. Diameter 1mm. Crook-loop headed.	
A008/002:771:1	Belt fitting	Cu Alloy	Fill of ditch 770	B/ 3c	C10th-C11th	14mm x 10mm x 1mm. Pierced CU alloy plate.	Fragment
A008/002:809:1	Spiral ring	Cu Alloy	Ditch F808	B/ 2d	C9th-C10th	Spiral ring 20mm in diameter, partially unwound. Twisted copper alloy wire giving a distinctive ribbed appearance.	Complete. Very likely to be associated with 809:2
A008/002:809:2	Pin shaft	Cu Alloy	Ditch F808	B/ 2d	C9th-C10th	Shaft bent below midpoint. L105mm. Circular cross-section 3mm. Tapers to fine point. Loop headed. 4mm diameter. Head bent but complete	Complete. Very likely to be associated with 809:1
A008/002:966:1	Buckle	Cu Alloy	Ditch F955	B/ 2d	C9th-C10th	D-shaped buckle. L38mm. B17mm. W4mm. T3mm. Flatted concave cross section on one side. Circular on other.	
A008/002:972:1	Pin shaft	Cu Alloy	Ditch F958	B/ 2d	C9th-C10th	Shaft fragment. L49mm x 2mm diameter	Both ends broken

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
Knifes							
A008/002:100:18	Knife	Fe	Topsoil: Area A	n/a	unknown	Tang: L 34mm T 2mm W 5mm. Blade: L 55mm T 2mm W 9mm. Type: 1b	Quite degraded
A008/002:100:91	Knife	Fe	Topsoil: Area A	n/a	unknown	Tang: L 27mm T 2mm W 5mm. Blade: L 30mm T 2mm W 10mm. Type: 1e	Complete. Miniature blade
A008/002:110:1	Knife	Fe	Ditch F239	A/3b	mid-late C7th	Tang: L 33mm T 2mm W 4mm. Blade: L 55mm T 2mm W 12mm. Type: 1e	Complete
A008/002:145: 2	Knife	Fe	Ditch F239	A/3b	mid-late C7th	Tang: L 42mm T 2mm W 5mm. Blade: L 51mm T 2mm W 12mm. Type: 1b	Blade damaged & tip broken
A008/002:153:2	Knife	Fe	Ditch F114	A/4a	C7th-C8th	Tang: L 30mm T 3mm W 5mm. Blade: L 85mm T 3mm W 14mm. Type: 1c	Complete. Tang bent.
A008/002:175: 2	Knife	Fe	Pit F178	A/6a	C13th-C14th	Tang: L 30mm T 3mm W 5mm. Blade: L 65mm T 2mm W 14mm. Type: 1b	Blade damaged & tip broken
A008/002:235: 2	Knife	Fe	Unknown	n/a	unknown	Tang: L 10mm T 1mm W 6mm. Blade: L 80mm T 2mm W 13mm.	Tang partially present
A008/002:251: 2	Knife	Fe	Ditch F250	A/1b	C6th	Tang: L 50mm T 1mm W 7mm. Blade: L 65mm T 3mm W 11mm. Type: 1b	Complete
A008/002:251: 3	Knife	Fe	Ditch F250	A/1b	C6th	Tang: L 45mm T 2mm W 6mm. Blade: absent Type: 1e?	Tang only. Blade missing
A008/002:400: 2	Knife	Fe	Topsoil: Area B	n/a	unknown	Tang: L 48mm T 2mm W 5mm. Blade: L 85mm T 3mm W 15mm. Type: 1a	Complete
A008/002:400:12	Knife	Fe	Topsoil: Area B	n/a	unknown	Tang: L 35mm T 2mm W 6mm. Blade: L 85mm T 3mm W 15mm. Type: 1c	Remains of wooden handle adhering to tang. Tip bent.
A008/002:400:18	Knife	Fe	Topsoil: Area B	n/a	unknown	Tang: L 35mm T 4mm W 7mm. Blade: L 62mm T 3mm W 10mm. Type: 1a	Tang and blade ends broken
A008/002:400:71	Knife	Fe	Topsoil: Area B	n/a	unknown	Tang: L 55mm T 2mm W 6mm. Blade: L 70mm T 2mm W 10mm. Type: 1e	Complete
A008/002:400:90	Knife	Fe	Topsoil: Area B	n/a	unknown	Tang: L 7mm T 3mm W 7mm. Blade: L 55mm T 3mm W 12mm. Type: 1a	Tang and blade ends broken
A008/002:417:1	Knife	Fe	Ditch F404	B/2a	C8th-C9th	Tang: L 33mm T 2mm W 6mm. Blade: L 70mm T 2mm W 13mm. Type: 1e	Complete. Tang tip broken but present
A008/002:429:3	Knife	Fe	Ditch F405	B/1a	C6th	Tang: L 30mm T 2mm W 5mm. Blade: L 59mm T 4mm W 11mm. Type: 1b	Complete
A008/002:438:6	Knife	Fe	Ditch F450	B/3a	C10th	Tang: L 25mm T 2mm W 5mm. Blade: L 64mm T 2mm W 12mm. Type: 1b	Blade tip broken

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
A008/002:455:1	Knife	Fe	Ditch F450	B/3a	C10th	Blade: L 52mm. T 4mm W 12mm. Type: 1e	No tang present
A008/002:476:3	Knife	Fe	Ditch F450	B/3a	C10th	Blade: L 38mm. T 5mm W 13mm. Type: 1b	Tang and blade ends broken
A008/002:545:1-3	Knife	Fe	Ditch F770	B/ 3c	C10th-C11th	Tang: L 20mm T 2mm W 4mm. Blade: L 32mm T 2mm W 11mm. Type: Unknown	In 2 pieces. In 3 pieces originally. Re-adhered by conservator
A008/002:566:4	Knife	Fe	Ditch F1104	B/2c	C8th-C9th	Tang: L 32mm T 2mm W 6mm. Blade: L 55mm T 4mm W 10mm. Type: 1e	Complete
A008/002:566:24	Knife	Fe	Ditch F1104	B/2c	C8th-C9th	Blade L 46mm (min) T 5mm W 12mm	Fragment of blade only
A008/002:656:1	Knife	Fe	Kiln F677	B/2a	C8th-C9th	Tang: L 40mm T 3mm W 7mm. Blade: L 85mm T 2mm W 10mm. Type: 1e	Complete
A008/002:686:1	Knife	Fe	Ditch F688	B/2d	C8th-C9th	Tang: L 35mm T 3mm W 9mm. Blade: L 67mm T3mm W 10mm. Type: 1b	Tang broken
A008/002:736:3	Knife	Fe	Ditch F735	unknown	unknown	Tang: L 27mm T 2mm W 3mm. Blade: L 42mm T 2mm W 8mm. Type: 1e	Complete. In two pieces
A008/002:963:2	Knife	Fe	Ditch F945	B/ 1c	C6th-C7th	Tang: L 42mm T 3mm W 6mm. Blade: L 64mm T 3mm W 10mm. Type: 1b	Complete
A008/002:1266:1	Knife	Fe	Linear F660	unknown	unknown	Tang: L 40mm T 3mm W 5mm. Blade: L 60mm T 3mm W 9mm. Type: 1e	Tang broken
A008/002:1291:2	Knife	Fe	Ditch F1290	B/2d	C8th-C9th	Tang: L 30mm T 4mm W 6mm. Blade: L 60mm T 2mm W 13mm. Type: 1d	Tang and blade ends broken
A008/002:1296:1	Knife	Fe	Pit F1294	unknown	unknown	Tang: L 30mm T 4mm W 6mm. Blade: L 60mm T 2mm W 13mm. Type: 1d	Complete
Socketed Blades							
A008/002:100:1	Socketed Blade	Fe	Topsoil: Area A	n/a	unknown	Socket L 48mm. T 2mm. W 12mm. Blade: L 60mm. T 4mm. W 10mm. C-section socket	Socket broken. Traces of wood in socket
A008/002:566:19-21	Socketed Blade	Fe	Ditch F1104	B/2c	C8th-C9th	Socket L 45mm. T 2mm. W 16mm. Blade: L 62mm. T 5mm. W tapers from 20mm to 13mm. C-section socket	Socket and blade ends broken. Re-adhered into 1 piece by conservator

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
Horse Trappings							
A008/002:100:52	Shoe	Fe	Topsoil: Area A	n/a	unknown	L 59mm T 4mm W 20mm. Evidence for square nail hole.	Fragment only.
A008/002:447:1	Shoe	Fe	Ditch F450	B/3a	C10th	L 40mm T 3mm W 20 mm. Tip only.	Fragment only.
A008/002:518:1	Shoe	Fe	Souterrain	B/2–3	C8th–C10th	L 40mm T 2mm W 24 mm. Tip only. Large headed nail present 18mm diameter.	Fragment only.
A008/002:566:2	Buckle pin	Fe	Ditch F1104	B/ 2c	C8th–C9th	Loop headed buckle pin. L32mm, W4mm, T3mm. Crook-shaped loop 5mm in diameter. Rectangular cross section, tapering to blunt point.	Pin complete. Buckle missing
A008/002:566:22	Buckle pin	Fe	Ditch F1104	B/ 2c	C8th–C9th	Loop headed buckle pin. L34mm, W4mm, T3mm. Pear-shaped loop 3mm x 7mm. Rectangular cross section, tapering to blunt point.	Pin complete. Buckle missing
Tools							
A008/002:161:5	Firesteel	Fe	Ditch F164	A/4a	C7th-C8th	L 75mm. T 5mm at base, tapering to less than 1mm in central section. W at centre section 17mm	Partially surviving. Ends originally curved, with a triangular shaped centre section.
A008/002:401:11	Firesteel?	Fe	Lower topsoil: Area B	n/a	unknown	U-shaped iron strip, the ends of which were bent together and formed into a pointed tang. L93mm. T4mm. Slot dimensions 42mm x 5mm. Tang L25mm. W7mm tapering to 2mm. Commonly encountered artefact and has been described as slotted punches.	Known from Cahercommaun, Lagore Carraig Aille II, Oldcourt but also from Scottish and Pictish sites. Likely date C7th-C9th AD. See main text Section 2.2.1
A008/002:601:2	?	Fe	Ditch F603	B/ 2a	C8th-C9th	Fragment of iron object. Square cross section tapering into point. L54mm. W4mm. T4mm.	Possible awl. End broken
A008/002:643:2	Firesteel	Fe	Ditch F642	B/2b	C8th-C9th	L 80mm. T 4mm at base, tapering to 1mm at tip of central section. W at centre section 19mm	Complete. Ends lopped with arms rising inwards to a triangular shaped centre section.
A008/002:993:1	Chisel	Fe	Occupation spread	B/ 1c	C6th-C7th	L 75mm. Squared section 8mm wide tapering into flattened blade 13mm wide.	Complete

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
Lock Keys							
A008/002:181:1	Key	Fe	Ditch F114	A/4a	C7th-C8th	L 46mm (min). Shaft diameter 4mm. Loop missing. Shank bent to form bit	
A008/002:220:1	Key	Fe	Ditch F102	A/2	C8th-C9th	L 54mm (min). Shaft diameter 3mm. Loop max W 10mm. (Type 5; Hurley et al 1997, 535)	Shank missing.
A008/002:255: 2	Key	Fe	Deposit	A/6a?	C13th-C14th	Shank and shaft fragment of barrel padlock key. L 43mm x 5mm x <2mm thick. Rectangular sectioned shaft. (Hurley et al 1997, 534)	Fragment. Shank and shaft fragment only present.
A008/002:400:84	Key	Fe	Topsoil/ Area B	n/a	unknown	Expanded shank of barrel padlock key. L 16mm x 11mm x <1mm thick. Square sectioned shaft 3mm x 3mm. Type 1? (Hurley et al 1997, 534)	Fragment. Shank and shaft fragment only present.
A008/002:401:2	Key	Fe	Lower topsoil: Area B	n/a	unknown	L37mm. Bow absent. Shaft circular cross section 3mm. Solid bit. Date unknown	Fragment
A008/002:438:5	Key	Fe	Ditch F450	B/ 3a	C10th	L50mm. Flattened cross-section circular cross section 3mm x 1mm.	Fragment
Weaponry							
A008/002:135:3	Javelin	Fe	Ditch F134	A/ 6a	C13th-C14th	Socket: L 115mm. Evidence for a nail driven through it. Maximum extant socket diameter 20mm. Tapers to 10mm at base of javelin head. Base of javelin rectangular section 10mm x 12mm. Javelin head 120mm long. Tapering to point 2mm wide (tip damaged slightly).	Bodkin style. Some damage to socket. Traces of wooden shaft within socket.
Mount							
A008/002:765:1	Mount	Cu Alloy	Ditch F766	B/ 2a	C8th-C9th	CU alloy mount in the shape of a ringed cross (Celtic cross). Centre of cross was squared (10mm x 10mm) while each of the four terminals was expanded into rectangular (10mm x 2mm) shape. Total diameter 60mm. 2mm thick. The back of the object had a slight rim along its circumference with a rounded triangular lug (10mm x 7mm), each with a central perforation (2mm) behind each terminal.	Complete. See main text Section 2.2.2

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
Needles							
A008/002:566:1	Needle	Fe	Ditch F1104	B/ 2c	C8th-C9th	Wrought iron pin. L 57mm. T 1mm. Witdtyh tapers from a largely undifferentiated oval head 4mm wide to point along shaft 2mm.	Part of shaft/tip missing
A008/002:590:1	Needle	Cu Alloy	Gully F591	B/ 1a	C6th	L23mm. 1mm diameter. Tapers to fine point	Tip only present
A008/002:733:1	Needle	Cu Alloy	Ditch F550	B/ 3a	C10th	L48mm. 1mm in dia\meter. Oval eyelet 3mm long.	Slight damage to eyelet
Miscellaneous							
A008/002:100:74	?Stylus	Fe	Topsoil: Area A	n/a	unknown	L75mm. Circular cross section 4mm. One terminal tapers into a blunt point The other has been flattened into a rectangular shape.	Possible writing/incising implement
A008/002:100:77	Loop	Fe	Topsoil: Area A	n/a	unknown	L45mm. Two expanded terminals. Mean size 28mm x 16mm. Each with a central circular perforation 3mm diameter	
A008/002:133:1	?Stylus	Fe	Topsoil: Area A	n/a	unknown	L65mm. Circular cross section 4mm. One terminal tapers into an edge. The other has been flattened into a triangular shape 26mm x 4mm x 2mm	Possible writing/incising implement
A008/002:161:2	Offcut	Au	Ditch F164	A/4a	C7th-C8th	Off-cut from silver object. Object shows signs of been beaten into ▯ roba prior to cutting. L120mm. W5mm. T1mm.	
A008/002:162:1	Strip/ Binding	Cu alloy	Ditch F164	A/4a	C7th-C8th	CU alloy strip with raised chevron decoration on its upper face. Portions of two circular holes at either end are ▯ robably the remains of tackoles for securing the object. L75mm. W5mm. T1mm.	
A008/002:251:1	?Stylus	Fe	Ditch F250	A/1b	C6th	L80mm. Flattened rectangular cross section 3mm x 2mm at one end tapering into fine point at other end	
A008/002:400:21	Hook	Fe	Topsoil: Area B	n/a	unknown	L55mm. Lozenge-shaped hook with tip bent. 2mm thick.	
A008/002:401:7	?Stylus	Fe	Lower topsoil: Area B	n/a	unknown	L73mm. Circular cross section 4mm. One terminal is a blunted point. The other has been flattened into a rectangular shape 34mm x 4mm x 1mm	Possible writing/incising implement

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
A008/002:416:1	Stud	Cu alloy	Ditch F404	B/ 2a	C8th-C9th	Tanged copper alloy stud. Tinned surface. 13mm diameter. 4mm thick. Triangular tang 6mm long	
A008/002:426:1	Wire	Cu alloy	Ditch F405	B/ 1a	C6th	Wire. L20mm. 1mm diameter	
A008/002:438:1	?Stylus	Fe	Ditch F450	B/ 3a	C10th	L100mm. 3mm. Flattened at one end, pointed at the other. Similra to other objects recovered. See above.	
A008/002:473:2	Ring	Fe	Ditch F450	B/ 3a	C10th	C-shaped ring. 58mm in diameter. One terminal rounded. The other pointed. W18mm max. T5mm	
A008/002:474:1	Nail	Fe	Ditch F450	B/ 3a	C10th	Nail. With circular head. L45mm. Square shaped section 4mm x 5mm. Head 16mm diameter.	
A008/002:598:2	?Strap/ buckle fitting	Cu alloy	Ditch F557	B/ 6	unknown	CU alloy object. Curved with square hole at one end set within a recess. The other end tapered into a small crown shaped motif. There was a small broken latch at the back. L41mm. Max width 7mm. Max thickness 2mm.	Likely to be post-medieval (Michael Ryan pers. comm.)
A008/002:601:1	Interlocking links	Cu alloy	Ditch F603	B/ 2a	C8th-C9th	Interlocking CU alloy links. Possibly part of a chain. 8mm diameter and 6mm diameter	
A008/002:643:3	Loop	Fe	Ditch F642	B/ 2b	C8th-C9th	Length of iron bent into a looped-shape. Square section. L 28mm. T 2mm. Loop formed an oval aperture 7mm x 4mm.	
A008/002:643:7	?Latch lifter	Fe	Ditch F642	B/ 2b	C8th-C9th	Object with expanded flattened head perpendicular to curved shank. L70mm. Rectangualr cross section 4mm x 3mm tapering to sharp point. Expanded terminal 10mm x 16mm x 4mm	Complete object. A similar object at Carraig Aille II was described by O'Riordain (1949; 75, fig. 11, no.483) as a 'latch lifter'. Possibly also Garranes (O'Riordain (1942; 106, fig. 9, no.259)
A008/002:643:10	Nail	Fe	Ditch F642	B/ 2b	C8th-C9th	Iron nail with circular head. L 16mm. Square section 2mm. Head 16mm diamter	Fragment only. Similar to A008/002:474:1
A008/002:1105:1	Clasp	Cu alloy	Ditch F1113	B/ 2b	C8th-C9th	CU alloy clasp bent around an incomplete Fe fixture. L32mm total, bent completely around Fe object L15mm x T2mm.	

Find No.	Object	Material	From	Phase	Date	Specifications	Notes
Unidentified							
A008/002:135:2	?	Fe	Ditch F134	A/ 6a	C13th-C14th	Fragment of iron object. L93mm. W4mm. T4mm	
A008/002:145:4	?	Fe	Ditch F239	A/ 3b	mid-late C7th	Fragments of iron object.	Broken. To damaged to interpret
A008/002:145:4	?	Fe	Ditch F239	A/ 3b	mid-late C7th	Fragment of iron strip. L74mm. W12mm. T2mm. Iron tack driven perpendicularly through it.	
A008/002:161:4	?	Fe	Ditch F164	A/ 4a	C7th-C8th	Curved iron object L115mm. Rectangualr cross section 5mm x 4mm. One terminal split into forked shape.	
A008/002:400:19	?	Fe	Topsoil: Area B	n/a	unknown	Fragment of iron object. Rectangular cross section L43mm. W4mm. T1mm.	
A008/002:473:7	?	Fe	Ditch F450	B/ 3a	C10th	Fragment of iron object. Square sectioned bar bent to 90 degrees. L60mm. W5mm. T4mm. Corroded head 17mm x 25mm at one end.	Door fitting?
A008/002:506:1	?	Fe	Souterrain	B/2	unknown	Fragment of iron object. L73mm. W4mm. T3mm	
A008/002:506:2	?	Fe	Souterrain	B/2	unknown	Fragment of iron object. L50mm. Diameter 2mm	
A008/002:615:2	?	Fe	Linear F616	unknown	unknown	Fragment of iron object. L180mm. W7mm. T4mm	
A008/002:671:1	?	Fe	Kiln F677	B/ 2a	C8th-C9th	Fragment of iron object. L70mm. W4mm. T4mm	
A008/002:862:1	?	Fe	Ditch F945	B/ 1c	C11th	L90mm. W 10mm T 2mm. Expanded at one end. Latch lifter?	
A008/002:893:2	?	Cu alloy	Linear F894	B/ 4	C11th	Fragment of CU alloy object. L12mm. W10mm. T<1mm	

3 DISCUSSION

3.1 Pre-rath activity

None of the stratified or dated features at the site conclusively pre-dated the early medieval period. There was, however, an overwhelming amount of evidence for chipped stone artefacts representing the Mesolithic through to the Bronze Age, which are dealt with in great detail in Appendix 14. The immediate landscape was clearly a focus for prehistoric settlement extending back to the Mesolithic, with the early communities exploiting the resources of the prehistoric lakeshore situated immediately east of the site that would later become marshland known as Redbog, an approximate extent of which can be derived from the 1836 Ordnance Survey map (Figure 3). The flint assemblage of Roestown can be divided into four groups:

- Early Mesolithic (microliths, blades and flakes)
- Late Mesolithic (which includes a distally trimmed flake)
- Early Neolithic (leaf/lozenge-shaped arrowheads, retouched artefacts, platform cores)
- Late Neolithic/Early Bronze Age (hollow-based arrowheads, plano-convex knife, hollow & concave scrapers, micro disc scrapers, retouched bipolar blades, flakes, scalar and bipolar cores.

It is highly likely that the Early Neolithic artefacts may have been associated with an occupation of a Neolithic house at the site, the remains of which were highly disturbed by later activities. Elements of the assemblage, especially the LN/EBA material, compares well to that found at Roestown 1 (A008/001; Nolan 2006), a disturbed burnt mound 100m northeast of the site.

3.2 Early medieval background

The early medieval settlement at Roestown was a wealthy and prosperous farm/settlement situated within the kingdom of Brega, adjacent to Lagore crannog, which was a major centre of political power between the seventh and tenth century AD. Brega was most likely claimed by the Déisi Temro at the outset of the sixth century AD. By the seventh century AD, political power in Brega was seized by Síl nÁedo Sláine of the Southern Uí Neill, who were at the peak of their political influence during the seventh century and much of the eighth century AD, when they held the kingship of Tara seven times, until they were eclipsed by their distant relatives, Clann Cholmáin (Byrne 1968). They remained the dominant power in Brega until the beginning of the 11th century AD however, when Clann Cholmáin extended their power directly over the kingdom. By this time, however, the kingship of Brega was more often claimed by the Saithne or the Déise, resurgent dynasties which had been displaced by Síl nÁedo Sláine in the seventh century (Bhreathnach 1999). By the eighth century AD, internal dissent and split Síl nÁedo Sláine into three separate kingdoms. The Uí Chonaing, became the kings of 'Ciannachta', and ruled over an area coterminous with the baronies of Lower & Upper Duleek from their caput at Knowth. The Síl Dluthaig retained an area around Oristown known as the kingdom of Fir Chúl Breg (roughly the baronies of Morgallion, and Lower & Upper Kells), while the kingdom of South Brega was controlled by the Uí Chernaig (See Table 3)

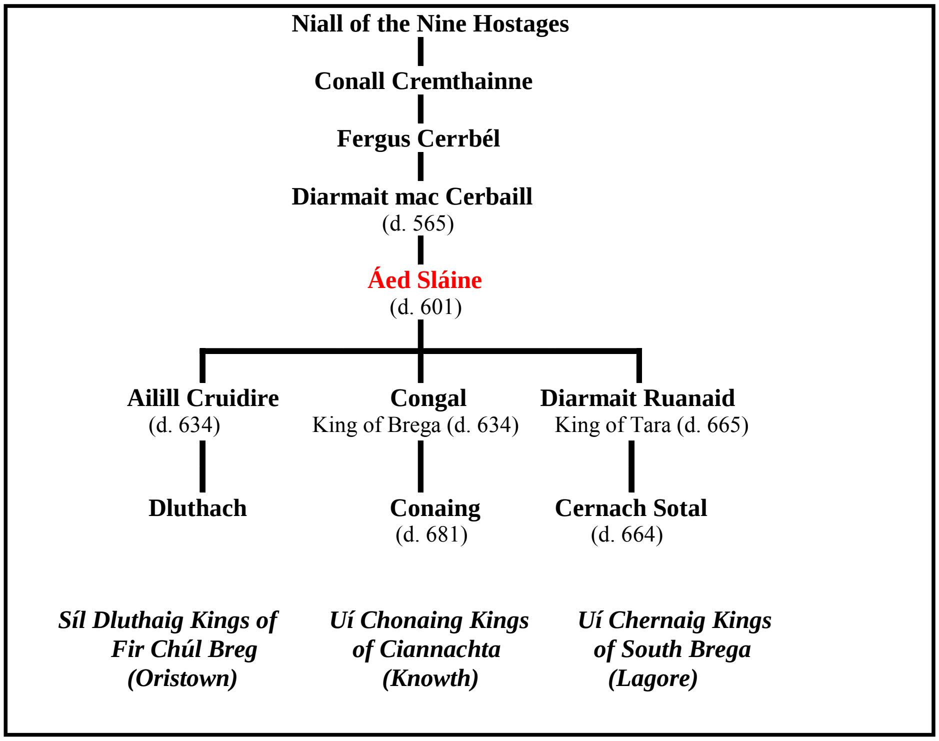

Table 3: Síl nÁedo Sláine of the Southern Uí Néill (Anne Connon; pers. comm.)

The titles given to the Uí Chernaig dynasty in the annals include 'kings of South Brega' and 'kings of Lagore'. The first claim to the title 'king of South Brega' by Síl nÁedo Sláine is not recorded until c. AD 727 (*Annals of Tigernach*), while the title 'king of Lagore' is not recorded until c. AD 785. Price (1950) believed, probably erroneously, that the two titles were one and the same (Dr. Anne Connon; pers. comm.). Recent study has identified four chief royal lines within the Uí Chernaig. Two of the four lines, the descendants of Fergus son of Fogartach, and the descendants of Flann Foirbthe, only ever receive the title 'king of Lagore' after AD 800. Likewise, the descendants of Cummuscach (d. AD 797) son of Fogartach and the descendants of Conall Grant, son of Niall are always called 'king of South Brega' after AD 800. This pattern suggests the kingships of Lagore and South Brega were not automatically synonymous (see Table 4). Presumably, when the kingship of South Brega was held by the descendants of Flann Foirbthe or Fergus, the two were synonymous. Similarly, when the kingship of South Brega was held by the descendants of Conall Grant or Cummuscach, the caput of South Brega was elsewhere, for example Galtrim, in the barony of Deece, where the descendants of Conall Grant were based. The caput of Cummuscach's descendants, who controlled the kingship of South Brega from approximately AD 868 to 919, is unknown (Anne Connon, pers. comm.).

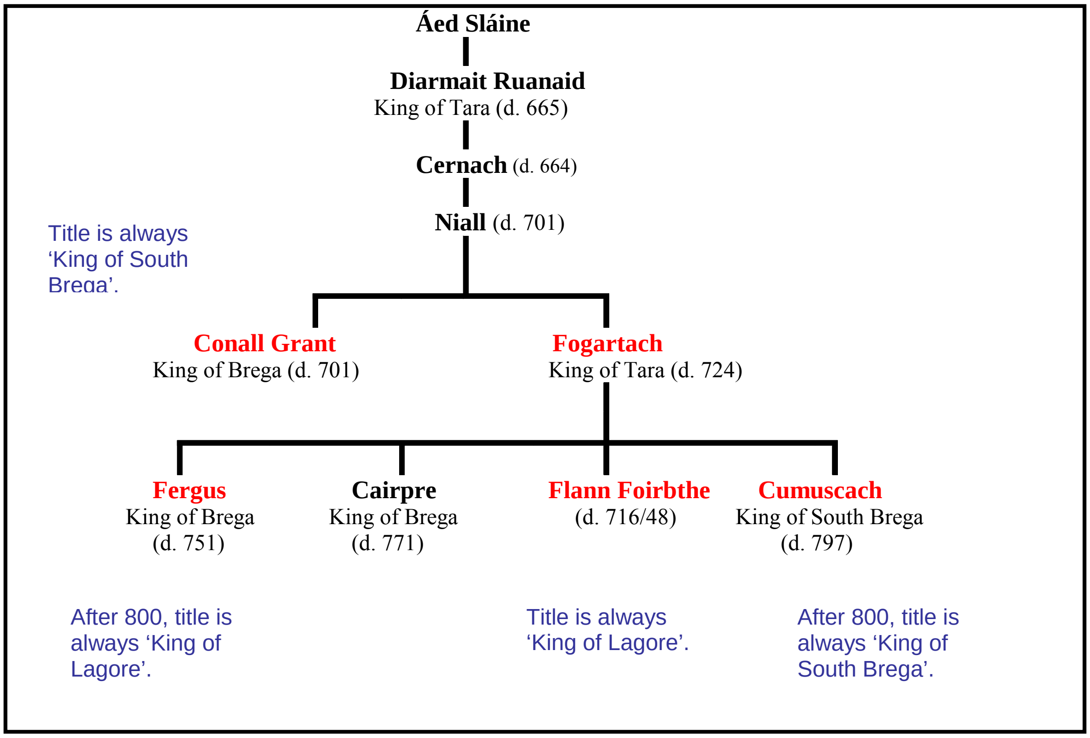

Table 4: Uí Chernaig kings of Lagore and South Brega (Anne Connon; pers. comm.)

If the annals are correct, it is likely earliest phase at Roestown 2 up to the mid-seventh century developed within a Déisi kingdom. Later phases occurred during the time when Síl nÁedo Sláine and the Uí Chernaig were establishing suzerainty within the kingdom. It was not possible to attribute morphological change within the site to political change, especially as power shifts may not have manifested themselves at a domestic level. The restructuring of the site in later phases was carried out with little regard for preceeding features, and there was enough difference between the initial (F405) and second (F404) phases of Enclosure 1 to suggest a change in occupancy.

3.2.1 Contemporary early medieval landscape

The local early medieval landscape would have been dominated by Lagore crannog (Hencken 1950, Lynn 1986; Comber 1997), with all settlement sites with a radius of a few kilometres of the crannog likely to have been the secular support network providing labour, food rent and services to the royal site. The excavated sites at Roestown (and the possible rath at Garretstown 2; Stuart Rathbone, pers. comm.) would certainly have been part of the overall network of settlements surrounding the royal centre. If the current understanding of the chronology at Lagore is correct, that 'the absence of Mediterranean pottery and penannular zoomorphic brooches, and the presence of E-ware at the lowest levels would seem to indicate very strongly that…the start of occupation, does not predate the seventh century and might even be as late as the eighth' (Warner 1985–86), then Lagore and Roestown 2 originated as settlements at approximately the same time. This raises the possibility that Roestown 2 was intentionally sited and developed in relation to Lagore and other contemporary sites may also have served the same purpose, perhaps acting as intermediates between client and king, receiving tribute and food rent from out-lying clients and ultimately forming a protective ring around the seat of royal power for Clann Chernaig Sotail. This was discussed by Stout (1997) who outlined legal references to grades of noblemen whose duty was to protect the borders of a kingdom (aire forgill) or to carry out raids or do battle in neighbouring tuath (aire deso). It is recognised that a hierarchy of settlement is noticeable in ringfort distribution, one model based on contemporary law tracts highlights the inter-relationships of ringfort dwelling freeman and the mutually advantageous links between secular and ecclesiastical settlements (Simms 1986; Stout 1997).

Two important ecclesiastical sites were situated within 2km of Roestown 2. Dunshaughlin (Domhnach Seachlainn) was revered as the church of Secundinus, an early Christian missionary, reputedly a follower of St Patrick but more likely to have been a contemporary of the bishop Palladius, sent by Pope Celestine in AD 431 (Charles-Edwards 2000). The Annals of Ulster (AU) record his death and burial at Dunshaughlin at either 438 AD (AU 438.2) or 447 AD (AU 447.1)[3]. Whether his original church endured beyond his death is unknown, but a monastic settlement is recorded there from the eighth century AD, when obits of abbots and senior clerics appear in contemporary annals (for which see Cogan 1874). Limited excavations around this church did not record pre-eighth century AD deposits (Simpson 2006).

[3] www.ucc.ie/celt/online/T100001A.html

The second monastery, Trevet was reputedly the burial place of the legendary figure Art, son of Conn of the Hundred Battles suggesting, perhaps, it had been an important pre-Christian ritual/burial site. Cogan (1874) believed one of its abbots, Cuanu mac Bessáin, whose obit is recorded in AD 739, may have written or been in possession of the *Liber Cuanach*, an occasional source for the Annals of Ulster for the period AD 467–629 (Ó'Mórdha 2000). This could explain why the monasteries are recorded so often in the annals; there is no denying the importance of both churches to Síl nÁedo Sláine and Clann Chólmáin. In 1027, an obit for Dunchad, son of Gilla-mo-Chunna mac Fogartaigh (who died in 1021 as king of Southern Brega) described him as a successor (i.e. abbot) of Seachnall[4], while both dynasties adopted the patronymic '-seachnaill' in their family names —Gilla- (devotee) and Máel- (servant of) respectively—, most famously Máel Seachnaill mac Domhnaill of Clann Chólmáin who died as high king in AD 1022.

The kingdoms on northern and southern Brega were bitter enemies, something the Norse kingdom of Dublin exploited to its advancatge during the ninth and tenth century AD. The Norse successfully exploited this rivalry; surreptitiously supporting Uí Chonaing (who were based at *Cnogba* or Knowth) attacks on Trevet in AD 848 that left 260 people dead and a destructive attack on Lagore in AD 850. In AD 917, the abbot of Trevet was killed during a Viking attack, while in AD 934 a Viking attack on Lagore effectively destroyed the crannóg (Cogan 1874; Price 1950). Bhreathnach (1999, 2005) suggests Dunshaughlin may have become increasingly important as a *caput* following the decline of Lagore.

3.2.2 Toponym

The townland of Roestown, forming part of the parish and barony of Ratoath, is located northwest of Dunshaughlin, Co. Meath. Placenames suffixed by *-town* in Meath are generally of medieval origin and rarely compounded with anything other than personal names, frequently of Norman origin and John O'Donovan (1836), who listed the Irish name for the townland as *Baile an Róidh*, determined that *–Róidh* was derived from such a family (Roe or Rowe). In south east Meath, a study of the distribution of Gaelic and English townland names revealed many of the historic parish centres (including Ratoath, Trevet and Skreen) remained surrounded by strongly Gaelic-named areas (Murphy 2006). O'Donovan's translation was almost certainly an error, the scholar probably intending *Baile an Roidh*, 'the settlement/place of/near/at the red mire' (Dineen 1927), a location that must refer to the former marsh, now the townland of Redbog that lies immediately east of Roestown. The modern placename hence developed from an Anglicisation (*Raweston*) of an existing Gaelic name (Murphy 2006),

[4] AFM1027.1 Dunchadh, son of Gillamochonna, successor of Seachnall, the most distinguished wise man of the Irish, died at Coloin, in Germany. Available at www.ucc.ie/celt

although the *baile* prefix may not pre-date the 11th century AD on etymological grounds. However, O'Donovan's notes also mentioned locals occasionally referred to the townland as *Raiste*. While its meaning had been lost by early 19th century, the prefix Ra- is a common diminution of rath and *Raiste* could perhaps have preserved an earlier toponymn, one perhaps associated with the settlement under discussion.

3.2 Form and Function

It is now widely accepted that the type of settlement encapsulated by ringforts and described in seventh- and eighth-century law tracts was in decline in the 10th century and that the flourit of ringfort construction was the early seventh century to the end of the ninth century AD (Stout 1997). In the preceding discussion the similarity in cultural and chronological terms of the more prominent, excavated, early medieval sites, in particular at Garryduff, Garranes, and Ballycatteen Co. Cork, Ballinderry 1 & 2, Cos. Westmeath and Offaly, Carrig Aille I & II, Co. Limerick, and especially Lagore Crannóg, has been highlighted. The stratigraphical evidence from Roestown 2 shows that the occupation of the site continued into the eleventh century and potentially up to the 13th century AD. Longevity of occupation at ringfort at Rathangan, Co. Kildare, was reflected upon by the writer of an eighth-century AD poem who listed seven successive kings who had resided there: 'the fort remains after each in his turn' (*ibid*, 115). How did such sites function over such duration? Sites such as Garranes and Garryduff were probably specialist craft centres first and farmsteads second, so what was the nature of the settlement at Roestown 2 and how did it change over half a millennium of use?

3.2.1 Settlement morphology

It is clear from the archaeological evidence that the morphology and economy of Roestown 2 in its later stages bore little similarity to its earlier period, and little resemblance to the standard ringfort of the later half of the first millennium AD. The continuity of the site within the landscape contrasts with it's ever changing morphology.

The majority of features at Roestown 2 are early medieval dating between the sixth to 11th century AD. The settlement expanded and developed during this time, with successive annexe enclosures and field systems radiating outwards from the main univallate D-shaped enclosure. Early medieval settlement studies are somewhat constrained by unsuitable and out-dated terminology. The term 'ringfort', like 'plectrum enclosure' is a modern invention and, while popular, is not an appropriate description for all early medieval enclosed settlements. In contemporary sources, such sites were generally distinguished by the manner of their construction, *ráth* (the enclosing bank) and *líos* (the space within) referred to earthen enclosures (de Paor 1997); while *caiseal* and *cathair* were stone-walled constructions generally found in the west of Ireland (Edwards 1990). Early medieval enclosures of non-circular morphology are well attested in the archaeological record with investigated or excavated sites including Ballynoe, Co. Antrim (Lynn 1980), Balriggan, Co. Louth (Delaney & Roycroft 2003), Clonva, Co. Cork (Doody 1995), Colp West (Murphy & Clarke 2001) and Johnstown, Co. Meath (Clarke 2004; Clarke & Carlin 2008), Killickaweeny, Co. Kildare (Walsh & Carlin 2008), but particularly Newtown, Co. Limerick, (Coyne & Collins 2003; Coyne 2005; 2006) to which Roestown 2 bears a number of morphological similarities. Similar morphology to Roestown 2 and Newtown may be tentatively identified at Kilkea, Co. Kildare and Linkardstown, Co. Carlow (Barret 2002). It has been argued that such sites; labelled plectrum-shaped enclosures (Coyne & Collins 2003; Coyne 2005; 2006) are a previously unrecognised type of high status settlement.

Multivallation within ringforts has traditionally been understood as an indicator of status (Stout 1997) but this has not always been accurate. Mytum (1992) highlighted the univallate nature of high status sites such as Garryduff, Co. Cork, and Cloghers, Co. Tyrone while the diversity of forms suggested by the total number of recorded early medieval enclosures reflects a freedom in design that contradicts many attempts to sub-categorise them. The importance of family or local tradition in choosing multivallation over raising a site may have been a possible factor (*ibid*) and the motive behind enclosure shape may have been no different, though additional factors such as topography or geology could also be important and would only have become obvious during construction. Ó Ríordáin (1942; 1949) noted at Garranes, Co. Cork and Carraig Aille II, Co. Limerick, that regular deviations in plan occurred, the most likely explanation being inconsistencies in topography (although Ó Ríordáin preferred to see uncoordinated building and poor forward planning as the reason at Garranes).

Enclosure 1 at Roestown 2 was D-shaped from its inception; possibly as early as the mid-sixth century (AD 530–650), and through two subsequent re-cuts during the eighth to 10th century AD (see Appendix 5). The initial site enclosed the largest area (76m x 53m), with both later ditches excavated within its circumference. However, the overall dimensions of the site did not alter radically between each phase. These enclosures were univallate, although slippage down their respective outer ditch edges probably indicated the presence of a counterscarp bank. The profile of the ditch varied between wide and either U-shaped or flat-bottomed, or narrow and V-shaped, the deciding factor being the nature of the underlying subsoil. Where bedrock was encountered, the profile was generally V-shaped; however, the overall depth of the ditch remained quite constant, at approximately 1.3m. There was some difference in the mean depth of the ditch across the different phases, with F450 the deepest at 1.4m. The material from the ditch was thrown up to form an internal bank, probably with a low counterscarp bank on the exterior side. Evidence for this internal bank was infrequent and confined to the northwest area of the site. Presumably cultivation had removed evidence for it elsewhere. Where bank material remained, it was a thin shallow layer of redeposited clay. It is most likely that this bank was associated with re-cut ditch F404, the remainder of it being truncated by F450. Despite the enclosure's naturally elevated position with good natural drainage supplemented by excavated drains both within and surrounding the site, portions of the Enclosure 1 ditch remained waterlogged in each of its main three phases. Site topography and high silt composition of the basal ditch fills elsewhere in the ditch suggested the waterlogging might have been more extensive originally. The southern and eastern portions of the ditch were dry, although this may be as a result of modern land improvements along the southern boundary of the site, which resulted in the lowering of the stream and presumably the water table. In the northern part of the ditch a higher water table allowed for the preservation of organic material during all three main phases. This may be due to the presence of a spring as suggested on the first edition Ordnance Survey map (1836) and it was noted that the immediate environs of the site were susceptible to seasonal flooding in the winter months, in particular towards the fringes of Redbog.

It is possible that between the initial ditch and its later re-cuts, the interior of the rath was raised, in the fashion of a raised or platform rath. The evidence for this is not compelling, but includes the absence of a significant portion of the roof of Chamber 1 in the souterrain, perhaps as much as 0.50m. Furthermore there is currently a dearth of recognisable habitation features after Phase 1. Even the overwhelming survival of Phase 1 features may be a result of their burial beneath a raised deposit, into which later features were cut, and which was gradually reclaimed.

3.2.2 Entrance

A further notable change in the morphology of the enclosure was the development of its entrance. It has been established that the majority of early medieval enclosures have a preference for entrances positioned towards the east, regardless of the topography, perhaps as a way of sheltering the occupants from the prevailing southwesterly winds and colder northern winds (Edwards 1990; Stout 1997). Roestown 2 reflects this arrangement, with its entrance facing the northeast. The initial enclosure was a complete, uninterrupted circuit, with a slight step along the inner edge of the ditch indicating the point of entry. Such an arrangement would have required a means of spanning the ditch, the easiest method being a wooden bridge. A possible example of such a structure was recorded at an enclosure at Mountgorry outside Swords, Co. Dublin (Giacometti 2005) and Lissue, Co. Antrim (Bersu 1947; Bersu 1948; Lynn 1978). At Baronstown, the ditch was probably spanned with large half timbers that left a telling scar in the subsoil there (Linnane 2009). Such structures may have been a permanent or a retractable fixture contained within gatehouses, which have been identified at other sites, in particular Feltrim Hill, Co. Dublin, Ballycatteen, Co. Cork and Garryduff 1 and (Hartnett & Eogan 1964; Ó Ríordáin & Hartnett 1943; O'Kelly 1963; see also Mytum 1992).

The causewayed entrance at Roestown 2 was established during the first re-cut of Enclosure 1 (F404); though it had become largely redundant immedieately prior to the second re-cut (F450). The causeway was created by backfilling the previous ditch and securing a deposit of medium-sized, angular stones within a border of large boulders (F493). The new ditch was then cut from either side of this deposit, leaving a freestanding stone-lined causeway approximately 2m wide. A single large posthole (F1552) within the enclosure was the only potential indicator of a gate-support. The change in entrance morphology coincided with a re-cutting of the surrounding ditch, an event radiocarbon dated to between the eighth and 10th centuries AD. Such a significant change may perhaps have been partly in response to Viking incursions during the ninth century, and the subsequent terse relationship with the Norse kingdom of Dyflinarskiri in the 10th century (Valante 2000). Excavation at the monastic settlement in Dunshaughlin produced evidence for re-cutting of its enclosing ditch during the same period (Simpson 2006) which, when taken in conjunction with the Roestown 2 evidence, may reflect the adoption of improved defensive measures in response to the Viking threat.

3.2.3 Interior of Enclosure 1

The interior of the rath was sectioned off into distinct areas by a number of internal ditches, which may not have been particularly common as the absence of internal division ditches at a number of recently excavated early medieval settlements suggests, for example Killickaweeny (Walsh & Carlin 2008), Colp West (Murphy & Clarke 2001), and elsewhere on the M3 scheme at Castlefarm 1 (Aidan O'Connell, pers. comm.) and Dowdstown 1 (Lydia Cagney, pers. comm.). This seems to have occurred during Phases 2 and 3 only, in Phase 1 the interior was not apparently partitioned, but fenced internal divisions, without an accompanying ditch may have been more common, an example of which is Ballynagallagh, Co. Limerick (Cleary 2006).

The interior of Enclosure 1 appeared be open plan in its earliest phase, but was partitioned by a series of ditches. The earliest of these ditched divisions (F642) truncated features believed to be small structures and potentially associated with E-ware pottery. The partitioning of the southern part of the site may be related to the development of the area as a cereal processing facility. Cereal-drying kilns and curvilinear gullies, interpreted as evidence for small shelters or structures, perhaps workshops or barns were found within this area.

The western part of the enclosure was also partitioned by a series of ditches, culminating in a deep multiphase semi-circular ditch (F550/F1319/F770). It was not clear at what stage partition in this area began, nor is it clear what was being divided as much of the western portion of the site lay beyond the limit of excavation. It may represent an enclosure within an enclosure, perhaps with a specific function.

3.2.4 Souterrain

A drystone souterrain was uncovered at the centre of Enclosure 1. It was stratigraphically isolated from previous features, although a number of modern cultivation furrows cut across it, causing displacement and partial collapse of the structure. Some capstones remained in their original setting, however the majority were removed in antiquity, prior to deliberate backfilling. The raw materials for the Roestown 2 example – was limestone, most likely excavated from the enclosing ditches.

The Roestown 2 structure comprised three circular, or beehive chambers connected by three short passages, a style of souterrain construction long acknowledged to occur with high frequency in the greater Meath area, for example Bective, Kiltale, Knowth, Loughcrew and Newrath Big (Clinton 2001). The passages and chambers were roofed by corbelling successive layers of stone to gradually incline the walls that were be capped by one or more capstones. The entire structure would have been covered over with backfill to ground surface level. The Roestown 2 souterrain was entered via a ramped entrance, a particular feature of drystone-built souterrains, although the capstones had been removed from this passage, so further specific details of entry were unclear. Immediately inside the entrance ramp, close to the floor level of the eastern wall was a small cupboard, detectable as a box-shaped opening in the wall. These features are common in drystone-built souterrains and are distinguished from cubbyholes and recesses on the basis of their size and capacity for storage (*ibid*). Cupboards, measuring less than 0.50m x 0.50m x 0.50m, were probably originally intended to hold candles or lamps (in stone or clay), perhaps similar to the Roestown 2 example

(A008/002:162:2) recovered from Area A. The location of the cupboard immediately inside the entrance may have been to illuminate the structure and the defensive features at the southern end of the passage, which comprised a constriction to the height and width of the passage in conjunction with a step feature, all of which occurred at a junction with a second passage.

The simplest defensive measures available to souterrain builders were restricting manoeuvrability and hindering advancement, and this could be achieved by a number of methods (generally various settings of stones placed across passages), but constriction, a simultaneous and abrupt decrease in the height and width of a passage, was the most common. Such impediments could occur along a passage, but were generally placed at junctions between passages or at entrances to chambers. The southern end of the entrance passage at Roestown 2 incorporated a narrowing of the western wall, while the presence of a ledge on both sides of the wall indicated a height restriction at this point also. There was no evidence that this ledge supported a stone, suggesting the height constriction at this point could have been created by timber planking, and such an arrangement could have provided additional storage space within the compartment above the constriction. Entry through this constriction was further constrained by the presence of an earth-cut step at the junction with the next passage. The overall arrangement of these features exemplifies the principal defensive option available to those who sought shelter in a souterrain, to impede and expose an intruder to potentially fatal attack by requiring them to crawl in a prone and vulnerable position to progress towards any of the chambers. Fresh air supply into the souterrain could be maintained by means of specially constructed air vents, a single example of which was preserved at Roestown 2 in Chamber 2, although damage to Chamber 1 probably removed evidence for such a feature there.

One of the most noteworthy structural elements of the souterrain was the trapdoor feature that occurred at the western end of Passage 2, and may be viewed as the culmination of the series of defensive measures outlined above, as the feature is preceded by an extended height constriction stretching from the step-up from the entrance passage. Clinton (*ibid*) has suggested the type of trapdoor features present in a souterrain could be used as an indicator for the primary function of the structure, which traditionally has fallen into two possible categories, defence and/or storage. He surmised that trapdoors that were sealed from the outside, as appears to have been the case at Roestown 2, were not conducive to an effective defence, and that their primary function was to contain objects of value, be they valuable metals or foodstuffs and slaves. The life of certain foodstuffs such as dairy products, or surplus grain could be prolonged in the relatively cool, stable environment offered by a souterrain, and the fact that many souterrains could be directly accessed through via domestic structures suggested that they frequently functioned as storage facilities. Indeed, pits cut into the floors of souterrains are common features which may have originally been intended to hold leather, ceramic or basket containers while evidence for iron hoops suggested barrel storage in a souterrain in Ballyaghagan, Co. Antrim (Evans 1950). Three such pits were identified at Roestown 2, one to each chamber. A trapdoor could safeguard stored food from domestic cats or dogs or from serious infestation by mice or rats. Rats became more common in the 12th century, but there is evidence for the species in early medieval contexts in Ireland, with an 11th-century reference to a plague (*plág lochad*) that struck the east coast that presumably arrived via shipping ports, though written evidence such as this may be compounded by the same word (*luch*) being used to describe both mice and rats (Kelly 1997). The bones of small rodents were recovered from floor deposits of the souterrain but these may be the result of later intrusion by borrowing animals seeking shelter in the walls of the structure. Clinton (2001) suggests the trapdoor features in open settlement souterrains were ideal for the securing of slave labour during raids. It is unlikely that nobility would have considered it desirable to hide away in a hole in the ground for prolonged periods and probably availed of the opportunity to flee in advance of attacks to neighbouring settlements or churches. Some of the 260 people burned in AD 848 (AU850.3; Cogan 1874, 154) at Trevet might have included noblewomen and children seeking sanctuary from the joint Uí Chonaing/ Viking attacks.

Artefacts from the souterrain included a perforated slate from Passage 3 (A008/002:513:3), which resembles similar examples from Ballycatteen (Ó Ríordáin & Hartnett 1943), and which may have roofed a nearby structure. Just a single slate was recovered from Roestown 2, while the Ballycatteen assemblage ran to many hundreds.

The copper-alloy stud-headed stick pin (Class 8; O'Rahilly 1998) from the entrance passage suggested this backfilling probably occurred during the 11th century or after. This date is supported by evidence elsewhere in Ireland, where these structures rarely post-date the 13th century, although many were re-used or had secondary purposes in later centuries. Medieval pottery in later backfill deposits is likely to have been introduced during truncation of the structure. The presence of a disarticulated human cranium fragment perhaps reflects a violent episode in the settlement's history. Human cranium fragments were also identified at a souterrain at Painestown, Co. Meath (O'Hara 2008c). Clinton (2001) highlights that 'it is worth noticing that at proven multiphase enclosed sites the souterrain will appear late in the sequence of development' citing Rathmullan and Deer Park Farms, Co. Antrim, as examples. At Painestown, the souterrain construction postdates an early enclosure ditch (O'Hara 2008c). Clinton also proposes a floruit for souterrains between AD 750–1250, which fits comfortably with the evidence from Roestown 2.

3.2.5 Overview

The above evidence indicates a high status ringfort with an associated complex of ancillary enclosures and field systems developed in the late sixth or early seventh century AD. That it originated as a settlement is suggested by the number of potential structures assigned to the initial phase, and that it was *high-status* was reflected in the presence of E-ware pottery and evidence for non-ferrous metalworking. Significant changes in the size and layout of the site occurred during the life of the settlement, and this was particularly evident within Enclosure, which was re-cut, and had its entrance altered. A souterrain was constructed, and a new series of enclosures developed. What was driving these changes?

It is worth noting again the proximity of early medieval monastic settlements at Dunshaughlin and Trevet, both of which have abbot lists beginning in the eighth century, though Dunshaughlin was originally founded in the fifth century AD. It is likely that leading clerics in both establishments were members of the royal dynasty centred on Lagore. Could Roestown 2 owe its prolonged occupation to monastic association? Does the second phase of activity at Roestown 2 mark a change in ownership, with the settlement granted to or acquired by either of the monastic sites at Trevet or Dunshaughlin? The Irish system of paruchia transcended territorial boundaries and allowed monasteries to accrue vast estates under the administrative jurisdiction of an abbot who retained clients (*manaig*) in much the same manner as secular lords. The church held vast areas of land, some of which was granted by ruling dynasties, others bequeathed land on their death (Kelly 1988), while O'Cróinín (1995) refers to the practice of Columban and other paruchiae taking over land abandoned during the plague years in the mid- and late-seventh century (AU 664–668; 683, 684, 700)[5]. Both Trevet and Dunshaughlin were most likely part of the paruchia of Armagh, which was among the richest monasteries on the island and in the ninth century appointed stewards (maer) to collect revenues from holdings in Brega. Máel-Pátraic, whose obituary was recorded in the Annals of Ulster in AD 888, was both abbot of Trevet and a steward of Armagh[6]. Secundinus, the founder of Dunshaughlin, was probably a predecessor of Patrick, but became part of the

[5] See various entries in The Annals of Ulster. www.ucc.ie/celt/published/T100001A/index.html

[6] AU 888.3 'Mael Pátraic, scribe and excellent scholar, superior of Treóit and steward of the community of Patrick for the district south of the Mountain, rested'.

distorted story of St Patrick's mission by later chroniclers who remembered him as a disciple of the saint (Charles-Edwards 2000).

The secular law tract Córus Béscnai[7] stated the succession to the office of abbot was to be sought amongst the founder's kin, or, failing that, from the family of man who donated the land for the monastery (O'Cróinín 1995). At Trevet, a father, son and grandson held the abbacy from AD 774 until AD 839 and Dunshaughlin retained abbatial succession within the same family for most of the ninth century (Hughes 1966). It also stated that *manaig* were *fine erluma*, the kin of the founder of the monastery that in some cases were probably unfree clients (*fuidir*, *bothach* or *senchléithe*) who were acquired by the church as part of land endowments.

There is a strong connection between the early medieval church and arable farming. The chief economic activity of the church in this period appears from contemporary accounts of the saints lives to be tillage (Stout 2000) and many of terms relating to crop-cultivation came from Latin, and were probably introduced via church economy (Kelly 1997). Surplus grain from secular sites may have been stored at monasteries or their estates and it has already been discussed above how the trapdoor feature in souterrains may have been connected to grain storage (Clinton 2001). No grinding stones were identified within the site, which was quite peculiar in light of the presence of drying kilns and the duration of occupation at the site (See section 3.4 below for further discussion).

3.3 Evidence for activities and industry

3.3.1 Evidence for ferrous metallurgy

It is important to note the presence of slag residues within each of the main phases of Enclosure 1 (F405, F404 and F450) suggesting a limited but sustained role for iron working at the site. The quantity of slag is comparable to the other early medieval sites on the M3, at Dowdstown 2 (O'Hara 2009), Castlefarm (O'Connell 2009) and Baronstown (Linnane 2009), though meagre by comparison to other early medieval sites, particularly Johnstown 1, Co. Meath (Clarke & Carlin 2008), from which approximately 2000kg of slag was recovered.

The majority of slag was associated with iron smithing (note also hammerscale in some samples), with no evidence for smelting slags. Perhaps as many as eleven smithing hearth cakes were identified, which confirmed small-scale ironworking. No hearths or furnaces were identified at Roestown 2 that could be directly attributable to ironworking and the recovered slag pieces were distributed randomly across the site. A considerable amount of data exists for

[7] 'The regulations concerning proper behaviour' dealing with the mutual obligations of clergy and laity, can be traced from at least the eighth century.

an expansion in ironworking during the early medieval period, particularly after the sixth century (Mytum 1992). It has been understood for quite some time that most sites, ecclesiastical and secular, undertook a considerable amount of their own ironmongery (Ryan 1988). At Johnstown 1 (Clarke & Carlin 2008) and Killickaweeny (Walsh & Carlin 2008) tonnes of iron slag were produced, as well as smelting or smithing features, and excavation frequently produces some metallic waste, for example Lisnagun, Co. Cork (O'Sullivan 1998), Grange, Co. Limerick (Ó Ríordáin 1949), Boho, Co. Fermanagh (Proudfoot 1954), Ballaghderg, Co. Donegal (O'Hara 2005).

Clearly, small scale, non-specialist iron-working was integral to the day-to-day activities of early medieval settlements but dedicated blacksmiths also existed; and are often referred to in contemporary law tracts as valued members of society, with an honour price equalling that of a physician, coppersmith and silversmith (Scott 1990) and considered the most prominent craftsman after the carpenter (Kelly 1988). Their main duties would have been the production of agricultural tools such as ploughing equipment or axes, specialist craft accessories such as chisels and awls or domestic implements such as knives, chains, fire-steels etc, or indeed weaponry such as spears and swords. Strong evidence for ironworking was found at Garryduff I (O'Kelly 1963), Garranes (Ó Ríordáin 1942) and Lagore (Hencken 1950). No smelting furnaces were identified at Lagore (Hencken 1950; Eogan 2000), but clusters of hearths were found in association with particles of free magnetic iron and iron oxide indicated smithing. Bog ore was the most utilised source for iron in the period and it is possible that Redbog (the toponym may reflect a high iron content) was the source for much of the slag recovered from the site.

3.3.2 Evidence for non-ferrous metallurgy

Non-ferrous metalworking was undertaken at Roestown 2 although, like ferrous metallurgy, was of limited importance to the overall economy of the site. Evidence of such activity can generally be interpreted as an indicator of high status, precious metals representing the importance of its owner and the production of such items was associated with the social elite, to whom it was a manifestation of power and social standing (Comber 1997). The presence for non-ferrous metalworking was suggested by various paraphernalia, including a stone ingot mould (A008/002:432:2; Illustration 3), crucible fragments (A008/002:400:63, A008/002:566:8, A008/002:1172:1), bone motif pieces (A008/002:401:19, A008/002:412:1, A008/002:414:4, A008/002:432:3, A008/002:535:1, A008/002:685:1–3, A008/002:1291:1), and occasional droplets of copper alloy presumably spillages or splattering during the melting process.

The high number of copper-alloy artefacts may reflect some production of these items within the site, while the number of broken pieces of larger artefacts may be interpreted as evidence for secondary reworking. Mytum (1992) stresses the emphasis placed on recycling copper-alloy objects during the early medieval period, probably due to the local unavailability of tin. Where scrap metal and not ore was used as the raw material, the only preparation was melting, possibly in conjunction with alloying, and this could be carried out using a crucible placed over a hearth or furnace (Comber 1997).

Three crucible fragments were excavated from Roestown 2, which contrasts sharply with 279 from Lagore (Hencken 1950; Comber 1997) and in excess of 2,500 from Garranes (Ó Ríordáin 1942). Two pyramid shaped crucibles (A008/002:400:63, A008/002:1172:1) have parallels from Lagore, Ballinderry 2, Garranes, Garryduff I and Moynagh Lough. The type is common to early medieval sites in Scotland also (Curle 1982; McCormick 1992). A flat-bottomed specimen (A008/002:566:8) may have functioned as a stand or support for the pyramidal types (Comber 1997). Copper alloy from this time usually consisted of bronze but lead could be added to improve the casting qualities, zinc and nickel could add strength to the end product, and this was generally attained by melting in foreign (usually Romano-British) copper-alloys objects, as may have occurred at Clogher, Co. Tyrone (Edwards 1990, Mytum 1992).

A bar-ingot stone mould (A008/002:432:2), in the common 'finger' shape with a plano-convex section, was found in Enclosure 1 ditch F404. Small fragments of copper-alloy objects were found in different contexts across the site. These pieces could reflect random breakage and accidental loss of domestic items, but the decorated bronze strip (A008/002:162:1) and fragment silver (A008/002:161:2) suggest scrap metal may have been collected for smelting, although these metals never occurred together in sufficient quantities to suggest deliberate caching as appears to have happened at Carraig Aille II, Co. Cork (Ó Ríordáin 1949). Silver was used throughout the early medieval period, but was most prevalent between the mid-ninth and 10th centuries circulating as coins, ornaments, ingots, and hack silver (Ó Floinn 1998), after it had become readily available through trade, tribute and exchange with Vikings based in Dublin, Waterford and elsewhere (Graham-Campbell 1998; Sheehan 1998, Valante 2000).
Another artefact type perhaps associated with the fabrication of fine metalwork were trial- or motif pieces, scraps of portable material, usually bone or stone, but also wood and possibly leather, carved or incised with discreet positive patterns (Comber 1997; O'Meadhra 1987b). Five separate incised bone objects were excavated at Roestown 2 (Plate 72), each bearing one

or more motif panels as well as etched but unfinished patterns. The motif panels identified, incorporated chip-carved interlacing designs and feature cord plait, triquetra and paired knot incised motifs (Kinsella 2006), but there was a notable absence of the anthropomorphic or zoomorphic motifs and trumpet spiral patterns, which were a feature of the Garryduff 1 material (O'Kelly 1963). The closest parallels for the Roestown 2 pieces can be found at Lagore (Hencken 1950; O'Meadhra 1987a). The motif pieces are discussed in detail in Appendix 15. Radiocarbon dates for Enclosure 1 suggest a late sixth or seventh century date (AD 530–650) for these pieces, particularly A008/002:412:1 which came from the primary deposit within F405. Hencken (1950) had no doubt the Lagore pieces were from the same hand or workshop, and that this group of craftsmen tested a variety of chip-carved designs on bone prior to manufacturing objects, including the 'Dunshaughlin brooch', a penannular brooch recovered from the Dunshaughlin area in the 19th century. Hencken (*ibid.*) saw parallels between the Lagore motif pieces and decorative motifs on this brooch. It seems reasonable to suggest that craftsmen from the same tradition or background identified at Lagore were also producing motifs at Roestown 2.

There are clear chronological and stylistic parallels between the metalworking assemblages of Roestown 2 and Lagore, with Lagore perhaps as one element (admittedly an important one) within a wider network of sites involved in specialised metalwork. The earliest settlement phase at Lagore probably dated to the late sixth or early seventh century (Lynn 1985–86; Comber 1997), a period which saw some craft activity, as indicated by crucible fragments and some artefacts bearing gold filigree ornament. Hencken (1950) believed there was a significant increase in non-ferrous metalworking during seventh to mid-ninth century, although Comber (1997) has questioned the validity of the excavation report based on inaccuracies between the published findings and the finds register submitted by Hencken to the National Museum. Instead, she argues for a minor increase in activity in Period 1b relative to the previous period, suggesting instead that non-ferrous activity was important throughout the life of the settlement but decreased in importance from the mid-10th century. The comparative duration of this period (approximately 200 years) in relation to the other periods as a reason for the increased numbers of stratified artefacts. The stratigraphical evidence from Roestown 2 indicates the potential for non-ferrous metalworking during its earliest phase, while later activity may be inferred, albeit through artefacts recovered from possibly residual contexts. It is important to highlight that a marginally greater number of motif pieces were identified at Roestown 2, suggesting perhaps that the site enjoyed an important role in the concept and design of the motifs found at Lagore. The decrease in craft activity at Lagore following the mid-10th century has been understood as a reflection of the growing importance of the settlement at Dublin, where specialist workshops developed, producing a range of artefacts in copper alloy and silver.

3.3.3 Evidence for glass working

There is little evidence for glass production in Ireland during the early medieval period, although glass vessels were imported (Merovingian glass vessels were excavated at Moynagh Lough, Co. Meath (Bradley 1991)). A considerable trade in glass rods and broken glass (or cullet) from Britain and the continent existed, which craftsmen could recycle into beads, bangles or studs or used in the decoration of ornamental metalwork (Edwards 1990). Imported vessels were probably recycled when they eventually broke.

The most common glass objects of this period were beads, individually made pieces generally manufactured by winding viscous glass around a metal rod (Mytum 1992). There is evidence for glass bead and stud manufacture at Moynagh Lough and Lagore (Bradley 1991; Hencken 1950). Certainly the technical ability to undertake glassworking existed at Roestown 2, as the equipment and processes required are broadly identical to those of non-ferrous metallurgy. The same craftsman would have been competent and skilled in both crafts (Edwards 1990). It was noted that some of the Roestown 2 crucible fragments bore glazed residues (A008/002:566:8), which, with a number of hardened glassy residues recovered during excavation, suggested some glass working on-site.

3.3.4 Evidence for craft activity

A number of objects were recovered from Roestown 2 that suggested a variety of crafts; weaving or textile production, bone working, leather working, and carpentry were undertaken within the site. Like the practice of metalworking, these crafts supplied immediate needs rather than specialising for the purposes of trade or general supply. A number of crafts were practised, with potential for an even greater amount that may not leave a discernible archaeological record. Some of the crafts would have required more skilled input than others, particularly interlace carving and non-ferrous metalworking, but also decorative or advanced/composite artefacts in other media. Roestown 2 had the capability of supplying any number of craftsmen, and many of the artefacts outlined below are common to a number of excavated high status sites suggesting the occupants were capable of addressing the specific needs of their settlement. The non-noble classes would have been capable of meeting their own day-to-day needs, particularly of simpler tools in bone or wood; and the general absence of artefacts on many of these sites may be due to depositional or post-depositional factors rather than the non-existence of activity (Mytum 1992).

Textiles rarely survive on archaeological sites from this period with only a handful of known examples. The largest collection to date is from Lagore (Edwards 1990), but contemporary manuscripts and sculptures can provide some indication of the type of clothing used and the manner in which it was worn. There was direct evidence for textile production at Roestown 2 in the form of spindle whorls (Illustration 4), and needles of copper alloy or iron. Many of the slaughtered cattle and sheep would have provided represented on site provided hides and wool for a variety of purposes. Noble women were expected to be able to carry out decorative embroidery or fine needlework, though much of the spinning of yarn and the dyeing and weaving of cloth would probably have been undertaken by unfree clients or female slaves, although some parts of the process may have required more expert knowledge than others (Kelly 1997). A stone spindle whorl (A008/002:473:4) from Roestown 2, circular in shape, undecorated with a central perforation, was a simple type common to many periods and was made from shale. A curved antler object (A008/002:432:1) with a notch cut into one end may be a knitting needle and is paralleled in medieval deposits from Winetavern Street in Dublin (Halpin 2000).

No complete shears was identified among the Roestown 2 assemblage, however blades where evidence for a tang is absent could be shears, which are essentially two knives joined by a central spring, or bow, that allowed for both blades to be worked simultaneously with one hand (Cowgill et al. 2000). The use of shears was central to the shearing of sheep by facilitating the removal of most of the fleece of wool, rather than relying on combing out tufts. Sheep with long, straight fleeces were considered superior to those with shorter curlier hair, presumably because they were easier to shear (Kelly 1997). Shearing was carried out around June every year after which it was dyed if necessary and spun (Mytum 1992). Shears could also be used to cut human hair or cloth as required (Cowgill et al. 2000; Mytum 1992). The common occurrence of shears within excavated sites indicates their importance as farm equipment, examples are known from both rural (Garyduff I, Garranes, Cahercommaun) and urban contexts (Wood Quay and High Street, Dublin). They were multifunctional tools well suited to cutting cloth, the length of the blade relative to that of the handle, the shape of the blade and the diameter of the bow could all be modified depending on the object being cut and the force and accuracy required to cut it.

An iron awl (A008/002:601:2) may have been used in this craft, or equally by a carpenter. A number of possible nail or tack fragments were retrieved from various deposits, while an iron chisel (A008/002:993:1) indicated that at least some basic joinery was being carried out. A total of 33 iron blades were found during the excavation and were the most frequently encountered artefact (Plate 73). These were most likely knives, although as noted above, some incomplete blades could represent shears fragments. Knives were a utilitarian tool used for a variety of every day tasks including craft activity and the cutting of hides and meat. Within the Roestown 2 assemblage it was possible to differentiate between socketed or the more common whittle-tanged blades, which had a variety of shapes, sizes and proportions. These relative shapes may reflect prolonged use or repeated sharpening, but it is likely that some tasks required specialised knives and were produced accordingly. Only three examples (A008/002:100:21, A008/002:401:13–14, A008/002:566:19–21) of socketed blades were noted at Roestown 2. These may have been specialist tools, perhaps for use in craft or agriculture, as is reflected in their general absence from other contemporary sites where good evidence for whittle-tang blades exists. Lagore, for example, produced 51 iron knives, of which just three could be confirmed as socketed (Hencken 1950), while Carrig Aille II and Garryduff I, assemblages of 54 and 61 knives respectively were almost entirely whittle tanged and did not produce a single definite socketed example (Ó Ríordáin 1949; O'Kelly 1963).

3.3.4 Incised game boards

A number of artefacts were recovered that revealed something of the leisure activities of the occupants beyond the hardship of their daily chores. Three stone-incised game boards were found representing two common early medieval games, *hnefatafl* (or a variant thereof) and merels (or Nine-Men's-Morris).

Incised game boards have been found in a number of early medieval contexts, usually on stone or, where preservation allows its recovery, on wood (Illustration 6). A possibly unfinished example was uncovered in an unstratified deposit at Lagore (Hencken 1950), which the excavator classified as a miscellaneous stone object. The crude nature of the design fits well with the hand carved designs on two of the Roestown 2 boards (A008/002:108:1, A008/002:151:2), although the closest parallel was recovered at Garryduff I, where an incised pattern on flat sandstone was uncovered from an eighth-century deposit (O'Kelly 1963) or a recently excavated example from Borris-in-Ossory, Co. Laois (Michael O'Droma, pers. comm.). In both cases, the pattern was incised in free-hand lines like the Roestown 2 boards. The pattern in each example was crudely executed with squares of varying size and shape. These boards belong to the *tafl* tradition of games, an early medieval precursor to chess and draughts, both of which developed in the 11th and 12th centuries. A number of games could be described as -*tafl*, but it was most commonly associated with *hnefatafl* ('the kings table'). Variations of the game developed in Scotland, Wales and Ireland, where it was called *Ard-Rí,* *Tawlbyund* and *Fidchell* respectively. The game is particularly well known from literary sources, and is mentioned in a number of texts or glosses, for example *Cormac's Glossary*[8] and earlier texts such as the *Táin Bó Friach* or *Táin Bó Cuailnge*. In these texts, the game was exclusively played by noble or *nemed* (privileged) classes, often associating the playing of board games and the expression of status, where the accoutrements of these games were objects of value and display, such as the pieces of precious stone, gold and silver that were played on a board of tinned bronze and gold in the Táin Bó Friach.

The intricately decorated wooden board recovered from a C10th deposit at Ballinderry 1 crannog, Co. Westmeath (Hencken 1936) would appear to be a high status board, but the greater number of identified game boards more closely resemble the Roestown 2 or Garryduff incised stone types, and were probably the boards of lower classes, a theory supported in the find spot of the two -tafl boards; a livestock enclosure. The exact form of these early games is unknown (MacWhite 1945) and *fidchell* may describe board games in general.

Both -*tafl* boards at Roestown 2 were in well stratified mid–late seventh century deposits indicating the presence of the game in Ireland more than a century prior to the first recorded Viking attacks in the late eighth century AD. The most likely method of introduction via trading links with settlements in Scotland and the Northern Isles and onwards to Scandinavia. Irish hermitages were apparently operating in the Faroe Islands by AD 725 (Ó'Corráin 2001, quoting the ninth-century work of Irish monk Dícuill[9]), while there is evidence for trade between Norway and British Isles from the mid-eighth century (Ambrosiani 1998) as suggested by the use of reindeer antler for comb making by Picts (Myhre 1998), and instances of *hnefatafl* games in pre-Viking deposits in Pictish settlements on the Northern Isles off Scotland[10].

The third stone-incised board game (A008/002:401:20) belonged to a game known as merels or nine-men's-morris (Plate 74). It was from an unstratified deposit but is identical to an example (E141: 5149) from ninth-century deposits at Fishamble Street, Dublin. Both games were in fashion at the same time as evidenced by the occurrence of double-sided boards containing both games, such as that from the Gokstad ship burial (Nicolaysen 1882; Hencken 1936). No gaming pieces, such as those identified from Knowth, Co. Meath, or Ballinderry 2, Co. Offaly (Eogan 1968; Hencken 1942) were associated with the Roestown 2 boards and

[8]These texts and others can be searched through the electronic Dictionary of the Irish Language available at the Corpus of Electronic Texts at www.ucc.ie/celt
[9] Dícuill the Geographer Liber *de mensura orbis terrae*.
[10] Mark Hall, 'A double sided hnefatafl board from Cathedral Hill, Downpatrick' at www.downcountymuseum.com/uploads/HnefatafiBoard.doc

were absent from the site generally. It is unlikely that these boards used specially crafted pieces, but small pebbles or bones, shells or twigs could have served as counters, all of which would have been readily available within the site, and which would be impossible to identify archaeologically.

3.3.5 Evidence for personal effects

While evidence for an impressive catalogue of functional or utilitarian tools or objects was recovered from Roestown 2, highlighting the range of crafts and activities carried out within the site over its lifetime, there was also ample evidence for intimate personal effects and jewellery. It is also noteworthy that copper alloy ring-pins were found almost exclusively within Enclosure 1, and were absent from Area A.

3.3.5.1 Beads

Eleven glass beads (A008/002:400:10, A008/002:400:44, A008/002:400:69, A008/002:400:70, A008/002:491:2, A008/002:491:3, A008/002:492:1, A008/002:552:1, A008/002:566:31, A008/002:1081:1, A008/002:1182:2), broadly representative of the range of types available in the period, were recovered from Roestown 2 (Plate 75; Illustration 7). In comparison, Garranes and Garryduff produced 10 and 30 respectively (Ó Ríordáin 1942; O'Kelly 1963) while Lagore produced some 136 beads (Hencken 1950). Highly decorative polychrome beads and glass bracelets or pendants, which featured at Lagore (*ibid*) and Castlefarm 1 (O'Connell 2009) were not identified at Roestown. The Roestown 2 beads were only recovered from within Enclosure 1.

A tiny fragment of amber (A008/002:570:2; see Plate 75), probably a bead or pendant, would have been a rare commodity, used sparingly in pre-ninth century contexts, though becoming more widespread following the establishment of Viking settlements at Dublin and elsewhere. Nearly 4000 pieces of amber were recovered from Hiberno-Norse levels at Wood Quay (Harvey 2006). Amber is the fossilised resin of extinct coniferous trees, the parent tree being a species of pine (*pinus succinifera*), and can found washed up from submarine strata on the eastern Baltic coasts, quite often after stormy weather. It has been mined from lower Oligocene beds on the Samland peninsula and can occur in lignite beds of the Jurassic and later eras, none of which have been identified in Ireland (*ibid*). Amber was imported from the Baltic region in the Viking period and earlier Irish merchants may well have traded for amber in this way prior to the ninth century (Edwards 1990).

That amber was a rare and valuable commodity in pre-Viking contexts can be inferred from its general absence from the assemblages of many recent excavations including Colp West (Murphy & Clarke 2001), Johnstown 1 (Clarke & Carlin 2008), Raystown (Seaver 2006) and Laughanstown (Seaver 2005), or its scarcity among the assemblages of other high status sites, many of which (Ballycatteen, Carraig Aille I and Garryduff I for example) produced a just single fragmented items (Ó Ríordáin & Hartnett 1943; Ó Ríordáin 1949; O'Kelly 1963). Ballinderry 2 and Lagore are notable for having 14 and 16 beads respectively (Hencken 1942; 1950), perhaps an indication of the wealth of these sites in this period.

3.3.5.2. Stone bracelets

Stone bracelets or armlets, commonly lignite, jet or shale were also worn during the early medieval period (Plate 76; Illustration 8). Evidence for the manufacture or such items was found at Oldcourt, Co. Cork (Ó'Cuileanáin & Murphy 1961), Cathedral Hill, Armagh (Gaskell Brown & Harper 1984) and elsewhere on the M3 scheme at Ross 2 (A008/082: O'Hara 2008b). The D-shaped sections of these examples generally distinguish them as early medieval lignite bracelets, as similar types of bracelet, with differently shaped sections, were produced as far back as the Bronze Age (Edwards 1990). They occur more frequently than glass bracelets, perhaps because glass could be recycled when broken, and the small size of many (85% of the measurable rings from Cahercommaun were under 70mm in diameter; Hencken 1938), suggests they may have been objects for children. Mytum (1992) suggested the smaller examples could have been accessories to be worn in the hair.

Seven fragments were excavated from Roestown 2 with diameters of 50mm (A008/002:566:23), 60mm (A008/002:400:101, A008/002:484:1, A008/002:736:1), 70mm (A008/002:438:3, A008/002:736:2) and 80mm (A008/002:161:23). This compares well to Lagore, where 92 fragments had diameters of 70mm or less (Hencken 1950). Lignite bracelets were found elsewhere on the M3 scheme at Castlefarm 1 (O'Connell 2009) and Dowdstown 2 (O'Hara 2009).

3.3.5.3 Bone pins

A total of 25 bone pins were recovered from the site, generally in fragments although some complete examples were found, primarily from Area A (Plate 77; Illustration 9). In cases where the head of the pin remained, the majority could be classified as belonging to the pig-fibula type, with or without a perforation. This is in keeping with other early medieval settlement excavations, where the pig-fibula type is commonly found, with 132 examples at Lagore alone (Hencken 1950). Such pins were easily manufactured as the fibula required very little modification beyond polishing and perforating the head and the latter was not always present. Generally the Roestown 2 bone pins were undecorated with just two showing any sign of embellishment (A008/002:175:1, A008/002:639:1). The former resembles a stick pin with watch-winder type decoration on the head, and the second has incised herringbone motifs within an incised border outlining the expanded head. At least one other fragment was of the hipped variety (A008/002:119:1) common to Scotland and occasionally found in Ireland (Curle 1992), they can be identified by a bulbous projection towards the base of the shaft. A detailed discussion of these pins is available in Appendix 15.

3.3.5.4 Ringed pins

From around fourth century AD up to the 12th century, the commonest form of dress fastener was the copper-alloy or iron-ringed pin. Unlike brooches that were generally concerned with making a statement about the status of the wearer the ringed pin was, for the most part, utilitarian in function. Over the centuries the basic form, which consisted of a pin with a ring attached to one end, underwent a number of stylistic changes before giving way to the prominence of stick pins in the C12th AD. A total of 32 objects were metal pins or fragments of ringed pins were identified across the excavation area at Roestown 2 and included 16 ferrous and 16 non-ferrous items (Plate 78). Some objects survived as complete artefacts, while other remained as fragments of the shaft or ring. See section 2.2.1.

3.3.5.5 Combs

Four partially complete antler combs were found during excavation (Plate 79; Illustration 10). Three of these were single sided (A008/002:422:1; A008/002:422:2; A008/002:1321:1–20), while a fourth was double sided (A008/002:227:1–3). All had incised decoration applied. Smaller fragments also occurred (A008/002:100:29; A008/002:110:2; A008/002:131:1), as well as a bone blank (A008/002:100:86) perhaps indicating on-site manufacture. These combs are discussed in detail in Appendix 15.

3.4 Agricultural economy

Agriculture was the backbone of the early medieval economy, and there was overwhelming evidence for both pastoral and arabale agricultural activity at Roestown 2. This section summarises the findings of the specialist analysis of the mammalian bones and the plant remains from the site.

3.4.1 Livestock (the following is summarised from Appendix 6)

Roestown 2 has a high level of consistency with other contemporary sites in terms of species distribution with cattle, sheep/goat and pig accounting for the vast majority of assemblages. The distribution for cattle is most consistent amongst the compared sites while there is greater variance between the proportions of sheep/goat or pig. Where it was possible to determine specimens in the sheep/goat category, all were confirmed as sheep, with no definite goats identified in the assemblage. Horse, dog, cat and red deer occur in much smaller amounts than the three main domesticates and account for less than 10% of MNI in most instances. Mouse was the only other species represented. The range of body parts from the three main domesticates indicated butchery and consumption of meat was taking place on-site. However, considering the size of the assemblage, overall evidence for visible butchery marks was poor. For cattle, sheep/goat and pig over 90%, 97% and 96% of the countable specimens respectively displayed no trace of butchery.

The age-slaughter patterns for cattle and sheep/goat at Roestown 2 have clearly established that old animals are most prevalent from the mid sixth to the fourteenth century. The high percentages of older animals are in contrast to livestock management patterns previously determined for early medieval assemblages of seventh to eleventh century date such as Knowth, Moynagh or Deer Park Farms. Considering that the Roestown 2 patterns are consistent for most of the Early Medieval period, it seems reasonable to conclude that they reflect a genuine animal husbandry practice that up until now has not been commonly demonstrated through animal bone assemblages. McCormick and Murray (2007, 57) interpreted the unusually high percentage of older cattle identified at Knowth (Stage 9) as a consequence of the dairy cow no longer being the main unit of wealth, and that by the C10th AD, Knowth was possibly being supplied with some of its beef from outside sources, therefore accounting for a higher than normal level of older cattle (*ibid*). However, a similar dominance of older cattle occurred at Roestown 2, though to a greater extent and from an earlier date, occurring from the beginning of settlement in the mid sixth century.

Prevalence for greater proportions of older cattle (and to a lesser extent sheep) was observed for collections from Dowdstown 2 (Coles 2009), Castlefarm 1 (Foster 2009a) and Boyerstown 3 (Foster 2009b) and indicates that the Roestown 2 pattern is not unique. Why this was the case needs further investigation, however preliminary some possibilities can be contemplated. Late sixth to early seventh century Roestown 2 was a secular high status ringfort with associated enclosures and field systems and the practice of metalworking and other crafts, including weaving and textile production, bone working etc (see relevant sections above). These crafts appear to have been carried out on a small-scale basis and were not central to the site's economy. The dominance of older cattle and sheep/goat may be partially due to their use as raw materials by craft workers at the site.

Cattle and sheep/goat that had surpassed their use for dairying, traction or reproduction may have been slaughtered for exploitation of their hides, horns and possibly wool. This however cannot solely explain the dominance of old animals. If exploitation of raw materials such as hides and horns were a priority, one would expect to find more evidence of cutmarks to areas such as the frontal skull, base of horncores and extremities such as toe bones. The butchery evidence has shown there is no major concentration of such evidence so while the presence of older animals may be partially due to slaughtering for hides and horns, it does not provide a full explanation. If sheep were primarily being exploited for wool, their age distribution contradicts the theory applied to Knowth that sheep were slaughtered at the earlier age range of 12-28 months in order to provide a softer, less oily fleece (McCormick and Murray 2007, 59). Some sheep at Roestown 2 may have been exploited for wool in spite of their older age and possibly coarser fleece. Documentary sources refer to wool called *cintecal,* too rough for clothing, but ideal for making rugs (Kelly 2000, 71). A range of other products such as bed clothing and outer-clothing could be made from sheepskins with the wool left in place (*ibid*). So, some of the older sheep evident at Roestown 2 may have been exploited for their fleece for manufacturing products that didn't require finer quality fleece.

Perhaps a greater influence on the age distribution pattern is the proximity of Roestown 2 to Lagore. The site at Roestown must be interpreted with regard to the crannog, less than 2km away. Both sites originated as settlements in approximately at the same time, and its possible Roestown was intentionally located and developed in relation to Lagore. It is proposed that Roestown 2, and possibly other settlement sites, served a role in providing an intermediate station between clients and king, perhaps acting as foci for receipt of tribute and food rent as well as forming a protective ring around the seat of royal power. If this was the case, it may provide an explanation for the strong presence of older cattle at Roestown 2. A change to the layout and internal features of Enclosure 1 concomitant with changes to surround enclosures between Phase 1 and Phase 2 may owe something to the development of the ecclesiastical sites at Dunshaughlin and Trevet, both of which have abbot lists from the eighth century. Both Trevet and Dunshaughlin were likely to be part of the paruchia of Armagh, which in the ninth century appointed stewards (maer) to collect revenues from holdings in Brega. This raises the possibility that Roestown 2, already potentially a centre for tribute deposition, maintained a similar function in later phases for revenues due to the Church. Once again, the animal bone assemblage from these later phases does not solely represent livestock of the inhabitants and must incorporate animals from outside sources.

None of these explanations can be proven to be the overriding factor determining the age-slaughter patterns evident at Roestown 2. It is likely that a combination of influences are at play, although the patterns evident at Roestown 2 are significant because they provide evidence for alternative trends to those already identified for the early medieval period in Ireland.

3.4.2 Crops and cereal processing

(The following is summarised from Appendiix 10)

The majority of evidence ofr cereal processing at the site came from the cereal drying kilns within, or immediately beyond, Enclosure 1. However, a notable quantity was recorded from ditches and pits across the site.

Oats and barley predominates the assemblage, and this is typical of cereal assemblages from early medieval sites. The main crops grown in Ireland at that time were 6-row hulled barley, oats and rye (Monk 1986; McClatchie 2007. The presence of bread wheat could reflect the high status of the site, being at the top of the list of relative prestige for cereals in an 8th century law text *Bretha Déin Chécht* (Binchy 1966). However, ‘low status crops’ (as per that law text) of hulled barley and oats were more frequent on-site.

Charred oats and barley grains were abundant in kilns F698, F776 and F832 suggesting that they were cereal-drying kilns, used to dry the crops prior to storage or grinding. Chaff fragments and weed seeds were present in low numbers relative to the cereal grains, which may indicate the crops had been processed prior to drying. The mixture of crop types in the fills is likely to reflect several firings of the kilns, with insufficient clearing out after each use, although the cultivation of maslin crops cannot be ruled out, these were deliberately mixed crops which reduced the risk of total crop failure (Jones & Halstead 1995).

From the data available, there appears to have been little change over the duration of occupation at the site, with oats and barley predominant in all phases (see Table 3.1 in Appendix 10), although there is limited evidence that wheat may have increased in use in Phase 3.

3.5 Surrounding natural landscape

Pollen and spore samples from each re-cut of Enclosure 1 suggested a landscape strongly influenced by human activity (see Appendix 11). A low number of arboreal pollen grains relative to herbaceous grains reflected a widely deforested landscape of open grassland and cultivated ground. Where tree pollen was represented, alder prevailed (probably growing along the wet fringes of Red Bog). Oak, elm, hazel and birch were also present.

Most of the charcoal identified at the site were species native to Ireland and were certainly available in the wider landscape. Oak and hazel were abundant, and probably existed as high-canopy woodland with ash and elm. Hazel is generally understorey vegetation, occurring at woodland margins or in scrub, along with other small trees and shrubs, such as cherries and Maloideae. Birch, alder and Salicaceae would have favoured wetland habitats along the edges of Red Bog. Elder was relatively frequently recorded on the site, with yew recorded in a single context. The woodlands were certainly highly managed, however, where this woodland might have been is unclear. Uncharred remains hazel nutshells and blackthorn (sloe) fruitstones in F484 indicated shrubs or small trees were growing alongside Enclosure 1 (certainly F450 but possibly F405/F404 also) as it infilled.

3.6 Medieval activity

Roestown 2, on the periphery of the demesne lands of the manor of Dunshaughlin which Hugh de Lacy retained following the sub-infeudation of Meath, would have been granted to a sub-tenant or left in the hands of its existing cultivators (Murphy 2006). There was nothing to indicate incoming Anglo-Normans took possession of the site in the 12th century. A small collection of medieval pottery was recovered from topsoil deposits or in deposits sealing F450 but, significantly, no medieval pottery sherds were recovered from stratified deposits within Area B suggesting this part of the site was abandoned by the 13th century. Most of the pottery was Dublin-type ware, a wheel-thrown, glazed fabric that dates broadly to the 13th century. The designation of a fabric with the suffix *-type* is recommended pottery practice to indicate that a ware has been consistently found in a particular area while evidence for a production centre or kiln which has not yet been discovered (McCutcheon 2000; 2005a).

Both medieval features at Roestown 2, the rectangular enclosure (Enclosure 4) and an associated pit contained sherds of Dublin-type ware and also produced bone pins, a bodkin-style javelin head (see Plate 80) and fragments of iron objects.

It is possible further associated features were removed by ploughing. A moderate corpus of excavated houses of medieval date have slight or no evidence for surviving walls. At Piperstown, Co. Louth (Barry 2000) and Dunmanogue, Co. Kildare (Sleeman & Hurley 1987), houses built in the 13th or 14th centuries were constructed with sill beams laid horizontally into bedding trenches or onto the ground surface, into which timber uprights were placed, while at Bourchier's Castle, Co. Limerick (Cleary 1982; 1983) mud walls were used in a late-13th-century structure. Such structures can be difficult to detect archaeologically as they are susceptible to later truncation (O'Conor 1998). There was sufficient space within Enclosure 4 to accommodate a structure similar to those excavated at Piperstown (8m x 5.6m) or House II (8.4m x 3.8m) at Caherguillamore, Co. Limerick (Ó'Ríordáin & Hunt 1942), while at Ballyveelish, Co. Tipperary (Doody 1987), a small 4m x 4m structure was placed within a stone boundary wall inside a moated site.

The medieval remains at Roestown 2 were indicative of a short-lived or limited occupation. The shallow primary deposit within Enclosure 4 was succeeded by a prolonged period of silt accumulation, and was possibly still open as late as the 17th century (AD 1440–1640; see Appendix 5). The site may have been home to a peasant family for a short period in the 13th century, living beyond the limits of the manorial centre of Dunshaughlin, which developed after 1176 (Bhreathnach 1999) or equally it could represent a temporary defensive structure securing the northwestern approach to the manor of Dunshaughlin during the same period, one of incessant warring between rival Anglo-Norman lords (Murphy 2006). John de Courcy's followers sacked and burned de Lacy's lands in Meath (which would have included Dunshaughlin) in retaliation for the kidnapping of de Courcy by Hugh de Lacy, and it is not impossible that the medieval occupation of Roestown 2 was abandoned for these reasons.

A detailed extent of the manor of Ratoath was made following the murder of William de Burgh, earl of Ulster, in 1333. The surviving manuscript, though in poor condition, shows Dunshaughlin was held at that time by Walter de la Hyde, who also held two carucates at *Raweston* for an annual rent of 11s (*ibid*). This seems likely to be Roestown 2 and two carucates represent 240 medieval acres or between 500 and 600 statute acres (2.02–2.42km^2). Its possible therefore that the 14th century holding consisted of the modern townland of Roestown (398 acres or 1.61km^2) and Redbog (209 acres or 0.85km^2). Bhreathnach (1999) has argued that Anglo-Norman land grants were, in some cases, pre-determined by existing divisions and that on entering Southern Brega, they encountered and exploited an established pattern of territorial division and settlement'. We may consider then, that the pre-Norman territory associated with Roestown was also between 500 and 600 statute acres.

De la Hyde died in 1344. A *post mortem* inquisition extent revealed he held Dunshaughlin manor, and though it didn't enumerate the tenant holdings, it vdid value the rents of the free tenants and burgesses at £8 per annum, which was approximately half the value of the manor. The landuse information given for the demesne lands show a preponderance of arable and the values indicate that the manor was prospering on the eve of the Black Death. A few years after this extent was made an individual called Geoffrey Travers of *Roweston*, was appointed one of the keepers of the peace in the liberty of Trim. This signifies the presence of a settlement or at least a holding at Roestown. At the time of the Civil Survey the townland of Roestown was in the possession of the protestant proprietor Sir William Parsons who also held much of Dunshaughlin. The settlement consisted of a stone house with other 'out houses' and a mill. There were 115 acres of arable land, 10 acres of meadow and 10 acres of pasture (Murphy 2006).

3.7 Date and sequence

The following tables outline the principal sequence of archaeological features for both Area A and B. Each area is described with an independent stratigraphy, as both parts of the site could not be amalgamated due to bisection of the physical remains by the N3.

A proposed overall sequence of development is suggested in section 3.5.3.

3.7.1 Stratigraphical sequence Area A

Area A	
A/Phase 1a	Enclosure 2 (F276, F282, F285) and Enclosure 5 (F225, F288, F335). Perhaps dating to the late-sixth or early seventh century AD.
A/Phase 1b	A re-cut (F250) of Enclosure 2
A/Phase 2	A re-cut (F102) of Enclosure 2. Enclosure 5 replaced or supplemented by Enclosures 6 (F132) and 7 (F172). The former containing a dog burial dated to AD 630–710.
A/Phase 3a	Excavation of Enclosure 3 (F113/F264/F326) and Enclosure 8 (F230). The former occurring in the late seventh century AD (AD 650–780; AD 620–690).
A/Phase 3b	Re-cut of F113 (F239 and F319) of Enclosure 3.
A/Phase 4a	A major re-cut of Enclosure 3 (F114/F164). F264 was not re-cut perhaps facilitating expansion westward linking up with features coming from Area B. Enclosure 8 was replaced by Enclosure 9 (F187, F196).
A/Phase 4b	Re-cuts to Enclosure 9 (F345, F195).
Note: In A/Phase 4b, it is possible that F164 was backfilled so the re-cut ditches of Enclosure 9 in effect delimited an expanded Enclosure 3.	
A/Phase 5a	F254 added to Enclosure 9, and F342 added to F114. The excavation of F342 suggested an amalgamation of Areas A and B and may equal B/Phase 2d.
A/Phase 5b	Re-cuts (F272 and F341) to F254 and F342.
A/Phase 6a	Enclosure 4 (F134) and pit (F178) centrally placed within Enclosure 3, which may have still been visible by this date. Dated by pottery association to the 13th and 14th centuries AD. A radiocarbon date for Enclosure 4 (F135: AD 1440–1640) suggested prolonged post-abandonment silting up. Pit F212 and metalled surface F281 may also belong to this phase.
A/Phase 6b	Linear ditches (F168, F219, F280, F283) potentially associated with Enclosure 4.
A/Phase 7	Post-medieval agricultural activity levelled all previous features and dispersed artefacts resulting in the lower topsoil (F100).
A/Phase 8	The modern period is represented by a backfilled quarry (F266), the grading of the N3 roadside (F308) and a shallow drain (F295).

3.7.2 Stratigraphical sequence Area B

Area B	
B/Phase 1a	Enclosure 1 (F405) excavated (AD 530–650). Associated with Enclosure 10 (F935), Enclosure 11 (F1000), ditch (F1315). Structure A (F350, F370, F374, F378, F387, F1463, F1556), Structure B (F885), Structure C (F591, F667, F834), gullies (F564, F797, F823, F825, F875, F1103, F1112). Miscellaneous features (F705, F719, F721, F1175) truncated by later Phase 1 or Phase 2 features.
B/Phase 1b	Re-cutting of Enclosure 11 (F901, F1002) and F1315 (F1404). Beginning of Enclosure 12 (F645, F1250) abutting Enclosure 11.
B/Phase 1c	Replacement of F1315/F1404 by extension of Enclosure 12 (F945, F1248, F1330, F1547). Metalled surface (F960) and occupation deposit (F993) that sealed F1315. Expansion of Enclosure 10 (F936, F1065), Enclosure 13 (F951). Structure D (F707, F1216). Possibly F1121 and F1130.
B/Phase 1d	Replacement of Enclosure 10 by expansion of Enclosure 13 (i.e. addition of F934 to F951).
B/Phase 2a	Re-cutting of Enclosure 1 (F404; AD 710–960). New internal layout with the subdivision of the southeast portion of the enclosure (F603). The souterrain (F501/F503) may date to this phase. A new sequence of successive multiphase field boundary ditches (F745, F748, F751, F764, F766, F900, F905, F1034, F1039, F1142, F1288, F1326) south of Enclosure 1, which formed Enclosure 14 (abutted Enclosure 12 suggesting it remained in use through this phase). Enclosure 13 replaced by F933.
B/Phase 2b	Re-cuts (F642) of F603. Multiple re-cuts (F863, F864, F888, F1113, F1152, F1154) to F933. Ditches (F902, F1525) may belong to this phase and could be evidence for further annexe enclosures south of Enclosure 14.
B/Phase 2c	Re-cut (1104) of F642.
B/Phase 2d	Either side of causewayed entrance of Phase 2a-c backfilled. Re-cuts (F675, F692) to the east end of F1104 probably attempted to improve or reconstruct the bank at this location following this alteration. Additional re-cuts (F808, F811) to F933. F1531 added to the east end of F933. Enclosure 15 (F649, F653, F684, F688, F691, F711, F762, F861, F954, F955, F958, and F959) replaces Enclosure 12 and Enclosure 14. A second major internal partition in the west of the enclosure (F550) may also date to this phase.
B/Phase 3	Re-cutting of Enclosure 1 (F450; AD 770–980) to Phase 2d limits. F571 replaced F1104. Further re-cuts (F1107, F1126, F1341) to F933 ditchs, mettled surface (F1337), and ditches (F820, F1485). Two re-cuts (F770, F1319) to the western partition ditch may have taken place during this stage.
B/Phase 4	Backfilling of F450, metalled pathway (F492). Ditch features (F408, F1354, F1358, F1346) cut F450. Two shallow ditches (F403, F841) excavated that approximately coterminous with F450. Souterrain partially dismantled and backfilled, two large pit features (F411, F1301) cut F450 and F1319.
B/Phase 5	Roadway constructed along the eastern edge of Area B, probably a remnant of the 18th-century turnpike road between Dublin and Navan, a precursor to the current N3. The site was heavily cultivated in the post medieval period as evidenced by numerous furrows (F561, F589, F658, F664, F701, F767, F879, F917, F923, F925, F927, F944, F1026, F1028, F1030, F1032, F1086, F1215, F1245, and F1426).
B/Phase 6	Modern drains (F557, F1428, F1431, F1433), and up cast (F932) from stream widening used to reclaim southeastern part of the site.

3.7.3 Overall site phasing

The following all encompassing phasing is presented as a blend of the two separate phasings presented above and is considered the most likely basis for the expansion of the site between the sixth century and the modern era. This phasing is the basis on which the animal bone was interpreted.

Period 1A

Start date: mid 6th century AD

Enclosure 1 (F404) excavated and became the focus for a number of ancillary field systems/ enclosures (Enclosures 2, 5 11). Within Enclosure 1, there was evidence for a number of structures (Structure A–C). Fine metalworking was occurring within the site in this period. Arable farming (cereal drying) also attested to. This period is likely to be quite drawn out, as there were a number of gullies and linears around the site that were cut by features belonging to Period 2 or later.

Period 1B

Approximate date: first half of 7th century AD

Successive re-cuts of Enclosures 2 and 11 (and other features from Period1A). Creation of smaller ancillary enclosures onto Enclosure 2 (Enclosure 6 & 7) and around Enclosure 1 (Enclosures 10, 12, 13). Within Enclosure 1, Structure D was built, possibly connected to metalworking activity.

Period 2A

Approximate date: mid 7th century AD

Re-cut of Enclosure 1 (F405). Enclosures 3 and 8 replace earlier enclosures (2, 6, 7) in a significant increase in settlement area and capacity. Reorganisation continued around Enclosure 1 also, with Enclosure 14 tagged onto the side of Enclosure 12, which shows some continuity of form between the two phases. The interior of Enclosure 1 is divided into subdivisions, with the southeast portion having a number of cereal drying kilns

Period 2B

Approximate date: 8th century AD

Successive re-cuts of Enclosure 3, while Enclosure 9 is created as an ancillary ditch to the south of Enclosure 3 (replacing Enclosure 8). Enclosure 10, on the west side of Enclosure 1 is replaced by a linear ditch extending towards the east. It is re-cut a great many times, possibly annually. South of Enclosure 1, Enclosures 15 and 16 replaced Enclosures 12 and 14. There are further changes over the course of this period to existing features such as Enclosure 3 and Enclosure 9. The internal partition ditch is altered or re-cut. The souterrain may originate in this, or possibly the following, period. Enclosure 1 is partially backfilled around its entrance.

Period 3A
Approximate date: late 8th century AD
Enclosure 1 re-cut (F450) to the extents defined by Period 2B backfilling. Continuing re-cuts of ditch F933. The existing internal partition ditch is replaced (by F571) enclosing a smaller area, and cutting earlier cereal drying kilns. A new partition (F550) of the west side of Enclosure 1 may reflect a constriction of the site or the creation of an inner enclosure.

Period 3B
Approximate date: 10th century AD
Continuing re-cuts to the internal partition ditch.

Period 4
Approximate date: 11th century AD
Enclosure 1 is backfilled and partially sealed below a stone path. Its former extent (from Period 3) is defined by a shallow drain, perhaps delimiting a large field. A number of ditches and pits are assigned to this period. The souterrain is dismantled and backfilled.

Period 5
Date: thirteenth–fourteenth century AD
A small enclosure is built within the former limits of Enclosure 3.

Period 6
Date: Post-medieval to modern
Farming/agricultural features.

4 CONCLUSIONS

Roestown 2 (A008/002) was excavated (19 September 2005 –30 March 2007) by Rob O'Hara (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council, NRDO, and the NRA.

Roestown 2 was an early medieval settlement and farmstead that developed between the sixth and 11th centuries AD. Medieval period activity was also recorded on the site. A multi-phased, D-shaped enclosure formed the focus of the early medieval remains. A stone-lined souterrain, cereal drying kilns and a number of structures structures were excavated, while a number of field systems and enclosures were enclosed large areas of the immediate landscape. The site was highly significant, not only for the quantity of archaeological material recovered, but also for the clear stratigraphical divisions within the site. The genesis and development of a site over 500 years of occupation can be traced in thearchaeological record for the site. Changes to its shape, size, function, staus reveal a site in near constant flux. This flux, both within and around the site, presents a wonderful foil to the inherent stability that was provided by a landmark settlement that remained occupied for centuries.

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Abbreviations

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JIA	Journal Irish Archaeology
JRSAI	Journal of the Royal Society of Antiquaries of Ireland
NMAJ	North Munster Antiquaries Journal
PRIA	Proceedings of the Royal Irish Academy
PSAS	Proceedings of the Scottish Antiquarians Society
UJA	Ulster Journal of Archaeology

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May 2009

ARCHIVAL APPENDICES

APPENDIX 1:	*Context Details by Ken Smith*
APPENDIX 2:	*Finds List by Maria Lear*
APPENDIX 3:	*Sample List by Maria Lear*
APPENDIX 4:	*Topsoil Assessment by Maria Lear & Stuart Rathbone*
APPENDIX 5:	*Radiocabon Dates by Beta Analytic*
APPENDIX 6:	*Animal Bone by Rachel Sloane*
APPENDIX 7:	*Osteological Report by Jennie Coughlan*

APPENDIX 1 *Context Details*

Roestown 2: A008/002										
No	Fill of/ Filled with	Strat above	Strat below	Description	Interpretation	Area/ Phase	Artefacts	Animal bone	Burnt bone	Samples
1	Sod	1		These numbers were used in a previous report on metal detection	Sod		See separate report			
2	Topsoil	100	1		Topsoil					
3	Test–pits				Topsoil					
004–099	Not allocated									
100	N/A	125 126 138 142 143 159 175 177 191 199 205 213 258 277 279 292	2	Lower topsoil approximately 0.4m deep created through post–medieval ploughing. Contained a large quantity of animal bone and prehistoric–modern artefacts	Lower topsoil	A/ 7	Modern earthenware, medieval pottery, posisbly prehistoric pottery, clay pipe fragments, assorted flint objects, bone pin fragments, bone comb fragments, assorted iron objects			
101	102	105 109 269	264 283	Loose, mid grey–reddish brown silty clay. Moderate (10–20%) rounded to subangular stones, occasional (<10%) charcoal & animal bone (incl. burnt bone). Abuts F220. Approximately 35m long x 1.1m wide max. x 0.4m deep max.	Fill of ditch 102	A/ 2	Unidentified iron object	1xA4	Y	
102	101 105 109 269 220 284	251	105 109 269	Cut for curvilinear ditch with concave sides and a concave base. C.75m long, 0.4m–1.4m wide, 0.14m– 0.4m deep. Encloses an area approximately 35m EW x 20m NS. Possibly open to the southeast. Approximately 75m long x 0.4m–1.4m wide x 0.4m deep max.	Re–cut of ditch 282	A/ 2				

103	132	132	113	Moderately compact mid–dark reddish brown silty clay. Moderate (10–20%) angular–subangular stones, very occasional (<10%) charcoal & occasional (<10%) animal bone (incl. burnt bone). Similar material to F116 although relationship removed by F113/ F114.	Fill of ditch 132	A/ 2		1xA4		
104	141	141	100	Moderately compact mid–dark reddish brown silty clay. Moderate (10–20%) subrounded stones very occasional (<1%) charcoal & animal bone flecks. 7.7m x 0.75m x 0.25m.	Fill of linear 141	?	Flint flake			
105	102	102	101	Moderately compact dark brownish grey sandy silt. Moderate (10–20%) angular–subangular stones, occasional (<10%) charcoal flecks & moderate (10–20%) animal bone. Localised dump of material below F101. 5m x 0.55m x 0.3m.	Fill of ditch 102	A/ 2		2xA4		
106	114	150	112	Moderately compact mid–dark reddish brown silty clay. Moderate (10–20%) subangular stones, moderate (10–20%) charcoal & animal bone (incl. burnt bone). Approximately 30m x 1.8m x 0.4m max.	Fill of ditch 114	A/ 4a	Flint flake	1xA1 2xA4 1xA5	Y	Charcoal #11, Charcoal #18, Bulk #44, Bulk # 96
107	239	152	184	Moderately compact mid reddish brown silty clay. Moderate (10–20%) subrounded–subangular stones, moderate (10–20%) charcoal, frequent (>20%) animal bone and very occasional (<1%) mollusc. Approximately 25m x 0.6m x 0.4m max.	Fill of ditch 239	A/ 3b	Flint debitage, bone pin	2xA3 2xA4	Y	Charcoal #13, Charcoal #14, Bulk #58, Bulk # 97
108	113	113	152	Moderately compact light yellowish brown silty clay. Moderate (10–20%) subrounded–subangular stones, moderate (10–20%) charcoal, frequent (>20%) animal bone and very occasional (<1%) snail shell and mollusc. Radiocarbon date: AD650–780. Approximately 30m	Fill of ditch 113	A/ 3a	Stone gaming board, hone stone, bone pin	1xA1 3xA4	Y	Snail shell #2, Snail shell #22, Bulk #6, Bulk #50, Charcoal #19, Charcoal # 40, Charcoal #55
109	102	102	101	Moderately compact dark greyish brown clayey silt. Moderate (10–20%) angular–subangular stones, very occasional (<1%) charcoal flecks & occasional (<10%) animal bone. Localised dump of material below F101. 3m x 0.70m x 0.20m.	Fill of ditch 102	A/ 2	Bone pin fragment	1xA4	Y	Bulk #66

110	239	151	110 182	Compact mid yellowish brown sandy silt. Moderate (10–20%) subangular stones, very occasional (<1%) charcoal flecks & moderate (10–20%) animal bone. 28m x 1.2m x 0.2m max.	Fill of ditch 239	A/ 3b	Iron knife, Bone comb fragment	1xA3 3xA4	Y	Charcoal #42, Bulk #47, Bulk # 98
111	114	114	148 149 156	Moderately compact mid brownish grey silty clay. Frequent (>20%) subangular stones, occasional (<10%) charcoal & snail shell. Moderate (10–20%) animal bone. Approximately 30m long x 0.5m wide x 0.15m deep max.	Fill of ditch 114	A/ 4a		3xA4 1xA5	Y	Bulk #9, Bulk #46, Bulk #54, Charcoal #3, Charcoal #39, Charcoal #41, Snail shell #17
112	114	106 153	342	Moderately compact mid–dark reddish brown sandy silt. Moderate (10–20%) subrounded–subangular stones, very occasional (<1%) charcoal & frequent (>20%) animal bone. 30m long x 1.5m x 0.25m max.	Fill of ditch 114. Same feature as 326	A/ 4a		2xA3 3xA4	Y	Bulk #57, Bulk #95
113	108 152 154	103 116	145	Cut for ditch with generally steep sloping sides (approx. 50º) and a flat base. Approximately 45m long, 2m wide at the top, 1m deep and 0.4m wide at the base. Enclosed an area approximately 42m NS by 45m EW. Same feature as F326.	Cut for ditch	A/ 3a				
114	106 111 112 148 149 150 153 156 181	110 182 137	111	Cut for ditch with generally steep sloping sides (approx. 50º) and a flat base. Approximately 45m long, 2m wide at the top, 0.9m deep and 0.35m wide at the base. Enclosed an area approximately 42m NS by 52m EW. 47m long x 1.1m–2.95m wide x 0.44m–1.0m de	Re–cut of ditch 113. Same feature as 164	A/ 4a				
115	168	118	100	Loose dark brownish grey clayey silt. Moderate (10–20%) subrounded – subangular stones, frequent (>20%) charcoal & occasional (<10%) burnt bone. 8m x 0.60m x 0.10m.	Fill of ditch 168	A/ 6b			Y	
116	132	103 116	113	Moderately compact mid–dark reddish brown silty clay. Moderate (10–20%) angular–subangular stones, very occasional (<1%) charcoal & occasional (<10%) animal bone. Similar material to F103. Radiocarbon date: AD 630–710. 21m x 1.63m–3.15m x 0.54m deep.	Fill of ditch 132	A/ 2	Flint debitage	2xA4		

117	N/A	100	002	Charcoal rich deposit contained within F100. 0.53m x 0.54m x 0.02m.	Charcoal deposit	A/ 8				Bulk #68
118	168	167	115	Loose mid–dark brownish grey silty clay. Moderate (10–20%) angular–subrounded stones, occasional (<10%) charcoal & animal bone (incl. burnt bone). 12m x 0.50m x 0.18m.	Fill of ditch 168	A/ 6b		1xA4 1xA5	Y	
119	N/A	255 273	100	Moderately compact dark brown silty clay. Occasional (<10%) subrounded –subangular stones, occasional (<10%) charcoal, very occasional heat fractured stone (<1%) & frequent (<20%) animal bone. 6.5m x 5m x 0.15m deep.	Occupation deposit	A/ 3?	Bone pin fragments, bone pin, struck flint	1x box 2xA5	Y	Coprolite #4, Slag #5, Bulk #69, Charcoal #71
120-123	Cancelled. Same as 100									
124	Cancelled. Same as 213									
125	202	137 215	100	Loose, mid brown clayey silt. Occasional (<10%) subrounded stones, occasional (<10%) animal bone. 8.25m x 1.05m x 0.15m.	Fill of linear 202	?	Flint debitage	1xA5	Y	Bulk #36
126	219	219	100	Loose, dark brown clayey silt. Occasional (<10%) subangular stones, occasional animal bone (<10%), very occasional (<1%) charcoal flecks. 9.00m x 0.40m x 0.30m.	Fill of linear 219	A/ 6b		2xA5		Bulk #33
127	Cancelled. Same as 137									
128	Cancelled. Same as 100									
129	212?	223	100	Dumped deposit of flat angular –subangular stones (<0.2m x 0.2m). Area quite disturbed. Not certain which cut this deposit is associated with. 1.5m x 0.75m x 0.25m.	Fill of pit 212	?				
130	Cancelled. Same as 107									
131	282	222 290	250	Moderately compact mid brownish grey silty clay. Frequent (>20%) angular –subangular stones occasional (<10%) charcoal & moderate (10–20%) animal bone (incl. burnt bone). Abuts F268. 35m x 1.4m x 0.53m max.	Fill of ditch 282	A/ 1a	E–ware, bone comb fragment, worked bone	1x box	Y	Bulk #83

132	103 116	171	103 116	Cut for curvilinear ditch with irregular sides (ranging from steep to concave) and an uneven though generally flat base. Approximately 0.8m– 1.6 m wide, 0.11m – 0.54m deep. Encloses an area approximately 17m NW–SE x 12m NE–SW. 21m x 0.8m–1.63m x 0.11m–0.5m	Cut for ditch	A/ 2				
133	Cancelled. Same as 100									
134	135 136 158 159	171	158	Cut for ditch with steep sides (approx 50º) and a slightly concave base lending it a V–shaped profile. Approximately 1.6m wide, 0.37m– 0.6m deep. It had a circumference of 48m & enclosed area 13m NE–SW x 10m NW–SE. No obvious entrance. 1.1m–1.6m wide x 0.5m	Cut for ditch	A/ 6a				
135	134	136	159	Moderately compact, mid greyish brown silty clay. Frequent (>20%) angular –subangular stones, very occasional (<1%) charcoal flecks & snail shell, occasional (<10%) animal bone (incl. burnt bone). Radiocarbon date: AD1440–1640 is later than primary activity	Fill of ditch 134	A/ 6a	Iron objects, struck flint, iron spearhead/ butt	1xA4	Y	Bulk #76, Snail shell #80
136	134	158	135	Loose, greyish brown silty clay. Frequent (>20%) subrounded –subangular stones, very occasional (<1%) charcoal flecks, snail shell & animal bone (incl. burnt bone). Approximately 35m x 1.2m x 0.3m max.	Fill of ditch 134	A/ 6a	Dublin–type ware	1xA4	Y	Snail shell #23, Bulk #77
137	172	172	114 202	Compact mid brown sandy silt with occasional (<10%) subrounded –subangular stones, charcoal & animal bone (incl. burnt bone). Possibly same deposit as F253. 16m x 1.00m x 0.55m.	Fill of ditch 172	A/ 2	Struck flint	1xA4 1xA5	Y	Charcoal #31, Bulk #32
138	283	283	100	Loose, greyish brown silty clay. Occasional (<10%) subrounded –subangular stones, charcoal flecks & animal bone. 5.2m x 0.7m x 0.15m.	Fill of linear 283	A/ 6b		1xA4		Bulk #90
139	Root activity									
140	285	285	100	Moderately compact, mid yellowish brown sandy silt. Moderate (10–20%) angular stones, very occasional (<1%) charcoal & animal bone. 2.92m x 0.72m x 0.24m.	Fill of 285	?	Flint flake		Y	Bulk #91

141	104	171	104	Cut for ditch with concave sides and an uneven, generally concave base. 7.7m long, 0.7m wide, 0.25m deep. 7.7m x 0.75m x 0.25m.	Cut for linear	?				
142	286	286	100	Loose, mid greyish brown silty clay. Moderate (10–20%) angular stones, occasional (<10%) animal bone. 20m x 0.42m–1.40m x 0.27m deep.	Fill of linear 286	?	Iron object	1xA4 1xA5		
143	266	311	100	Compact deposit comprising mixed building rubble used to backfill a quarry. 18m x 9m x 1.6m deep.	Fill of quarry 266	A/ 8	Slate writing boards, stone pencils, assorted glazed earthenware, bottle glass, clay pipe fragments, iron nails			
144	239	147	155 157	Moderately compact dark brown silty clay. Occasional (<10%) subrounded –angular stones & charcoal, frequent (>20%) animal bone (incl. burnt bone). Radiocarbon date: AD 620–690. 5m x 1.2m x 0.45m.	Fill of ditch 239	A/ 3b	Iron object, bone pin fragments	1xA3	Y	Bulk #1, Bulk #49, Bulk #101, Charcoal #7, Charcoal #56
145	239	108	147	Moderately compact, dark brownish grey silty clay. Occasional (<10%) subangular stones & charcoal, frequent (>20%) animal bone (incl. burnt bone). 3m x 1.1m x 0.16m.	Fill of ditch 239	A/ 3b	Iron object, iron blade, struck flint	2xA4	Y	Bulk #8, Charcoal #12
146	239	155 157	151	Moderately compact, dark greyish brown silty clay. Occasional (<10%) subrounded–subangular stones, very occasional (<1%) charcoal flecks & animal bone. 2m x 0.75m x 0.23m.	Fill of ditch 239	A/ 3b		1xA4		
147	239	145	144	Compact mid yellowish brown silty clay. Moderate (10–20%) subangular stones, occasional (<10%) animal bone. 3.5m x 1.6m x 0.26m.	Fill of ditch 239	A/ 3b		1xA4 1xA5		
148	114	111	153	Moderately compact, dark brownish grey silty clay. Frequent (>20%) subangular to subrounded stones. Very occasional (<1%) animal bone. 4m x 0.4m x 0.5m.	Fill of ditch 114	A/ 4a				
149	Cancelled. Same as 111									

150	114	149	106	Compact mid yellowish brown silty clay. Frequent (>20%) angular–subangular stones, moderate (10–20%) animal bone, very occasional (>1%) charcoal. Approximately 30m x 1.5m x 0.25m.	Fill of ditch 114	A/ 4a	Struck flint	1xA3 4xA4		Bulk #45, Bulk #100
151	239	146 171 184	110 182	Compact mid yellowish brown silty clay. Frequent (>20%) subangular stones, occasional (<10%) charcoal, moderate (10–20%) animal bone (incl. burnt bone). Approximately 30m x 1.8m x 0.3m.	Fill of ditch 239	A/ 3b	Stone gaming board, iron object	1xA1 4xA4	Y	Charcoal #20, Bulk #48, Bulk #99
152	113	108	154	Compact yellowish brown silty clay. Moderate (10–20%) subangular stones, occasional (<10%) charcoal, very occasional (<1%) animal bone (incl. burnt bone). Approximately 15m x 0.30m x 0.15m.	Fill of ditch 113	A/ 3a		2xA5	Y	
153	114	156	153	Mid brownish grey silty clay. Frequent (>20%) angular stones, very occasional (<1%) charcoal & animal bone. 10m x 0.40m x 0.30m.	Fill of ditch 114	A/ 4a	Iron knife, struck flint			
154	113	108	239	Compact yellowish brown silty clay. Moderate (10–20%) subangular stones, occasional (<10%) animal bone. 9m x 0.30m x 0.15m.	Fill of ditch 113	A/ 3a		2xA4		
155	Cancelled. Same as 281									
156	Cancelled. Same as 112									
157	239	144	146	Loose, mid yellowish grey silty clay. Moderate (10–20%) angular stones, very occasional (<1%) animal bone. 1m x 0.3m x 0.4m.	Fill of ditch 239	A/ 3b		1xA5		
158	134	134	136	Loose, mid greyish brown silty clay. Frequent (>20%) subrounded–subangular stones, very occasional (<1%) charcoal flecks & snail shell, occasional (<10%) animal bone. 9m x 0.90m x 0.16m.	Fill of ditch 134	A/ 6a		1xA4 1xA6		Snail shell #24, Bulk #116
159	134	135	100	Loose mid brown silty clay. Frequent (>20%) subangular stones. Very occasional (<1%) animal bone. Approximately 28m x 1.6m 0.30m.	Fill of ditch 134	A/ 6a				

160	164	164	161	Moderately compact, dark brownish grey silty clay. Moderate (10–20%) subangular stones, frequent (>20%) animal bone (incl. burnt bone), occasional (<10%) charcoal, very occasional (<1%) metallic waste, mollusc shell & charred seeds. Approximately 38m x 1.	Fill of ditch 164	A/ 4a	Bone pin fragment, worked bone	1xA1 13xA4	Y	Slag #26, Charcoal #27, Charcoal #72, Charcoal #93, Charred seeds #74, Mollusc #30, Bulk #75, Bulk #102
161	164	160	162	Moderately compact, mid brownish grey silty clay. Frequent (>20%) subangular stones & animal bone (incl. burnt bone), occasional (<10%) charcoal, very occasional (<1%) metallic waste, mollusc shell & charred seeds. 38m x 2.3m x 0.4m.	Fill of ditch 164	A/ 4a	Lignite fragment, (hack?) silver object, worked bone, iron object, possible stone bead	2xA3 13xA4	Y	Bulk #60, Bulk# 103, Slag #78, Slag #79, Mollusc #109, Charcoal #110
162	164	161	163	Loose, mid greyish brown clayey silt. Frequent (>20%) subangular stones & animal bone (incl. burnt bone), occasional (<10%) charcoal, very occasional (<1%) metallic waste, snail & mollusc shell. 38m x 2.2m x 0.56m.	Fill of ditch 164	A/ 4a	Decorated copper alloy strip, stone lamp, bone pin fragments	2xA1 12xA4	Y	Slag #25, Slag #73, Bulk #59, Bulk #104, Snail shell #111, Mollusc #28, Mollusc #112
163	164	162	286	Moderately compact, mid greyish brown silty clay. Frequent (>20%) subangular stones, moderate (10–20%) animal bone (incl. burnt bone). 38m x 2.2m x 0.35m.	Fill of ditch 164	A/ 4a		3xA3 4xA4	Y	
164	160 161 162 163	325 192 247	160	Cut for ditch with generally steep sloping (approx. 50º) but irregular sides and flat base. Approximately 38m long, 3m wide at the top, 0.9m deep and 0.35m wide at the base. Enclosed an area 40m EW x 50m NS. 2.1m–3.0m wide x 0.9m deep.	Re–cut of ditch 326. Same feature as 114	A/ 4a				
165	166	180	100	Grave fill within F166 (Burial I). Essentially F100.	Grave Fill	?				Bulk #10
166	165 180	171	180	Grave cut for Burial 1. Survived as a shallow partial cut into natural clay delimiting a Metalled surface c180. Largely removed by later agricultural activity. 1.5m x 1.0m x 0.1m.	Grave cut	?				
167	168	168	118	Loose dark brownish grey clayey silt. Moderate (10–20%) subrounded – subangular stones, occasional (<10%) burnt bone. 12m x 0.30m x 0.20m.	Fill of ditch 168	A/ 6b?			Y	

168	115 118 167	164 209 231	167	Cut for NW–SE orientated curvilinear ditch with concave sides and base. Traced for a distance of 12 m. Extends beyond the CPO line. Approximately 0.8 m wide and 0.5 m deep.	Cut for ditch	A/ 6b?				
169	201	201	100	Sub–rectangular pit with rounded ends, gently sloping sides and an irregular base. 2.7 m long, approximately 0.9m wide & 0.26m deep.	Cut for pit	?				
170	Cancelled. Same as 119									
171	Natural subsoil in both areas (A/B)			Natural subsoil or bedrock in both areas of the site. A variety of subsoils were encountered highlighting various geological instances. The primary types were shale bedrock exposed both areas, a glacial deposit of compact rounded boulders which cut throug						
172	137	171	137 253	Cut for curvilinear ditch with steep sides (approximately 70º) and a flat base. 16 m in length, 0.75m wide & up to 0.55m deep. Potentially delimiting Burials I & II although these burials were too disturbed to be considered for dating. 16m x 0.75m x 0.55m	Cut for ditch	A/ 2				
173	Cancelled. Same as 132									
174	Cancelled. Same as 172									
175	178	178	100	Loose, mid greyish brown sandy clay. Moderate (10–20%) angular stones, frequent (>20%) animal bone (incl. burnt bone). 2.45m x 2.3m x 0.48m.	Fill of pit 178	A/ 6a	Bone pins, iron knife, Dublin–type ware, struck flint, hone stone	1xA3	Y	Bulk #15
176	203	203	241	Moderately compact, mid brown sandy silt. Frequent (>20%) angular stones, occasional (<10%) charcoal & animal bone. 4.25m x 0.30m x 0.23m.	Fill of linear 203	?		1xA5		Bulk #34
177	204	204	100	Moderately compact, mid brown sandy silt. Frequent (>20%) angular stones. 2.50m x 0.30m x 0.15m.	Fill of linear 204	?				Bulk #35
178	175	171	175	Cut for pit with irregular sides (gentle and steep) and a generally flat base. Subcircular in plan, approximately 2.45m NE–SW by 2.3m NW–SE. 0.48m deep.	Cut for pit	A/ 6a				
179	N/A	171	100	Metalled surface below Burial II	Metalled surface	?				

180	166	171	165	Metalled surface below Burial I. Contained within F166	Metalled surface	?				
181	114	114	342	Moderate mid greyish brown silty clay. Frequent (>20%) angular stones, very occasional (<1%) animal bone. Note: bone preservation in this part of F114 was poor due to underlying geology. Approximately 8m long x 1.77m x 0.45m deep.	Fill of ditch 114	A/ 4a	Iron object, flint flake			
182	239	113	114	Moderate dark greyish brown silty clay. Frequent (>20%) angular stones, very occasional (<1%) animal bone. Note: bone preservation in this part of F113 was poor due to underlying geology. Approximately 8m long x 1.40m x 0.89m deep.	Fill of ditch 239	A/ 3b				
183	Not allocated									
184	239	107	151	Moderate mid greyish brown silty clay. Occasional (<10%) subangular stones & animal bone. 1.6m x 0.55m x 0.35m.	Fill of ditch 239	A/ 3b		1xA4		
185	187	186	345	Compact light brownish grey silty clay. Occasional (<10%) subangular stones & animal bone.	Fill of ditch 187	A/ 4a		1xA5		Bulk #114
186	187	187	185	Loose, dark brownish grey silty clay. Occasional (<10%) subrounded stones, animal bone & charcoal. 2.25m x 0.42m.	Fill of ditch 187	A/ 4a	Struck flint	1xA5		Mollusc #29, Bulk #115
187	185 186	171	186	Cut for EW orientated curvilinear ditch with steep sloping sides (80º) but stepped on the southern side & a flat base. Potentially associated with F196. Extended beyond CPO line. Re–cut by F345. 10m long min x 2.93m x 0.71m.	Cut for ditch	A/ 4a				
188	345	345	189	Moderately compact, light brownish grey silty clay. Occasional (<10%) angular stones, very occasional (<1%) charcoal. 10m x 1.35m x 0.40m.	Fill of ditch 345	A/ 4b				Bulk #113
189	345	188	254	Deposit sealing F345. Moderately compact, mid brownish grey clayey silt. Frequent (>20%) subangular stones, moderate (10–20%) animal bone, very occasional (<1%) charcoal. 10m x 2.47m x 0.23m.	Fill of ditch 345	A/ 4b		1xA1		
190	Root activity									

191	238	237	100	Loose dark greyish brown clayey silt. Occasional (<10%) subangular stones & animal bone. 8.1m x 0.75m x 0.27m.	Fill of linear 238	?		2xA4 1xA5		
192	230	227	164 196	Moderately compact, mid yellowish brown clayey silt. Occasional (<10%) subrounded stones & animal bone. 16.3m x 2.03m x 0.38m.	Fill of ditch 230	A/ 3a		1xA4		
193	Root activity									
194	195	195	254	Loose mid brown silty clay. Frequent (>20%) subangular stones. Very occasional (<1%) animal bone. 14m x 1.6m x0.50m.	Fill of ditch 195	A/ 4b		1xA5	Y	Bulk #51
195	194	199	194	Cut for EW orientated curvilinear ditch with concave sides & base. Traced for length of 14 m EW, 1.6 m wide, 0.5m deep. Potential associated with F345. Extended under N3. 14m min. x 1.6m x 0.50m.	Re–cut of ditch 196	A/ 4b				Bulk #88
196	197 198 199	192	197	Cut for EW orientated curvilinear ditch with concave sides & base. Traced for 14m EW, 2.2m wide, 0.97m deep. Potentially associated with F187. Extended under N3. 14m min. x 2.2m x 0.97m.	Cut for ditch	A/ 4a				
197	196	196	198	Moderately compact, mid brownish grey silty clay. Frequent (>20%) subangular stones, occasional (<10%) animal bone. 14m x 0.86m x 0.21m.	Fill of ditch 196	A/ 4a	Flint flake	2xA4		Bulk #53
198	196	197	199	Moderately compact, mid brownish grey silty clay. Moderate (10–20%) subangular stones, occasional (<10%) animal bone. 14m min x 2.28m x 0.90m.	Fill of ditch 196	A/ 4a		1xA4		Bulk #52
199	196	198	195	Moderately compact, mid brownish grey silty clay. Frequent (>20%) subangular stones, very occasional (<1%) animal bone. 14m min. x 1.93m x 0.70m.	Fill of ditch 196	A/ 4a				
200	215	215	202 212	Moderately compact, dark orange brown clayey silt. Frequent (>20%) subrounded stones, occasional (<10%) animal bone. 2.00m x 0.54m x 0.22m.	Fill of linear 215	?		1xA5		Bulk #37
201	169	169	100	Moderately compact, mid greyish brown silty clay. Occasional (>10%) subangular stones & animal bone. 2.70m x 0.93m x 0.26m.	Fill of pit 169	?		1xA4		Charcoal #38

202	125	137 200	100	Cut for shallow EW orientated ditch with a rounded terminus, steep sides & flat base. 8.25 m long, 1.05m wide, 0.15m deep. Late in sequence and potentially modern.	Cut for linear	A/ 8?				
203	176	171	176	Cut for NS orientated linear cut with steep sides & u–shaped base. 4.25m long, 0.3 m wide, 0.23 m deep rising sharply at each terminal. Parallel to and possible association with F204 c.3 m to the east.	Cut for linear	?				
204	177	171	177	Cut for NS orientated linear cut with steep sides & U–shaped base. 2.5m long, 0.3m wide, 0.15m deep rising sharply at each terminal. Parallel to and possible association with F203 c.3 m to the west.	Cut for linear	?				
205	206	206	100	Moderately compact, light brown clayey silt. Occasional (>10%) subrounded–angular stones & animal bone. 8.00m x 0.50m x 0.10m.	Fill of linear 206	?		1xA4		
206	25	171	25	Cut for NW–SE orientated linear cut with straight sides & a flat base. Traced for distance of 8m. Extended eastward beyond CPO. 8.00m x 0.50m x 0.10m.	Cut for linear	?				
207	208	208	212	Fill of F208. Compact, dark greyish brown silt. Occasional (<10%) animal bone. 5.00m x 0.86m x 0.38m.	Fill of linear 208	?		1xA4		
208	207	171	207	Cut for NW–SE orientated linear cut with steep sides & a U–shaped base. 5.00m x 0.86m x 0.38m.	Cut for linear	?				
209	212	210	168 206 219	Compact, mid orange brown silty clay. Occasional (>10%) subrounded–subangular stones & animal bone. 6.00m x 6.00m x 0.15m.	Fill of pit? 212	A/ 6a?		1xA4		Bulk #62
210	212	211	209	Moderately compact, dark greyish brown sandy silt. Occasional (<10%) subangular stones & charcoal flecking, moderate (10–20%) animal bone. 0.3m x 2.80m x 0.15m.	Fill of pit? 212	A/ 6a?		1xA4		Bulk #63
211	212	223	210	Moderately compact, mid greyish brown silt. Moderate (10–20%) animal bone. 6.00m x 6.00m x 0.28m.	Fill of pit? 212	A/ 6a?	Worked bone?			Bulk #64

212	209 210 211 212 223	200 208 226	223	Cut for an unusually shaped sub–circular feature. A clear curving edge to the east with vertical sides becoming shallow towards the truncated western side. The base was flat with a gentle west to east gradient. At the centre was a roughly square unexcavat	Cut for pit?	A/ 6a?				
213	214	214	100	Compact mid orange brown silty clay. Occasional (<10%) subrounded stones. 2.4m x 0.30m x 0.10m.	Fill of linear 214	?				
214	213	176	213	Cut for shallow EW orientated linear cut with gentle sloping sides and a U–shaped base.	Cut for linear	?				
215	200	171	200	Cut for NW–SE orientated linear cut. 2m long. 0.54m wide, 0.22m deep. 2.4m x 0.30m x 0.10m.	Cut for linear	?				
216	217	217	219	Compact, light orange brown sandy silt. Occasional (<10%) sub rounded stones. 2.40m x 0.60m x 0.05m.	Fill of linear 217	?				
217	216	171	216	Cut for curvilinear drain with concave sides & base. Extended eastward beyond CPO. 2.40m x 0.60m x 0.05m.	Cut for linear	?				
218	Cancelled. Same as 172									
219	126	209	126	Cut for EW orientated linear with steep sides & flat base. 9.00m min x 0.40m x 0.30m.	Cut for linear	A/ 6b				
220	102	102	264 283	Loose, dark greyish brown clayey silt with frequent (>20%) subangular stones, moderate (10–20%) animal bone (incl. burnt bone). Abuts F101. Approximately 30m x 1.40m x 0.35m.	Fill of ditch 102	A/ 2	Iron object: Key?	1xA1 1xA3 1xA4	Y	Bulk #82
221	282	282	222 290	Moderately compact, mid brownish grey silty clay. Frequent (>20%) subangular–subrounded stones, very occasional (>1%) animal bone. Abuts F271. 30m x 0.65m x 0.35m max.	Fill of ditch 282	A/ 1a		1xA4 1xA6		Bulk #84
222	282	221	131	Compact, mid reddish brown silty clay. Occasional (<10%) subangular stones. Localised deposit within F282. 2.00m x 0.50m x 0.46m.	Fill of ditch 282	A/ 1a				
223	212	212	211	Metalled surface at base of F212. Possibly associated with or same as F281. 6.00m x 6.00m x 0.05m.	Metalled surface	A/ 6a?			Y	

224	225	225	226	Moderately compact, mid brownish grey clayey silt. Occasional (<10%) subangular stones & animal bone (incl. burnt bone). Approximately 10m x 0.46m x 0.12m.	Fill of ditch 225	A/ 1a		1xA4	Y	Bulk #61
225	224 226	171	224	Cut for curvilinear ditch with steep sloping sides & concave base. Potentially part of annexe enclosure associated with F288 & F333. 10m x 0.60m x 0.35m	Cut for ditch	A/ 1a				
226	225	224	212 168	Moderately compact, light brownish grey sandy silt. Occasional (<10%) subangular stones, very occasional (<1%) animal bone. 6m x 0.60m x 0.25m.	Fill of ditch 225	A/ 1a		1xA5		
227	230	228	192	Moderately compact, greyish brown silty clay. Moderate (10–20%) angular stones & animal bone (incl. burnt bone). 16.30m x 2.00m x 0.46m.	Fill of ditch 230	A/ 3a	Bone comb fragments	1xA4 1xA5	Y	Bulk #87
228	230	229	227	Moderately compact, mid reddish brown clayey silt. Occasional (<10%) subrounded stones & charcoal flecking, moderate (10–20%) animal bone (cattle skulls were particularly common). 16.3m x 0.53m x 0.30m.	Fill of ditch 230	A/ 3a		1x box 2xA4		Bulk #86
229	230	230	228	Loose mid greyish brown clayey silt. Frequent (>20%) subangular stones, moderate (10–20%) animal bone & very occasional (<1%) charcoal flecks & snail shell. 20m x 0.75m x 0.20m.	Fill of ditch 230	A/ 3a		1xA3		Bulk #85, Snail shell #105
230	192 227 228 229	234	229	Cut for NE–SW orientated ditch with steep (approximately 80º) sides and a flat base. 20m long, 1.4m to 2.2m wide & 1.25m deep. It was cut by F164 & F196	Cut for ditch	A/ 3a				
231	232	232	100	Moderately compact, mid greyish brown sandy silt. Moderate (10–20%) subangular stones, occasional (<10%) animal bone. 5.50m x 0.40m x 0.25m.	Fill of linear 232	?		1xA4		
232	231	168	231	Cut for WNW–ESE orientated cut with steep (approximately 80º) sides & generally flat, irregular base. 5.50m x 0.40m x 0.25m.	Cut for linear	?				
233	234	265	230	Moderately compact mid brown silty clay. Moderate (10–20%) angular stones & animal bone. 8.70m x 0.57m x 0.22m.	Fill of linear 234	?		1xA1		

234	233 265	171	265	Cut for NW–SE orientated linear with vertical to concave sides & a concave base. 8.7m long, 0.76m wide, 0.5m deep. It was cut by F230. 8.7m x 0.76m x 0.50m.	Cut for linear	A/ 1?				
235	236	236	100	Loose mid greyish brown silty clay. Occasional (<10%) subrounded stones & animal bone. Fill of tree bowl F236. 8.5m x 2.94m x 0.45m.	Fill of tree bowl	?	Dublin–type ware, iron knife, large bone handle			
236	Tree Bowl					?				
237	238	238	191	Moderately compacted mid brownish grey silty clay. Occasional (<10%) subangular stones & animal bone. 8.10m x 0.84m x 0.39m.	Fill of linear 238	?		1xA5		Bulk #108
238	191 237	171	238	Cut for linear with concave sides & generally flat base. 8.1m long, 0.9m wide, 0.4m wide. 8.1m x 0.94m x 0.40m.	Cut for linear	?				
239	107 110 144 145 147 151 157	154	145	A U-shaped re-cut of ditch 113. Present along the full route of the earlier ditch. Approximately 45m long, 1.8m wide at the top, 0.75m deep and 0.4m wide at the base. Enclosed an area approximately 42m NS by 45m EW.	Re-cut of ditch 113	A/3b				
240-243	Not allocated									
244	246	171	246	Linear cut curving sharply at the southern end. 13.7m long (min.) x 0.50m x 0.35m - 0.55m. Steep to vertical sloping sides with a flat base.	Cut for ditch	?				
245	244	244	246	Compact mid greyish brown silty clay. Very occasional stone.	Fill of ditch 244	?				
246	307	245	307	Cut for curvilinear ditch. 15m (min.) x 0.75m x 0.32m. Steeply sloping sides leading to a concave base. Possibly associated with Phase 1 annexe enclosures.	Cut for ditch	?				
247	335	336	164	Moderately compact mid greyish brown clayey silt. Very occasional (<1%) animal bone. 9.00m x 0.90m x 0.15m.	Fill of ditch 335	A/ 1b		1xA5		
248	249	171	249	Cut for SW-NE orientated curvilinear ditch, 6.5m long x 0.68m x 0.43m. Steep sides leading to a flat base.	Cut for ditch	?				

249	248	248	246	Moderately compact light brownish grey silty clay. Occasional (<10%) subangular stones.	Fill of 248	?					
250	251 252	131	252	Localised re–cut to eastern terminus of F282 before overall re–cut F102. 9m long, 0.1m wide, 0.3m deep.	Localised re–cut of 282	A/ 1b					
251	250	252	102	Loose mid greenish grey sandy clay. Moderate (10–20%) subangular stones & animal bone, very occasional (<1&) charcoal flecks. 9.00m x 0.80m x 0.30m.	Fill of ditch 250	A/ 1b	Iron knife, fragments of iron objects	3xA4			
252	250	250	251	Moderately compact, mid light yellowish brown sandy silt. Very occasional (<1%) subrounded stones, moderate (10–20%) animal bone. 9.00m x 0.50m x 0.20m.	Fill of ditch 250	A/ 1b		1xA1 1xA5		Bulk #67	
253	172	172	100	Moderately compact dark greenish grey silt. Occasional (<10%) subangular stones & animal bone (incl. burnt bone). 4.00m x 0.50m x 0.08m.	Fill of ditch 172	A/ 2		1xA5	Y		
254	258 260 262	194 189 249 347	262	Cut for NS orientated linear with gradually sloping sides & a concave base. Approximately 30m long, 2m wide, 0.7m deep. Post–dated but respected some Phase 4B features and was re-cut by F272.	Cut for ditch	A/ 5a					
255	N/A	281	100	Light grey silt deposit below sealing Metalled surface F281. 7.00m x 3.00m x 0.25m.	Deposit	A/ 6a?	Bone pin fragment, iron object				
256	N/A	171	100	Moderately compact mid brownish grey silty clay with occasional (<10%) burnt bone & charcoal flecking. Subsoil beneath was slightly oxidised. 1m x 0.30m x 0.08m.	Firespot	?			Y	Bulk #70	
257	Cancelled. Same as 255										
258	272	259	100	Deposit sealing F272. Broadly identical to F100. 0.15m thick.	Fill of ditch 272	A/ 5b		1xA4			
259	272	261	258	Loose yellowish grey silty clay. Moderate (<10%) subrounded stones	Fill of ditch 272	A/ 5b					
260	254	262	272	Compact mid brown silty clay. Moderate (10–20%) subangular–subrounded stones.	Fill of ditch 254	A/ 5a		1xA4			
261	272	272	259	Moderately compact yellowish grey silty clay. Moderate (<10%) subrounded stones.	Fill of ditch 272	A/ 5b			Y		

262	254	254	260	Moderately compact mid brownish grey clayey silt. Occasional (<10%) subangular–subrounded stones.	Fill of ditch 254	A/ 5a		1xA6		
263	346	346	347	Moderately compact mid greyish white silty clay. Moderate (<10%) subrounded stones, some iron panning.	Fill of ditch 346	?				
264	267 314 315	220	315	Cut for NE–SW orientated linear with steep slopes (80º), steeped on the NW side & a concave base. 17m long, 2m wide, 1m deep.	Cut for ditch. Probably associated with 113/ 326	A/ 3a				
265	234	234	233	Fill of F234. Moderately compact mid brown silty clay. Moderate (10–20%) angular stones & animal bone. 8.70m x 0.76m x 0.5m.	Fill of linear 234	?				Bulk #65
266	143	299 267	295	NW–SE orientated subrectangular cut with rounded corners, steep sides (80º) and a flat base. 18m long, 9m wide, 1.5m deep.	Cut for quarry	A/ 8				
267	264	314	289 266	Loose mid brownish grey silty clay. Frequent (>20%) subangular stones. 17m x 2.00m x 0.80m.	Fill of ditch 264	A/ 3a				
268	282	271	102	Moderately compact, mid brownish grey clayey silt. Frequent (>20%) subangular stones (mostly shale), occasional (>10%) animal bone. Abuts F131.	Fill of ditch 282	A/ 1a				
269	102	102	101	Loose, light reddish brown silty clay. Frequent (>20%) angular stones and occasional (<10%) animal bone. 6m x 0.31m x 0.26m.	Fill of ditch 102	A/ 2			Y	Bulk #43
270	289	289	100	Moderately compact mid yellowish brown silty clay. Moderate (10–20%) angular stones. 2.8m x 1.95m x 0.29m.	Fill of pit 289	?				
271	282	282	268	Loose dark brownish grey silty clay. Frequent (>20%) angular stones. Abuts F221. 22m x 0.65m x 0.35m.	Fill of ditch 282	A/ 1a				
272	258 259 261	260	261	Cut for NS orientated curvilinear ditch 30m x 1.4m x 0.45m with irregularly sloping sides (steep to gradual) incorporating a step in the eastern side and an irregular base.	Re–cut of ditch 254	A/ 5b				

273	274	274	119	Moderately compact dark greyish brown sandy clay. Moderate (10–20%) animal bone (incl. burnt bone), occasional (<2%) charcoal. 4.10m x 0.50m x 0.30m.	Fill of linear 274	?			Y	Bulk #81
274	273	171	273	Cut for NS orientated linear with steep sides (80º) & a flat base. 4.1m long, 0.5m wide, 0.3m deep.	Cut for linear	?				
275	276	276	250	Compact, mid greenish brown sandy silt. Occasional (>5%) subangular stones & animal bone. 4.45m x 1.28m x 0.38m.	Fill of ditch 276	A/ 1a				Bulk #92
276	275	171	275	Cut for NNE–SSW orientated linear with steep sides (70º) & a flat base. 4.45m x 1.28m x 0.38m.	Cut for ditch. Same as 282?	A/ 1a				
277	278	278	100	Loose mid greyish brown clayey silt. Occasional (<10%) subangular stones. 7.85m x 0.36m x 0.08m.	Fill of linear 278	?				
278	277	171	277	Cut for NS orientated linear with concave sides & a flat irregular base. 7.9m long, 0.4m wide, 0.1m deep.	Cut for linear	?				
279	280	280	100	Moderately compact dark brown sandy silt. Moderate (10–20%) subangular stones, occasional (<10%) animal bone & charcoal. 3.50m x 1.20m x 0.22m.	Fill of linear 280	A/ 6b	Iron object		Y	Bulk #94
280	279	171	279	Cut for NS orientated linear with concave sides & base. 3.5m long, 1.1m wide, 0.22m deep. Potentially connected to F219 & F283. 3.50m x 1.20m x 0.22m.	Cut for linear. Potentially connected to 219 & 283.	A/ 6b				
281	N/A	171	255	Metalled surface potentially related to metalling at base of F212. 7.5m long, 1.5m – 5.5m wide. Relationship has been lost due to truncation by F168 and later ploughing. Extended up to the western edge of F134.	Metalled surface	A/ 6a?				
282	131 221 222 271 268 290	171	221 271	Cut for curvilinear ditch with concave sides & base. C.40m long, 0.7m– 2.2m wide, 0.1m–0.4m deep. Enclosed an area approximately 20m EW x 20m NS. Re–cut by F102. Same feature as F276 & F285	Cut for ditch	A/ 1a				

283	138	101	100	Cut for NNW–SSE orientated linear with gradual sloping sides (<15º) & flat base. 5.2 m long, 0.7 m wide, 0.24 m deep. Potentially associated with F219 & F280	Cut for linear	A/ 6b				
284	102	220	N/A	Dumped deposit of loose orange oxidised clay within F220	Fill of ditch 102	A/ 2			Y	Bulk #89
285	140	171	140	Cut for curvilinear feature with gradually sloping sides and concave, irregular base. Approximately 12m long, 0.72m wide, 0.2m deep. Same feature as F282 & F276.	Cut for ditch	A/ 1a				
286	142	163 287	142	Cut for EW orientated linear with steep sides (70º) and a flat irregular base. 20m long, 0.4m to 1.4m wide, 0.27m deep.	Cut for linear	?				
287	288	288	286	Moderately compact dark reddish brown clayey silt. Occasional (<10%) subangular stones, animal bone & charcoal. 9m x 0.95m x 0.30m.	Fill of ditch 288	A/ 1a			Y	Charcoal #106, Bulk #107
288	287 316	171	287	Cut for NS orientated curvilinear ditch. Irregular concave sides & flat irregular base. 9m long, 0.9m wide, 0.3m wide. Mostly NS running with an eastwards turn at the southern end.	Cut for ditch. Part of annexe enclosure associated with 225 & 333.	A/ 1a				
289	270	267	270	Cut for subcircular pit with concave sides & flat base. 2.8m NS, 1.95m EW, 0.3m deep.	Cut for pit	?				
290	282	221	131	Compact mid brownish grey silty clay. Occasional (10–20%) subangular stones. Localised deposit below F131. 2.00m x 0.25m x 0.31m.	Fill of ditch 282	A/ 1a				
291	Cancelled. Same as 171									
292	297	132 295	100	Loose mid greyish brown clayey silt. Occasional (<10%) subrounded stones & animal bone. 10.5m x 1.10m x 0.42m.	Fill of linear 297	?		2xA6		
293	298	298	100	Moderately compact mid brownish grey silty clay. Very occasional (<1%) subrounded pebbles. 12m x 0.77m x 0.37m.	Fill of drain 298	?		1xA4		

294	304	304	298	Moderately compact mid yellowish brown silty clay. Very occasional (<1%) subrounded stones. 9.0m x 0.70m x 0.29m.	Fill of drain 304	?				
295	296	266	296	Cut for curvilinear cut with concave sides & base. 21m long, 0.37m wide, 0.2m deep. Extended through Aii & Aiii	Cut for drain	A/ 8				
296	295	296	312	Moderately compact mid yellowish grey silty clay. Very occasional (<1%) subrounded stones. 11m x 0.37m x 0.19m.	Fill of drain 295	A/ 8				
297	292	116 293	292	Cut for irregular shaped linear with concave sides & base. 10m long, 1.4m wide, 0.4m deep.	Cut for linear	?				
298	293	294	293	Cut for NS orientated linear with concave sides & flat base. 12 m long, 0.77m wide, 0.37 m deep. Relationship to F132 obscured by F297.	Cut for linear	?				
299	341	300	266	Compact light greyish brown silty clay. Moderate (10–20%) subrounded stones & lumps of redeposited natural boulder clay. Preservation of animal bone was poor in this part of the site due to geology. 11m x 2.14m x 0.49m.	Fill of ditch 341	A/ 5b				
300	341	301	299	Compact light greyish brown silty clay. Frequent (>20%) subrounded stones & lumps of redeposited natural boulder clay. Preservation of animal bone was poor in this part of the site due to geology. 11m x 1.66m x 0.25m.	Fill of ditch 341	A/ 5b				
301	342	302	341	Compact dark brown sandy clay. Moderate (10–20%) subrounded stones & lumps of redeposited natural boulder clay. Preservation of animal bone was poor in this part of the site due to geology. 4m x 0.34m x 0.05m.	Fill of ditch 342	A/ 5a				
302	342	303	301	Compact mid greyish brown silty clay. Frequent (>20%) subrounded stones. Preservation of animal bone was poor in this part of the site due to geology. 11m x 1.3m x 0.52m	Fill of ditch 342	A/ 5a				

303	342	342	302	Compact mid greyish brown silty clay. Frequent (>20%) subrounded stones. Preservation of animal bone was poor in this part of the site due to geology. 11m x 2.3m x 0.70m	Fill of ditch 342	A/ 5a				
304	294	171	294	Cut containing F294. NW–SE orientated linear cut with concave sides and flat irregular base. 9m x 0.7m x 0.29m.	Cut for linear	?				
305	Cancelled. Same as 296									
306	Cancelled. Same as 295									
307	246	246	343 346 254	Compact brownish grey silty clay. Traces of iron panning, occasional small stones,	Fill of ditch 246	?				
308	Graded edge along east side of current N3					A/ 8				
309-310	Cancelled. Same as 296									
311	312	312	143	Compact dark brownish grey clayey silt. Frequent (>20%) subangular stones. 16m x 0.62m x 0.32m.	Fill of drain 312	A/ 8				
312	311	296	311	Cut for NW–SE orientated drain in base of F266. Vertical sides & flat base. 16m x 0.62m x 0.32m.	Cut for drain	A/ 8				
313	Cancelled. Same as 267									
314	264	315	267	Compact mid greyish brown sandy clay. Occasional (<10%) angular stones. 8.5m x 0.44m x 0.06m.	Fill of ditch 264	A/ 3a				
315	264	264	314	Compact dark greyish brown silty clay. Frequent (>20%) angular stones. 8.5m x 0.44m x 0.06m.	Fill of ditch 264	A/ 3a				
316	288	288	164	Moderately compact dark greyish brown sandy silt. Occasional (>10%) rounded stones & animal bone, very occasional (<1%) metallic waste.	Fill of ditch 288	A/ 1a		1xA4		Slag #117, Slag #118
317	Cancelled. Same as 288									
318	Not allocated									
319	320 321 323 325	322	320	This cut was only seen fully in one section along the eastern CPO edge. It had gradually sloping sides, possibly stepped on the southern side, with a flat irregular base. It is considered to be a localised re–cut to F326, however so little remained within	Localised re–cut to ditch 326?	A/ 3b				

320	319	319	321	Moderately compact mid greyish brown silty clay. Moderate (10–20%) subangular stones. 1.1m x 0.20m.	Fill of ditch 319	A/ 3b				
321	319	320	322	Moderately compact dark greyish brown silty clay. Frequent (>20%) subangular stones. 1.17m x 0.36m.	Fill of ditch 319	A/ 3b				
322	Cancelled. Same as 321									
323	319	322	325	Fill of F319. Loose light greyish brown silty clay. Moderate (10–20%) subangular stones, very occasional (<1%) charcoal flecking. 1.55m x 0.55m.	Fill of ditch 319	A/ 3b				
324	Cancelled. Same as 325									
325	319	323	164	Moderately compact mid greyish brown silty clay. Moderate (10–20%) subangular stones. 0.50m x 0.23m.	Fill of ditch 319	A/ 3b				
326	327 328 329 330 331 332	171	327	Cut for ditch visible only in one section along eastern CPO line. Truncated by F319. 1.6m x 1.00m.	Cut for ditch. Same as 113	A/ 3a				
327	326	326	328	Moderately compact mid brownish grey silty clay. Moderate (10–20%) subrounded–subangular stones. 1.55m x 0.30m.	Fill of ditch 326	A/ 3a				
328	326	327	329	Moderately compact dark brownish grey silty clay. Occasional (<10%) subrounded–subangular stones. 0.62m x 0.25m.	Fill of ditch 326	A/ 3a				
329	326	328	330	Moderately compact light greyish brown silty clay. Occasional (<10%) subrounded–subangular stones, very occasional (<1%) animal bone. 0.57m x 0.30m.	Fill of ditch 326	A/ 3a				
330	326	329	331	Moderately compact light greyish brown silty clay. Occasional (<10%) subrounded–subangular stones. 0.5m x 0.27m.	Fill of ditch 326	A/ 3a				
331	326	330	322	Loose dark greyish brown silty clay. Occasional (<10%) subrounded–subangular stones. 1.2m x 0.3m.	Fill of ditch 326	A/ 3a				
332	326	331	319	Loose mid greyish brown silty clay. Occasional (<10%) subrounded–subangular stones. 1.15m x 0.18m.	Fill of ditch 326	A/ 3a				

333	334	171	334	Cut for EW orientated pit with rounded ends, concave sides & base. Western extent truncated by F335 & later by F164. Survived for 1.6m, 1.1m wide, 0.3m deep.	Cut for pit	?				
334	333	333	335	Fill of F333. Moderately compact mid greyish brown, clayey silt. Occasional (<10%) subangular stones. 1.00m x 0.32m.	Fill of pit 333	?				
335	247 336	334	336	Curvilinear cut with irregular concave sides & base. 9m long, 1.2m wide, 0.25m deep.	Cut for ditch	A/ 1a				
336	335	335	247	Moderately compact mid brownish grey silty clay. Very occasional (<1%) subangular stones. 0.85m x 0.16m.	Fill of ditch 335	A/ 1b				
337	338	335	338	Subrectangular cut with rounded ends. Irregular steep sides (40–70º) & flat base. 2.55m NS, 1.13m EW, 0.12m deep.	Cut for pit	?				
338	337	337	100	Loose, mid greyish brown silty clay. Occasional (<10%) subangular stones, very occasional (<1%) animal bone & charcoal flecking. 2.55m x 1.33m x 0.12m.	Fill of pit 337	?		2xA6		
339	Cancelled. Same as 295									
340	Cancelled. Same as 296									
341	299 300	301	300	Irregular cut for a ditch. Approximately 16m EW but extending under current N3. 2.14m wide and 0.49m deep. It had gradually sloping sides and a concave base with a generally U–shaped profile.	Re–cut of ditch 342	A/ 5b				
342	301 302 303	112	303	Irregular cut for a ditch. Approximately 16m EW but extending under current N3. Surviving to 1.44m wide and 0.6m deep with gradually sloping sides and concave base with a generally V–shaped profile. It was clearly positioned with respect to the terminal o	Cut for ditch. Positioned with respect to the terminal of 114.	A/ 5a				
343	344	307 347	344	Cut for curved ditch. This dicth is an L-shaped ditch 10.60m x 0.57m x 014m. Gradual sloping sides and concave base.	Cut for ditch	?				
344	343	343	002	Moderately compact, dark greyish–brown silty clay and occasional stones. 0.35m x 0.30m x 0.25m.	Fill of ditch 343	?				

345	188 189	185	188	Curvilinear ditch that extended beyond the eastern CPO. It was approximately 10m long, 1.35m wide and 0.5m deep.	Re–cut of ditch 187	A/ 4b				
346	347	171	254	Cut for E-W orientated ditch 19.5m x 1.25m x 0.70m. Steep sides leading to a concave base.	Cut for ditch	?				
347	346	346	254	Moderately compact, yellowish–brown silty clay with occasional decayed stones. 19.35m x 1.25m x 0.7m.	Fill of ditch 346	?				
348	349	249	349	Oval concave shaped cut 0.45m in diameter x 0.03m deep. Slighly oxidised sides.	Cut for firespot	?				
349	348	348	002	Moderately compact, black silty clay with occasional large stones and charcoal. 0.45m x 0.03m.	Fill of firespot 348	?				
350	351	1515	351	Subcircular north–south cut (0.35m x 0.30m x 0.20m) with gradual break of slope, slightly concave sides and a gradual break of slope leading to a rounded base	Cut for posthole	B/ 1a				
351	350	350	400	Firm, dark brownish–grey silty clay with occasional large stones. 0.35m north– south x 0.30m x 0.20m	Fill posthole 350	B/ 1a				
352	353	1515	353	Subcircular east–west cut (0.30m x 0.25m x 0.22m) with sharp break of slope, concave sides and a sharp break of slope leading to a flat base	Cut for posthole	?				
353	352	352	400	Moderately compact, mid–orange brown silty clay with occasional large stones. 0.30m x 0.25m x 0.22m	Fill of posthole 352	?				Bulk #321
354	355	1515	355	Subcircular north–south cut (0.35m x 0.30m x 0.15m) with sharp (gradual on south side) break of slope, slightly concave sides and a gradual break of slope leading to a rounded base.	Cut for posthole	?				
355	354	354	400	Moderately compact, mid–greyish–brown sandy silt with occasional charcoal flecks. 0.35m x 0.30m x 0.15m	Fill of posthole 354	?				
356	357	1515	357	Subcircular north–south cut (0.30m x 0.25m x 0.20m) with sharp break of slope, steep and a sharp break of slope leading to a flat base	Cut for posthole	?				
357	356	356	400	Mid greyish–brown sandy silt with frequent large stones. 0.30m x 0.25m x 0.15m	Fill of posthole 356	?				

358-359	Not allocated									
360	361	1515	361	Subcircular east–west cut (0.35m x 0.30m x 0.25m) with sharp break of slope, vertical sides and a sharp break of slope (gradual on south side) leading to a slightly concave base	Cut for posthole	?				
361	360	360	400	Moderately compact, mid greyish–brown silty clay and c.40% large stones. 0.35m x 0.30m x 0.25m	Fill of posthole 360	?				Bulk #323
362	363	366	363	Linear, northwest–southeast cut (6.00m x 0.60–0.80m x 0.22–0.28m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a flat base	Cut for linear	?				
363	362	362	400	Moderately compact, mid–orange–brown sandy silt with frequent small stones, moderate flecks of orange clay and animal bones. 6.00m x 0.60–0.80m x 0.22–0.28m	Fill of linear 362	?	Iron pin fragment	1xA6		
364	365	1521	365	Sub–oval WNW–ESE cut (0.80m x 0.35m x 0.1m) with a sharp break of slope (gradual at WNW end), gentle concave sides and gradual break of slope (imperceptible at WNW end) leading to a concave base	Cut for pit	?				
365	364	364	400	Loose, dark orange brown silty clay with moderate animal bone, occasional large stones, small stones and charcoal flecks. 0.80m x 0.35m x 0.10m	Fill of pit 364	?		1xA4	Y	Bulk #326
366	367 1497 1498	1515	1498	Curvilinear NNW–SSE (curving to ESE for southern half) cut (14.50m x 1.00m x 0.40m) with a sharp break of slope, concave sides and a sharp break of slope leading to a flat base.	Cut for ditch	?		1xA4		
367	366	1497	362	Moderately compact, mid greyish–brown, with orange mottling, silty clay with moderate sand, occasional small stones and animal bones. 14.50m x 1.00m x 0.40m	Fill of curvilinear 366	?		1xA4		
368	369	1521	369	Circular cut (0.30m x 0.25m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat base.	Cut for posthole	?				

369	368	368	400	Moderately compact, mid–brown silty clay, c.20% large stones and v. occasional animal bones. 0.30m x 0.25m deep	Fill of posthole 368	?					
370	371	1515	371	Circular cut (0.22m x 0.18m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for posthole	B/ 1a					
371	370	370	400	Moderately compact mid brownish–grey silty clay with medium small stones. 0.20m x 0.15m deep.	Fill of posthole 371	B/ 1a					
372	373	1515	373	Sub–oval east–west cut (0.30m x 0.25m x 0.1m) with a sharp break of slope, concave sides and gradual break of slope leading to a slightly concave base	Cut for posthole	?					
373	372	372	400	Loose, mid orange–brown silty clay, c.50% large stones and occasional charcoal flecks. 0.30m x 0.25m x 0.10m	Fill of posthole 372	?					
374	375	1515	375	Circular cut (0.20m x 0.18m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for posthole	B/ 1a					
375	374	374	400	Moderately compact mid brownish–grey silty clay with medium small stones. 0.20m x 0.15m deep.	Fill of posthole 374	B/ 1a					
376	377	1515	377	Circular cut (0.20m x 0.10m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for posthole	?					
377	376	376	387	Moderately compact mid–greyish–brown silty clay and moderate pebbles. 0.20m x 0.10m deep.	Fill of posthole 376	?					
378	379	1515	379	Circular cut (0.20m x 0.19m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for posthole	B/ 1a					
379	378	378	400	Moderately compact mid brownish–grey silty clay with medium small stones. 0.20m x 0.19m deep.	Fill of posthole 378	B/ 1a					
380	381	381	400	Moderately compact mid–brownish–grey, with orange mottling, silty clay and occasional small stones. 0.15m x 0.15m deep.	Fill of posthole 381	?					

381	380	1515	380	Circular cut (0.15m x 0.15m deep) with a sharp break of slope, sloping sides and a gradual break of slope leading to a concave base.	Cut for posthole	?				
382	383	383	385 629	Moderately compact firm mid–brownish–grey silty clay with occasional small stones and animal bone. 7.00m x 0.50–0.70m x 0.40m.	Fill of curvilinear 383	?		1xA6		
383	382	386	382	Curvilinear east–west, curving to the south at the east end, cut (7.00m x 0.50–0.70m x 0.40m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	?				
384-385	Not allocated									
386	387	387	1507	Moderately compact light orange–grey silty clay with occasional pebbles. 19.00m x 0.25m x 0.20m.	Fill of ditch 387	B/ 1a		1xA6		
387	386 1507	377 145	387	Roughly circular cut (19.00m x 0.25m x 0.20m) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for ditch	B/ 1a				
388	389	1408	1440	Moderately compact darkgreyish–brown silty clay with frequent pebbles, occasional small stones and occasional animal bones. 0.80m x 0.55m x 0.30m.	Fill of linear 389	?				
389	388 1408 1440	1515	1408	Curvilinear northwest–southeast cut (6m x 0.55m x 0.30m) with a sharp break of slope, steep sides and a sharp break of slope leading to a slightly concave base.	Cut for ditch	?				
390	391	391	1548	Moderately compact mid–dark–greyish–brown silty clay and c.30% small stones with v. occasional animal bone and charcoal flecks. 8.00m x 0.65m x 0.16m.	Fill of ditch 391	?		1xA6		
391	390	386	390	Linear east–west cut (8.00m x 0.65m x 0.16m) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base.	Cut for ditch	?				
392	393	393	400	Moderately compact mid greyish–brown silty clay and occasional pebbles. 0.22m x 0.18m deep.	Fill of posthole 393	?				
393	392	386	392	Circular cut (0.22m x 0.18m deep) with a sharp break of slope, steep sides and sharp break of slope leading to concave base.	Cut for posthole	?				

394	395	395	383	Moderately compact mid brownish–grey silty clay with medium small stones. 0.20m x 0.15m deep.	Fill of posthole 395	?				
395	394	386	394	Circular cut (0.20m north–south x 0.15m deep, truncated on east side by 383) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for posthole	?				
396	398	397	400	Loose mid brown sandy clay with occasional small stones. 0.10m x 0.25m deep.	Fill of posthole 398	?				
397	398	398	396	Packing stones 5 flat angular stones with an average thickness of 0.07m.	Fill of posthole 398	?				
398	396 397	386	397	Circular cut (0.28m x 0.20m) with a sharp break of slope, vertical sides and a sharp break of slope leading to a flat base.	Cut for posthole	?				
399	1347	1348	400	Loose dark brown silty clay with occasional small stones. 0.11m x 0.35m deep.	Fill of posthole 1347	?				
400	n/a	401	2	Remaining topsoil in Area B removed by hand following the mechanical excavation of F2.	Topsoil		Medieval & post–medieval pottery, clay pipe, iron objects (knifes,nails, pins etc), copper alloy pins, glass beads, crucible fragment, flint/chert objects, stone objects, worked bone	5xA1	Y	Slag #125 , Slag #127, Slag #129
401	n/a	423 473 492 493	400	Interface deposit 0.10–0.20m deep between F400 and the upper fills of the enclosing ditches 404, 405, 450.	Lower topsoil	B/ 5	Medieval pottery, iron objects, flint objects, copper alloy pins, Iron knife/blades, stone objects, bone trial piece, stone gaming board.	1xA1	Y	
402	403	403	400	Moderately compact yellowish–grey silty sand with occasional small stones. 31.00m x 0.90m x 0.40m	Fill of ditch 403	B/ 4		1xA6		

403	F408	473 1455 1488	400	Curvilinear roughly east–west cut (31.00m x 0.90m x 0.40m) with a sharp break of slope, steep concave sides and a sharp break of slope leading to a concave base. Follows the inside line of the northern east–west arm of the main enclosing ditch F450 Probably associated with F821	Cut for ditch	B/ 4				
404	415 416 417 418 419 420 431 432 433 434 435 449 451 452 462 467 468 469 490 491 494 495 497 535 539	414 430 472	416 431 467 535	Recut of F405 forming a D–shaped enclosure with entry through an undug causeway approximately 2m wide at the location of the proposed entrance to F405. This enclosure had maximum internal dimensions of 70m NS x 57m EW. The ditch profile changed between lo	1st re–cut of enclosing ditch 405	B/ 2a				
405	410 412 413 414 424 425 426 427 428 429 430 441 456 457 458 459 460 461 470 471 472 493 538	171	412 424 425 456	A cut for a D–shaped enclosure with a proposed entry in the eastern side, although the enclosure was formed by a complete circuit with maximum internal dimensions of approximately 76m NS x 53m EW. The ditch profile changed between locations, with a tendan	Cut of enclosing ditch	B/ 1a				
406	405	408	407	Firm mid–grey silty clay with occasional animal bone. 15m x 1.1m x 0.20m.	Fill of ditch 408	B/ 4?		1xA4		
407	408	406	1344?	Moderately compact mid–reddish–grey silty sand with occasional small stones and animal bone. 15m x 1.0m x 0.20m.	Fill of ditch 408	B/ 4?				

408	406 407 409	473	406	Linear cut (15m x 1.2m x 0.50m max.) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a concave base	Cut for ditch	B/ 4?	Iron object			Slag #135
409	408	407	400	Moderately compact dark–reddish–grey silty clay with occasional small stones. 15m x 0.9m x 1.0m.	Fill of ditch 408	B/ 4?				
410	405	414	493	Firm mid yellowish–grey to brown clayey sand with occasional small stones, animal bone and v. occasional slag. 5m x 1.70–3.60m x 0.45m.	Fill of ditch 405	B/ 1a		1xA4		Slag #137
411	421 422	473	421	A large oval shaped pit 7m long x 3.7m x 1.2m. It had concave sides and base and was cut through the upper fills of F450.	Cut for pit					
412	405	405	538	Moderately compact mid–yellowish–brown silty clay with inclusions of red sand, frequent small stones, occasional animal bone and shells. Approximately 15m x 1.75m x 0.40m.	Fill of ditch 405	B/ 1a	Bone trial piece	7xA4 1xA4		Mollusc #195
413	405	538	414 441	Moderately compact dark–reddish–brown clayey silt with frequent small stones and moderate animal bone. Approximately 25m x 1.10–2.30m x 0.50m.	Fill of ditch 405	B/ 1a		1xA1 2xA4	Y	
414	405	413	404	Loose dark yellowish–brown clayey silt with moderate small stones, animal bone, v. occasional fragments of slag and flint flakes. Approximately 20m x 1.10–2.60m x 0.40m.	Fill of ditch 405	B/ 1a	Struck flint, iron object, bone pin fragment, bone trial piece	1xA1		
415	404	416	418	Loose mid brownish–grey silty clay to mid reddish–brown silty clay with frequent small stones, moderate animal bone, occasional large stones and v. occasional shells. 20m x 0.80–1.80m x 0.70m.	Fill of ditch 404	B/ 2a		2xA4		Snail shell #144
416	404	404	415 417 449 462 539	Firm mid reddish–brown silty clay with moderate small stones, coarse pebbles and animal bones. 20m x 0.70–1.10m x 0.50m.	Fill of ditch 404	B/ 2a	Copper alloy tanged stud	3xA4 1xA4		
417	404	416	418	Firm dark yellow–brown silty clay to mid reddish–brown silty sand with moderate animal bone. 15m x 0.40m–0.90m x 0.45m.	Fill of ditch 404	B/ 2a	Iron blade, iron pin	1xA4		

418	404	415 417 449	419 451	Moderately compact mid–brownish–grey silty clay to light–reddish–brown sandy silt with frequent small stones and moderate animal bone. 15m x 1.20–1.90m x 0.35m.	Fill of ditch 404	B/ 2a		2xA4	Y	
419	404	418	420	Moderately compact light yellowish–brown silty clay with moderate animal bone and charcoal flecks. 18m x 1.20m x 0.34m.	Fill of ditch 404	B/ 2a		1xA4		
420	404	419 451	450	Moderately compact mid yellowish–brown clayey silt with moderate small stones, animal bone and v. occasional fragments of slag. Approximately 15m x 1.70–2.50m x 0.45m.	Fill of ditch 404	B/ 2a		2xA4	Y	
421	411	411	422	Moderately compact mid–yellowish–brown silty clay to silty sand with moderate pebbles, animal bone and occasional charcoal flecks. 6m x 1.30–2.00m x 0.30–0.15m	Fill of pit 411	B/ 4		1xA4		
422	411	421	423	Firm dark–yellowish–brown silty clay to light–reddish–brown silty sand with frequent small stones, moderate animal bone and occasional charcoal flecks. 7m x 0.95–1.40m x 0.40m.	Fill of pit 411	B/ 4	Bone combs, struck flint	1xA4		
423	411	422	401	Moderate to firm mid–yellowish–brown silty sand with moderate small stones, animal bone, occasional flecks of animal bone and v. occasional fragments of slag. 7m x 1.80–3.70m x 0.55m.	Fill of pit 411	B/ 4	Iron object	1xA4		
424	405	405	426	Moderately compact mid brownish–grey silty clay with occasional pebbles and animal bone. 24m x 0.60–0.90m x 0.45m. Probably same as 425.	Fill of ditch 405	B/ 1a		1xA4	Y	
425	405	405	426	Moderately compact mid–yellowish–brown clayey sand, light–brownish–grey silty sand with occasional small stones. 50m x 0.55–1.75m x 0.30m. Probably same as 424.	Fill of ditch 405	B/ 1a		1xA4		
426	405	425	427 428	Firm mid yellowish–brown clayey sand, with moderate small stones. 48m x 0.90–1.50m x 0.28m.	Fill of ditch 405	B/ 1a	Bronze fragment	1xA1		
427	405	426	429	Firm light reddish–brown sandy silt with occasional coarse pebbles, animal bone and charcoal flecks. 50m x 0.45–1.42m x 0.44m.	Fill of ditch 405	B/ 1a		2xA4		

428	405	426	429	Firm mid yellowish–brown silty sand to dark–greyish–brown silty clay with occasional coarse pebbles, animal bone and charcoal fragments. Approximately 48m x 0.80–1.40m x 0.40m.	Fill of ditch 405	B/ 1a		1xA1		Slag #138
429	405	427 428	430	Moderately compact mid–reddish–brown silty sand with occasional pebbles and flecks of animal bone. Approxiamtely 50m x 1.25–2.00m x 0.50m.	Fill of ditch 405	B/ 1a	Loop headed ring pin, bronze fragment, iron knife, flint flake.	2xA4		
430	405	429	404	Firm light–yellowish–brown sandy silty with occasional pebbles. Approximately 30m x 1.00–1.90m x 0.37m.	Fill of ditch 405	B/ 1a				
431	404	404	433	Moderately compact mid–reddish–grey sandy clay to mid–orange–grey sandy silty with moderate pebbles and animal bone. 30m x 0.75–1.70m x 0.23m.	Fill of ditch 404	B/ 2a		1xA1	Y	
432	404	433	434	Moderately compact reddish–grey clayey sand to silty clay with occasional stone and charcoal flecks. Approximately 42m x 0.80–2.60m x 0.28m.	Fill of ditch 404	B/ 2a	Antler object, stone ingot mould, bone trial piece.	1xA4		
433	404	431	432	Moderately compact light–yellowish–grey silty clay occasional pebbles. Approximately 25m x 0.70m x 0.17m.	Fill of ditch 404	B/ 2a		1xA4		
434	404	432	435	Moderately compact light–yellowish–brown clayey sand to mid–reddish–brown silty clay with moderate coarse pebbles, animal bone and occasional charcoal flecks. 36m x 0.60–2.65m x 0.30m.	Fill of ditch 404	B/ 2a		1xA4		
435	404	434	450	Moderately compact mid–yellowish–brown silty sand to sandy clay with moderate coarse pebbles, animal bone and occasional charcoal flecks. 48m x 1.28–1.90m x 0.38m.	Fill of ditch 404	B/ 2a		1xA4		
436	450	450	440	Moderately compact light–orange–brown silty clay with moderate animal bone. 22m x 0.55m x 0.35m.	Fill of ditch 450	B/ 3a		1xA4		
437	450	463 466	438	Firm dark yellowish–brown silty clay to mid reddish–brown clayey sand with moderate coarse pebbles, animal bone and occasional charcoal flecks. 15m x 1.70–2.90m x 0.40m.	Fill of ditch 450	B/ 3a	Iron object, stone whetstone w/ pin sharpening grooves.	1xA1	Y	

438	450	437	492	Moderately compact light–yellowish–brown silty clay to mid–reddish–grey sandy silt with moderate small stones, animal bone and charcoal flecks. 52m x 2.90–4.40m x 0.50m.	Fill of ditch 450	B/ 3a	Iron objects, lignite fragment, struck flint, iron knife, copper alloy objects	1xA1		
439	450	450	440	Moderately compact mid–brownish–grey silty clay with moderate small stones, animal bone and charcoal flecks. 37m x 0.60–1.15m x 0.40m.	Fill of ditch 450	B/ 3a		1xA1	Y	
440	450	436 439	464 465	Firm light–yellowish–brown to mid–reddish–brown clayey silty sand with moderate pebbles, animal bone and charcoal flecks. 32m x 0.85–1.85m x 0.60m.	Fill of ditch 450	B/ 3a	Iron object	2xA4		
441	405	413	404	Firm mid–greyish–brown silty sand with moderate small stones and animal bone. 15m x 1.90m x 0.50m. Probably same as F538.	Fill of ditch 405	B/ 1a		1xA1		
442	450	450	496	Moderately compact mid yellowish–grey silty sand with occasional subangular pebbles and animal bone 12m x 0.85m x 0.30m.	Fill of ditch 450			1xA6	Y	
443	404	420	401	Firm light yellowish–brown sandy silty with occasional pebbles. Approximately 15m x 1.00–1.90m x 0.37m. Late deposit sealing edge of enclosing ditch at junction with F933 etc.	Fill of ditch 404	B/ 2a				
444-446	Not allocated									
447	450	450	453	Firm white clay. 14m x 1.60m x 0.28m.	Fill of ditch 450	B/ 3a	Horseshoe fragment		Y	Slag #141
448	450	453	454 455	Firm mid–reddish–brown sandy silt moderate small stones. 24m x 1.40m x 0.35m.	Fill of ditch 450	B/ 3a		2xA4	Y	Bulk #131, Charcoal #146, Slag #134
449	404	416	418	Firm dark–brown–grey silty sand moderate animal bone	Fill of ditch 404	B/ 2a				
450	436 437 438 439 440 442 447 448 453 454 455 463 464 465 466 473 474 475 476 477 478 479 480 481 482 483 484 486 492 496 498 499 536 537	420 435 469 494	436 439 442 447 482 484 537	A re–cut of 404 retaining the shape of the previous enclosures, however a considerable portion of the eastern arm of this ditch was not re–cut, having been reclaimed, intentionally during the 404 phase. There was not obvious entrance feature into this enc	2nd re–cut of enclosing ditch 405	B/ 3a				

451	404	418	420	Firm mid–yellowish–grey clayey sand with moderate small stones. 20m x 1.65m x 0.36m.	Fill of ditch 404	B/ 2a					
452	404	491	469	Firm mid–brownish–grey sandy silt, with moderate small stones, animal bone and v. occasional shell. 15m x 3.00–1.80m x 0.55m.	Fill of ditch 404	B/ 2a		1xA1			
453	450	447	448	Firm mid–reddish–brown silty clay with moderate animal bone. 24m x 1.75m x 0.30m.	Fill of ditch 450	B/ 3a	Iron object, struck flint	2xA4			
454	450	448	455	Firm mid–reddish–brown silty sand moderate pebbles and animal bone. 32m x 1.35m x 0.30m.	Fill of ditch 450	B/ 3a		1xA4			
455	450	454	411	Loose light–orange–brown sandy silt with moderate animal bone. 20m x 1.55m x 0.35m.	Fill of ditch 450	B/ 3a	Iron blade fragment, iron objects	1xA4			
456	405	405	457 470	Loose dark–brownish–grey silt with occasional coarse pebbles. 22m x 0.90m x 0.32m.	Fill of ditch 405	B/ 1a		2xA4			
457	405	456	460	Firm mid–grey, with red flecks, clay with occasional pebbles and animal bone. XX x 0.60–1.80m x 0.40m.	Fill of ditch 405	B/ 1a		2xA4		Organic material #245	
458	Not allocated										
459	405	458 461	471	Firm dark brownish–grey, with orange flecks, sandy clay with moderate small stones and v. occasional animal bone. 15.00m x 2.20m x 0.50m.	Fill of ditch 405	B/ 1a		2xA4			
460	405	457 470	458 461	Firm dark–brown clay and c10% organic material with moderate silt, occasional sand and pebbles. 24m x 0.5m x 0.10m.	Fill of ditch 405	B/ 1a				Pollen #192	
461	405	460	459	Moderately compact mid–greyish–brown silt with occasional small stones and v. occasional animal bones. 3.00m x 0.70m x 0.20m.	Fill of ditch 405	B/ 1a		1xA4			
462	404	416	418	Moderately compact light–reddish–grey silty sand with occasional small stones and v. occasional animal bone. Probably the same as F417	Fill of ditch 404	B/ 2a		1xA4			
463	450	464	437	Moderately compact dark–brownish–grey, with yellow flecks, silty clay with occasional stones. 15m x 0.40 x 0.20m	Fill of ditch 450	B/ 3a		1xA4			

464	450	440	463	Firm mid–yellowish–grey silty clay to sandy clay with occasional small stones. 18m x 1.35m x 0.27m.	Fill of ditch 450	B/ 3a		1xA4		
465	450	440	466	Firm mid–reddish–brown silty sand, mid–brownish grey clayey sand with moderate small stones. 22m x 1.10m x 0.35m.	Fill of ditch 450	B/ 3a		1xA4		
466	450	465	437	Moderately compact mid–greyish–brown, with red flecks, sandy clay and moderate small stones. 12m x 1.25m x 0.15m.	Fill of ditch 450	B/ 3a		1xA4		
467	404	404	490	Moderately compact dark–grey silt with moderate organic material. 18m x 0.80m x 0.05m.	Fill of ditch 404	B/ 2a				
468	404	490	497	Firm mid–grey, with red flecks, clay with occasional stones, pebbles and animal bone. 16m x 1.10m x 0.20m.	Fill of ditch 404	B/ 2a				
469	404	452	450	Firm mid–brownish–grey clayey sand, with moderate small stones, animal bone and occasional snail shell fragment. 20m x 1.50–2.50m x 0.55m.	Fill of ditch 404	B/ 2a		2xA4		
470	405	456	460	Moderately compact mid–grey silty clay with moderate small stones	Fill of ditch 405	B/ 1a				
471	405	459	472	Firm mid–brownish–grey, with red flecks, sandy clay with moderate small stones and v. occasional animal bone. 5.00m? x 1.50m x 0.30m.	Fill of ditch 405	B/ 1a				
472	405	471	404	Firm light–grey sandy clay with occasional small stones. 32m x 1.5m x 0.3m.	Fill of ditch 405	B/ 1a		1xA4	Y	
473	450	474	401	Moderately compact mid–yellowish–grey sandy clay, occasional pebbles and animal bone. 24m x 2.95–3.25m x 0.50m.	Fill of ditch 450	B/ 3a	Iron objects, iron penannular ring, stone spindle whorl, flint, medieval pottery, copper alloy pin fragment.	1xA4		
474	450	403 473	476	Firm mid–yellowish–brown, with red flecks, sandy clay with occasional lumps of yellow boulder clay, small stones and animal bone. 25.00m x 3.40m x 0.50m	Fill of ditch 450	B/ 3a		1xA4		
475	450	477	476	Firm dark–grey, with red flecks, clay with occasional small stones and pebbles. 30m x 1.30–3.10m x 0.30m.	Fill of ditch 450	B/ 3a		1xA4		

476	450	475 478	474	Moderately compact mid–reddish–grey sandy clay with occasional small stones. 32m x 2.10–2.60m x 0.35m.	Fill of ditch 450	B/ 3a	Iron objects, ring pin shaft, iron blade fragment.	1xA1	Y	
477	450	475 478	479	Moderately compact mid–reddish–grey silty clay with v. occasional small stones. 5.00m x 2.50m x 0.20m.	Fill of ditch 450	B/ 3a				
478	450	477	476	Firm mid–greyish–brown, with red flecks, silty clay with occasional small stones and v. occasional animal bone. 6.00 x 2.00m x 0.15m.	Fill of ditch 450	B/ 3a		4xA4		
479	450	480	477	Soft mid–reddish–brown silty peat with banding of silt throughout and occasional small stones. 8.00m x 2.00m x 0.20m.	Fill of ditch 450	B/ 3a		1xA4		Bulk #187, Pollen #188
480	450	481 483	479	Soft mid–reddish–brown silty peat with banding of silt throughout. 4.00m X 1.10m x 0.12m.	Fill of ditch 450	B/ 3a				
481	450	484	480	Moderately compact mid–grey clayey silt with moderate small stones. 5.00m x 1.00m x 0.15m	Fill of ditch 450	B/ 3a				
482	450	450	484	Firm dark–grey, with red flecks, silty clay with occasional small stones, pebbles and organic material. 1.25–2.15m x 0.30m.	Fill of ditch 450	B/ 3a		1xA1 2xA4	Y	
483	450	484	480	Firm light–grey clayey silt with occasional small stones, pebbles and organic material. 23m x 1.05–2.30m x 0.15m	Fill of ditch 450	B/ 3a		1xA4	Y	
484	450	482 486	481 483	Soft dark–brownish–green fibrous organic deposit with clear banding throughout and moderate animal bone. 24m x 0.95–1.75m x 0.10m.	Fill of ditch 450	B/ 3a	Wooden staves, lignite fragment	1xA1		Bulk #191, Wood #190, Pollen #189, Seeds #243
485	Not allocated									
486	450	450	484	Soft mid–brownish–grey silt moderate small stones. 12.00m x 2.00m x 0.20m.	Fill of ditch 450	B/ 3a				Organic material #244
487-489	Not allocated									
490	404	467	468	Moderate mid–brownish–grey clayey sand, with red and orange flecks, moderate small stones, animal bone, occasional shell, burnt bone and organic material. 15m x 0.50–2.40m x 0.40m.	Fill of ditch 404	B/ 2a		1xA1		Pollen #193

491	404	535	452	Moderately compact dark brownish–grey clayey sand with orange flecks, moderate medium stones, small stones, animal bone and occasional shell. 25m x 0.90–2.50m x 0.40m.	Fill of ditch 404	B/ 2a	Copper alloy object, glass bead, bone object (poss. needle holder)	1xA1		
492	450	438	401	Stone surface sealing F438 within F450. Composed of small to medium sized subangular to angular stones. It extended for a distance of approximately 15m and was 2.5m wide (max.). The deposit appeared to be a path rather than a floor or working surface.	Stone surface/ path?	B/ 4	Glass segmented bead, struck flint	1xA4		
493	404	410	401	Loose mid greyish–brown clayey sand and c.50% small to large stones with moderate animal bone. 2.30m x 2.25m x 0.70m.	Stone causeway surface on the entrance in 404	B/ 2a		1xA4		
494	404	495	450	Firm light yellowish–grey, with red flecks, sandy clay with moderate coarse pebbles and animal bone	Fill of ditch 404	B/ 2a		1xA4		
495	404	497	494	Moderate mid brown clayey sand, with red and orange flecks, moderate small stones, occasional animal bone 10m x 0.50m x 0.40m.	Fill of ditch 404	B/ 2a		1xA4		
496	450	442	499	Moderate light–yellowish–grey silty clay with moderate small stones and v. occasional animal bones. 20.00 X 2.50m x 0.30–0.50m.	Fill of ditch 450	B/ 3a		1xA4		
497	404	468	495	Firm light–grey, with yellow flecks, clay with moderate animal bones, occasional small stones and pebbles. 16m x 1.12m x 0.35m.	Fill of ditch 404	B/ 2a				
498	450	499	401	Firm light–yellowish–grey silty clay with frequent small and medium stones. 16.00m x 6.00m x 0.60m.	Fill of ditch 450	B/ 3a				
499	450	496	498	Firm dark–yellowish–grey silty clay with moderate small stones and v. occasional animal bone. 20.00m x 3.50m x 0.50m.	Fill of ditch 450	B/ 3a		1xA6		
500	501	506	561 701	Loose dark–greyish–brown silty clay with frequent medium sized blocks, coarse pebbles, occasional animal bone and charcoal flecks. 5.00m x 2.00m max x 0.5m max.	Reclamation deposit in souterrain Chamber 1 & Passage 1	B/ 4	Bronze fragment	1xA4		Charcoal #132

501	502 503 504 524 534	171	503 524 534	This was a specifically shaped cut to receive the stone walls og the passages and chambers of the souterrain. The chambers were circular and deliberately undercut, albeit slightly, to recieve the corbelled roof of the chambers, while the passages were more simpler trenches with vertical sides. The cuts had the following approximate dimateres (Chamber 1: 3.5m; Chamber 2: 4m; Chamber 3: 3m) The passages had a mean width of 2m.	Cut for souterrain	B/ 2-3				
502	501	504	501	Firm, sticky clay comprised of redeposited natural mixed with small to medium subangular stones placed between F501 and F503 and sealing the passage lintels F504. Probably an attempt at dry–lining the structure.	Backfill/ sealing layer between 501 & 503	B/ 2-3				
503	501	501	504	A dry stone construction of randomly coursed or uncoursed roughly hewn limsetone blocks. The walls remained largely intact to roof level, although some localised collapse had occurred following the removal of the capsones, or during backfilling or later ploughing. Please refer to the main text for dimensions.	Stone wall of souterrain	B/ 2-3				
504	501	503	502	A total of 9 in–situ flagstones used to roof the souterrain. The remainder had been removed in antiquity while some had been displaced and fallen into the souterrain. They had mean dimensions around 0.70m x 0.50. The flagstones remained in place over the	In–situ capstones covering portions of souterrain Passages 1 & 2	B/ 2-3				
505	Cancelled. Same as 502									
506	501	508	500	Moderately compact mid–yellowish–brown silty clay with frequent coarse pebbles, moderate angular blocks, occasional charcoal flecks and animal bone. Up to 0.5m thick.	Reclamation deposit in souterrain Chamber 1, Passages 1 & 2	B/ 4	Iron object, iron pin fragment.	1xA4		Bulk #145, Charcoal #133
507	501	171	509	Moderately compact light–brown clay with frequent small stones, moderate animal bone and charcoal flecks. 2.95m east–west x 2.45m	Deposit sealing floor of souterrain Chamber 1	B/ 2-3		1xA5		Bulk #142, Charcoal #140, Charcoal #147

508	509	509	506	Loose mid–yellowish–grey silty clay with occasional small stones. 0.3m x 0.25m.	Fill of pit 509	B/ 4			Y	Bulk #130
509	508	507	508	Circular cut (0.3m x 0.25m) with a sharp break of slope, vertical sides and a sharp break of slope leading to a flat base	Cut for pit	B/ 2-3				
510	Cancelled. Same as 500									
511	Cancelled. Same as 507							1xA4		
512	501	513	515	Loose mid–greyish–brown clayey silt and c.40% large stones with moderate animal bone, charcoal flecks and occasional burnt bone. 2.10m north–south x 0.80m x 0.20m	Reclamation deposit in souterrain Passage 3	B/ 4	Medieval pottery sherd	1xA4	Y	
513	501	514	512	Firm mid–yellowish–brown silty clay with frequent animal bone, burnt bone and moderate charcoal flecks. 3.00m north–south x 1.70m x 0.12m	Reclamation deposit in souterrain Passage 3	B/ 4	Struck flint, Class 8 stick pin, perforated slate, iron object	1xA4		
514	501	501	513	Loose mid–dark–greyish–brown clayey silt with frequent small, medium stones and moderate charcoal fragments. 3.40m north–south x 1.70m x 0.20m	Reclamation deposit in souterrain Passage 3	B/ 4		1xA4		
515	501	512	400	Loose mid–greyish–brown clayey silt with frequent medium, large stones, moderate animal bone and charcoal flecks. 3.00m north–south x 0.70m x 0.25m	Reclamation deposit in souterrain Passage 3	B/ 4				
516	501	517	400	Moderately compact dark–brown clayey silt with moderate medium, large stones, occasional animal bone, charcoal flecks and v. occasional burnt bone. 1.40m x 0.30m deep	Reclamation deposit in souterrain Chamber 3	B/ 4				
517	501	518	516	Moderately compact mid–greyish–brown silty clay with v. frequent medium, large stones, v. occasional large capstones and animal bones. 1.50m x 0.70m deep	Reclamation deposit in souterrain Chamber 3	B/ 4		1xA5		
518	501	520	517	Firm mid greyish–yellow silty clay with moderate charcoal fragments, animal bone, occasional charcoal flecks and v. occasional burnt bone. 1.60m x 0.20m deep	Reclamation deposit in souterrain Chamber 3	B/ 4	Misc. iron objects	1xA5	Y	Bulk #180

519	520 521	171	521	Cut (0.60m x 0.50m x 0.45m) with a sharp break of slope, concave sides and an imperceptible break of slope leading to a concave base	Cut for pit	B/ 2-3				
520	519	521	518	Loose mid greyish–brown silty clay frequent medium and large stones. 0.60m? x 0.50m x 0.25m	Fill of pit 519	B/ 4				
521	519	519	520	Firm light greyish–yellow silty clay with moderate animal bone, occasional small stones, charcoal fragments and flecks. 0.50m? x 0.45m x 0.20m deep	Fill of pit 519	B/ 4		1xA6	Y	Bulk #181
522	523	523	514	Loose dark greyish–brown clayey silt with occasional small stones, charcoal flecks, v. occasional animal bone and one medium stone. 0.36m x 0.34m x 0.20–0.15m	Fill of pit 523	B/ 4		1xA6		
523	522	171	522	Sub–circular east–west cut (0.36m x 0.34m x 0.20–0.15m) with a sharp break of slope, concave sides and an imperceptible break of slope leading to a concave base	Cut for pit	B/ 2-3				
524	503	N/A	N/A	Cubby hole in F503 in west facing wall of Passage 3	Cubby hole	B/ 2-3		1xA5		
525	501	526	400	Firm mid brown silt with frequent pebbles, small stones and occasional large stones. 2.55m x 2.5m x 0.75m	Reclamation deposit in souterrain Chamber 2	B/ 4				
526	501	528	525	Loose mid greyish–brown, with orange mottling, sandy silt with frequent small stones. 1.50m x 1.50m x 0.56–0.10m	Reclamation deposit in souterrain Chamber 2	B/ 4				
527	501	529	528	Loose light–orange–grey silty clay with occasional medium stones. 1.70m north–south x 1.00m x 0.20–0.06m	Reclamation deposit in souterrain Chamber 2	B/ 4				
528	501	527	526	Loose dark–greyish–brown silt with small, medium stones and occasional large stones. 2.00m north–south x 0.50m wide x 0.80m	Reclamation deposit in souterrain Chamber 2	B/ 4				

529	501	530	527	Firm mid brown silt and c.50% large stones with frequent coarse pebbles and small stones. 4.50m x 2.90m x 1.20–0.40m	Reclamation deposit in souterrain Passage 1 & Chamber 2	B/ 4				
530	501	531	529	Firm light orange–grey silty clay occasional large stones. 3.00m x 2.90m x 0.10m	Reclamation deposit in souterrain Chamber 2	B/ 4				
531	501	501	530	Loose mid–brownish–grey, with orange mottling, silty clay with occasional small, medium stones and v. occasional charcoal flecks. 1.20m x 1.10m x 0.12m	Reclamation deposit in souterrain Chamber 2	B/ 4		1xA5		Bulk #184
532	533	533	530	Loose mid–brownish–grey, with orange mottling, silty clay with frequent small, medium stones and occasional charcoal flecks. 0.50m x 0.40m x 0.20m	Fill of pit 533	B/ 4				Bulk #185
533	532	171	532	Subcircular east–west cut (0.50m x 0.40m x 0.20m) with a gradual break of slope, steep sides and a sharp break of slope leading to a concave base	Cut for pit	B/ 2-3				
534	503	N/A	N/A	Air vent extending from wall F503 in Chamber 2. Surviving as six angular stones forming a channel from F503 but was badly truncated.	Air vent	B/ 2-3				
535	404	404	491	Moderately compact mid reddish–brown sandy clay, with flecks of orange clay, moderate small stones, animal bones, occasional burnt bone, charcoal flecks and v. occasional shell. Approximately 15m x 1.50m x 0.35m.	Fill of ditch 404	B/ 2a	Bone trial piece	2xA4		
536	450	450	537	Firm mid yellowish–brown silty clay with occasional charcoal flecks and v. occasional small stones.	Fill of ditch 450	B/ 3a				
537	450	450	538	Moderately compact mid–yellowish–grey sandy clay, occasional pebbles and animal bone.	Fill of ditch 450	B/ 3a				
538	450	537	401	Very truncated deposit. Probably the same as F441.	Fill of ditch 450	B/ 3a				
539	Cancelled. Same as 415									
540	Not allocated									

541	Cancelled. Same as 542									
542	770	545	551	Moderately compact mixed fill of mid–dark brown and light–mid yellowish–brown silty clay and c.15% charcoal flecks. 1.80m x 0.70m x 0.12m.	Fill of ditch 770	B/ 3c				Bulk #306
543	Cancelled. Same as 545									
544	Cancelled. Same as 542									
545	770	542	1319	Moderately compact dark yellowish– brown clayey silt with small stones, occasional charcoal flecks & oxidised clay. 3.50m x 0.90–1.75m x 0.27m max.	Fill of ditch 770	B/ 3c	Iron blade fragments		Y	Bulk #307
546	770	547	551	Moderately compact dark greyish–brown silty clay and c.10% charcoal flecks with flecks of oxidised clay and small stones. 1.80m x 1.10m x 0.28m.	Fill of ditch 770	B/ 3c				Bulk #304
547	1319	548	770	Moderately compact yellowish–brown clayey silt with moderate animal bones, charcoal flecks, small stones and occasional larger stones. 3.50m x 1.82m x 0.95m.	Fill of ditch 1319	B/ 3b		1xA5		Charcoal #319
548	1319	1319	1312	Moderately compact dark–greyish brown and c.20% charcoal flecks silty clay with occasional flecks of oxidised clay and flecks of burnt bone. 1.80m x 0.80m x 0.04m. Radiocarbon dated to AD870-1010 (Beta 246964).	Fill of ditch 1319	B/ 3b				Bulk #305
549	550	550	547 1298	Loose mid yellowish–brown silty clay with, moderate pebbles, small and medium stones, and, occasional animal bones and charcoal flecks. 0.75– 1.50m x 0.95m max.	Fill of ditch 550	B/3a		2xA4	Y	Bulk #318
550	549 551 552 733 1208 1298	689 1182	549	U–shaped cut (7.00m northern east–west arm, 20.00m north–south arm and 5.00m x 3.20–1.70m x 1.40–0.90m) with rounded corners, a sharp break of slope, irregular sides and a sharp break of slope leading to a slightly concave base.	Cut for ditch	B/3a				
551	550	546	542	Compact mid yellow–brown silty clay with moderate animal bones, charcoal flecks, moderate small and medium stones. 3.50m x 0.90m x 0.50m max.	Fill of ditch 550	B/3a				
552	550	549	548	Moderately compact mid yellowish–brown silty clay with frequent small stones, occasional medium stones and charcoal	Fill of ditch 550	B/3a	Glass toggle bead			

				flecks. 1.60m x 0.10m x 0.26m.						
553	Cancelled. Same as 547									
554	557	598	596	Firm light–brown slightly silty clay with frequent small stones. 84.00m x 1.56–1.10m x 0.30m.	Fill of ditch 557	B/ 6	Modern pottery, modern glass, iron nail.	1xA6		
555	Cancelled. Same as 598									
556	557	557	598	Firm mid–brown slightly silty clay with occasional large stones and animal bone. 84.00 northeast–southwest x 0.90m x 0.18m.	Fill of ditch 557	B/ 6		1xA5		Slag #143
557	596 554 598 556	588 650 657 702 814 893 978 982 983 985 1149 1150 1189 1233 1291	556	Linear northeast–southwest cut (84.00m x 1.20m x 0.60m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base. Modern drainage feature cutting many earlier features.	Cut for ditch	B/ 6				
558-559	Not allocated									
560	561	561	557	Firm mid greyish–brown silt with occasional small stones. 35.00m x 0.60m x 0.10m	Fill of furrow 561	B/ 5				
561	560	566 503	560	Linear northwest–southeast cut (35.00m x 0.60m x 0.10m) with a sharp break of slope, steep sides and a gradual break of slope leading to a flat base	Cut for furrow	B/ 5		1xA4		
562	564	563	715	Loose dark greyish–brown silty clay with occasional animal bones, charcoal flecks, small stones and medium stones. 9.50m x 0.66m x 0.18m	Fill of linear 564	B/ 1a		1xA5		Bulk #273
563	564	564	562	Firm light greyish–brown silty clay and c.20% coarse pebbles with occasional charcoal flecks and small stones. 9.50m x 0.34m x 0.11m	Fill of linear 564	B/ 1a		1xA4		Bulk #204

564	562 563	171	563	Curvilinear north–south, curving at southern end to the west, cut (9.50m x 0.66–0.80m x 0.24m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for linear	B/ 1a				
565	Not allocated									
566	1104	858	561 664 658 589 675 767 802	Loose mid greyish–brown silt with moderate animal bone, occasional burnt bone, small and medium stones. (30.00m x 0.30–1.00m x 0.15–0.40m)	Fill of ditch 1104	B/ 2c	Iron pin fragments, glass bead, iron blade fragments, iron objects, crucible fragment, flint, bone pin fragment, lignite fragment	1xA1	Y	Bulk #228, Charcoal #213, Charcoal #237
567	568	569	616 1191	Moderately compact mid brownish–grey clayey silt with occasional animal bones and charcoal flecks. 2.80m x 0.95m x 0.15m	Fill of linear 568	?		1xA5		
568	567 569	171	569	Linear northeast–southwest cut (2.80m x 0.95m x 0.29m) gradual break of slope, slightly concave sides and gradual break of slope leading to a concave base. Truncated on northwest and south side by F616 & F1191 respectively	Cut for linear	?				
569	568	568	567	Moderately compact mid brownish–grey silty clay with occasional charcoal flecks. 2.80m x 0.70m x 0.21m	Fill of linear 568	?		1xA5		Charcoal #148
570	571	571	593 664	Firm dark greyish–brown silty clay with occasional animal bone, burnt bone, charcoal flecks, small stones and moderate pebbles. 23.70m x 0.80m x 0.40m	Fill of curvilinear 571	B/ 3a	Hammerstone?, amber bead	2xA4	Y	Bulk #209
571	570	678 714 826	570	Curvilinear ditch running east–west before curving to the south, 23.70m x 0.80m x 0.40m with gradual–sharp break of slope, concave sides and gradual break of slope leading to a flat base. Partition ditch probably later than F642/F1104 sequence	Cut for ditch	B/ 3a				
572	574	573	1276	Loose mid yellowish–brown clayey silt with moderate small stones, occasional medium stones, charcoal flecks and animal bones	Fill of linear 574	?		1xA4		
573	574	574	572	Firm mid greyish–brown silty clay with occasional animal bones, medium and large stones	Fill of linear 574	?		1xA4		

574	572 573 1276	1277 1283	573	Linear northwest–southeast cut (4.76m x 0.62m x 0.40m) with sharp break of slope, concave sides and a gradual break of slope leading to a concave base	Cut for drain	?				
575	576	576	1271	Loose light greyish–brown clayey sand with occasional charcoal flecks, animal bone, redeposited natural clay, moderate small and large stones. 5.00m x 0.80m x 0.60m	Fill of ditch 576	?		1xA5		
576	575	171	575	Linear east–west cut (5.00m x 0.80m x 0.60m) with a sharp break of slope, concave sides and a sharp break of slope, becoming more gradual to the west, leading to a concave base. Extends beyond western CPO line. Function unclear. Terminal truncated by F550	Cut for ditch	?				
577-578	Cancelled. Same as 560									
579	Cancelled. Same as 561									
580	581	581	1294	Moderately compact mid yellowish– brown silty clay. 10.50m x 0.40–0.80m x 0.20m	Fill of linear 581	?	Bone pin fragment, worked antler.	1xA4		
581	580	689	580	Linear east–west cut (10.50m x 0.40–0.80m x 0.20m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a flat base	Cut for linear	?				
582	1279	1280	607	Moderately compact mid yellowish– brown silty clay. 7.80m x 0.40–0.80m x 0.15m	Fill of linear 1279	?		1xA5		
583	584	584	1260	Moderately compact dark greyish–brown silty clay with moderate coarse pebbles, small stones and occasional animal bone. 4.00m x 0.49m x 0.22m max	Fill of linear 584	?				
584	583	171	583	Curvilinear north–south, curving at northern end to the west, cut (4.00m x 0.33–0.49m x 0.13–0.22m) with a sharp break of slope, slightly concave on west side, steep on the east side and a sharp break of slope leading to a slightly concave stepped base	Cut for linear	?				
585	586	0602	0400	Moderate mid brownish grey silty clay with occasional animal bone. 1.15m x 0.80m x 0.20m	Fill of pit 586	?		1xA5		

586	585 602	580	602	Sub–oval east–west orientated cut (1.15m x 0.80m x 0.20m) with a sharp break of slope, stepped on north side, steep on south and west sides, gentle on east side and a gradual break of slope leading to a concave base	Cut for pit	?				
587	Not allocated									
588	589	589	557	Moderately compact mid yellowish–brown clayey silt with frequent small stones and occasional large stones. 20.30m x 0.35m x 0.04m	Fill of furrow 589	B/ 5		1xA5		
589	588	615 566 1521	588	Linear northwest–southeast cut (20.30m x 0.35m x0.04m) with a sharp break of slope, irregular sides and a sharp break of slope leading to a flat base	Cut for furrow	B/ 5				
590	591	591	677	Firm light brown clayey silt with small lumps of yellow clay, occasional animal bone and small stones. 4.10m x 0.38m x 0.14m	Fill of gully 591	B/ 1a	Copper alloy pin/needle fragment	1xA4	Y	Bulk #205
591	590	171	590	Curvilinear north–south, curving at northern end to the east, cut (4.10m x 0.38m x 0.14m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base. Associated possible structure represented by F667, F843.	Cut for gully	B/ 1a				
592	593	593	595	Moderately compact mid–brown clayey silt with frequent animal bone, occasional small stones and charcoal flecks. 8.10m x 0.56m x 0.20m	Fill of linear 593	B/ 3a?		2xA4		
593	592	570	592	Linear north–south cut (8.10m x 0.56m x 0.18m) with a sharp break of slope, concave sides and a gradual break of slope leading to a flat base	Cut for linear	B/ 3a?				
594	595	595	400	Loose mid–light–brown clayey silt with frequent animal bones, occasional charcoal flecks and small stones. 7.90m north–south x 0.66m x 0.17m	Fill of linear 595	B/ 3a?		1xA6		
595	594	592	594	Linear north–south cut (7.90m x 0.66m x 0.17m) with a gradual break of slope, concave sides and an imperceptible break of slope leading to a flat base	Cut for linear	B/ 3a?				
596	557	597	400	Loose mid yellowish–brown silty clay. 8.00m x 0.45m x 0.20m	Fill of ditch 557	B/ 6				

597	Cancelled. Same as 554								
598	557	556	554	Loose light yellow–brown silty clay with frequent medium stones, occasional large stones and animal bone. 84.00m x 0.90m x 0.20m	Fill of ditch 557	B/ 6	Modern bottle glass, silver/ copper alloy object, bone pin, iron nails, Dublin–type ware, flint.	2xA4 1xA5		
599	Cancelled. Same as 556								
600	603	601	642	Firm dark yellowish brown clayey silt with moderate medium stones, occasional small stones and animal bone. 30.00m x 0.50m x 0.20m	Fill of ditch 603	B/ 2a		1xA4		
601	603	603	600	Loose mid greyish brown sandy silt with occasional animal bone, burnt bone, small and medium stones. 30.00m x 0.40–1.00m x 0.15m	Fill of ditch 603	B/ 2a	Copper alloy interlocking rings, iron pin/nail.	1xA4		Bulk #226
602	586	586	585	Firm mid greyish–brown clayey silt with occasional charcoal flecks and orange (oxidised?) clay. 0.35m x 0.25m x 0.05m	Fill of pit 586	?		1xA6		
603	600 601	796 884 1151	601	A precurcursor to F642. Probably matches it for length (i.e. 35m) but was largely disturbed by later truncation and seen only in occasional sections.	Cut for ditch.	B/ 2a				
604-606	Not allocated								
607	608 689	582	608	Linear east–west cut (8.65m x 1.00m x 0.50m) with a sharp break of slope, steep sides and a sharp break a slightly concave but irregular base. Heavily truncated	Cut for linear	?				
608	607	607	689	Moderately compact mid–greyish brown silty clay with frequent flecks of orange clay. 8.65m x 0.55m x 0.45m max.	Fill of linear 607	?		1xA4	Y	
609	Not allocated								
610	611	611	400	Firm light yellowish–brown, with orange mottling, clayey silt with frequent small stones and moderate small fragments of charcoal. 0.45m diameter x 0.1m deep max	Fill of pit 611	?				
611	610	171	610	Circular cut (0.45m diameter x 0.1m deep max) with a sharp break of slope, steep on northern side, gentle on southern side and a gradual break of slope leading to an irregular concave base	Cut for pit	?				

612-614	Not allocated									
615	616	616	589	Moderately compact mid greyish–brown silty clay with moderate coarse pebbles. 2.50m x 0.40m x 0.10m	Fill of linear 616	?	Copper alloy pin shaft (loop headed), iron object	1xA4		
616	615	567	615	Linear northeast–southwest cut (2.50m x 0.40m x 0.10m) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base	Cut for linear	?				
617	Cancelled. Same as 588									
618	Cancelled. Same as 589									
619	622	620	589 637	Firm mid yellowish–brown clayey silt with moderate small stones, animal bone and occasional charcoal flecks. 22.00m x 1.00m x 0.40m	Fill of ditch 622	?	Flint	1xA4	Y	
620	622	622	619	Moderately compact mid greyish–brown clayey silt with frequent small stones, moderate animal bones, charcoal fragments, occasional burnt bone and large stones. 22.00m x 0.90–1.60m x 0.35m	Fill of ditch 622	?	Copper alloy pin fragments, spindle whorl?, iron objects, bone pin	1xA3 1xA4	Y	
621	626	626	622	Moderate light–yellowish–brown silty clay with occasional small stones, animal bone, occasional charcoal flecks and large stones. 5.00m x 0.50m x 0.10m	Fill of linear 626	?				
622	619 620	621	620	Linear east–west cut (22.00m x 0.90–1.50m x 0.45m) with a sharp break of slope, irregular sides and a sharp break of slope leading to a concave base	Re–cut of ditch 660	?				
623	626	625	621	Moderately compact mid yellowish– brown clayey silt with frequent small stones, occasional animal bone and charcoal fragments. 5.00m x 0.50m x 0.15m	Fill of linear 626	?	Flint	1xA4		
624	660	660	1266	Moderately compact dark greyish–brown clayey silt with moderate small stone, animal bones, occasional charcoal flecks, medium and large stones. 19.00m x 0.40–1.00m x 0.4m	Fill of ditch 660	?		1xA4	Y	Industrial waste #139
625	626	626	623	Moderately compact dark greyish–brown clayey silt with frequent small stones, occasional charcoal flecks and animal bone. 5.00m x 0.55m x 0.20m max	Fill of linear 626	?				

626	621 623 625	1266	625	Linear east–west cut (5.00m x 0.62m x 0.28m max) with a sharp break of slope, concave sides, a sharp break of slope leading to concave base	Cut for linear	?				
627-628	Not allocated									
629	630 631	634 1372 1396 1398	631	Linear east–west cut (10.80m x 1.15m x 0.18–0.42m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a concave base	Cut for ditch	?		2xA6		
630	629	631	1279	Firm mid brownish–grey clayey silt with frequent small stones and occasional charcoal flecks. 10.80m x 1.15m x 0.42m	Fill of ditch 629	?		1xA5		
631	629	629	630	Firm mid orange–grey silty clay with frequent small stones and moderate charcoal flecks. 3.40m x 0.58m x 0.18m	Fill of linear 629	?				
632	633	0633	0400	Firm light brownish–grey clayey silt with frequent small stones, medium stones, charcoal flecks and burnt bone? 0.48m x 0.44m x 0.27m	Fill of posthole? 633	?		2xA6		
633	632	171	632	Oval northeast–southwest cut (0.48m x 0.44m x 0.27m) with a sharp break of slope (gradual on west and southwest sides), steep concave sides (gentle on west and southwest sides) and a sharp break of slope (gradual on west and southwest sides) leading down	Cut for posthole?	?				
634	638	635	629	Firm mid–yellowish–brown silty clay with occasional charcoal flecks and burnt bone and two large stones. 1.00m x 0.90m x 0.13m	Fill of posthole 638	?			Y	
635	638	638	634	Firm dark greyish–brown silty clay moderate charcoal flecks, burnt bone and v. occasional animal bone. 1.00m x 0.90m x 0.28m	Fill of posthole 638	?		1xA6	Y	
636	637	637	400	Firm mid yellowish–brown clayey silt with moderate charcoal flecks, charcoal fragments, occasional animal bone, small stones and v. occasional large stones. 2.15m x 0.77m x 0.1m	Fill of pit 637	?		1xA6		

637	636	619	636	Kidney–shaped cut (2.15m x 0.77m x 0.1m) with a gradual break of slope, v. gently sloping sides and an imperceptible break of slope leading to a concave base	Cut for pit	?				
638	634 635	171	635	Subcircular east–west cut (1.00m x 0.90m x 0.30m) with a gradual break of slope, but sharp on west side, concave sides and an imperceptible break of slope, but gradual on west side, leading to a stepped base. One of two large postpits found in base of F622	Cut for posthole	?				
639	N/A	1254	400	Moderately compact dark–brown clayey silt and 50% medium and large stones with occasional animal bone and charcoal flecks. 3.60m x 0.45–1.00m x 0.11m	Stone deposit	?	Bone pin fragment	1xA4	Y	
640	Cancelled. Same as 588									
641	Cancelled. Same as 589									
642	643 676 723 800 803 804 805 847	796 884 1151	601	Curvilinear northeast–southwest, curving at southwest end to the south and at northeast end to the east, cut (35.00m x 0.60–1.50m x 0.30–0.80m) with a gradual break of slope, steep sides and a gradual break of slope leading to a flat base	Re-cut of 603. Cut for ditch	B/ 2b				
643	642	676 723 800	1104	Loose dark greyish–brown silt with frequent animal bone, moderate charcoal flecks, occasional burnt bone, small to large stones. 25.00m x 0.60m–1.10m x 0.30m	Fill of ditch 642	B/ 2b	Bone pin, iron objects including nail, blade and pin fragments	1xA1	Y	Bulk #232, Slag #238, Charcoal #235
644	645	661	653 1145	Firm mid reddish–brown sandy silt with moderate small, medium stones and occasional animal bone. 10.00m x 1.30m x 0.30m	Fill of ditch 645	B/ 1b		1xA3 2xA4		
645	644 661 1145	734 990	661	Linear north–south cut (10.00m x 1.35m x 0.60m) with a sharp break of slope, moderate flat sides and a gradual break of slope leading to a flat base	Cut for ditch	B/ 1b				
646	649	647	688	Loose light yellowish–brown silt with frequent small stones, moderate medium stones, occasional animal bone and flecks of yellow clay. 16.30m x 0.65m x 0.18m	Fill of ditch 649	B/ 2d		1xA5		
647	649	648	646	Moderately compact mid–brown clayey silt with moderate small stones and occasional animal bone. 16.30m x 0.60m x 0.35m.	Fill of ditch 649	B/ 2d		1xA6	Y	

648	649	649	647	Firm mid brown silt with moderate medium stones and animal bones. 6.00m x 0.40m x 0.22m.	Fill of ditch 649	B/ 2d		1xA6		
649	646 647 648	683 651	648	Linear north–south cut (16.30m x 0.70m x 0.5m) with a sharp break of slope, moderate flat sides and a sharp break of slope, but gradual on east side, leading to a concave base.	Cut for ditch	B/ 2d		1xA6	Y	
650	653	651	762	Firm light yellowish–brown silt with moderate small stones, animal bone and occasional medium stones. 8.70m x 0.75m x 0.50m.	Fill of ditch 653	B/ 2d		1xA5 2xA4		
651	653	652	650	Loose mid brown clayey silt with frequent flecks of yellow and orange sand, occasional medium stones and animal bone. 18m x 0.65m x 0.30m.	Fill of ditch 653	B/ 2d				
652	653	653	651	Firm light yellowish–grey clayey silt with frequent decayed stones, occasional flecks of white clay and animal bones. 8.70m x 0.60m x 0.17m.	Fill of ditch 653	B/ 2d		1xA6		
653	650 651 652	712	652	Linear north–south cut (20.70m x 1.20m x 0.70m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2d				
654	677	656	682	Loose mid brown to light–red silty sand with moderate yellow to red flecks of clay, animal bone and occasional small stones. 1.32m x 0.60m x 0.17m.	Fill of cereal drying kiln 677	B/ 2a	Flint	1xA4	Y	
655	677	671 673	656	Moderately compact mid black to dark brown clayey silt with frequent charcoal flecks, burnt bone, moderate medium stones and occasional flecks of yellow clay. 1.80m x 0.90m x 0.55m.	Fill of cereal drying kiln 677	B/ 2a		1xA4	Y	Bulk #149, Bulk #172, Bulk #173
656	677	655	654	Loose light pink to light orange clayey silt with frequent burnt bone, animal bone, occasional charcoal fragments and a lens of light yellow clay (0.20m x 0.02m deep) at the top of the fill. 1.73m x 0.90m x 0.56m	Fill of cereal drying kiln 677	B/ 2a	Iron blade	1xA4	Y	Bulk #155, Bulk #171
657	658	658	557	Firm light yellowish–brown silty clay with occasional small stones and occasional medium stones. 30.00m x 0.42m x 0.05m.	Fill of furrow 658	B/ 5	Flint	1xA6		

658	657	663	657	Linear northwest–southeast cut (30.00m x 0.42m x 0.05m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5				
659	Not allocated									
660	624 1266	1412 1407 1507	624	Linear east–west cut (19.00m x 1.50m x 0.80m) with a completely truncated break of slope at the top, irregular steep sides and a sharp break of slope leading to a concave base.	Cut for ditch	?				
661	645	645	644	Moderate dark brownish–grey clayey sandy silt with evidence for some iron panning, moderate animal bone, medium and large stones. 10.00m x 0.75m x 0.35m.	Fill of ditch 645	B/ 1b		1xA3		Bulk #229
662	Cancelled									
663	664	664	658	Firm light yellowish–brown silty clay with moderate small, medium stones, animal bone and burnt bone. 7.55m x 0.34–0.75m x 0.21m max.	Fill of furrow 664	B/ 5		1xA4	Y	
664	663	570	663	Linear NNW–SSE cut (7.55m x 0.34–0.75m x 0.21m max) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5				
665	667	667	677	Loose mid yellowish–brown, with flecks of orange, silty clay with occasional pebbles and charcoal flecks. 4.47m x 0.56m max x 0.13m.	Fill of gully 667	B/ 1a	Iron nail	2xA4		Bulk #220
666	1191	1191	1254	Firm mid yellowish–brown silty clay with frequent small, medium stones, occasional animal bone and charcoal flecks. 6.20m x 0.55m–1.10m x 0.35m.	Fill of linear 1191	?		2xA6		
667	665	171	665	Curvilinear northeast–southwest, curving at northeast to the north, cut (4.47m x 0.56m max x 0.13m) a gradual break of slope, steep concave sides.	Cut for gully	B/ 1a				
668	Cancelled. Same as 400									
669	Cancelled. Natural hollow									
670	677	655	656	Loose mid grey clayey silt with moderate flecks of white clay, occasional animal bone and charcoal flecks. 0.70m x 0.38m x 0.03m.	Fill of cereal drying kiln 677	B/ 2a		1xA5	Y	Bulk #174

671	677	672	655	Loose mid brown sandy silt with frequent animal bones. 0.50m x 0.40m x 0.90m.	Fill of cereal drying kiln 677	B/ 2a	Iron object	1xA4		
672	677	677	671	Firm mid grey clayey silt with frequent small stones, moderate flecks of clay (white and yellow) and occasional animal bone. 2.70m x 1.00m x 0.50m	Fill of cereal drying kiln 677	B/ 2a		1xA4 1xA5	Y	Bulk #156
673	Cancelled. Same as 672									
674	675	724	692	Firm mid greyish–brown sandy clay with occasional fine pebbles, animal bone and flecks of iron panning. 7.00m x 1.60m x 0.30m	Fill of ditch 675	B/ 2d	Iron object	2 xA4	Y	
675	674 724	566 723	724	Slightly curvilinear generally ENE–WSW cut (7.00m x 1.6m x 0.30m) with a sharp break of slope, concave sides and a gradual break of slope leading to a irregular flat base.	Cut for ditch. A localised re–cut of 642	B/ 2d				
676	642	642	643	Loose mid grey sandy silt with occasional animal bones, burnt bones, small and medium stones. 7.00m x 1.00m x 0.10m.	Fill of ditch 642	B/ 2b		1xA4	Y	
677	654 655 656 670 671 672	672	591 667	Roughly circular cut (2.20m x 1.70m x 0.90m) with a short channel extending to the southwest from a point slightly off–centre. The bowl had a sharp break of slope, steep to concave sides with a gradual break of slope leading to an irregular flat base. The	Cut for cereal drying kiln	B/ 2a				Bulk #150
678	0682	0680	571	Firm dark–red to dark–reddish–brown silty clay with frequent flecks of red clay and occasional charcoal flecks. 1.30m north–south x 0.33m x 0.25m.	Fill of 682					Bulk #151
679	Not allocated									
680	682	681	678	Loose mid brown clayey silt with moderate flecks of clay, occasional small stones and animal bones. 1.50m x 0.50m x 0.15m.	Fill of 682	B/ 2a		1xA5		
681	682	682	680	Loose mid brown silty clay with occasional lumps of redeposited natural, charcoal flecks and animal bone. 0.77m x 0.46m x 0.80m.	Fill of 682	B/ 2a		1xA5		
682	678 680 681	654	681	Suboval east–west cut (1.50m x 1.00m x 0.67m) with a sharp break of slope, stepped sides and a sharp break of slope leading to a flat base.	Circular cut through 654 in kiln 677	B/ 2a				

683	684	713	649	Firm mid brown silt with moderate small stones, flecks of yellow clay and occasional animal bone. 16.50m x 0.30m x 0.35m	Fill of ditch 684	B/ 2d		1xA5		
684	683 713	929	713	Linear north–south cut (16.50m x 0.50m x 0.40m) with a completely truncated break of slope at the top, truncated sides and a sharp break of slope leading to a concave base	Cut for ditch	B/ 2d				
685	688	686	691 853 1094	Moderately compact mid yellowish–brown clayey silt with frequent small stones, moderate animal bone and occasional large stones. 14.80m x 1.20m x 0.30m	Fill of ditch 688	B/ 2d		1xA4		
686	688	687	685	Firm mid yellowish–brown sandy silt with frequent small stones, occasional animal bone and decaying stones. 14.80m x 0.80m x 0.35m	Fill of ditch 688	B/ 2d	Iron blade	1xA4		
687	688	688	686	Firm mid greyish brown clayey silt with frequent flecks of yellow clay, occasional large stones and decaying stones. 1.00m x 0.30m x 0.05m.	Fill of ditch 688	B/ 2d				
688	685 686 687	646 760 1042	687	Linear north–south cut (14.80m x 1.20m x 0.60m) with a gradual break of slope, steep concave sides, but gentle slope on east side, and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2d				
689	607	608	550 581	Moderate mid yellowish–greyish–brown silty clay. 8.65m x 1.00m x 0.35m.	Fill of linear 607	?	Bone pin	1xA4		Charcoal #154
690	691	691	400	Firm mid yellow–brown slightly clayey silt with occasional small stones and v. occasional animal bone. 10.50m x 0.50m x 0.30m.	Fill of ditch 691	B/ 2d		1xA6		
691	690	685 1049	690	Linear northwest–southeast cut (10.50m x 0.50m x 0.30m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2d				
692	693 694	674	694	Slightly curvilinear generally ENE–WSW cut (7.00m x 0.50m x 0.30m) with a sharp break of slope, concave sides and an imperceptible break of slope down to a concave base.	Re–cut to 675	B/ 2d				
693	692	694	400	Loose dark–reddish–brown sandy clay with moderate pebbles, animal bone and charcoal flecks. 1.10m x 0.60m x 0.10m.	Fill of ditch 692	B/ 2d				Bulk #211

694	692	692	693	Loose dark–brown sandy clay with frequent pebbles, small stones, animal bone and occasional charcoal flecks. 0.70m x 0.50–0.40m x 0.30–0.20m.	Fill of ditch 692	B/ 2d		1xA4		Bulk #230
695	698	696	400	Loose mid–brown silty clay with occasional animal bone. 1.00m x 0.80m x 0.30–0.20m.	Fill of cereal drying kiln 698	B/ 1a				
696	698	697	695	Loose mid–brown silty clay with moderate small stones and occasional animal bones. 2.51m x 1.58m x 0.20m.	Fill of cereal drying kiln 698	B/ 1a				Bulk #160
697	698	698	696	Firm mid yellowish–brown silty clay with frequent charcoal fragments. 0.80m x 0.60m x 0.05m.	Fill of cereal drying kiln 698	B/ 1a				Bulk #159
698	695 696 697	1445 1448	697	Oval east–west cut (2.51m x 1.58m x 0.20–0.40m) with a sharp break of slope, but imperceptible on the south side, steep concave north side, shallow convex south side, steep convex west and east sides and an imperceptible break of slope leading to an irregular base	Cut for cereal drying kiln	B/ 1a				
699	Cancelled. Same as 561									
700	Not allocated									
701	702	171	702	Linear northwest–southeast cut (3.38m x 0.46m max x 0.12m) with a gradual break of slope, gentle concave sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5				
702	701	701	557	Firm dark orange–brown silty clay with occasional pebbles. 3.38m x 0.46m max x 0.12m.	Fill of furrow 701	B/ 5	Post–medieval pottery			
703	705	1173	933	Firm mid brownish–grey sandy silt with moderate animal bone, occasional pebbles and charcoal flecks. 1.85m x 0.20–0.64m x 0.20m.	Fill of linear 705	B/ 1a		1xA6		Bulk #262
704	707	707	934	Firm mid greyish–brown, with orange mottling, sandy silt with moderate animal bone, occasional coarse pebbles and charcoal flecks. 0.96m x 0.41m x 0.26m.	Fill of gully 707	B/ 1c		1xA4		
705	703 1173	171	1173	Curvilinear northeast–southwest cut (1.85m x 0.64m max x 0.32m max) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base. Possible association with F1175.	Cut for linear	B/ 1a				

706	N/A	171	933	An area of disturbed metalling with three patches remaining (2.00m x 1.65m, 2.25m x 1.15–0.75m, 0.75m x 0.25m) within a 5.00m2. Compact well sorted stones (mean diameter 0.04m). Relationship to F705 unclear.	Metalled surface	?				
707	704	1171	704	Curvilinear northwest–southeast, curving slightly at southeast end to the east, cut (0.96m x 0.41m x 0.26m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a irregular flat base. Possible gully associated with Structure D	Cut for gully	B/ 1c				
708	Cancelled. Same as 677									
709	710	710	715	Loose light greyish–brown silty clay occasional small stones. 3.00m x 0.20m x 0.10m.	Fill of linear 715	?		1xA6		
710	709	171	709	Linear east–west cut (3.00m x 0.20m x 0.10m) with a sharp break of slope, gentle concave sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
711	712	762?	712	Subcircular cut (0.30m diameter x 0.20m deep) with steep sides and a sharp break of slope, leading to a concave base. Possibly a posthole cut into base of F762. Severely truncated by F653.	Cut for posthole?	B/ 2d				
712	711	711	653	Firm mid orange–grey silty clay with occasional small stones, animal bone and charcoal flecks. 0.30 x 0.20m.	Fill of feature 711	B/ 2d		1xA6		
713	684	684	683	Firm light brownish–grey silty clay, occasional stones and animal bone. 16.50m x 0.31m x 0.19m.	Fill of ditch 684	B/ 2d		1xA6		
714	715	715	571 787 789	Loose light greyish–brown silty clay frequent small stones to medium stones. 10.50m x 0.40m x 0.15m.	Fill of ditch? 715	?				Bulk #201
715	714	562 709 773 818	714	Curvilinear (L–shaped) long arm northwest–southeast curving at southern end to the west cut (10.50m x 0.40m max x 0.15) with a sharp break of slope, gentle concave sides and a gradual break of slope leading a concave base.	Cut for ditch?	?				

716	717	717	787	Firm mid greyish–brown, with yellow mottling, silty clay with frequent small stones. 2.00m x 0.50m x 0.20m.	Fill of linear 717	?		1xA4		
717	716	773	716	Linear northwest–southeast cut (6.00m x 0.50m x 0.20m) with a sharp break of slope, gentle concave sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
718	769	769	400	Loose mottled mid brownish–orange to dark–brown and black silty clay with occasional small stones and charcoal flecks. 1.37m x 0.64m x 0.12m.	Fill of pit 769	?				
719	720	171	720	Linear NNW–SSE cut (1.50m x 0.50m x 0.40m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for linear	B/ 1a				
720	719	719	721	Firm mid greyish–brown silty clay with moderate fine pebbles, occasional small stones and flecks of iron panning. 1.50m x 0.50–0.40m x 0.40m.	Fill of linear 719	B/ 1a				
721	722	720	722	Linear NNW–SSE cut (4.50m x 1.10m x 0.60m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for linear	B/ 1a				
722	721	721	450 692	Firm mid greyish–brown silty clay with moderate fine pebbles, occasional small stones and flecks of iron panning. 4.50m x 1.10m x 0.60m.	Fill of linear 721	B/ 1a		1xA6		
723	642	642	675	Moderately compact mid brown sandy clay with moderate pebbles, small stones and animal bone. 5.00m x 0.20m x 0.15–0.25m.	Fill of ditch 642	B/ 2b		1xA6		
724	675	675	674	Moderately compact mid yellowish–brown sandy clay with occasional pebbles. 3.00m x 0.40–0.50m x 0.10m.	Fill of ditch 675	B/ 2d		1xA6		
725	726	726	784	Firm mid greyish–brown silty clay with moderate small stones. 16.50m x 0.45m x 0.30m.	Fill of ditch 726	B/ 2a				
726	725	967	725	Linear east–west, curvilinear ditch (16.50m x 0.45m x 0.30m) with a sharp break of slope, gentle concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2a				

727	Cancelled. Same as 964									
728	Not allocated									
729	Cancelled. Same as 1250									
730	734	731	645	Moderately compact mid brownish–grey silty clay with occasional small stones, flecks of orange and yellow clay. 18.00m x 2.80m x 0.50m max.	Fill of linear 734	B/ 1a		1xA4		
731	734	732	730	Moderately compact light brownish–grey silty clay with v. frequent small stones and occasional flecks of orange clay. 18.00m northeast–southwest x 3.56–0.65m x 0.38–0.09m.	Fill of linear 734	B/ 1a	Iron object			
732	734	734	731	Moderately compact mid brownish–grey silty clay with evidence of iron panning, occasional small stones. 18.00m x 1.50m max x 0.45m max.	Fill of linear 734	B/ 1a				
733	550	1298	1208	Moderately compact light brownish–grey silty clay with moderate small stones, occasional animal bone. 9.00m x 2.10m x 0.35m.	Fill of ditch 550	B/ 3a	Copper alloy needle	1xA4		
734	730 731 732	930	732	Linear northeast–southwest cut (18.00m x 3.56m x 0.77m) with a sharp break of slope, moderate concave sides and a sharp break of slope, but gradual on southeast side, leading to a concave base.	Cut for ditch	B/ 1a				
735	736 1182 1183 1184	1270 1530	1182	Linear east–west cut (6.00m x 2.10m x 1.10m) with a sharp break of slope, steep sides and a sharp break of slope leading to a slightly concave irregular base.	Cut for ditch	?				
736	735	1182	1183	Moderately compact mid orange–grey sandy silty clay, moderate subangular small stones. 6.00m x 1.80m–0.90m x 0.36m.	Fill of ditch 735	?	Lignite fragments, iron nail.	2xA4	Y	
737	Cancelled. Same as 930									
738	Cancelled. Same as 1044									
739	Cancelled. Same as 1228									
740	Cancelled. Same as 1000									
741	745	742	751 1142	Moderately compact light greyish–brown silty clay with occasional medium stones and animal bone. 23.50m x 1.73–2.60m x 0.65m max.	Fill of ditch 745	B/ 2a		2 xA4		

742	745	743	741	Loose light greyish–brown silty clay with occasional medium stones and animal bone. 6.00m x 2.50m x 0.16m.	Fill of ditch 745	B/ 2a		1xA6		
743	745	744	742	Moderately compact light yellowish– brown silty clay with occasional small stones. 2.00m x 0.36m x 0.08m.	Fill of ditch 745	B/ 2a				
744	745	745	743	Loose mid greyish–brown silty clay with occasional animal bone and charcoal flecks. 23.50m x 1.19m max x 0.20m max.	Fill of ditch 745	B/ 2a	Iron object	1xA4	Y	Bulk #247
745	741 742 743 744	746	744	Linear NNW–SSE cut (c.23.50m x 2.77m x 0.72–0.97m) with a truncated break of slope at the top, stepped sides and an imperceptible break of slope leading to a concave base.	Cut for ditch	B/ 2a				
746	748	747	745 758	Loose light greyish–brown silty clay with occasional small stones. 3.35m x 1.24m x 0.69m.	Fill of ditch 748	B/ 2a				
747	748	748	746	Loose mid greyish–brown silty clay with occasional small stones. 3.35m x 0.60m x 0.10m.	Fill of ditch 748	B/ 2a	Piece of quartz crystal	1xA6		Bulk #257
748	746 747	1145	747	Linear NNW–SSE cut (3.35m x 0.40–1.29m x 0.74m) with a completely truncated break of slope at the top, gentle concave sides and a gradual break of slope leading to concave base.	Cut for ditch	B/ 2a				
749	751	751	750	Loose light yellowish–brown silty clay with moderate small stones. 11.00m x 0.70m x 0.15m.	Fill of ditch 751	B/ 2a				
750	751	749	755	Loose light brown silty clay frequent small stones and occasional animal bones. 11.00m x 0.63m x 0.23m max	Fill of ditch 751	B/ 2a		1xA4		
751	749 750	746	749	Linear NNW–SSE cut (11.00m x 0.53–90m x 0.28m max) with a sharp break of slope, generally moderate concave sides and an imperceptible break of slope leading to a generally concave base.	Cut for ditch	B/ 2a				
752	1142	753	400	Loose light brownish–grey silty clay with occasional small stones, animal bone, charcoal flecks and redeposited clay. 10.00m x 1.00–2.08m x 0.34m max.	Fill of ditch 1142	B/ 2a		1xA4		

753	1142	1141	752	Loose mid brown silty clay with occasional small stones, animal bone and charcoal flecks. 10.00m x 1.46– 2.08m x 0.43m max.	Fill of ditch 1142	B/ 2a		1xA4		
754	755	755	400	Moderately compact light yellowish– brown silty clay with occasional small stones and flecks of yellow clay. 8.00m x 0.40–0.60m x 0.40m max.	Fill of ditch 755	B/ 2d		1xA4		
755	754	750	754	Linear NNW–SSE cut (8.00m x 0.60–0.40m x 0.40–0.18m) with a sharp break of slope, moderate concave sides and an imperceptible break of slope leading to a concave base.	Cut for ditch	B/ 2d				
756-757	Not allocated									
758	Cancelled. Same as 400									
759	Cancelled. Same as 1044									
760	762	761	688 861	Firm light yellowish–brown silt with occasional small stones and animal bone. 2.50m x 1.10m x 0.28m.	Fill of pit 762	B/ 2d		2xA4		
761	762	762	760	Firm mid brown clayey silt with occasional small stones and animal bone. 2.50m x 1.26m x 0.14m.	Fill of pit 762	B/ 2d				
762	760 761	650	761	Oval north–south cut (2.52m x 1.26m x 0.31m) with a sharp break of slope, gentle concave sides and an imperceptible break of slope leading to a concave base.	Cut for pit	B/ 2d				
763	764	764	1085	Moderate mid reddish brown silty clay with frequent subrounded stones, occasional animal bone and charcoal fragments. 13.50m x 1.10m x 0.20m.	Fill of ditch 764	B/ 2a		1xA4		
764	763 1085	1333	763	Linear north–south cut (22.00m x 1.30m x 0.80m) with a gradual break of slope, moderate convex sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2a				
765	766	1087	1290	Moderately compact mid reddish–brown silty clay, frequent subrounded stones, occasional animal bone and charcoal flecks. 6.00m x 0.68m x 0.35m max.	Fill of ditch 766	B/ 2a	Copper alloy cross object	1xA4		
766	765	1086	1087	Linear north–south cut (6.00m x 0.68m x 0.35m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2a				

767	768	566	768	Linear northwest–southeast cut (7.00m x 0.50m x 0.05m) with a gradual break of slope, gentle concave sides and an imperceptible break of slope leading to a concave base.	Cut for furrow	B/ 5		1xA4		
768	767	767	400	Loose mid brown silty clay with moderate small stones. 7.00m x 0.50m x 0.05m.	Fill of furrow 767	B/ 5				
769	718	786 788	718	Oval east–west cut (1.37m x 0.64m x 0.12m) with an imperceptible break of slope, gentle concave sides and an imperceptible break of slope leading to a concave base.	Cut for pit	?				
770	542 545 546 771 1321	1299 1305	771	Linear north–south cut (16.50m x 2.30m x 0.53m) with a generally sharp break of slope, but generally gradual on west side, v. irregular sides and an irregular break of slope leading to a concave base	Cut for ditch. 2nd re–cut of ditch 550	B/ 3c				
771	770	770	1321	Loose mid to dark–reddish brown clayey silt with moderate subangular stones and occasional large stones. 16.50m x 2.30m max x 0.50m max.	Fill of ditch 770	B/ 3c	Perforated copper alloy object	1xA4		
772	1103	1151	400	Moderate dark–brown sandy clay with frequent large and medium stones and occasional charcoal flecks. 1.00m x 0.50m x 0.10m.	Fill of pit 1103	B/ 1a	E–ware			
773	776	774	715 717	Loose mid brown silty clay with frequent small stones. 2.60m x 1.00m x 0.35m max.	Fill of cereal drying kiln 776	B/ 2a		1xA4		
774	776	775	773	Firm light greyish–brown oxidized silty clay with occasional small stones. 2.50m x 0.90m x 0.10–0.30m.	Fill of cereal drying kiln 776	B/ 2a		1xA4		
775	776	777	774	Firm mid greyish–brown silty clay occasional small stones. 2.40m x 0.80m x 0.20m.	Fill of cereal drying kiln 776	B/ 2a				
776	773 774 775 777	171	777	Suboval shaped east–west cut (2.60m x 1.00m x 0.50m) with a sharp break of slope, vertical sides and a gradual break of slope leading to a slightly concave base.	Cut for cereal drying kiln	B/ 2a				
777	776	776	775	Loose mottled (black, yellow, orange) silty clay and frequent charcoal fragments with occasional pebbles. 1.70m x 0.70m x 0.10m.	Fill of cereal drying kiln 776	B/ 2a				Bulk #200

778	782	812 813	782	Irregular east–west cut (1.90m east–west x 0.74m x 0.17m) with a gradual break of slope, but sharp on southwest side, gently sloping irregular sides and a gradual break of slope leading to an irregular base.	Cut for pit	?				
779	780 798 799	405	799	Sub–rectangular northeast–southwest cut with rounded corners (1.72–1.40m x 0.81m x 0.47m) with a sharp break of slope, vertical side, but slightly concave towards the base, and a sharp break of slope leading to a slightly concave base.	Cut for pit	?				
780	779	798	400	Moderately compact light brownish–grey silty clay with occasional small stones and coarse pebbles. 1.72m x 0.81m x 0.20m.	Fill of pit 779	?		1xA4		
781	Cancelled. Same as 782									
782	778	778	400	Moderately compact mid brown silty clay, with occasional medium stones, charcoal flecks and animal bone. 1.70m x 1.22m x 0.13m .	Fill of pit 778	?	Quartz crystal fragment, struck flint	1xA6	Y	
783	Cancelled. Same as 782									
784	792	725 967	792	Curvilinear east–west cut (19.00m x 1.50m x 0.70m) with a sharp break of slope, gently sloping concave sides (heavily truncated on south side) and an imperceptible break of slope leading to a concave base.	Cut for ditch	B/ 2a				
785	Not allocated									
786	Cancelled. Same as 716									
787	Cancelled. Same as 717									
788	789	789	769	Loose mid greyish–brown silty clay with occasional small stones. 1.50m x 0.25m x 0.15m.	Fill of linear 789	?				
789	788	714 716	788	Slightly curvilinear northwest–southeast cut (1.50m x 0.25m x 0.75m) with a sharp break of slope, gently sloping concave sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
790-791	Not allocated									
792	784	784	808	Firm mid greyish–brown silty clay with moderate small stones. 19.00 x 1.50m x 0.70m.	Fill of ditch 784	B/ 2a		1xA4		

793	863	863	808 846	Firm mid greyish–brown silty clay with occasional small stones. 16.00m x 0.84m x 0.65m.	Fill of ditch 863	B/ 2b		1xA6		
794	823	823	642	Moderately compact mid—brown clayey silt with frequent fleck of yellow clay, moderate medium, large stones, occasional animal bone and v. occasional burnt bone. 3.00m x 0.70m x 0.35m.	Fill of linear 823	B/ 1a		1xA4		Bulk #234
795	Cancelled. Same as 823									
796	797	797	823	Firm dark brown sandy clay with occasional small stones and medium stones. 6.60m x 0.60m x 0.20m	Fill of linear 797	B/ 1a		1xA6		
797	796	171	796	Linear WNW–ESE cut (6.60m x 0.60m x 0.20m) with a gradual break of slope, moderate concave sides and a gradual break of slope leading to a concave base.	Cut for linear	B/ 1a				
798	779	799	780	Moderately compact mid grey silty clay with moderate small stones and animal bone. 1.60m x 0.77m x 0.33m.	Fill of pit 779	?		1xA6		
799	779	779	798	Loose dark yellowish–grey silty clay with moderate animal bone and occasional small stones. 1.45m x 0.67m x 0.11m.	Fill of pit 779	?		1xA4		
800	642	847	643	Loose dark brownish–grey sandy clay with frequent animal bone, occasional small stones, medium stones and charcoal flecks. 3.50m x 0.60m x 0.30m.	Fill of ditch 642	B/ 2b		1xA4	Y	Bulk #227
801	802	802	400	Firm dark brown sandy silt with occasional small stones, medium stones and animal bones. 2.70m x 1.40m x 0.20m.	Fill of pit 802	?		1xA4		
802	0801	566	0801	Oval north–south cut (2.70m x 1.40m x 0.20m) with a gradual break of slope, concave sides and a gradual break of slope leading an irregular concave base	Cut for pit	?				
803	642	0601	805 847	Loose mid brown silty clay with frequent flecks of orange, small stones and medium stones. 2.00m x 0.90m x 0.20m.	Fill of ditch 642	B/ 2b		1xA5		
804	642	805	643	Moderately compact, mid brown silty clay with frequent flecks of orange clay, moderate subangular stones and moderate medium subangular stones. (3.00m × 0.90m × 0.25m).	Fill of ditch 642	B/ 2b		1xA4		

805	642	803	804	Soft, dark brown silty clay, frequent flecks of yellow clay, flecks of orange clay, moderate subangular, small stones and occasional medium stones. 3.00m × 0.80m × 0.20m.	Fill of ditch 642	B/ 2b	E–ware	1xA4		
806	807	807	400	Compact, mid brown with occasional flecks of orange silty clay, occasional small stones and medium subrounded, subangular stones, (3.00m × 0.40m × 0.15m).	Fill of linear 807	?				
807	806	804	806	Linear cut (3.00m × 0.40m × 0.15m), with sharp break of slope, concave sides and a sharp break of slope leading to a concave base.	Cut for linear	?				
808	809 1081	864	809	Curvilinear east–west cut (19.00m x 1.85m x 0.60m) curving at western end to the south with gradual break of slope, moderate convex sides and a gradual break of slope leading to a concave base.	Cut for ditch. A re–cut to 933	B/ 2d				
809	808	808	1081	Compact, dark greyish–brown clayey silt with frequent small stones and medium, subangular stones. 19.00 x 1.50–1.00m x 0.45m.	Fill of ditch 808	B/ 2d	Spiral headed ring, ring pin shaft			
810	811	811	400	Compact, dark greyish–brown silty clay with occasional small, subangular stones. 16.50m, curving at western end to the south, x 0.50m x 0.20m.	Fill of curvilinear 811	B/ 2d				
811	810	1081	810	Curvilinear east–west, curving at western end to the south, cut (16.50m x 0.50m x 0.25m), sharp break of slope, concave sides and an imperceptible break of slope leading to a concave base.	Cut for ditch. A re–cut to 933	B/ 2d				
812	N/A	171	778	Loose, light brown clayey silt with frequent flecks of red iron panning, flecks white clay and occasional small, subangular stones. (0.80m × 0.50m × 0.50m).	Deposit	?				
813	N/A	857	778	Loose, mid reddish–brown clayey silt with frequent flecks of red iron panning and occasional inclusions of medium sized stones, (0.60m × 0.55m × 0.70m)	Deposit	?				
814	816	815	557 1250	Loose, brownish–grey silty clay with frequent flecks of orange clay, occasional large, subangular stones and small, angular stones, (6.80m × 1.19m × 0.29m), cut by 0729, 0557	Fill of ditch 816	?		1xA6		

815	816	816	814	Moderately compact, mid greyish–brown silty clay with occasional small, angular stones, (6.81m × 0.36m × 0.06m).	Fill of ditch 816	?				
816	814 815	171	815	Curvilinear, northwest–southeast, curving at southeast end to the south, cut (6.81m × 1.19m × 0.39m), sharp break of slope, steep sides and a gradual break of slope leading to a flat base.	Cut for ditch	?				
817	N/A	171	400	Firm, mid grey silty clay and frequent subrounded stones. 0.90m × 0.60m	Metalled surface	?				
818	819	819	715	Moderately compact, mid–greyish–brown silty clay with occasional small, angular stones. 10m × 0.40m × 0.25m. Cut by F787, F714, F789, F571	Fill of linear 819	?		1xA6		Bulk #275
819	818	870	818	Linear, northwest–southeast cut (10m × 0.40m × 0.25m), sharp break of slope, gently sloping concave sides and a gradual break of slope leading to concave base.	Cut for linear	?				
820	821	821	1190	Firm, mid–brown silty clay and c.15% of angular, subrounded, small to medium pebbles with occasional animal bone. 34.00m x 0.50m × 0.20m	Fill of ditch 821	B/ 4		1xA4		Bulk #301
821	820	828	820	Linear, east–west cut (34.00m x 0.50m × 0.20m), sharp break of slope, steep concave sides and a sharp break of slope leading to a flat base. Appears to be a cut for a drain or ditch later than F450. Probably associated with F403	Cut for ditch	B/ 4				
822	823	823	1151	Loose, mid brown/grey silty clay with 15% of angular, subrounded, small to medium pebbles. 4.60m × 0.44m × 0.30m max.	Fill of linear 823	B/ 1a		1xA6		Bulk #216
823	794 822 1151	874 824 866	794 822	Curvilinear north–south, curving at northern end to the west, cut (8.0m × 0.44m × 0.30m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for linear 823	B/ 1a				
824	0825	825	823	Compact, dark yellowish–brown silty clay and 15% of angular and subrounded, small to medium pebbles, with occasional animal bone. 2.40m × 0.42m × 0.21m.	Fill of curvilinear 825	B/ 1a				Bulk #219

825	824	868 1111	824	Curvilinear, northwest–southeast, curving at northwestern end to the west, cut (2.40m × 0.42m × 0.21m max) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base	Cut for linear	B/ 1a				
826	827	827	571	Firm, mid greyish–brown silty clay with occasional charcoal flecks and small, angular, subangular pebbles. 9.60m × 0.42m × 0.30m).	Fill of linear 827	?	Iron fragment	1xA4	Y	Bulk #274
827	826	171	826	Linear, ENE–WSW cut (9.60m × 0.42–0.14m × 0.30–0.02m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base. Cut by F571 and furrows F589, F658, F664	Cut for linear	?				
828	832	829	821	Loose, light–yellow/brown silty clay and 15% of angular, subrounded, small to medium pebbles, with frequent small, moderate charcoal fragments and occasional large stones, (2.00m × 0.75–0.60m × 0.08m),	Fill of kiln 832	B/ 1a		1xA5		
829	832	830	828	Loose, mid–yellow/brown silty clay and 10% of angular medium and small pebbles, with occasional charcoal flecks, (2.00m × 0.70–0.50m × 0.11m).	Fill of kiln 832	B/ 1a				
830	832	831	829	Loose, black silty clay charcoal rich material, (0.76m north–south × 0.49–0.42m × 0.07m).	Fill of kiln 832	B/ 1a			Y	Bulk #197
831	832	832	830	Loose, mid orange silty clay with occasional subrounded, medium pebbles, (0.62m × 0.48m × 0.03m).	Fill of kiln 832	B/ 1a				
832	828 829 830 831	171	831	Figure of eight shaped, north–south cut (2.50m × 0.75–0.40m × 0.26m) with a sharp break of slope, concave sides and a gradual break of slope leading to a flat base.	Cut for cereal drying kiln	B/ 1a				
833	834	834	400	Firm, mid yellowish–brown clayey silt with frequent medium sized stones, small stones, moderate flecks of orange clay and flecks of black decaying stone (0.59m × 0.22m × 0.12m), cut by test trench.	Fill of gully 834	B/ 1a				

834	833	171	833	Oval, east–west cut (0.59m × 0.22m × 0.12m), sharp break of slope, steep concave sides and gradual break of slope leading to an irregular, stony base. Associated with F591, F667, F843.	Cut for gully	B/ 1a				
835	N/A	836	400	Loose, dark–brown with orange–red flecks silty clay, charcoal flecks and occasional small stones, (0.50m × 0.50m × 0.02m). Severely truncated by Phase 1 test trench.	Deposit	?				Bulk #206
836	N/A	171	835	Firm mid–red sandy clay with moderate large and medium sized stones, (0.63m × 0.36m × 0.02m). Severely truncated by Phase 1 test trench	Firespot?	?				
837	N/A	171	400	Firm light–dark–grey material with small, medium, angular and subangular stones, (1.50m × 1.00m north–south),	Metalled surface	?				
838	Cancelled. Same as 590									
839	Cancelled. Same as 591									
840	Cancelled. Same as 590									
841	Cancelled. Same as 591									
842	843	843	400	Loose, mid–brown to whitish–brown clayey silt with frequent flecks of iron panning and occasional medium sized stones, (1.60m × 0.17m–0.30m × 0.11m).	Fill of gully 843	B/ 1a				
843	842	171	842	Curvilinear northeast–southwest, curving at southwest end to the south, cut (1.60m × 0.17m–0.30m × 0.11m), sharp break of slope, but gradual on northwest side, gently sloping sides and an imperceptible break of slope leading to an irregular base.	Cut for gully	B/ 1a				
844	864	845	400	Firm mid–yellowish–brown with yellow mottling silty clay with occasional medium, subangular stones. 19.00m x 2.00–0.60m x 0.35m.	Fill of ditch 864	B/ 2b				
845	864	864	844	Firm light–greyish–brown silty clay with occasional small stones. 19.00m x 1.45–0.65m x 0.45m.	Fill of ditch 864	B/ 2b				
846	861	760	848	Firm, dark red sandy clay with moderate flecks of orange–yellow sand. 0.68m × 0.50m × 0.03m.	Fill of pit 861	B/ 2d				

847	642	803	800	Loose mid brownish–grey silty clay, frequent flecks of orange clay, moderate small–medium subangular to subrounded stones. 1.50m × 0.40m × 0.10m.	Fill of ditch 642	B/ 2b				
848	861	846	400	Firm, mid–brown silty clay with occasional flecks of orange–yellow clay and small stones, 0.53m × 0.68m × 0.11m.	Fill of pit 861	B/ 2d				
849 - 852	Cancelled. Natural									
853	N/A	685	400	Firm mid red oxidised clay with occasional flecks of orange clay and small stones. 0.28m × 0.27m × 0.03m.	Firespot?	?				
854 - 856	Cancelled									
857	859	860	813	Moderately compact, mid–greyish–brown clayey silt. 2.70m × 0.58m × 0.13m.	Fill of curvilinear 860	?				
858	1104	1104	566	Firm dark orange–brown silty clay with moderate small, subangular stones, animal bone, burnt soil and occasional charcoal flecks. 1.00m x 0.40m x 0.10m.	Fill of ditch 1104	B/ 2c		1xA6	Y	Bulk #231
859	857 860	895	860	Curvilinear, northeast–southwest, curving at southwest end to the south, cut (2.70m × 0.58m × 0.20m), sharp break of slope at the top and gradual, sharp at the base with concave (65°) sides and concave base.	Cut for linear	?				
860	859	859	857	Compact, mid yellowish–brown silty clay. 2.70m × 0.40m × 0.10m.	Fill of linear 859	?				Bulk #210
861	846 848	760	846	Oval, north–south cut (0.53m × 0.68m × 0.14m), gradual break of slope, concave sides and an imperceptible break of slope leading to a concave base.	Cut for pit	B/ 2d				
862	945	964	1248	Moderately compact mid–brown silty clay with frequent flecks of orange and yellow clay, moderate medium subrounded and angular stones, animal bone and occasional pebbles. c.46.00m x 0.70m x 0.15m.	Fill of ditch 945	B/ 1c	Iron knife	1xA4		

863	793	1105 1108	793	Curvilinear east–west, curving at western end to the south, cut (16.00m x 0.84m x 0.65m) completely truncated down to the base with gradual break of slope leading to a concave base.	Cut for ditch	B/ 2b		1xA4		
864	844 845	845	793	Curvilinear east–west, curving at western end to the south, cut (19.00m x 0.64m x 0.90m) with a sharp break of slope, moderately sloping flat to convex sides and a sharp break of slope leading to a flat base.	Cut for ditch	B/ 2b		1xA4		
865	Not allocated									
866	Cancelled. Same as 768									
867	Cancelled. Same as 767									
868	Cancelled. Same as 1111									
869	Cancelled. Same as 1112									
870	871	871	819	Moderately compact light greyish–brown silty clay with moderate coarse pebbles and small stones, (2.70m × 0.30m– 0.50m × 0.13m).	Fill of linear 871	?				
871	870	171	870	Linear, northeast–southwest cut (2.70m × 0.30m–0.50m × 0.13m), sharp break of slope, steep flat sides, but concave on southeast side, and a sharp break of slope leading to a concave base.	Cut for linear	?				
872 - 873	Not allocated									
874	875	875	823	Firm mid brown silty clay with flecks of yellow clay, occasional small, subangular stones and animal bone. 2.00m × 0.20m × 0.20m.	Fill of linear 875	B/ 1a				
875	874	171	874	Curvilinear, east–west, curving at east end to the south, cut (2.00m × 0.20m × 0.20m), north side completely truncated, with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base. Very truncated feature.	Cut for linear	B/ 1a				
876 - 877	Not allocated									
878	879	879	400	Moderately compact mid yellowish brown clayey silt with frequent small, angular, subangular stones and occasional charcoal flecks. 1.80m × 0.56m × 0.05m.	Fill of furrow 879	B/ 5				

879	878	566	878	Linear northwest–southeast cut (1.80m × 0.56m × 0.05m) with a gradual break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5				
880	1245	1245	400	Moderately compact mid yellowish brown sandy clay, frequent small, angular stones, occasional charcoal flecks and lumps of yellow clay, (3.15m × 0.25m– 0.90m × 0.05m).	Fill of furrow 1245	B/ 5				
881	886	892	400	Firm mid brown silty clay with moderate small, subrounded stones, occasional animal bone and medium sized, subangular stones, (2.20m north–south × 0.90m × 0.04m–0.16m).	Fill of pit? 886	?				
882	Cancelled. Same as 820									
883	Cancelled. Same as 821									
884	885	885	642	Firm, light yellowish brown clayey silt with frequent small to large, subangular stones, occasional charcoal flecks. 9.80m × 0.36m × 0.27m max.	Fill of gully 885	B/ 1a		1xA6		Bulk #215
885	884	171	884	Semi–circular cut (9.80m × 0.23m–0.36m × 0.02m–0.21m), with a sharp break of slope, but imperceptible at northwest and northeast ends, steep concave sides, becoming more shallow and moderate towards northwest and northeast ends and a gradual to impercepti	Cut for gully	B/ 1a				
886	881 892	171	400	Curvilinear north–south, slightly curving at the southern end to the west, cut (2.21m × 0.97m × 0.04m–0.21m) with an imperceptible break of slope with shallow concave sides and an imperceptible break of slope leading to an irregular concave base.	Cut for pit?	?				
887	888	888	1108	Firm dark yellowish–brown silty clay with occasional medium sized, subangular stones. 19.00m x 1.00m x 0.95m.	Fill of ditch 888	B/ 2b				
888	887 1108	968	1108	Curvilinear east–west, curving at west end to the south, cut (19.00m x 1.00m x 0.95m) completely truncated down to the base with imperceptible break of slope leading to a concave base.	Cut for ditch	B/ 2b		1xA4		

889	1114	890	1116	Moderately compact mid yellowish–grey sandy silt with occasional small stones. 4.00m x 0.75m x 0.10m.	Fill of linear 1114	?				
890	1114	1114	889	Loose, mid yellowish–brown with orange–yellow flecks silty clay with frequent small to medium sized, subangular stones and subrounded pebbles. 0.46m × 0.33m × 0.12m.	Fill of linear 1114	?				
891	Not allocated									
892	886	886	881	Firm, mid brown to light–reddish silty clay with moderate small, subrounded stones, occasional flecks of red clay. Flecks of iron panning and charcoal flecks. 1.40m × 0.33m × 0.21m	Fill of linear 886	?				
893	894	894	1190	Firm light yellowish–brown with lumps of yellowish clay, sandy clay, moderate small and medium sized stones, occasional flecks charcoal and burnt stones. 4.50m × 0.32m × 0.17m	Fill of linear 894	B/ 4	Flint, copper alloy fragment.	1xA6		
894	893	820	893	Linear, east–west cut (4.50m × 0.32m × 0.17m), with a gradual break of slope with concave sides and a gradual break of slope leading to a concave base.	Cut for linear	B/ 4				
895	897	896	1001	Firm, mid–yellowish–brown silty clay with occasional charcoal flecks and angular, subangular pebbles. 3.73m × 0.29– 0.58m × 0.18m.	Fill of linear 897	?		1xA6		
896	897	897	895	Firm, mid greyish–brown silty clay with occasional small, angular, subangular pebbles. 3.73m × 0.58m × 0.18m.	Fill of linear 897	?				
897	895 896	898	896	Curvilinear, east–west cut (3.73m × 0.29–0.58m × 0.18m), sharp break of slope with concave sides, but stepped on the north side and a sharp break of slope leading to an irregular flat base.	Cut for linear	?				
898	1101	899	897	Firm mid yellowish–greyish–brown silty clay. 2.40m × 0.57m × 0.08m.	Fill of linear 1101	?				
899	1101	1101	898	Moderately compact, mid–greyish–brown silty clay. 1.60m × 0.45m × 0.08m.	Fill of linear 1101	?				

900	913 915 987 1037 1038 1059 1060 1061 1062	645 764 918 919 1039 1050 1525	913 1059	Linear, east–west cut (30.00m x 1.00–1.82m x 0.45–0.82m), sharp break of slope at the top and with steep flat sides and a gradual break of slope.	Cut for ditch	B/ 2a				
901	929 931 1004 1003 1006 1007 1009	1024	1009	Linear, northeast–southwest cut (60m × 2.17m × 0.75m), gradual break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for ditch. 2nd re–cut of ditch 1000	B/ 1b				
902	938 1218 1219 1220	906	1220	Linear, north–south cut (approximately 13m × 1.20m × 0.62m), sharp break of slope with steep sides and a sharp break of slope leading to a flat base. Extended beyond the southern limit of excavation. Probably contemporary with F1525.	Cut for ditch	B/ 2b				
903	906 912	1239	912	Linear, NNW–SSE cut (13m × 1.05m × 0.60m), sharp break of slope with moderate concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	?				
904	907	1222	907	Linear, ENE– WSW cut (4.50m × 0.50m × 0.17m), gradual break of slope with steep flat sides and a gradual break of slope leading to a flat base.	Cut for linear	B/ 1a				
905	1051 1052 1035	1066	1051	Linear, E–W cut (13.00m x 1.10–0.80m x 0.65–0.30m), sharp break of slope with moderate concave sides and a gradual break of slope leading to a flat base.	Cut for ditch	B/ 2a				
906	903	912	902 1525	Firm light greyish–brown silty clay with occasional charcoal flecks. 13.00m × 1.05m × 0.40m.	Fill of linear 903	?	Flint	1xA6		
907	904	904	764	Firm, mid greyish–brown silty clay with moderate small stones. 4.50m x 0.50m x 0.17m.	Fill of linear 904	B/ 1a	Flint	1xA4	Y	
908-909	Not allocated									
910	1222	171	1222	Linear, ENE–WSW cut (2.50m × 0.60m × 0.38m), gradual break of slope with steep flat sides and a gradual break of slope leading to a concave base.	Cut for linear	B/ 1a				

911	922	922	400	Firm, mid brownish–grey silty clay with frequent small stones and occasional animal bones. 0.70m × 0.50m × 0.18m.	Fill of pit/posthole 922	?		1xA6		
912	903	903	906	Firm, mid grey, with orange–brown mottling, silty clay. 13.00m × 0.50m × 0.23m.	Fill of ditch 903	?				
913	900	900	1037 1038	Firm mottled brownish–grey and orange–brown silty clay with frequent small, subangular stones. 15m × 1.00m × 0.20m .	Fill of ditch 900	B/ 2a		1xA4		
914	Not allocated									
915	900	1061	1062	Firm mid orange–brown silty clay with small to medium sized, angular and subangular stones. 8.00m × 0.09m × 0.10m.	Fill of ditch 900	B/ 2a				
916	917	917	400	Linear northwest–southeast cut (3.38m x 0.46m max x 0.12m) with a gradual break of slope, gentle concave sides and a gradual break of slope leading to a concave base.	Fill of furrow 917	B/ 5				
917	916	1079	916	Firm dark orange–brown silty clay with occasional pebbles. 3.38m x 0.46m max x 0.12m.	Cut for furrow	B/ 5				
918	1221	171	1221	Sub–oval northeast–southwest cut (1.00m x 0.40m x 0.30m) heavily truncated at the top, moderate flat sides and a gradual break of slope leading to a concave base. Badly truncated feature.	Cut for pit	?				
919	1217	171	1217	Linear north–south cut (0.40m × 0.35m × 0.32m), sharp break of slope with steep flat sides and a gradual break of slope leading to a flat base. Possibly related to F918 or FF1090. Badly truncated.	Cut for linear	?				
920	Cancelled. Same as 1226									
921	Cancelled. Same as 934									
922	911	171	911	Sub–oval north–south cut (0.70m × 0.50m × 0.18m) with a gradual break of slope with moderately sloping sides and a gradual break of slope leading to a concave base. Adjacent to pit F965.	Cut for pit/posthole	?				

923	924	171	924	Linear northwest–southeast cut (6.50m x 0.35m × 0.05m) with a gradual break of slope with moderate concave sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5				
924	923	923	400	Moderately compact mid greyish–brown silty clay. 6.50m x 0.35m × 0.05m depth	Fill of furrow 923	B/ 5				
925	926	171	926	Linear northwest–southeast cut (6.90m × 0.30m × 0.04m) with a gradual break of slope, moderate concave sides and a gradual break of slope leading to a flat base.	Cut for furrow	B/ 5				
926	925	925	400	Moderately compact mid greyish–brown silty clay. 6.90m × 0.80m × 0.04m	Fill of furrow 925	B/ 5				
927	928	902	928	Linear northwest–southeast cut (7.80m × 0.40m × 0.04m) with a gradual break of slope, moderate concave sides and a gradual break of slope leading to a flat base.	Cut for furrow	B/ 5				
928	927	927	400	Moderately compact mid–greyish–brown silty clay. 7.80m × 0.40m × 0.04m	Fill of furrow 927	B/ 5				
929	901	931	1002	Moderately compact light yellow–brown clayey silt with occasional charcoal flecks and small, medium stones. 12.30m × 2.04m × 0.38m.	Fill of ditch 901	B/ 1b		1xA4		
930	1000	1044	1018	Firm dark greyish–brown sandy clay with occasional medium sized stones. 45m × 0.55–1.2m × 0.32m max.	Fill of ditch 1000	B/ 1a		1xA4		
931	901	1008	929	Firm mid brownish–grey clayey silt with frequent charcoal flecks, occasional small stones and grains of orange sand. 11.50m × 1.25m × 0.09m.	Fill of ditch 901	B/ 1b				Bulk #217
932	N/A	993	400	Reclaimation deposit approximately 50m by 30m covering the southern end of the area of excavation. Compact grey black clay with frequent large boulders and building rubble included. Up to 1.5m deep in places.	Reclamation deposit in Areas Bix and Bx	B/ 6				

933	967 968	405	968	Curvilinear east–west, curving at west end to the south, cut (19.00m × 2.00m × 0.90m), sharp break of slope with steep concave sides and an imperceptible break of slope leading to a concave base.	Cut for ditch	B/ 2a		1xA4		
934	946 947 948	704 967	948	L–shaped cut with long arm running northwest–southeast (17.00m x 1.20m x 0.70–0.25m) with a northeast–southwest return (10.00m x 1.20–0.60m x 0.60m). Rounded corner, sharp break of slope with steep slightly concave sides and a sharp break of slope leadin	Cut for ditch	B/ 1d		1xA4		
935	940 950	171	950	Curvilinear northwest–southeast, curving at northwest end to the west, cut (27.00m × 0.85m × 0.60m), with a sharp break of slope, moderate concave sides and a sharp break of slope leading to a concave base.	Cut for ditch	B/ 1a				
936	961 952 941	171	961	L–shaped cut (23m x 0.9m–1.40m x 0.41) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a flat base	Cut for ditch. Associated with 1065	B/ 1c				
937	975	962	975	Curvilinear east–west cut (8.00m × 0.27m × 0.17m), with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
938	902	1219	1218	Firm dark brownish–black clayey silt. 3.00m × 0.70m × 0.07m	Fill of ditch 902	B/ 2d	Iron object	1xA4		Bulk #290
939	Cancelled. Same as 1065									
940	935	950	1065	Firm mid grey sandy clay with occasional flecks of iron panning and charcoal flecks. 2.50m × 0.75m × 0.23m	Fill of ditch 935	B/ 1a				
941	936	952	400	Firm, mid greyish–brown clayey silt with moderate flecks of iron panning and occasional small stones. 23m x 1.40m x 0.20m.	Fill of ditch 936	B/ 1c	Iron object	2xA4		
942	976	171	976	Curvilinear cut (9.50m × 0.67m × 0.18m) with a gradual break of slope, gently sloping concave sides and an imperceptible break of slope leading to a flat, slightly concave base.	Cut for ditch	?				

943	977 985 986	171	977	Suboval, northwest–southeast cut (1.65m × 0.97m × 0.38m) with a sharp break of slope, gently to moderate sides and a gradual break of slope leading to a concave base.	Cut for pit	?				
944	978	171	978	Linear, NNE–SSW cut (2.50m × 0.34m × 0.06m) with a gradual break of slope, gently sloping slightly concave sides and an imperceptible break of slope leading to an irregular concave base.	Cut for furrow	B/ 5				
945	862 963	964	963	Curvilinear WNW–ESE, curving at WNW end to the west and at ESE end to the south, cut (c.46.00m x 1.20–1.50m × 0.40m) with a sharp break of slope with steep sides and a gradual break of slope leading to a flat base.	Cut for ditch. Re–cut of ditch 1250	B/ 1c				
946	934	947	933	Firm mid greyish–brown silty clay with occasional small, subangular stones and charcoal flecks. 37.00m x 1.00m wide x 0.35m.	Fill of ditch 934	B/ 1d	Iron object	2xA4		
947	934	948	946	Firm mid grey clay with occasional flecks of iron panning and charcoal flecks. 27.00m x 0.80m x 0.40m max.	Fill of ditch 934	B/ 1d		1xA4		
948	934	934	947	Firm mid greyish–brown silty clay with occasional small, angular stones and charcoal flecks. c. 16.00m x 0.70m x 0.25m max.	Fill of ditch 934	B/ 1d				
949	971	171	971	Rectangular, east–west cut (1.80m × 1.10m × 0.12m) with rounded corners, sharp break of slope, steep sides and a gradual break of slope leading to a flat base.	Cut for pit	?		1xA5		
950	935	935	940	Firm light brownish–grey silty clay with frequent flecks of iron panning and occasional charcoal flecks. 27.00m x 0.55m x 0.45m max.	Fill of ditch 935	B/ 1a				
951	983	934 964	983	Curvilinear north–south cut (16.00m x 0.90m x 0.30m) with a gradual break of slope, moderate concave sides and a gradual break of slope leading to a flat base.	Cut for ditch	B/ 1c				
952	936	961	941	Firm, reddish–brown clayey silt and c.15% oxidised material with frequent burnt clay and moderate animal bone. 23.50m x 0.9–1.40m x 0.41m	Fill of ditch 936	B/ 1c	Iron object	1xA6		

953	1063	171	1063	Linear north–south cut (5.00m × 0.20m × 0.08m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base.	Cut for gully	?		1xA4		
954	984	969 980	984	Curvilinear northwest–southeast, curving at northwestern end to the west and southwest, cut (17.00m x 0.40–0.80m x 0.14–0.60m) with a sharp break of slope, steep concave sides and a gradual break of slope and a concave base.	Cut for ditch	B/ 2d				
955	966 969	171	966	Curvilinear northwest–southeast, curving at northwestern end to the west, cut (20.50m x 0.80–0.90m x 0.30–0.50m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base. Potential association with F958.	Cut for ditch	B/ 2d				
956	973	971	973	Linear northwest–southeast cut (c.10.00m x 0.40m x 0.17m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a flat base.	Cut for linear	?				
957	974	971	974	Linear northwest–southeast cut (7.15m × 0.40m × 0.12m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a flat base.	Cut for linear	?				
958	972	171	972	Linear ENE–WSW cut (14.00m × 0.70m × 0.17m) with a gradual break of slope, gently sloping sides and imperceptible break of slope leading to an irregular base. Potentially associated with F955 & F1047.	Cut for ditch	B/ 2d		1xA6		
959	980 996	171	996	Linear northeast–southwest, cut (13.50m x 0.80m × 0.34m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base. Probable annexe enclosure on side of F955/ F958. Associated with F954.	Cut for ditch	B/ 2d				
960	N/A	1409	993	Large area of metalling within Area Bvii and Bx. 8.00m x 7.00m and comprising of tightly packed subrounded to rounded small to medium sized stones sealed by F993, a dark deposit containing animal bone.	Metalled surface	B/ 1c				

961	936	936	952	Firm mid brownish–grey silty clay with moderate flecks of iron panning. 23m x 0.85m x 0.20m.	Fill of ditch 936	B/ 1c		1xA5		
962	1065	1064	934 937 988 1531	Firm mid brown silty sand with moderate iron panning and occasional small stones. 23.00m × 0.90m × 0.13m.	Fill of ditch 1065	B/ 1c		2xA4 1xA6		
963	945	945	862	Firm mid brown silty clay with moderate small and medium sized stones. 23m x 1.50m × 0.40m.	Fill of ditch 945	B/ 1c	Iron object, iron blade.	2xA1	Y	
964	1250	1250	862	Firm mid greyish–brown silty clay with occasional small stones. C.30.00m x 0.30m × 0.15m.	Fill of ditch 1250	B/ 1b		1xA4		
965	970	171	970	Oval northeast–southwest cut (0.78m × 0.52m × 0.20m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base. Potential association with F922 & F949.	Cut for pit/ posthole	?				
966	955	955	969	Moderately compact mid orange–brown sandy clay with frequent small, medium sized stones. 10m × 0.80m × 0.24m.	Fill of ditch 955	B/ 2d	Copper alloy buckle	1xA5		
967	933	968	726	Firm greyish–brown, with yellow mottling, silty clay, moderate small, subangular stones. 16.00m x 0.70m x 0.35m.	Fill of ditch 933	B/ 2a				
968	933	933	967	Firm dark greyish–brown, with dark–yellow mottling, silty clay, moderate small to large, subangular stones, occasional charcoal flecks. 19.00m x 1.30m x 0.95m.	Fill of ditch 933	B/ 2a				
969	955	966	954	Firm, mid orange–brown silty clay with occasional small stones. 14.00m × 0.90m × 0.05–0.30m.	Fill of ditch 955	B/ 2d		1xA4		
970	965	966	400	Firm mid brownish–grey silty clay with frequent small stones. 0.78m × 0.52m × 0.20m.	Fill of pit/ posthole 965	?		1xA5		
971	949	949	956	Firm, mid greyish–brown silty clay with frequent medium stones and occasional large stones. 1.80m × 1.10m × 0.12m.	Fill of pit 949	?		1xA5		
972	958	958	400	Firm mid greyish–brown silty clay with frequent small and medium stones. 14.00m × 0.70m × 0.17m.	Fill of ditch 958	B/ 2d	Copper alloy pin fragment	1xA5		
973	956	956	400	Loose mid grey–brown sandy clay with small stones. 6.20m × 0.40m × 0.13m.	Fill of linear 956	?		1xA5		

974	957	957	400	Firm, mid grey–brown sandy clay with frequent small stones. 7.15m × 0.40m × 0.12m.	Fill of linear 957	?					
975	937	937	1531	Firm mid grey silty clay with occasional small, subangular stones. 8.00m × 0.27m × 0.17m.	Fill of linear 937	?					
976	942	942	400	Firm light brownish–grey clayey silt with occasional small subangular stones. 9.50m × 0.67m × 0.18m max.	Fill of ditch 942	?					
977	943	943	986	Firm mid dark–brown silty clay with occasional small stones. 1.25m × 0.80m × 0.16m.	Fill of pit 943	?					
978	944	944	557	Firm mid orange–brown silty clay with moderate small stones. 0.34m × 0.06m	Fill of furrow 944	B/ 5					
979	1239	1240	903	Compact mid reddish–brown silty clay with subrounded, angular pebbles and occasional large, subrounded stones, charcoal flecks. 2.50m x 0.60m x 0.20m.	Fill of ditch 1239	?			1xA4		
980	959	996	954	Firm mid brownish–grey silty clay with moderate small stones. 13.50m x 0.80m × 0.34m.	Fill of ditch 959	B/ 2d					
981	0982	171	982	Linear north–south cut (1.65m × 0.25m × 0.12m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base. Relationship to F951 unclear.	Cut for gully	?					
982	981	981	557	Firm mid brown silty clay with occasional small stones. 1.65m × 0.25m × 0.12m.	Fill of gully 981	?					
983	951	951	934 945	Firm mid brown silty clay with moderate small stones. 16.00m × 0.60–0.90m × 0.20–0.30m.	Fill of ditch 951	B/ 1c			1xA5		
984	984	954	400	Firm mid brown silty clay with occasional small stones. 17.00m x 0.40–0.80m x 0.60m max.	Fill of ditch 954	B/ 2d			1xA6		
985	943	986	557	Firm mid brown silty clay with moderate medium sized stones. 1.65m × 0.97m × 0.12m.	Fill of pit 943	?					
986	943	977	985	Firm, mid orange–brown slightly sandy silty clay with moderate small, medium sized stones and occasional charcoal flecks. 1.35m × 0.85m × 0.10m.	Fill of pit 943	?					

987	900	1061	1062	Firm dark brown–black silty clay with frequent charcoal flecks and occasional small stones. 0.40m × 0.30m × 0.05m.	Fill of ditch 900	B/ 2a			Y	Bulk #256
988	991 992	962	991	Linear east–west cut (3.90m × 0.50m × 0.20m) with a gradual break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for ditch. Re–cut to 1065?	B/ 1c				
989	Cancelled. Same as 962									
990	1527 1528	171	1528	Linear NNW–SSE cut (5.2m × 0.95m × 0.36m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base. Badly truncated.	Cut for linear	?				
991	988	988	992	Firm mid brownish–grey silty clay with occasional flecks of iron panning and charcoal flecks. 3.90m × 0.35m × 0.18m.	Fill of cut 988	B/ 1c				
992	988	991	934	Moderately compact mid orange–grey silty clay with moderate flecks of iron panning, occasional small stones and charcoal flecks. 3.90m east–west × 0.50m × 0.03m.	Fill of cut 988	B/ 1c				
993	N/A	960	932	Loose dark brownish–black silty clay with moderate animal bone and medium sized subrounded to subangular stones. Coterminous with F960. 0.08m deep max.	Occupation deposit?	B/ 1c	Handmade pottery, iron chisel, iron object, flint	3xA4		
994	N/A	171	400	Localised deposit of medium sized well–rounded coarse pebbles. 2.10m × 1.40m.	Metalled surface	?				
995	Not allocated									
996	959	959	980	Firm, reddish–brown, with black mottling, silty clay with charcoal staining. 0.90m × 0.45m × 0.05m.	Fill of ditch 959	B/ 2d				Bulk #199
997	Cancelled. Same as 951									
998	1034	1054	1056	Firm mid brownish–grey silty clay with large to medium, angular and subangular stones and occasional charcoal flecks. 1.50m × 0.60m × 0.38m max.	Fill of ditch 1034	B/ 2a	Flint			
999	Not allocated									

1000	930 1016 1018 1019 1020 1044 1223 1224 1225 1228	405	1228	Linear northeast–southeast cut (60.00m × 2.10m × 1.34m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base. Generally U–shaped profile. Recut by F1015 & F901.	Cut for ditch. Large annexe enclosure associated with 405	B/ 1a				
1001	1002	1002	400	Firm dark greyish–brown clayey silt with occasional small and medium sized stones and grains of orange sand. 4.40m × 0.56m × 0.36m.	Fill of ditch 1002	B/ 1b				
1002	1001	929	1001	Linear northeast–southwest cut (4.40m × 0.56m × 0.36m) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for ditch	B/ 1b				
1003	901	1004	400	Firm mid yellowish–brown clayey silt with occasional small and large stones. 6.20m × 0.63m × 0.23m.	Fill of ditch 901	B/ 1b				
1004	901	929	1003	Firm mid brownish–yellow silt with moderate small and large stones. 6.20m × 0.19m × 0.10m.	Fill of ditch 901	B/ 1b				
1005	1017	1017	1025	Compact mid orange–brown clayey silt with frequent flecks of manganese. 2.80m × 0.20m × 0.15m.	Fill of ditch 1017	B/ 1a				
1006	901	1007	931	Moderate light greyish–yellow silt with occasional decayed manganese. 12.30m × 0.99m × 0.06m.	Fill of ditch 901	B/ 1b				
1007	901	1009	1006	Firm mid yellowish–grey silty clay with frequent charcoal flecks, moderate medium sized stones. 10.00m × 0.90m × 0.03m.	Fill of ditch 901	B/ 1b				
1008	Cancelled. Same as 1009									
1009	901	901	1008 1007	Firm light brownish–grey clay with occasional charcoal flecks. 12.30m × 0.52m × 0.12m.	Fill of ditch 901	B/ 1b		1xA6		
1010	1011	1011	1017	Firm light orange–brown clayey silt with moderate small stones, occasional medium sized stones. 7.40m × 0.77m × 0.58m.	Fill of ditch 1011	B/ 1a		1xA4		

1011	1010	1012	1010	Linear northeast–southwest cut (7.40m × 0.77m × 0.58m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base. Localised re–cut along edge of F1015.	Cut for ditch	B/ 1a		1xA5		
1012	1015	1013	1011	Firm mid yellowish–grey clayey silt with moderate charcoal flecks and small stones. 4.00m × 0.78m × 0.07m.	Fill of ditch 1015	B/ 1b		1xA5		Bulk #251
1013	1015	1014	1012	Firm mid orange–brown silty clay with moderate small stones including decaying manganese. 6.70m × 0.54m × 0.05m.	Fill of ditch 1015	B/ 1b				
1014	1015	1015	1013	Loose light–whitish–grey silty clay with frequent flecks of yellow–orange sand and occasional small stones. 4.00m northeast–southwest × 0.68m × 0.07m.	Fill of ditch 1015	B/ 1b				Bulk #214
1015	1012 1013 1014	1016	1014	Linear northeast–southwest cut (6.70m × 1.14m × 0.74m) heavily truncated down to base with a gradual break of slope leading to a concave base.	Cut for ditch. 1st re–cut of ditch 1000	B/ 1b				
1016	1000	1020	1015	Compact mid orange–brown clayey silt with occasional charcoal flecks, small stones and shells. 17.10m × 0.65m × 0.29m.	Fill of ditch 1000	B/ 1a		1xA6		
1017	1005	1010	1005	Linear northeast–southwest cut with completely truncated sides and base. 2.80m × 0.20m × 0.15m. Localised re–cut along edge of F1015.	Cut for ditch	B/ 1a				
1018	1000	930	1019	Moderately compact light brownish– orange silty clay with occasional charcoal flecks. 17.10m × 0.11m × 0.28m.	Fill of ditch 1000	B/ 1a		1xA4		
1019	1000	1018	1020	Moderate light–yellowish–grey silty clay with occasional small stones, medium stones. 17.10m × 0.32m × 0.09m.	Fill of ditch 1000	B/ 1a				
1020	1000	1019	1016	Firm mid brownish–grey silty clay with occasional shells and small to large stones. 45.00m × 0.80m × 0.97m.	Fill of ditch 1000	B/ 1a		1xA4		
1021	1025	1022	901	Moderately compact light yellowish– brown silty clay with frequent medium stones, many decayed. 2.80m × 0.58m × 0.23m.	Fill of ditch 1025	B/ 1a				

1022	1025	1023	1021	Moderately compact light grey clayey silt with occasional medium sized stones. 2.80m × 0.60m × 0.13m.	Fill of ditch 1025	B/ 1a				
1023	1025	1024	1022	Firm light orange–brown silty clay with occasional snail shell and medium sized stones. 2.80m × 0.39m × 0.16m	Fill of ditch 1025	B/ 1a				
1024	1025	1025	1023	Firm light greyish–brown clayey silt with occasional small decayed stones. 2.80m × 0.34m × 0.14m	Fill of ditch 1025	B/ 1a				
1025	1024 1023 1022 1021	1005	1024	Linear northeast–southwest cut (2.80m × 0.60m × 0.74m) heavily truncated with steep sides and a sharp break of slope leading to a concave base. Localised re–cut along edge of F1015.	Cut for ditch	B/ 1a				
1026	1027	171	1027	Linear northwest–southeast cut (3.0m x 0.30m x 0.05m) with a gradual break of slope, moderate concave sides and a gradual break of slope leading to a flat base.	Cut for furrow	B/ 5				
1027	1026	1026	400	Fairly compact, mid–greyish–brown silty clay. 3.0m x 0.30m x 0.05m.	Fill of furrow 1026	B/ 1a				
1028	1029	171	1029	Linear northwest–southeast cut (2.50 x 0.47m x 0.11m) with a gradual break of slope with moderate concave sides and a gradual break of slope leading to a flat base.	Cut for furrow	B/ 5				
1029	1028	1028	400	Moderately compact mid greyish–brown silty clay. 2.50m x 0.47m x 0.11m	Fill of furrow 1028	B/ 5				
1030	1031	171	1031	Linear northwest–southeast cut (4.00m x 0.40m x 0.10m) with a gradual break of slope, moderate concave and a gradual break of slope leading to a flat base.	Cut for furrow	B/ 5				
1031	1030	1030	400	Moderately compact mid greyish–brown silty clay. 4.00m x 0.40m x 0.10m.	Fill of furrow 1030	B/ 5				
1032	1033	171	1033	Linear northwest–southeast cut (1.00 x 0.24m x 0.05m) with a gradual break of slope with moderate concave sides and a gradual break of slope leading to a flat base.	Cut for furrow	B/ 5				

1033	1032	1032	400	Moderately compact mid greyish–brown silty clay. 1.00m x 0.24m x 0.05m.	Fill of furrow 1032	B/ 5				
1034	1054 1055 1056 1057 1058 998	1052 1035	1054	Linear east–west cut (15.00m x 1.57m x 0.60m) with a gradual break of slope, steep concave sides and a gradual break of slope leading to a flat base.	Cut for ditch. Re–cut to ditch 905	B/ 2a				
1035	Same as 1052				Fill of ditch F905	B/ 2a	Struck flint			
1036	Cancelled. Same as 1052									
1037	900	913 1059	1060	Firm mottled mid yellowish–grey and orange–brown sandy silty clay with occasional small, subangular stones. 16.00m × 0.20m × 0.15m.	Fill of ditch 900	B/ 2a		1xA6		
1038	900	913	1060	Firm mottled mid orange–brown and yellowish–grey sandy silty clay with occasional small, subangular stones. 8.00m × 0.25m × 0.20m.	Fill of ditch 900	B/ 2a				
1039	1072 1226	1221	1072	Linear, ESE–WNW cut (9.00m × 0.90m × 0.70m) with a gradual break of slope with moderate concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2a				
1040	1041	1041	400	Loose mid blackish–brown silty clay with moderate charcoal flecks and occasional medium sized stones. 1.06m × 0.46m × 0.10m.	Fill of pit 1041	?				
1041	1040	171	1040	Oval north–south cut (1.06m × 0.46m × 0.10m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a flat base.	Cut for pit	?				
1042	1043	1043	688	Moderate light whitish–grey silty clay with frequent flecks of iron panning and occasional small stones. 1.46m × 0.31m × 0.06m.	Fill of gully 1043	?				
1043	1042	171	1042	Linear east–west cut (1.46m × 0.31m × 0.06m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base.	Cut for gully	?				

1044	1000	1228	930	Firm mid greyish–brown silty clay with frequent medium and large sized stones. 44m × 0.79m × 0.14m.	Fill of ditch 1000	B/ 1a		1xA4		
1045	Cancelled. Same as 651									
1046	Cancelled. Same as 652									
1047	Cancelled. Same as 653									
1048	1050	1050	1049	Firm mid greyish–brown silty clay with occasional charcoal flecks and medium sized stones. 15.50m × 0.38m × 0.20m.	Fill of ditch 1050	?		1xA5		
1049	1050	1048	691 900 1039	Firm mid–reddish–brown clayey silt with occasional charcoal flecks, small stones and flecks of manganese. 15.50m northwest–southeast, curving at northwest end to the north × 0.45m × 0.33m.	Fill of curvilinear 1050	?				
1050	1048 1049	646 1045	1048	Curvilinear cut (15.50m × 0.45m × 0.50m) with sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for ditch	?				
1051	905	905	1052 1035	Firm mid brownish–grey silty clay with moderate charcoal flecks, flecks of iron panning and occasional animal bone. 13m × 0.50m–0.70m × 0.25m.	Fill of ditch 905	B/ 2a				
1052	905	1051	1034	Firm mid brownish–grey silty clay with frequent small, subangular stones and moderate charcoal flecks. 2.00m × 0.70m × 0.13m.	Fill of ditch 905	B/ 2a				
1053	Cancelled. Same as 1052									
1054	1034	1034	998 1055	Firm mottled mid brownish–grey silty clay with occasional charcoal flecks, flecks of ash and animal bone. 15m × 0.87m × 0.28m.	Fill of ditch 1034	B/ 2a				
1055	1034	1054	1056	Firm mottled mid–orange–grey and mid–brownish–orange silty clay with moderate charcoal flecks and flecks of orange clay. 6.00m × 0.73m × 0.45m.	Fill of ditch 1034	B/ 2a				
1056	1034	1055 998	1057	Firm mid–brownish–grey silty clay with moderate charcoal flecks, occasional animal bone and small, subangular stones. 14.00m × 1.55m × 0.40m.	Fill of ditch 1034	B/ 2a				

1057	1034	1056	1058	Firm mid orange–brown silty clay with occasional charcoal flecks, animal bone and iron panning. 15.00m × 1.57m × 0.35m.	Fill of ditch 1034	B/ 2a				
1058	Cancelled. Same as 400									
1059	900	900	1037	Loose mid orange–brown silty clay with occasional small to medium sized, subangular stones. 15.00m × 0.50m × 0.20m.	Fill of ditch 900	B/ 2a	Flint			
1060	900	1037 1038	1061	Firm mid greyish–brown silty clay with frequent small, subangular stones. 14.0m × 0.70m × 0.07m	Fill of ditch 900	B/ 2a		1xA4		
1061	900	1060	915	Firm mid greyish–brown silty clay with frequent small subangular stones. 18.0m × 0.20m × 0.15m	Fill of ditch 900	B/ 2a		1xA5		
1062	900	915 987	400	Moderate mid greyish–brown silty clay with frequent small, angular stones. 30.0m x 1.82m x 0.25m	Fill of ditch 900	B/ 2a				
1063	953	953	400	Firm mid dark brown silty clay with occasional pebbles. 5.00m × 0.20m × 0.08m	Fill of gully 953	?		1xA4 1xA6		
1064	1065	1065	962	Firm mid brownish–grey silty clay with moderate flecks of iron panning. 23m × 0.50m × 0.10m.	Fill of ditch 1065	B/ 1c				
1065	962 1064	950	1064	Curvilinear cut (23.00m × 0.90m × 0.22–0.47m) with a gradual break of slope with moderate concave sides and a gradual break of slope leading to a concave base.	Cut for ditch. Associated with 936	B/ 1c		1xA6		
1066	1067	171	1067	Truncated north–south pit cut (2.85m × 0.85m × 0.12m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a flat base.	Cut for pit	?				
1067	1066	1066	905	Firm mid brownish–grey silty clay with occasional small, subangular stones, animal bone and charcoal flecks.0.85m × 0.12m	Fill of pit 1066	?				
1068	Cancelled. Same as 1066									
1069	Cancelled. Same as 1067									
1070	Cancelled. Same as 763									
1071	Cancelled									

1072	1039	1039	1226	Compact mottled mid orange–brown to orange–grey silty clay with moderate charcoal flecks and animal bone. 9.00m × 0.70m × 0.37m.	Fill of ditch 1039	B/ 2a		1xA6		
1073	Cancelled. Same as 1056									
1074	1075	1075	1034	Firm mid orange–brown silty clay with moderate amount of charcoal flecks and animal bone. 3.25m × 0.70m × 0.55m.	Fill of linear 1075	B/ 2d				
1075	1074	171	1074	Linear east–west cut (3.25m × 0.70m × 0.55m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base. Severely truncated by surrounding features.	Cut for ditch	B/ 2d				
1076	1078 1079	171	1078	Circular pit cut (1.00m × 0.06m deep) with a gradual break of slope, gently sloping concave sides and imperceptible break of slope leading to an irregular base.	Hearth/ firespot?	?				
1077	1088 1089	171	1089	Sub–circular northwest–southeast cut (1.12m × 0.97m × 0.20m) with a sharp break of slope, vertical sides and a sharp break of slope leading to an irregular base.	Hearth/ firespot?	?				
1078	1076	1076	1079	Loose mid yellowish–brown sandy silt with frequent charcoal flecks and traces of ash. 0.50m × 0.03m deep.	Fill of hearth/ firespot 1076	?				Bulk #255
1079	1076	1078	1080	Moderately compact mid yellowish–brown sandy clay with moderate charcoal flecks. 1.00m × 0.02m deep.	Fill of hearth/ firespot 1076	?				
1080	1099	1099	1098	Loose dark grey–black silty clay c.10% pebbles and c.15% large stones with occasional charcoal flecks. 4.00m x 0.90m x 0.41m	Fill of ditch 1099	?				
1081	808	809	811	Firm dark greyish–brown silty clay with occasional small to medium subangular stones.16.00m x 1.85m x 0.40m	Fill of ditch 808	B/ 2d	Glass bead			
1082	Cancelled. Same as 764									
1083 - 1084	Not allocated									

1085	764	763	766	Moderately compact mid reddish–brown silty clay and c.30% of angular and subrounded pebbles with occasional charcoal flecks. 22.00m x 1.32m × 0.35m deep.	Fill of ditch 764	B/ 2a		1xA6		
1086	Cancelled. Same as 1085									
1087	Cancelled. Same as 765									
1088	1077	1089	400	Moderately compact mid greyish–brown clayey silt with frequent lumps of orange, yellow and light–grey clays and charcoal flecks. 0.97m × 0.86m × 0.12m.	Fill of hearth/ firespot 1077	?				
1089	1077	1077	1088	Loose dark blackish–brown, mixed with flecks of ash, clayey silt with occasional burnt bone. 1.12m × 0.97m × 0.08m.	Fill of hearth/ firespot 1077	?				Bulk #265
1090	1091 1092 1093	171	1091	Sub–rectangular north–south cut (1.70m × 1.30m × 0.42m) with rounded corners, sharp break of slope, steep sides and a sharp break of slope leading to a flat base.	Cut for pit	?				
1091	1090	1092	400	Firm mid orange–brown sandy silt with occasional charcoal flecks and animal bones 1.70m × 1.30m × 0.25m.	Fill of pit 1090	?				
1092	1090	1093	1091	Firm mottled orange–brown and yellow–grey sandy clay with moderate charcoal flecks and occasional medium and small sized stones. 1.05m × 0.79m × 0.15m.	Fill of pit 1090	?				
1093	1090	1090	1092	Moderately compact dark orange–brown sandy silt with moderate animal bone, occasional charcoal flecks and medium sized stones. 1.53m × 1.05m × 0.25m.	Fill of pit 1090	?		1xA4		
1094	N/A	685	400	Loose light yellowish–greyish–brown clayey silt, frequent charcoal flecks, moderate patches of red and orange oxidised clay and occasional small stones. 0.56m × 0.27m × 0.02m.	Firespot?	?				
1095 - 1096	Not allocated									
1097	1099	1099	1098	Loose dark brownish–grey silty clay and 10% of medium to coarse pebbles with frequent animal bone. 7.00m x 1.10m x 0.60m.	Fill of ditch 1099	?		2xA4		

1098	1099	1097 1080	1239	Firm mid orange–brown silty clay and 20% of small to medium, subrounded, angular pebbles with moderate animal bone. 9.00m x 1.10m x 0.37m.	Fill of ditch 1099	?		1xA4		
1099	1080 1097 1098	171	1080 1097	Curvilinear north–south, curving at southern end to the west, cut (11.00m x 1.10m x 0.60m) with a sharp break of slope. Steep concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	?				
1100	Not allocated									
1101	898 899	171	899	Curvilinear cut, 2.40m x 0.57m x 0.15m with a sharp break of slope, but gradual on southeast side of northeast– southwest arm, moderate concave sides and a sharp break of slope, but gradual at the ends, leading to a concave base.	L–shaped cut	?				
1102	1103	1103	772	Loose mid greyish–brown silty clay and c.20% pebbles with moderate medium stones, animal bone and occasional charcoal flecks. 1.50m x 0.60m x 0.15m.	Fill of pit 1103	B/ 1a		1xA4		
1103	772 1102	822	1102	Linear northwest–southeast cut (5.50m x 0.50m x 0.20m max) with a sharp break of slope, moderate concave sides and a gradual break of slope leading down to a concave base.	Cut for pit	B/ 1a				
1104	566 858	643 804	858	Curvilinear northeast–southwest 30.00m x 0.50–1.0m x 0.40m max. Sharp break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for ditch. Re–cut of ditch 642	B/ 2c				
1105	1113	1113	808	Firm mid yellowish–brown silty clay with moderate charcoal flecks, occasional medium stones and small stones. 19.00m x 0.70m x 0.80–0.45m.	Fill of ditch 1113	B/ 2b	Copper alloy object			
1106	1107	1107	1126	Firm light greyish–brown silty clay with occasional small stones. 15.00m x 0.58m x 0.40m.	Fill of ditch 1107	B/ 3a				
1107	1106	844	1107	Curvilinear east–west cut (15.00m x 0.58m x 0.40m) with a sharp break of slope, but truncated on south side, steep flat slope, but moderate on south side, and sharp break of slope, but gradual on south side, leading to a generally flat base.	Cut for ditch	B/ 3a				

1108	888	887	863	Firm mid greyish–brown silty clay with small stones. 19.00m east–west, curving at west end to the south, x 0.60–0.50m x 0.30–0.20m.	Fill of ditch 888	B/ 2b				
1109	Cancelled. Same as 400									
1110	Cancelled. Natural depression									
1111	1112	1112	1123	Firm mid reddish–brown silty clay with moderate pebbles and occasional charcoal flecks. 7.40m x 0.35m x 0.14m.	Fill of gully 1112	B/ 1a		1xA6	Y	Bulk #239
1112	1111	171	1112	Curvilinear northwest–southeast, curving at NW end to the west and at SE end to the south, cut (7.40m x 0.35m x 0.14m) with a sharp break of slope, steep concave sides and a sharp break of slope leading to a concave base.	Cut for gully	B/ 1a				
1113	1105	1108	1105	Curvilinear east–west, curving at western end to the south, cut (19.00m x 0.70m x 0.80–0.45m) heavily truncated at top, steep generally flat sides and a sharp break of slope leading to an irregular base varying between flat and V–shaped.	Cut for ditch	B/ 2b				
1114	889 890	171	890	Linear north–south cut (0.74m x 0.59m x 0.18m) with a gradual break of slope, moderate flat sides and a gradual break of slope leading to a flat base.	Cut for linear	?				
1115-1115	Cancelled. Same as 400									
1117	1121	1119	1127	Firm mid greyish–brown sandy silt with occasional charcoal flecks. 3.00m x 0.69m x 0.25m.	Fill of linear 1121	B/ 1c		1xA5		
1118	Cancelled. Same as 1117									
1119	1121	1119	1117	Firm light brownish–yellow sandy silt. 0.40m x 0.22m x 0.90m.	Fill of linear 1121	B/ 1c				
1120	Cancelled. Same as 1119									
1121	1117 1119 1127	1129	1119	Curvilinear WNW–ESE, curving at WNW end to the north, cut (5.22m x 0.70m x 0.75m) with a gradual break of slope, steep sides, but moderate on south side, and a gradual break of slope leading to a concave base.	Cut for linear	B/ 1c				

1122	1123	1123	1112	Loose dark greyish–brown silty clay with moderate subrounded stones and charcoal flecks and v. occasional animal bone. 4.00m x 0.20m x 0.07m max.	Fill of gully 1123	?		1xA6		
1123	1122	1111	1122	Linear NNW–SSE cut (4.00m x 0.20m x 0.07m) with a gradual break of slope, gently sloping concave sides and a gradual break of slope leading to a concave base.	Cut for gully	?				
1124	N/A	171	593 894 1112 1162	Natural colluvial deposit within a depression in F171	Natural deposit					
1125	1126	1126	400	Firm mid greyish–brown, with yellow mottling, silty clay with occasional small stones and large stones. 15.00m x 0.80m x 0.30m.	Fill of ditch 1126	B/ 3a				
1126	1125	1106 1338	1125	Curvilinear east–west, curving at western end to the south, cut (15.00m x 0.80m x 0.30m) with a sharp break of slope, moderate sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 3a				
1127	1121	1117	1142	Firm light brownish–yellow sandy silt with occasional charcoal flecks. 0.66m x 0.30m x 0.14m.	Fill of linear 1121	B/ 1c				
1128	Cancelled. Same as 1127									
1129	1130	1130	1121	Firm mid greyish–brown sandy silt with occasional small stones. 7.00m x 0.80m x 0.10m max.	Fill of linear 1130	B/ 1c				
1130	1129	171	1129	Slightly curvilinear north–south, curving at northern end to the east, cut (7.00m x 0.30–0.80m x 0.10m). Shallow concave shaped cut with imperceptible breaks of slope, gently sloping concave sides and a flat base.	Cut for linear	B/ 1c				
1131-1132	Cancelled. Same as 400									
1133	Cancelled. Same as 669									
1134 - 1138	Not allocated									
1139	Cancelled. Same as 752									
1140	1142	1142	1141	Loose mid brownish–yellow silty clay with charcoal flecks. 2.95m x 1.00m x 0.17m.	Fill of ditch 1142	B/ 2a				

1141	1142	1140	753	Moderately compact light yellowish– brown with occasional small stones, redeposited white and yellow natural clay. 2.10m x 0.30m x 0.50m.	Fill of ditch 1142	B/ 2a				
1142	752 753 1140 1141	741 1117	1140	Linear north–south cut (c.10.00m x 1.93–2.10m x 0.35–0.66) with a sharp break of slope, but imperceptible at southern end, moderate sides, but gently sloping for southern half, and an imperceptible break of slope leading to a concave base.	Cut for ditch	B/ 2a				
1143	1144	1144	400	Moderately compact mid brownish–grey with occasional rounded small stones. 2.87m x 0.43m x 0.09m.	Fill of linear 1144	?				
1144	1143	171	1143	Curvilinear northwest–southeast, curving at southeast end to the east, cut (2.87m x 0.43m x 0.09m) with concave sides and and irregular base.	Cut for linear	?				
1145	645	644	748	Firm mid greyish–brown silty clay frequent flecks of iron panning and occasional small stones. 1.20m x 1.00m x 0.20m.	Fill of ditch 645	B/ 1b				
1146	Cancelled. Same as 400									
1147	Cancelled. Same as 171									
1148	1152	1152	664	Moderately compact light greyish–brown silty clay with occasional animal bone, charcoal flecks and small stones. 0.75m x 0.45m.	Fill of ditch 1152	B/ 2b				
1149	1150	1263	557	Loose mid greyish–brown silty clay frequent subrounded medium to large stones, charcoal fragments and traces of ash. 7.14m x 0.66m x 0.20m.	Fill of linear 1150	?		1xA5		
1150	1149 1263 1264 1265	171	1265	Linear north–south cut (7.14m x 0.66m x 0.38m) with sharp break of slope, steep sides and a gradual break of slope leading to a generally flat base.	Cut for linear	?				
1151	823	822	642 1103	Firm mid yellowish–brown silty clay with moderate small stones and v. occasional animal bone. 4.00m x 0.45m x 0.15m max.	Fill of linear 823	B/ 1a				

1152	1148	1108	1148	Heavily truncated at the top, gently sloping convex sides and an imperceptible break of slope leading to a concave base. Length and width not recorded due to truncation, minimum depth was 0.80m.	Cut for ditch	B/ 2b				
1153	1154	1154	864	Moderate dark yellowish–brown silty clay with moderate medium stones and occasional charcoal flecks.	Fill of ditch 1154	B/ 2b				
1154	1153	1148	1153	Very truncated ditch. Minimum depth of 0.60m, at the top, heavily truncated sides and an imperceptible break of slope leading to a concave base. Length and width not recorde ddue to truncation.	Cut for ditch	B/ 2b				
1155 - 1156	Not allocated									
1157	Cancelled. Same as 722									
1158	Cancelled. Same as 721									
1159 - 1160	Not allocated									
1161	1162	1162	677	Loose light brown to mid reddish–brown silty clay with occasional indications of iron panning, small stones, animal bone and charcoal flecks. 4.10 x 0.40m x 0.11m max.	Fill of gully 1162	B/ 1a		1xA6		Bulk #280
1162	1161	171	1161	Curvilinear north–south, curving at south end to the west, cut (4.10m x 0.04m x 0.11m) with a gradual break of slope, gently sloping concave sides and an imperceptible break of slope leading to a concave base.	Cut for gully	B/ 1a				
1163	Cancelled. Same as 400									
1164	Cancelled. Natural depression									
1165 - 1167	Cancelled. Geological feature									
1168	1169	1169	649	Firm mid greyish–brown silty clay with occasional pebbles, animal bone and charcoal flecks. 3.51m x 0.29m x 0.07m.	Fill of gully 1169	?				Bulk #264

1169	1168	171	1168	Curvilinear east–west, curving at eastern end to the north, cut (3.51m x 0.29m x 0.07m) with a sharp break of slope, but gradual at western end, concave sides and a gradual break of slope leading to a concave base.	Cut for gully	?				
1170	N/A	171	400	Linear northwest–southeast Metalled surface with compact well sorted rounded stones (mean diameter 0.035m). 2.50m x 0.50m x 0.04m.	Metalled surface	?				
1171	1175	1174	707 1216	Firm mid brownish–grey, with orange and red mottling, sandy silt with occasional coarse pebbles, animal bone and charcoal flecks. 8.25m x 0.70m x 0.24m.	Fill of linear 1175	B/ 1a				
1172	1216	1216	1241	Firm mid greyish–brown silty clay with moderate small stones and occasional animal bones. 4.85m x 0.47m x 0.27m.	Fill of gully 1216	B/ 1c	Crucible fragment			Bulk #263
1173	705	705	703	Firm mid grey silty clay with occasional pebbles. 1.85m x 0.50m x 0.12m.	Fill of linear 705	B/ 1a				
1174	1175	1175	1171	Moderately compact mid–bluish–grey silty clay with occasional coarse pebbles. 8.25m x 0.30m x 0.13m.	Fill of linear 1175	B/ 1a				Bulk #261
1175	1171 1174	171	1174	Slightly curvilinear northwest–southeast, with a slight curve at southeastern end to the south, cut (8.25m x 0.70m x 0.30m) with sharp break of slope, steep slightly concave sides and a sharp break of slope leading to an irregular concave base.	Cut for linear	B/ 1a				
1176	1177	171	1177	Subcircular northeast–southwest cut (0.18m x 0.16m x 0.09m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a concave base.	Cut for stakehole	?				
1177	1176	1176	400	Moderately compact mid brownish–grey silty clay with frequent charcoal fragments. 0.18m x 0.16m x 0.09m.	Fill of stakehole 1176	?				
1178	1179	171	1179	Subcircular east–west cut (0.28m x 0.25m x 0.09m) with a sharp break of slope, vertical sides, but moderate slope on the south and west sides, and a sharp break of slope leading to a concave base.	Cut for stakehole	?				

1179	1178	1178	400	Moderately compact mid brownish–grey silty clay with frequent charcoal fragments and occasional pebbles. 0.28m x 0.25m x 0.09m.	Fill of stakehole 1178	?				Bulk #266
1180	1181	171	1181	Subcircular northeast–southwest cut (0.09m x 0.09m x 0.14m) with a sharp break of slope, steep sides and a sharp break of slope leading to a rounded point base.	Cut for stakehole	?				
1181	1180	1180	400	Firm dark brownish–grey silty clay with moderate charcoal fragments. 0.09m x 0.14m deep.	Fill of stakehole 1180	?				Bulk #267
1182	735	736	400	Moderately compact light grey clay. 6.00m x 1.86m x 0.37m.	Fill of ditch 735	?	Glass bead	1xA5		
1183	735	1184	736	Loose mid brownish–grey silty clay with moderate small to medium stones. 6.00m x 0.90–1.80m x 0.58m.	Fill of ditch 735	?	Iron object	1xA4		
1184	735	735	1183	Moderate mid orange–grey silty clay with frequent grit and pebbles. 6.00m x 1.10m x 0.53m.	Fill of ditch 735	?		1xA5		
1185	1186	1186	400	Firm mid–brown clayey silt with frequent small stones and moderate large stones. 2.30m NNW–SSE x 0.30m x 0.05m.	Fill of furrow 1186	B/ 5				
1186	1185	566	1185	Linear NNW–SSE cut (2.3m x 0.30m x 0.05m) with gradual break of slope, gently sloping concave sides and an imperceptible break of slope leading to a concave base.	Cut for furrow	B/ 5				
1187	N/A	171	869 894 1112	Compact metalling c.30% large stones, c.30% medium stones and c.40% small stones. 3.30m x 2.40m.	Metalled surface	?	Copper alloy object			
1188	N/A	171	832	Compact metalling c.20% large stones, c.40% medium stones and c.40% small stones. 0.50m east–west x 0.45m north–south.	Metalled surface	?				
1189	1190	1190	557	Moderately compact mid greyish–brown silty clay with occasional small stones, animal bones and v. occasional charcoal flecks. 2.40m x 0.65m x 0.30m.	Fill of drain? 1190	B/ 4				
1190	1189	820 893	1189	Linear east–west cut (2.40m x 0.65m x 0.30m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for drain? Re–cut of 821	B/ 4				

1191	666 1256	1192 1257	666	Linear northeast–southwest cut (6.20m x 0.60m–1.10m x 0.24–0.45m) with a sharp break of slope, generally steep concave sides and a sharp break of slope, but gradual at northeastern end, leading to a concave base.	Cut for linear	B/ 3a				
1192	1194	1193	1191	Moderately compact mid yellowish– brown silty clay with moderate small stones and occasional charcoal flecks. 5.50m x 0.45–1.10m x 0.30m.	Fill of linear 1194	B/ 3a		1xA5		
1193	1194	1194	1192	Moderately compact –firm light–mid–orange–brown silty clay with frequent flecks of orange clay, occasional small stones, pebbles and charcoal flecks. 5.50m northeast–southwest x 0.90–0.50m x 0.30–0.08m	Fill of linear 1194	B/ 3a		1xA5		Bulk #294
1194	1192 1193	171	1193	Linear northeast–southwest cut (5.50m x 1.10–0.70m x 0.40m) with a sharp break of slope, concave side and a generally gradual break of slope leading to a concave base.	Cut for linear	B/ 3a				
1195	1196 1197	1203	1196	Linear, with slight curve at eastern end to the south, east–west cut (5.10m x 0.83–0.60m x 0.50m) with a sharp break of slope, steep sides and a sharp break of slope leading to a slightly concave base.	Cut for linear	?				
1196	1195	1195	1197	Moderately compact light grey silty clay	Fill of linear 1195	?	Iron pin	1xA4		
1197	1195	1196	1198	Moderately compact mid brownish–grey silty clay with occasional small stones, flecks of yellow clay and flecks of red iron panning. 5.10m x 0.70m x 0.35m.	Fill of linear 1195	?		1xA4		
1198	1541	1541	400	Loose mid brownish–grey clayey silt with frequent flecks of yellow clay. 5.10m x 0.52–0.30m x 0.25m.	Fill of linear 1541	?		1xA5		
1199	Cancelled. Same as 1065									
1200	Cancelled. Same as 171									
1201	Cancelled. Same as 1064									
1202-1203	Cancelled. Same as 962									
1204 - 1207	Not allocated									

1208	550	733	1319	Moderately compact mid brownish–grey silty clay with moderate small subangular stones, occasional animal bone and charcoal flecks. 7.00m x 2.10m x 0.37m.	Fill of ditch 550	B/ 3a		2xA4	Y	
1209	Not allocated										
1210	1211 1212 1213	405 1065	1211	Subrectangular east–west cut (3.80m x 1.20m x 0.40–m) with a sharp break of slope, flat vertical sides and a gradual break of slope leading to a flat base.	Cut for pit	?				
1211	1210	1210	1212	Moderately compact light orange/grey sandy clay. 3.80m x 0.46m x 0.08m.	Fill of pit 1210	?				
1212	1210	1211	1213	Firm mid brownish grey silty clay. 3.80m x 1.20m x 0.35m.	Fill of pit 1210	?				
1213	1210	1212	400	Moderately compact mid orange–grey silty clay. 3.80m x 1.00m x 0.20m.	Fill of pit 1210	?				
1214	1215	1215	400	Moderately compact mid greyish–brown silty clay. 7.70m x 0.25m x 0.07m.	Fill of furrow 1215	B/ 5				
1215	1214	171	1214	Linear northwest–southeast cut (7.70m x 0.25 x 0.07m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5				
1216	1172	1171	1172	Semicircular cut (4.85m long x 0.31– 0.47m wide x 0.15–0.27m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base. Associated with F707.	Cut for gully	B/ 1c				
1217	919	919	900	Moderately compact mid greyish–brown silty clay with occasional small stones. 0.40m x 0.35m x 0.32m.	Fill of linear 919	B/ 1c				
1218	902	938	400	Firm light grey/brown silty clay with frequent flecks of red/orange clay, medium stones and occasional charcoal flecks. 13.00m x 0.85m x 0.11m.	Fill of linear 902	B/ 2b	Flint			
1219	902	1220	938	Firm light grey/brown silty clay with frequent flecks of red/orange clay, moderate charcoal flecks and occasional pebbles. 13.00m x 1.20m x 0.40m.	Fill of linear 902	B/ 2b				
1220	902	902	1219	Loose mid grey silty clay with occasional pebbles. 13.00m x 0.70m x 0.25m.	Fill of linear 902	B/ 2b				

1221	918	918	900 1039	Firm dark orange–brown silty clay with occasional medium stones and animal bone. 1.00m x 0.40m x 0.30m.	Fill of pit 918	?				
1222	910	910	907	Firm mid brown silty clay with moderate medium stones and small stones. 2.50m x 0.40m x 0.23m.	Fill of pit 910	B/ 1a				
1223	1000	1224	764 1326	Firm mid brownish–grey silty clay frequent small stones and occasional animal bone. 16.00m x 2.75m x 0.50m.	Fill of ditch 1000	B/ 1a				
1224	1000	1225	1223	Firm mid grey silty clay with frequent small to medium stones and occasional animal bone. 16.00m x 1.35m x 0.34m.	Fill of ditch 1000	B/ 1a				
1225	1000	1000	1224	Firm mid yellowish–grey silty clay frequent medium to large stones and occasional animal bone. 16.00m x 0.80m x 0.30m.	Fill of ditch 1000	B/ 1a				
1226	1039	1072	1000	Firm mid orange–brown silty clay with moderate charcoal flecks. 9.00m x 0.90m x 0.35m.	Fill of linear 1039	B/ 2a				
1227	Not allocated									
1228	1000	1000	1044	Firm mid greyish–brown silty clay with occasional medium stones and occasional snail shell fragments. 60.00m x 0.45m x 0.06m.	Fill of ditch 1000	B/ 1a				
1229	Cancelled. Same as 946									
1230	Cancelled. Same as 947									
1231	Cancelled. Same as 948									
1232	951	951	983	Firm mid orange–brown silty clay with frequent charcoal flecks, moderate flecks of iron panning and small stones. 1.60m x 0.60m x 0.16m.	Fill of ditch 951	B/ 1c				
1233	Cancelled. Same as 983									
1234	1236	1235	400	Firm light orange–grey silty clay with moderate pebbles and occasional charcoal flecks. 0.40m x 0.40m x 0.18m.	Fill of posthole 1236	?				
1235	1236	1236	1234	Loose dark grey/brown silty clay 0.28m x 0.25m x 0.15m.	Fill of posthole 1236	?				

1236	1234 1235	171	1235	Sub–circular cut (0.40m x 0.18m deep) with a gradual break of slope, steep sides, but moderate and concave on northern side, and a gradual break of slope leading to a concave base.	Cut for posthole	?					
1237	1238	1238	400	Loose dark greyish–brown silty clay and c.15% pebbles at base with occasional charcoal flecks. 0.25m x 0.20m x 0.10m.	Fill of posthole 1238	?					
1238	1237	171	1237	Suboval north–south cut (0.25m x 0.20m x 0.10m) with a gradual break of slope, steep concave sides and an imperceptible break of slope leading to a tapered point at base.	Cut for posthole	?					
1239	979 1240	1098	1240	Slightly curvilinear generally north–south cut (2.50m x 0.93m x 0.40m) with a sharp break of slope, steep concave sides and an imperceptible break of slope leading to a concave base	Cut for ditch. Re–cut of 1099	?					
1240	1239	1239	979	Firm mid yellowish–brown silty clay with frequent subrounded stones and moderate charcoal flecks. 2.50m x 1.10m x 0.40m.	Fill of ditch 1239	?	Flint	3xA4			
1241	1242 1243 1244	950 1172	1244	Subrectangular northeast–southwest cut with rounded corners (2.10m x 1.02m x 0.27m) with a sharp break of slope, but gradual on southeast side, steep slightly concave sides, but convex on southeast side, and a sharp break of slope, but gradual on southeas	Cut for pit	?					
1242	1241	1243	400	Moderately compact mid greyish–brown silty clay with occasional small stones, coarse pebbles and animal bone. 1.02m x 0.85m x 0.14m.	Fill of pit 1241	?					
1243	1241	1244	1242	Moderately compact mid greyish–brown, with orange mottling, silty clay with moderate coarse stones. 2.10m x 1.02m x 0.25m.	Fill of pit 1241	?					
1244	1241	1241	1243	Moderately compact mid brownish–grey silty clay with occasional flecks of orange clay. 1.00m x 0.25m x 0.10m.	Fill of pit 1241	?					
1245	880	171	880	Linear northwest–southeast cut (3.50m x 0.40m x 0.05m) with a sharp break of slope, concave sides and a gradual break of slope leading to a concave base.	Cut for furrow	B/ 5					

1246	1247	1247	400	Loose mid yellowish–brown silty clay with occasional small stones and charcoal flecks. 0.31m x 0.48m x 0.21m.	Fill of pit 1247	?		1xA6		
1247	1246	1256	1246	Suboval cut (0.31m x 0.48m x 0.21m) with a sharp break of slope, steep sides, but moderate on northwest side, and a sharp break of slope leading to a slightly concave base.	Cut for pit	?				
1248	1249	963	1249	Curvilinear northwest–southeast cut (10.50m x 0.70m x 0.17m) with a sharp break of slope, moderately sloping sides and a gradual break of slope leading to a concave base. Re–cut of F945.	Cut for ditch	B/ 1c				
1249	1248	1248	400	Firm mid brownish–grey silty clay with small stones. 10.50m x 0.70m x 0.17m	Fill of ditch 1248	B/ 1c				
1250	964	1000	964	Curvilinear WNW–ESE, curving at WNW end to the west and at ESE end to the south, cut (c.46.00m x 0.30m x 0.15m) completely truncated top of cut, heavily truncated sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 1b				
1251	Not allocated									
1252-1253	Cancelled. Same as 400									
1254	1255	1255	550?	Loose dark orange–brown silty clay with frequent large stones, moderate animal bones, occasional pebbles and charcoal flecks. 5.20m x 0.50m x 0.20m.	Fill of linear 1255	?		1xA6	Y	
1255	1254	1256	1254	Linear northeast–southwest cut (5.20m x 0.40–0.60m x 0.20m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
1256	1191	666	1247 1255	Loose dark brownish–grey silty clay with frequent pebbles and small stones. 1.60m x 1.00m x 0.22m.	Fill of linear 1191	?		1xA4		
1257	1260	1258	1191	Loose mid brownish–grey silty clay with frequent small stones. 5.30m x 0.90m x 0.31m.	Fill of linear 1260	?		1xA4		
1258	1260	1259	1257	Moderately compact mid yellowish–grey silty clay with occasional medium stones and charcoal flecks. 5.30m x 0.65m x 0.15m.	Fill of linear 1260	?				

1259	1260	1260	1258	Moderately compact mid brownish–grey silty clay with occasional subrounded stones. 3.40m x 1.00m x 0.16m.	Fill of linear 1260	?				
1260	1257 1258 1259	171	1259	Linear northeast–southwest cut (5.30m x 1.20–0.50m x 0.50–0.40m) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base.	Cut for linear	?				
1261	1262	1262	400	Moderately compact mid grey/brown silty clay with moderate subangular small stones and occasional charcoal flecks. 0.30m x 0.28m x 0.12m.	Fill of posthole 1262	?				
1262	1261	1149	1261	Subcircular north–south cut (0.30m x 0.28m x 0.12m) with a gradual break of slope, moderate concave sides and an imperceptible break of slope leading to a concave base.	Cut for posthole	?				
1263	1150	1264	1149	Loose mid grey/black silty clay with frequent charcoal fragments. 0.70m x 0.18m x 0.02m.	Fill of linear 1150	?				Bulk #302
1264	1150	1265	1263	Loose brick red oxidised clay. 0.70m x 0.35m x 0.05m.	Fill of linear 1150	?				Bulk #302
1265	1150	1150	1264	Firm mid greyish–brown silty clay with moderate subrounded stones with charcoal flecking throughout. 7.14m x 0.35m x 0.10m.	Fill of linear 1150	?				
1266	660	624	626	Firm dark greyish–brown silty clay. 19.00m x 1.15m x 0.43m.	Fill of linear 660	?	Iron blade fragment	1xA4	Y	
1267	1268 1269 1270	1273	1268	U–shaped generally NNW–SSE cut with rounded corners (14.40m x 1.25m x 0.45m) with a sharp break of slope, irregular sides and a sharp break of slope leading to a concave base. Located inside and predates F550, therefore pre-dating Phase B/3a.	Cut for ditch	?				
1268	1267	1267	1269	Firm mid light orange–grey slightly silty clay with moderate small stone and pebbles. 12.20m x 0.97m x 0.30m.	Fill of ditch 1267	?				
1269	1267	1268	1270	Firm mid orange–grey silty clay with moderate coarse pebbles and occasional small stones. 12.20m x 0.90m x 0.32m.	Fill of ditch 1267	?		1xA4	Y	
1270	1267	1269	735	Firm mid brownish–grey silty clay with occasional small stones. 8.80m x 1.00m x 0.20m.	Fill of ditch 1267	?		1xA4	Y	

1271	1272 1273	575 1252	1272	Linear NNW–SSE, with a slight curve at NNW end to the north, cut (23.00m x 1.10m x 0.55–0.28m) with a sharp break of slope, irregular steep sides and a sharp break of slope leading to an irregular base. Pre-dated Phase B/3a.	Cut for linear	?				
1272	1271	1271	1273	Moderately compact mid brownish–grey silty clay with occasional small stones. 23.00m x 0.85m x 0.33m	Fill of linear 1271	?		1xA4		Charcoal #308
1273	1271	1272	1267 1397	Moderately compact mid brownish–grey silty clay with moderate coarse pebbles. 23.00m x 1.10m x 0.35m.	Fill of linear 1271	?	Flint	1xA4	Y	
1274 - 1275	Not allocated									
1276	574	572	400	Firm dark blackish–brown clayey silt with frequent charcoal fragments, occasional small to medium stones and burnt bone.	Fill of linear 574	?		1xA6	Y	Bulk #283
1277	1278	1278	400	Moderately compact mid yellowish– brown silty clay with occasional small stones, pebbles, animal bone, charcoal flecks and v. occasional burnt bone. 5.23m x 0.42m x 0.22m.	Fill of ditch 1278	?		1xA6		
1278	1277	1281	1277	Curvilinear east–west, curving at west end to the south, cut (5.23m x 0.42m x 0.22m) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base.	Cut for ditch. Re–cut of 1282?	?				
1279	582 1280	630	1280	Linear east–west cut (7.80m x c.0.80m x 0.45m) with a sharp break of slope, but gradual on southern side at eastern end, moderate irregular concave sides and a sharp break of slope leading to a concave base.	Cut for linear	?				
1280	1279	1279	582	Moderately compact mid brownish grey silty clay. 7.80m x 0.65m x 0.30m.	Fill of linear 1279	?		1xA6		
1281	1282	1306	1278	Moderately compact dark yellowish– brown silty clay with moderate animal bone, burnt bone, charcoal fragment and occasional medium stones. 3.46m x 0.60m x 0.25m.	Fill of linear 1282	?		1xA4	Y	Bulk #287

1282	1281 1306	171	1306	Linear northwest–southeast cut (6.76m x 0.60m x 0.25m) with a gradual break of slope, moderate concave sides and a gradual break of slope leading to a concave base. Re–cut by F1278.	Cut for ditch	?				
1283	1287	1284	574	Firm light yellowish–brown silty clay with moderate small to medium stones. 2.40m x 0.79m x 0.10m.	Fill of pit 1287	?				
1284	1287	1285	1283	Firm mid yellowish–brown clayey silt with moderate small stones. 1.17m x 1.04m x 0.17m.	Fill of pit 1287	?		1xA6		
1285	1287	1286	1284	Loose dark blackish–brown silty clay with moderate animal bone, burnt bone, charcoal flecks and occasional small stones. 2.05m x 1.03m x 0.17m.	Fill of pit 1287	?	Bone pin, iron blade fragments	1xA4	Y	Bulk #288
1286	1287	1287	1286	Firm mid greyish–brown clayey silt with frequent small stones and moderate medium stones. 0.87m east–west x 0.50m x 0.12m.	Fill of pit 1287	?				
1287	1283 1284 1285 1286	171	1286	Sub–rectangular north–south cut (2.40m x 1.04m x 0.32m) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat base.	Cut for pit	?				
1288	1289	171?	1289	Linear north–south cut (3.00m x 1.30m x 0.35m) with a gradual break of slope, steep concave sides and a gradual break of slope leading to a concave base. Very truncated ditch..	Cut for ditch	B/ 2a				
1289	1288	1289	1290	Moderately compact mid reddish–brown silty clay with frewuent subrounded stones with occasional animal bone and charcoal flecks. 3.00m x 1.30m x 0.35m.	Fill of ditch 1288	B/ 2a		1xA4		
1290	1291	1288	1291	Curvilinear north–south, curving at the south to the west, cut (7.50m x 1.10m x 0.34m) with a gradual break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for ditch	B/ 2d				
1291	1290	1290	1326	Moderately compact mid blackish–brown silty clay with frequnet subangular stones, moderate animal bone and occasional charcoal flecks. 7.50m x 1.10m x 0.34m.	Fill of ditch 1290	B/ 2d	Bone trial piece, iron blade, flint	1xA4	Y	

1292	1293	1293	400	Firm light greyish–yellowish–brown sandy clayey silt with moderate medium subangular stones. 2.10m min. x 0.24m x 0.13m.	Fill of gully 1293	?		1xA4		
1293	1292	171	1292	Curvilinear semi–circular cut (2.10m min. x 0.24m x 0.13m) with generally sharp break of slope, steep sides and a gradual break of slope leading to a flat base.	Cut for gully	?				
1294	1295 1296 1297	580 1192	1295	Trapezoid east–west cut (2.42m x 1.42–1.66m x 0.57m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to an irregular flat base.	Cut for pit	?				
1295	1294	1294	1296	Moderately compact mid grey silty clay with occasional animal bone and flecks of burnt bone. 2.30m x 1.40m x 0.08m.	Fill of pit 1294	?	Iron object	1xA4 1xA6	Y	Charcoal #300
1296	1294	1295	1297	Loose dark brownish–grey clayey silt with frequent animal bone, moderate burnt bone and charcoal fragments. 2.42m x 1.60m x 0.46m.	Fill of pit 1294	?	Iron blade	1xA4	Y	Bulk #299
1297	1294	1296	400	Moderately compact mid brownish–grey silty clay, occasional animal bone and charcoal flecks	Fill of pit 1294	?		1xA6		
1298	550	549	733	Loose mid grey/brown clayey silt with traces of oxidsed orange clay, moderate small to medium, animal bone and occasional charcoal flecks. 24.50m x 1.42–2.34m x 0.66–0.85m.	Fill of ditch 550	B/ 3a		1xA1		
1299	1319	1312	1305	Moderately compact mid greyish–brown silty clay with moderate small stones and charcoal flecks. 16.50m x 1.58m x 0.40m max.	Fill of ditch 1319	B/ 3b		1xA4		Charcoal #320
1300	Not allocated									
1301	1310	1310	400	Loose dark greyish–brown clayey silt with moderate small stones, occasional animal bone and charcoal flecks. 1.85m x 1.75m x 0.70m.	Fill of pit 1310	B/ 4	Iron objects	2xA4		Slag #317
1302	Not allocated									
1303	1319	1319	1304	Firm mid orange–grey silty clay with occasional small stones. c.1.50m x 0.40m x 0.30m.	Fill of ditch 1319	B/ 3b				

1304	1319	1303	135	Firm mid orange/brown silty clay with small stones. c.2.00m x 1.25m x 0.70m.	Fill of ditch 1319	B/ 3b				
1305	1319	1304	1310	Firm mid brownish–grey silty clay with occasional small stones. 2.50m x 0.90m x 0.20m.	Fill of ditch 1319	B/ 3b		1xA5		
1306	1282	1282	1281	Moderate light greyish–brown silty clay occasional medium subrounded stones. 5.05m x 0.43m x 0.15m.	Fill of ditch 1282	?		1xA5		
1307	1311	1308	400	Firm mid greyish–brown clayey silt with frequent small to medium subangular stones, occasional animal bone and charcoal flecks. 1.13m x 0.61m x 0.18m	Fill of hearth 1311	?		1xA5		
1308	1311	1309	1307	Loose light grey ash deposit. 0.63m x 0.20m x 0.05m.	Fill of hearth 1311	?				Bulk #285
1309	1311	1311	1308	Loose dark greyish–brown silty clay with frequent charcoal flecks and occasional animal bone. 1.08m x 0.56m x 0.06m.	Fill of hearth 1311	?				Bulk #284
1310	1301	1305	1301	Sub–oval WNW–ESE cut (1.85m x 1.75m x 0.70m) with a sharp break of slope but a gradual break of slope on south side and imperceptible break of slope on east side, gently sloping concave sides but stepped on east side and an imperceptible break of slope bu	Cut for pit	B/ 4				
1311	1307 1308 1309	171	1307	Circular feature that extends beyond the CPO. (1.13m diameter x 0.61m x 0.22m) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat base	Cut for hearth	?				
1312	1319	1303	1299	Moderately compact mid brownish–grey silty clay with moderate small subrounded stones, animal bone and charcoal flecks. 15.50m x 1.75m x 0.75m max.	Fill of ditch 1319	B/ 3b	Iron nail	2xA4 1xA6		Charcoal #309
1313	1404	1314	1434	Moderately compact mid yellow brown silty clay with frequent subrounded pebbles.	Fill of ditch 1404	B/ 1b				
1314	1404	1405	1313	Compact light yellowish–brown silty clay with occasional medium subrounded stones.	Fill of ditch 1404	B/ 1b		1xA6		

1315	1316 1320	171	1404	Cut for curvilinear ditch. Recorded for a distance of approximately 35m, however it extended beyond the eastern limit of excavation while nothing remained of the cut where it extended beneath the reclamation deposit F932. It had steep sides cut through bedrock and a V-shaped profile.	Cut for ditch	B/ 1a				
1316	1315	1315	1320	Compact light yellow grey silty clay with occasional medium subrounded stones.	Fill of 1315	B/ 1a				
1317	Cancelled. Same as 960									
1318	Cancelled. Same as 400									
1319	547 548 1299 1303 1304 1305 1312	1298	1303	Linear NNE–SSE cut (16.50m x 3.15m x 1.00m max.) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for ditch. 1st re–cut of ditch 550	B/3b				
1320	1315	F1315	F1404	Loose dark greyish brown clayey sand. Occasional flecks of degraded animal bone and charcoal flecking.	Fill of 1315	B/ 1a				
1321	770	771	1310	Moderately compact mid reddish–brown silty clay with frequent small stones, occasional animal bone and charcoal flecks. 10.00m x 1.40m x 0.40m max.	Fill of ditch 770	B/ 3c	Bone comb	1xA4		
1322	1323	1323	400	Loose light greyish–brown silty clay with occasional pebbles and charcoal flecks. 0.11m x 0.09m x 0.13m.	Fill of stakehole 1323	?				
1323	1322	171	1322	Subcircular cut (0.11m x 0.09m x 0.13m) with a sharp break of slope but gradual on the east side, steep sides and a sharp break of slope leading to a pointed base, inclination from top west to base.	Cut for stakehole	?				
1324	1325	1325	400	Loose light brownish–grey silty clay with occasional pebbles.	Fill of stakehole 1325	?				
1325	1324	171	1324	Subcircular cut (0.05m x 0.05m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a pointed base.	Cut for stakehole	?				

1326	1327 1328 1329	1223 1291	1327	Curvilinear northeast–southwest, curving at northeast end to the north, cut (c.8.00m x 1.37m x 0.59m) with a sharp break of slope, steep sides and a gradual break of slope leading to a concave base.	Cut for ditch. Re–cut or extension to 1290	B/ 2d				
1327	1326	1326	1328	Loose mid yellowish–brown silty clay with frequent subrounded stones and occasional animal bone. 8.00m x 1.37m x 0.16m.	Fill of ditch 1326	B/ 2d		1xA4		
1328	1326	1327	1329	Loose dark blackish–grey/brown silty clay with frequent subrounded stones, occasional animal bone and charcoal flecks. 8.00m x 1.16m x 0.25m.	Fill of ditch 1326	B/ 2d				
1329	1326	1326	1328	Loose dark grey/brown silty clay with frequent suangular rounded stones and occasional charcoal flecks. 8.00m x 0.75m x 0.27m.	Fill of ditch 1326	B/ 2d				
1330	1331	1320	1331	Curvilinear north–south cut (20.00m x 2.70m x 0.90m) with a gradual break of slope, moderate convex sides and a gradual break of slope leading to a flat base. Probably the same as F945, following expansion of Enclosure 12	Cut for ditch. Continuation of 945	B/ 1c				
1331	1330	1330	400	Firm mid greyish–brown silty clay with moderate pebbles, small stones and animal bone.	Fill of ditch 1330	B/ 1c		1xA1		
1332	1333	171	1333	Linear ENE–WSW cut (0.90m x 0.50m x 0.21m) with a sharp break of slope, moderate concave sides and an imperceptible break of slope leading to a concave base.	Cut for linear	B/ 2d				
1333	1332	1332	764	Loose mid greyish–brown silty clay with frequent pebbles and occasional charcoal flecks. 0.90m x 0.50m x 0.21m.	Fill of linear 1332	B/ 2d		1xA4		
1334	1336	1335	400	Moderately compact dark brown silty clay with occasional fine pebbles, animal bone, v. occasional charcoal flecks and coarse pebbles. 7.00m x 0.90m x 0.30m.	Fill of ditch 1336	B/ 3a		1xA5	Y	
1335	1336	1336	1334	Moderately compact dark greyish–brown clayey silt with frequent small stones and occasional animal bone. 7.00m x 0.80m x 0.28m.	Fill of ditch 1336	B/ 3a				

1336	1334 1335	1337	1335	Slightly curvilinear northwest–southeast cut (7.00m x 1.00m x 0.60m) with a sharp break of slope, steep sides and a sharp break of slope leading to a generally concave base.	Cut for ditch	B/ 3a				
1337	N/A	171	1336	Moderately compact metalling c.20% large stones, c.40% medium stones and c.40% small stones. 10.50m x c.4.50m.	Metalled surface	B/ 3a				
1338	1339	1339	1126 1341	Firm mid yellowish–brown sandy clay with occasional medium stones, small stones animal bone and v. occasional large stones. 15.00m x 1.00m x 0.60m.	Fill of ditch 1339	B/ 3a				
1339	1338	171	1338	Curvilinear east–west, curving at western end to the south cut (15.00m x 1.00m x 0.60m) with a sharp break of slope, gently sloping sides and a sharp break of slope leading to a concave base .	Cut for ditch	B/ 3a				
1340	1341	1341	400	Moderately compact light brownish–grey sandy clay with occasional small stones and animal bone. 14.50m x 1.50m x 0.30m.	Fill of ditch 1341	B/ 3a				
1341	1340	1338	1340	Curvilinear east–west, curving at western end to the south cut (14.50m x 1.50m x 0.30m) with a moderate break of slope, gently sloping concave sides and an imperceptible break of slope leading to a flat base.	Cut for ditch	B/ 3a				
1342	1346	1346	1343	Moderately compact dark brownish–grey sandy clay with v. frequent flecks of iron panning and small stones. 7.00m x 1.10m x 0.40m	Fill of ditch 1346	B/ 4				
1343	N/A	1342	400	Moderately compact dark brownish–grey sandy clay with frequent small stones and medium stones. 7.00m x 2.00m x 0.40m.	Depsoit sealing ditch 1346	B/ 4				
1344-1345	Cancelled. Same as 401									
1346	1342	406	1342	Curvilinear ditch 7.00m x 1.10m x 0.40m with a sharp break of slope, steep sides and a sharp break of slope leading to an irregular flat base. Along outer edge of F405.	Cut for ditch	B/ 4				

1347	399 1348	171	1348	Circular cut (0.25m x 0.35m deep) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base.	Cut for posthole	?				Bulk #312
1348	1347	1347	399	Packing stones surrounding F399 within F1347.	Packing stones	?				
1349	1485	1485	1484	Moderately compact mid grey with v. frequent flecks of reddish iron panning, small to medium subrounded stones. 17.30m x 1.00m x 0.30m.	Fill of ditch 1485	B/ 3a				
1350	1351 1508	1352 1355	1351	Linear NNW–SSE cut (6.62m x 0.60m x 0.40m) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat base.	Cut for drain.	?				
1351	1350	1350	1508	Moderately compact mid brownish–grey clay with flecks of reddish–brown iron panning and animal bone. 6.62m x 0.60m x 0.30m.	Fill of drain 1350	?		1xA4		
1352	1354	1353	1350	Moderately compact mid yellow/grey clayey silt with occasional small stones and animal bone. 17.00m x 2.00m x 0.33m.	Fill of linear 1354	B/ 4		1xA4		
1353	1354	1354	1352	Loose mid–grey silt with moderate medium stones, occasional flecks of redeposited boulder clay and v. occasional animal bone. 17.00m x 1.80m x 0.05m.	Fill of ditch 1354	B/ 4		1xA4		
1354	1352 1353	450	1353	Curvilinear east–west, curving at western end to the southwest, cut (c.17.00m x 1.50–2.00m x 0.15–0.48m) with a sharp break of slope, steep sides and a gradual break of slope leading to a flat base.	Cut for ditch	B/ 4		1xA4		
1355	1358	1356	1350	Loose mid yellow/grey silty clay with occasional small stones, v. occasional animal bone and large stones. 20.60m x 1.35m x 0.30m.	Fill of ditch 1358	B/ 4		1xA4		
1356	1358	1357	1355	Moderate mid grey silty clay with frequent flecks of orange clay, occasional small stones. 20.60m x 1.45–1.70m x 0.30m.	Fill of ditch 1358	B/ 4		1xA6		
1357	1358	1358	1356	Firm mid grey clay with occasional decaying stone. 20.60m x 1.45m x 0.25m.	Fill of ditch 1358	B/ 4		1xA6		

1358	1355 1356 1357	171	1357	Curvilinear ENE–WSW, curving at ENE end to the east, cut (20.60m x 1.45–1.90m x 0.55m) with a sharp break of slope, steep sides and a sharp of slope leading to a flat base.	Cut for ditch	B/ 4				
1359	Cancelled. Same as 400									
1360	1428	1427	1359	Firm mid yellowish–grey clayey silt. 26.00m x 0.50m x 0.20m.	Fill of drain 1428	B/ 6				
1361	1362 1363 1364 1421	367	1362	Curvilinear north–south, curving at both ends to the east, cut (13.40m x 0.80–1.20m x 0.30–0.65m) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base.	Cut for ditch	?				
1362	1361	1361	1421	Moderately compact mid grey silty clay with frequent coarse pebbles. 13.40m x 0.60m x 0.30m.	Fill of ditch 1361	?		1xA5	Y	
1363	1361	1421	1364	Moderately compact mid yellowish–grey silty clay with frequent coarse pebbles and occasional charcoal flecks. 13.40m x 1.20m x 0.50m max.	Fill of ditch 1361	?				
1364	1361	1363	1368	Moderately compact mid brownish–grey silty clay with occasional small stones and charcoal flecks. 13.00m x 1.00m x 0.30m max.	Fill of ditch 1361	?				
1365	1366 1367 1402	1412	1366	Shallow curving linear (12.00m x 0.65m x 0.35m) with a sharp break of slope, steep concave sides and a sharp break of slope leading to a concave base.	Cut for linear	?				
1366	1365	1365	1367	Moderately compact mid yellowish–brown silty clay with occasional small stones and charcoal flecks. 12.00m x 0.80m x 0.25m.	Fill of linear 1365	?		1xA5		
1367	1365	1366	1402	Moderately compact light yellowish–grey silty clay with charcoal flecks.	Fill of linear 1365	?				
1368	1369 1370	1364	1369	Linear northeast–southwest cut (4.00m x 0.85m x 0.60m) with a heavily truncated sharp break of slope, moderate slightly concave on southeastern side and steep slightly convex on northwest side and a V–shaped base.	Cut for linear	?				
1369	1368	1368	1370	Moderately compact mid yellowish–grey silty clay with occasional coarse pebbles.	Fill of linear 1368	?				

1370	1368	1369	1371 1393	Moderately compact mid orange–grey clay with frequent coarse pebbles 4.00m x 0.85m x 0.30m.	Fill of linear 1368	?				
1371	1372	1370	1372	Curvilinear east–west, curving at west end to the south, cut (4.50m x 0.72m x 0.25m max.) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
1372	1371	1371	629	Moderately compact mid greyish–brown silty clay. 4.50m x 0.72m x 0.25m.	Fill of linear 1371	?		1xA6		
1373	Cancelled. Same as 1366									
1374	Cancelled. Same as 1365									
1375	1376	1376	366	Moderately compact dark orange–brown sandy silt with moderate small stones and charcoal flecks. 6.20m x 0.62m x 0.15m.	Fill of linear 1376	?				
1376	1375	1373	1375	Slightly curvilinear north–south cut (6.20m x 0.62m x 0.15m) with a sharp break of slope, concave sides and a generally sharp break of slope leading to a generally concave base.	Cut for linear	?				
1377	1379	1378	400	Moderately compact mid greyish–brown silty clay with moderate small stones. 3.00m x 1.15m x 0.35m	Fill of pit 1379	?				
1378	1379	1379	1377	Loose dark greyish–brown silty clay with moderate small to medium stones, occasional animal bone and charcoal flecks. 3.00m x 0.90m x 0.20m.	Fill of pit 1379	?				
1379	1377 1378 1424	1410	1378	Linear east–west cut (3.00m x 1.15m x 0.55m) with a sharp break of slope, steep concave sides and a gradual break of slope leading to a concave base.	Cut for pit	?				
1380	1381	1381	400	Moderately compact mid brownish–grey silty clay with frequent small stones and occasional animal bone. 0.36m x 0.26m x 0.15m	Fill of posthole 1381	?				
1381	1380	171	1380	Suboval east–west cut (0.36m x 0.26m x 0.15m) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat base.	Cut for posthole	?				
1382	1383	1383	400	Moderately compact mid brownish–grey silty clay with frequent small stones and occasional animal bone. 0.23m x 0.17m x 0.20m.	Fill of posthole 1383	?				

1383	1382	171	1382	Oval east–west cut (0.23m x 0.17m x 0.20m) with a sharp break of slope, steep sides and a sharp break of slope leading to a tapered blunt point.	Cut for posthole	?				
1384	1385	1385	400	Loose mid greyish–brown silty clay with frequent pebbles. 3.40m x 0.50m x 0.14m.	Fill of linear 1385	?				
1385	1384	171	1384	Linear northeast–southwest cut (3.40m x 0.50m x 0.14m) with a generally gradual break of slope, moderate concave sides and a gradual break of slope leading to a flat stepped base.	Cut for linear	?				
1386	1387	1387	400	Moderately compact mid orange–brown silty clay with moderate large stones. 0.40m x 0.35m x 0.20m.	Fill of posthole 1387	?				Bulk #325
1387	1386	1515	1386	Suboval east–west cut (0.40m x 0.35m x 0.20m) with a sharp break of slope, stepped sides and a sharp break of slope, but gradual on north side leading to a tapered blunt point.	Cut for posthole	?				
1388	1389	1389	400	Moderately compact mid orange–brown silty clay with frequent large stones. 0.30m x 0.15m deep.	Fill of posthole 1389	?		1xA6		
1389	1388	1515	1388	Circular cut (0.30m x 0.15m deep) with a sharp break of slope, moderate concave sides and a gradual break of slope leading to a tapered rounded point	Cut for posthole	?				
1390	Not allocated									
1391	1392	1392	1376	Firm mid brownish–grey sandy clay with frequent flecks of yellow clay, red iron panning and occasional small stones. 2.00m x 1.00m x 0.50m.	Fill of pit 1392	?				
1392	1391	1364	1391	Oval northeast–southwest cut (c.2.00m x 1.00m x 0.50m max.) with sharp break of slope, steep concave sides but moderate on east side and an imperceptible break of slope leading to a concave base.	Cut for pit	?				
1393	1394 1395 1396	1370	1394	Curvilinear, curving with a northwest–southeast trend, cut (13.50m x 0.90m x 0.42m max.) with a sharp break of slope, steep sides and a sharp break of slope leading to a slightly concave base.	Cut for linear	?				
1394	1393	1393	1395	Moderately compact light brownish–grey silty clay with occasional small stones. 13.50m x 0.50m x 0.14m	Fill of linear 1393	?				

1395	1393	1394	1396	Moderately compact dark brownish–grey silty clay with moderate charcoal flecks. 13.50m x 0.65m x 0.18m.	Fill of linear 1393	?				
1396	1393	1395	629	Moderately compact mid brownish–grey silty clay with occasional charcoal flecks. 13.50m x 0.90m x 0.21m.	Fill of linear 1393	?				
1397	1398 1399	1273	1399	Subcircular east–west cut (0.92m x 0.90m x 0.20m) with a sharp break of slope, steep sides and a sharp break of slope, but gradual on west side, leading to a slightly concave base. Similar feature to F638.	Cut for pit/posthole	?				
1398	1397	1399	629	Moderately compact mid yellowish–brown silty clay. 0.70m x 0.13m deep.	Fill of pit/posthole 1397	?				
1399	1397	1393	1398	Loose mid brownish–grey silty clay. 0.92m x 0.90m x 0.18m.	Fill of pit/posthole 1397	?				
1400	1401	382 1208	1401	Linear WNW–ESE cut (4.60m x 0.50m x 0.10m) with a sharp break of slope, moderate slightly concave sides and a sharp break of slope leading to a concave base becoming more pointed towards the east.	Cut for linear	?				
1401	1400	1400	400	Moderately compact mid brownish–grey silty clay with frequent flecks of yellow clay, moderate fine pebbles, occasional small stones and large stones. 4.60m x 0.50m x 0.10m.	Fill of linear 1400	?				
1402	1365	1367	1361	Moderate light yellowish–grey silty clay. 12.00m x 0.50m x 0.12m.	Fill of linear 1365	?				
1403	Cancelled. Same as 1412									
1404	1313 1314 1405	1320	1405	Re–cut of F1315, approximately 17m long x 0.50m wide x 0.50m deep. Generally steep sides and a concave base.	Re–cut of ditch 1315	B/ 1b				
1405	1404	1404	1314	Loose mid brownish grey clay with frequent subangular pebbles.	Fill of 1404	B/ 1b				
1406	1407	171	1407	Curvilinear north–south, curving at northern end to the east, cut (2.00m x 0.20m x 0.14m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a concave base.	Cut for linear	?				

1407	1406	1406	660	Moderate dark greyish–brown clayey silt. 2.00m x 0.20m x 0.14m.	Fill of linear 1406	?				
1408	389	389	388	Moderate mid greyish–brown silty clay with moderate small to medium stones and occasional animal bone. 0.80m x 0.40m x 0.10m.	Fill of ditch 389	?		1xA6		
1409	1434	1434	960	Moderately compact dark brownish–grey silty clay with frequent fine pebbles, occasional small stones and large stones. Flecks of animal/ burnt bone.	Fill of linear/ drain 1434	B/ 1b				
1410	Cancelled. Same as 400									
1411	1412	1391	1412	Suboval northeast–southwest cut (1.80m x 1.20m x 0.35m) with a sharp break of slope, but gradual on east side, gently sloping sides and a gradual break of slope leading to a flat base.	Cut for pit	?				
1412	1411	1411	1376	Loose dark orange–brown silty clay with moderate small stones, medium stones and occasional animal bone. 1.80m x 1.20m x 0.35m.	Fill of pit 1411	?				
1413	1414	1414	1379	Loose dark greyish–brown clayey silt with occasional small stones and pebbles. 0.83m x 0.62m x 0.40m.	Fill of pit 1414	?				
1414	1413	171	1413	Subcircular east–west cut (0.83m x 0.62m x 0.40m) with a sharp break of slope, vertical sides, concave towards base, and a sharp break of slope leading to a slightly concave base.	Cut for pit	?				
1415	Cancelled. Same as 389									
1416	Cancelled. Same as 1408									
1417	Cancelled. Same as 389									
1418	Cancelled. Same as 1440									
1419	Cancelled. Same as 1402									
1420	Cancelled. Same as 1367									
1421	1361	1362	1363	Firm mid orange–grey clay. 1.00m x 0.60m x 0.32m.	Fill of ditch 1361	?				
1422	1376	1376	1423	Moderately compact mid brownish–grey sandy clay with occasional small stones. 1.50m x 0.75m x 0.15m.	Fill of linear 1376	?				
1423	1376	1422	1375	Moderately compact light brownish sandy silt with frequent coarse pebbles. 1.00m x 0.35m x 0.12m.	Fill of linear 1376	?				

1424	1379	1378	400	Loose mid–greyish–orange–brown silty clay with frequent small stones and occasional medium stones. 1.00m east–west x 0.30m x 0.20m	Fill of linear 1379	?		1xA6		
1425	1426	1426	400	Loose mid brown with frequent small stones and occasional animal bone. 1.56m x 0.30m x 0.05m.	Fill of furrow 1426	B/ 5				
1426	1425	1384	1425	Linear northwest–southeast cut (1.56m x 0.30m x 0.05m) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat slope.	Cut for furrow	B/ 5				
1427	1428	1428	1360	Deposit of flat angular–subangular medium–large stones generally 0.08m3 – 0.10m3.	Stone deposit within drain 1428	B/ 6				
1428	1359 1360 1427	1431	1427	Linear northeast–southwest cut, uncovered for 26.00m x 0.50m x 0.30m, but probably continues for an additional 19.00m in Bii. Sharp break of slope, vertical sides and a sharp break of slope leading to flat base.	Cut for modern drain	B/ 6				
1429	1431	1430	1428	Moderately compact mid greyish–brown silty clay. 48.00m x 0.70m x 0.20m.	Fill of drain 1431	B/ 6				
1430	1431	1431	1430	Firm light greyish–brown silty clay. 48.00m x 0.80m x 0.50m.	Fill of drain 1431	B/ 6				
1431	1429 1430	1432	1430	Linear northeast–southwest cut (c.48.00m x 0.88m x 0.55m) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base.	Cut for drain	B/ 6				
1432	1433	1433	1431	Moderately compact light–brownish–grey slightly silty clay with occasional animal bone. 21.00m x 0.40m x 0.30m.	Fill of drain 1433	B/ 6				
1433	1432	171	1432	Linear ENE–WSW cut (c.21.00 x 0.40m x 0.30m) with a gradual break of slope, gently sloping sides and a gradual break of slope leading to a concave base.	Cut for drain	B/ 6				
1434	1409	1313	1409	Linear cut for drain recorded in section only. Approximately 5m long x 0.40m wide x 0.20m deep. Concave sides and base.	Cut for linear/ drain	B/ 1b				
1435	Cancelled. Same as 976									
1436	Cancelled. Same as 942									

1437	1438	1438	400	Moderately compact dark–greyish–brown clayey silt with moderate small stones and occasional charcoal flecks. 2.20m x 0.80m x 0.27m	Fill of pit 1438	?				
1438	1437	1471	1437	Linear northeast–southwest cut (2.20m x 0.80m x 0.27m) with a sharp break of slope, steep concave sides, but gradual on southern side, and a sharp break of slope leading to concave base	Cut for pit	?				
1439	Cancelled. Same as 1467									
1440	389	388	1419	Firm ligh brownish–grey silty clay with moderate small stones and occasional medium stones. 0.80m x 0.55m x 0.30m	Fill of ditch 389	?		1xA4		
1441	1442 1443	171	1443	Subcircular 0.2m in diameter x 0.2m deep with a sharp break of slope, v. steep sides and a sharp break of slope and a stepped base.	Cut for posthole	?				
1442	1441	1443	400	Moderately compact mid yellowish– brown silty clay with frequent small stones/pebbles and occasional charcoal flecks.	Fill of posthole 1441	?				
1443	1441	1441	1442	Loose dark brownish–grey silty clay with occasional animal bone, charcoal flecks and burnt bone fragments.	Fill of posthole 1441	?				
1444	1445	1445	698	Firm light brownish–grey silty clay. 4.00m x 0.70m x 0.30m.	Fill of linear 1445	?				
1445	1444	171	1444	Curvilinear northwest–southeast, curving at northwestern end to the west and at southeastern end to the south. 4.00m x 0.70m x 0.30m.	Cut for linear	?				
1446	1471	1471	1467	Moderately compact mid yellowish–brown silty clay with occasional small stones and charcoal flecks. 2.10 m x 0.45m x 0.23m.	Fill of pit 1471	?				Bulk #328
1447	1448	1448	698	Moderately compact dark greyish–brown silty clay and c.10% fine pebbles with frequent coarse pebbles, moderate animal bone and occasional charcoal flecks. 3.00m x 0.32m x 0.20m	Fill of linear 1448	?		1xA6		
1448	1447	171	1447	Curvilinear north–south cut (c.3.00m x 0.32m x 0.20m) with a sharp break of slope, moderate flat sides and a gradual break of slope leading to a concave base	Cut for linear	?				

1449	1453	1453	1450	Moderately compact mid brownish–grey sandy silt with occasional large stones and flecks of orange clay. C.8.00m x 3.60m x 0.22m max.	Fill of sub–rectangular feature 1453	?	E–ware			Bulk #327
1450	1453	1449	1454	Loose mid yellowish–brown silty clay with frequent animal bone, occasional pebbles and charcoal flecks. C.8.00m x 7.20m x 0.32m.	Fill of sub–rectangular feature 1453	?		1xA4		
1451	1453	1454	1457	Moderately compact mid orange–brown sandy silt with moderate animal bone and occasional small stones. C.8.00m x 7.20m x 0.33m.	Fill of sub–rectangular feature 1453	?		4xA4		
1452	Cancelled. Same as 1451									
1453	1449 1450 1451 1454	171	1449	Subrectangular northeast–southwest orientated feature (11.80m x 7.20m x 0.62m) surviving as a cut into F171 along northwest side. Elsewhere the cut blends into bedrock (indurated shale), although as the ground slopes away here quite shaply.	Sub–rectangular cut. Function unknown.	?				
1454	1453	1450	1451	Firm mid brownish–yellow silty clay. 2.00m-x c.1.00m x 0.05m.	Fill of sub–rectangular feature 1453	?				
1455	1457	1456	403	Moderately compact mid brownish–grey silty clay with occasional large stones, medium stones and animal bones. 4.20m x 1.05m x 0.15m.	Fill of linear 1457	?	Iron object	1xA4		
1456	1457	1457	1455	Moderately compact dark brownish–grey silty clay with moderate medium stones. 4.20m x 0.90m x 0.15m.	Fill of linear 1457	?				
1457	1455 1456	1450	1456	Curvilinear northwest–southeast cut (4.20m x 1.25m x 0.65m) with a sharp break of slope, steep flat sides and a sharp break of slope, but more gradual on southwest side, leading to a concave base.	Cut for linear probably associated with F1453	?				
1458	1459	1459	400	Firm dark brownish–grey slightly silty clay and c.70% large angular packing stones mainly on north and east sides. 0.30m x 0.15m deep.	Fill of posthole 1459	?				
1459	1458	1515	1458	Circular cut (0.30m x 0.15m deep) with a gradual break of slope, steep flat sides and a gradual break of slope leading to a tapered rounded point	Cut for posthole	?				

1460	1461	1461	400	Moderately compact dark brownish–grey silty clay with moderate medium stones. 6.20m x 0.90m x 0.15m.	Fill of linear F1461	?				
1461	1460	171	1460	Northwest–southeast cut (6.20m x 1.25m x 0.65m) with a sharp break of slope, steep flat sides and a sharp break of slope, but more gradual on southwest side, leading to a concave base.	Cut for linear probably associated with F1453	?				
1462	1463	1463	400	Moderately compact mid greyish–brown silty clay with moderate large packing stones. 0.25m x 0.2m deep.	Fill of posthole 1463	B/ 1a				
1463	1462	1515	462	Sub–circular cut (0.25m x 0.20m deep) with a sharp break of slope, steep flat sides and a sharp break of slope leading to concave base.	Cut for posthole	B/ 1a				
1464	1503 1504	171	1504	Linear WSW–ENE cut (4.40m x 1.00m x 0.43m) with a gradual break of slope, moderate flat sides and a gradual break of slope leading to a flat base.	Cut for linear	?				
1465	Cancelled. Same as 400									
1466	1468	1468	400	Loose dark greyish–brown silty clay with occasional small stones and charcoal flecks. 3.20m x 0.35m x 0.30m	Fill of ditch 1468	?				
1467	1471	1446	1438	Moderately compact mid greyish–brown with occasional medium stones, charcoal flecks, v. occasional large stones and animal bone. 2.08m x 0.95m x 0.29m.	Fill of pit 1471	?				
1468	1466	171	1466	Linear northeast–southwest cut (3.20m x 0.35m x 0.30m) with a sharp break of slope, moderately sloping sides and a sharp break of slope leading to a concave base	Cut for ditch	?				
1469	1470	1470	400	Moderately compact dark yellowish– brown silty clay with v. occasional pebbles and charcoal flecks. 3.26m x 0.48m x 0.17m.	Fill of linear 1470	?				
1470	1469	976	1469	Slightly curvilinear northeast–southwest cut (3.26m x 0.48m x 0.17m) with a sharp break of slope, steep concave sides and a sharp break of slope leading to a concave base.	Cut for linear	?				

1471	1446 1467	171	1467	Kidney shaped north–south cut (2.08m x 0.95m x 0.29m) with a sharp break of slope, concave sides and a gradual break of slope leading to a flat base. Cut by F933.	Cut for pit	?				
1472	1473	1515	1473	Sub–circular cut (0.20m x 0.20m deep) with a sharp break of slope, steep flat sides, but concave on south and southeast, and a sharp break of slope, but gradual on south and southeast sides, leading to a tapered blunt point.	Cut for posthole	?				
1473	1472	1472	400	Loose mid greyish–brown sandy silt with frequent large stones, probably displaced packing stones. 0.20m x 0.20m deep.	Fill of posthole 1472	?				Bulk #324
1474	1475	1515	1475	Sub–circular cut (0.20m x 0.15m deep) with a sharp break of slope, steep flat sides, but concave on southern sides, and a sharp break of slope leading to a concave base.	Cut for posthole	?				
1475	1474	1474	400	Moderately compact mid orange–brown silty clay with v. frequent large packing stones. 0.20m x 0.15m deep.	Fill of posthole 1474	?				
1476	1477	1515	1477	Sub–oval northwest–southeast cut (0.40m x 0.35m x 0.20m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to concave base.	Cut for posthole	?				
1477	1476	1476	400	Moderately compact mid brown silty clay with v. frequent large packing stones. 0.40m x 0.35m x 0.20m.	Fill of posthole 1476	?				
1478	1479	1515	1479	Sub–circular cut (0.25m x 0.15m) with a sharp break of slope, steep flat sides and a sharp break of slope leading to a slightly concave base.	Cut for posthole	?				
1479	1478	1478	400	Moderately compact mid greyish–brown silty clay with moderate large packing stones. 0.25m x 0.15m deep.	Fill of posthole 1478	?				Bulk #322
1480	1481	1515	1481	Sub–circular cut (0.30m x 0.15m) with a sharp break of slope, steep slightly concave sides and a sharp break of slope leading to a concave base.	Cut for posthole	?				
1481	1480	1480	400	Loose mid greyish brown silty clay with frequent packing stones.0.30m x 0.15m	Fill of posthole 1480	?				

1482	N/A	171	564	Firm mid brownish–grey silty clay with frequent small stones, animal bones and burnt bone. 1.26m x 0.59m x 0.08m.	Localised spread	B/ 1a		1xA6	Y	
1483	Cancelled. Natural hollow									
1484	1485	1349	400	Moderately compact mid greyish–brown slightly silty clay with frequent large stones. 17.3m x 2.20m x 0.65m deep.	Fill of ditch 1485	B/ 3a	Medieval pottery			
1485	1349 1484	405	1349	Curvilinear northeast–southwest, curving at southwestern end to the south, cut (c.16.00m x 2.90m x 0.85m) with a sharp break of slope, steep flat sides and a sharp break of slope leading to a flat base. Potentially contemporary with metalled surface F1337	Cut for ditch	B/ 3a				
1486	1487	1487	400	Moderately compact mid greyish–brown slightly silty clay with frequent large packing stones. 0.40m x 0.25m deep.	Fill of posthole 1487	?				
1487	1486	1515	1486	Sub–circular cut (0.40m x 0.25m deep) with a sharp break of slope, steep slightly concave sides and a sharp–gradual break of slope leading to a concave base	Cut for posthole	?				
1488	1490	1489	389	Moderately compact mid orange–brown sandy silt with occasional animal bone. 3.00m x 0.80m x 0.50m	Fill of linear 1490	?		1xA6		
1489	1490	1490	1488	Moderately compact light brownish–grey sandy clay with frequent flecks of orange clay. 2.40m x 0.50m x 0.10m.	Fill of linear 1490	?				
1490	1488 1489	1515	1489	Slightly curvilinear northeast–southwest cut (5.2m x 0.80m x 0.58m) with a sharp break of slope, steep almost vertical sides and a sharp break of slope leading to a flat base. Associated with F389	Cut for linear	?				
1491	1492	1492	366 1389	Moderately compact mid orange–brown sandy clay with moderate animal bone, occasional flecks of iron panning and charcoal flecks. 2.00m x 0.70m x 0.17m.	Fill of linear 1492	?		1xA6		
1492	1491	1515	1491	Linear NNE–SSW cut (2.00m x 0.70–0.64m x 0.17m) with a sharp break of slope, generally steep concave sides and a generally sharp break of slope leading to a concave base.	Cut for linear	?				

1493	1495	1494	1487	Loose dark orange–brown sandy clay with v. frequent animal bone, occasional small stones, charcoal flecks and burnt bone. 0.25m x 0.25m x 0.15m	Fill of pit 1495	?		1xA4		
1494	1495	1495	1493	Moderately compact mid–orange–brown sandy clay with moderate small stones and occasional large packing stones. 0.90m x 0.60m x 0.30m.	Fill of pit 1495	?				
1495	1493 1494	1515	1494	Irregular sub–oval northwest–southeast cut (0.90m x 0.60m x 0.30m) with a sharp break of slope, moderate concave sides and a sharp break of slope leading to a concave base.	Cut for pit	?				
1496	1453	1453	1449	Firm mid brownish–yellow slightly sandy clay with moderate medium stones. 2.00m x c.1.00m x 0.10m.	Fill of pit 1453	?				
1497	366	1498	367	Moderately compact dark brownish–grey silty clay. 6.00m x 1.00m x 0.30m.	Fill of ditch 366	?		1xA4		
1498	366	366	1497	Firm light orange–grey silty clay. 6.00m x 0.40m x 0.20m.	Fill of ditch 366	?		1xA4		
1499	1500	1500	400	Loose mid greyish–brown clayey silt with v. frequent large, medium and small stones, occasional animal bone and charcoal flecks. 5.96m x 0.52m x 0.18m.	Stone lining of gully 1500	?				Bulk #329
1500	1499	171	1499	Curvilinear north–south, curving at southern end to the east, cut (5.96m x 0.52m x 0.18m) with a gradual break of slope, concave sides and a gradual break of slope leading to an irregular stony base. Potentially part of a circular drip gully associated wi	Cut for gully	?				
1501 - 1502	Not allocated									
1503	1464	1504	1506	Loose light greyish–brown slightly silty clay with occasional small stones and animal bone. 4.40m x 0.60m x 0.19m	Fill of linear 1464	?				
1504	1464	1464	1503	Moderately compact light whitish–grey clay with occasional small stones and animal bone. 4.40m x 0.50m x 0.43m	Fill of linear 1464	?				
1505	1506	1506	1465	Loose light brownish–grey silty clay with occasional pebbles. 4.0m x 0.60m x 0.30m.	Fill of linear 1506	?				

1506	1505	1503	1505	Linear cut (4.0m x 0.60m x 0.30m) with a gradual break of slope, gently sloping concave sides and a gradual break of slope leading to a concave base.	Cut for linear	?				
1507	387	386	660	Firm light–greyish/brownish orange silty clay with occasional charcoal flecks. 4.0m x 0.70m x 0.25m.	Fill of gully 387	B/ 1a				
1508	1350	1351	400	Loose light greyish–brown silty clay with occasional pebbles and animal bone. 4.00m x 0.35m x 0.10m.	Deposit sealing ditch 1350	?				
1509-1510	Cancelled. Same as 171									
1511-1514	Not allocated									
1515	N/A	171	1523	Firm light–grey with orange and brown mottling sandy silty clay with occasional coarse pebbles. 16.90m x 11.20m x 0.36m.	Colluvial deposit?	–				
1516	1517 1518	1515	1518	Sub–oval north–south cut (0.35m x 0.25m x 0.12m) with a sharp break of slope, but gradual on north side, steep flat sides, but moderately concave sloping on north and south sides, and a sharp break of slope, but gradual on north and south sides, leading t	Cut for posthole	?				
1517	1516	1518	400	Moderately compact mid brownish–grey sandy silty clay. 0.35m x 0.15m x 0.07m.	Fill of posthole 1516	?				
1518	1516	1516	1517	Moderately compact light–brownish grey sandy/silty clay. 0.35m x 0.12m x 0.07m.	Fill of posthole 1516	?				
1519	1520	1515	1520	Circular cut (0.22m x 0.13m deep) with a sharp break of slope, steep slightly concave sides, but gradual on north side, and a sharp break of slope, but gradual on north side, leading to a slightly rounded base.	Cut for posthole	?				
1520	1519	1519	400	Moderately compact dark brownish–grey sandy silty clay. 0.22m x 0.13m deep	Fill of posthole 1519	?				
1521	N/A	171	362 364 366 368	Moderately compact mid greyish–orange sandy silty clay with moderate flecks of light–grey clay, occasional flecks of reddish iron panning and coarse pebbles. 12.00m x 2.4m x 0.20m. Probably the disturbed remains of an internal bank associated with the enc	Bank material	B/ 2–3				

1522-1523	Cancelled. Same as 171									
1524	1525	1525	1526	Moderately compact dark orange–grey silty clay. 5.22m x 0.75m x 0.35m deep	Fill of ditch 1525.	B/ 2b				
1525	1524 1526	903	1524	Linear cut 5.22m x 0.75m x 0.35m with a sharp break of slope, steep sloping sides and a sharp break of slope leading to a flat base. Possibly contemporary with F902.	Cut for ditch	B/ 2b				
1526	1525	1524	900	Compact, mid greyish brown silty clay. Occasioanl subangular–angular stones. very occasional (>1%) charcoal flecks.	Fill of ditch 1525	B/ 2b				
1527	990	1528	645 745 900	Moderately compact mid grey silty clay with frequent small angular stones. 5.2m x 0.95m x 0.2m deep.	Fill of linear 990	?				
1528	990	990	1527	Moderately compact mid greyish brown silty clay with frequent small angular stones. 5.2m x 0.75m x 0.16m deep.	Fill of linear 990	?				
1529	1530	171	1530	Oval? Truncated pit with rounded corners and concave sides and base. 0.75m x 0.62m x 0.11m	Cut for pit	?				
1530	1529	1529	735	Moderately compact dark brownish grey silty clay with frequent small angular stones, charcoal flecks and burnt bone. 0.75m x 0.62m x 0.11m.	Fill of pit 1530	?				
1531	1532 1534 1535 1536 1537 1538	1081	1537 1538	Large linear cut at the east end of F933. The stage at which this ditch was cut is unclear due to later truncation of the ditches belonging to the F933 sequence of features and the leaching of F1531 fills by a forested road that formed the eastern limit o	Cut for linear	B/ 2d				
1532	1531	1534	400	Compact, light yellowish brown sandy clay. Occasioanl subangular–angular stones. 11.5m x 3.0m x 0.5m.	Fill of ditch 1531	B/ 2d				
1533	Not allocated									
1534	1531	1535	1532	Compact, yellowish light brown sandy clay. Frequent small stones and occasional medium and large stones 11.5m x 3.0m x 0.7m.	Fill of ditch 1531	B/ 2d				

1535	1531	1536	1534	Moderately compact, light yellowish brown sandy clay. Occasional small stones and very occasional medium stones. 11.5m x 1.01m x 0.2m	Fill of ditch 1531	B/ 2d				
1536	1531	1537 1538	1535	Moderatley compact, light greyish brown sandy clay. Occasional small angular and subangular stones. 11.5m x 2.45m x 0.9m.	Fill of ditch 1531	B/ 2d				
1537	1531	1531	1536	Moderately compact, mid yellowish brown sandy clay. Occasional small stones. 11.5m x 0.65m x 0.4m.	Fill of ditch 1531	B/ 2d				
1538	1531	1531	1536	Moderately compact, mid brownish grey sandy clay. Occasional small stones. 11.5m x 0.75m x 0.3m.	Fill of ditch 1531	B/ 2d				
1539	1540	1540	400	Small curvilinear cut to the north of F195 orientated mainly north-east/south-west, however it does curve towards the east at the northeastern end and again curving to the south at the south-western end. The full length of the cut is unknown as it has be	Fill of gully 1540	?				
1540	1539	171	1539	Moderately compact, mid greyish brown silty clay. Occasional fine pebbles. 2.4m x 0.4m x 0.1m.	Cut for gully	?				
1541	1198	1197	1198	A small slightly curvilinear cut generally orientated east-north-east/west-south-west with a slight curve to the southwest at the west-south-west end. The break of slope at the top was sharp with slightly concave sides on the "south" sides and slightly c	Cut for linear	?				
1542	1543	171?	1543	Sub-rectangular cut orientated north-north-west/south-south-east with rounded corners and a sharp break of slop and close to vertical sides, and a sharp break of slope leading to a flat base. It was measured as 2.7m x 1.3m x 0.5m. It had some relationship	Cut for pit	?				
1543	1542	1542	1210	Moderately compact, mid greyish brown silty clay. Occasional small stones. 2.7m x 1.3m x 0.5m.	Fill of pit 1542	?				
1544-1545	Cancelled. Same as F171									
1546	1547	1547	400	Moderately compact, mid brownish grey sandy clay. Occasional small stones.	Fill of F1547					

1547	1546	644	1546	Linear north-south cut (8.00m x 1.15m x 0.20m) with sharp break of slope, moderate flat sides and a gradual break of slope leading to a flat base	Cut for ditch. Re-cut of F645	B/1c				
1548	1549	1515	1549	Sub-circular cut orientated east–west after excavation but was more likely to have been orientated north-south originally. The break of slop at the top was abrupt with concave sides and and a gradual break of slope leading to a concave base. It was measur	Cut for pit	?				
1549	1548	1548	383 391	Moderately compact, mid to dark greyish brown clayey silt. 1.14m x 1.02m x 0.1m.	Fill of pit 1548	?				
1550	Cancelled. Same as 946									
1551	Cancelled. Same as 948									
1552	1553	171	1553	Oval cut orientated north-west/south-east with a sharp break of slope and a slightly concave side to the northwest and a flat side, c. 65, to the southeast side. The break of slop at the base was more gradual on the north-west side and more sharp of the	Cut for posthole	?				
1553	1552	1552	400	Moderately compact, mid to dark brownish grey sandy silty clay. Frequent small stones and pebbles. 0.74m x 0.5m x 0.21m.	Fill of posthole 1552	?				
1554	Cancelled. Same as 561									
1555	Cancelled. Same as 560									
1556	1557	1515	1557	Sub-oval cut orientated north-west/south-east with a sharp break of slope and slightly concave sides leading to another sharp break of slope and a concave base. It was measured as 0.34m x 0.26m x 0.19m.	Cut for posthole	B/ 1a				
1557	1556	1556	400	Compact, dark brownish grey silty clay. Moderate small stones. 0.34m x 0.26m x 0.19m.	Fill of posthole 1556	B/ 1a				
1558	Cancelled. Same as 387									
1559	Cancelled. Same as 386									
1560	Cancelled. Same as 1170									

APPENDIX 2 *Finds List*

Find no:	Description	Area	E	N	RL
A008/002:100:1	Modern pottery	Av	NO PRECISE LOCATION (NPL)		
A008/002:100:2	Metal object	Aix	NPL		
A008/002:100:3	Black glazed earthenware	Av	NPL		
A008/002:100:4	Modern pottery	Axii	NPL		
A008/002:100:5	Modern pottery	Av	NPL		
A008/002:100:6	Clay pipe stem fragment	Av	NPL		
A008/002:100:7	Flint flake	Av	NPL		
A008/002:100:8	Flint retouched artefact	Av	NPL		
A008/002:100:9	Flint core	Aix	195.35	235.56	106.227
A008/002:100:10	Flint flake	Aix	194.88	227.32	105.920
A008/002:100:11	Iron peg	Avi	195	250	NPL
A008/002:100:12	Local fine ware body sherd (13th-14th)	Aix	193.70	225.40	105.999
A008/002:100:13	Bone pin/needle	Aix	194	225	NPL
A008/002:100:14	Flint flake	Aix	NPL		
A008/002:100:15	Flint debitage	Aix	NPL		
A008/002:100:16	Flint debitage	Aix	NPL		
A008/002:100:17	Bone pin/needle	Aix	196.66	225.27	105.778
A008/002:100:18	Iron knife	Aix	183.97	229.27	106.371
A008/002:100:19	Leinster cooking ware body sherd (12th-14th)	Axii	190.13	235.86	106.572
A008/002:100:20	Flint flake	Axii	191.95	224.46	105.680
A008/002:100:21	Iron tool	Ax	199.46	234.34	106.022
A008/002:100:22	Flint blade	Avii	202.22	247.50	105.567
A008/002:100:23	Flint flake	Ax	203.58	230.00	105.983
A008/002:100:24	Flint flake	Ax	202.23	226.31	105.803
A008/002:100:25	Clay pipe stem	Ax	203.50	225.90	105.668
A008/002:100:26	Flint flake	Axiii	201.14	217.75	105.367
A008/002:100:27	Flint debitage	Axiii	204.57	219.70	105.537
A008/002:100:28	Bone spearhead	Aix	NPL		
A008/002:100:29	Bone comb fragment	Aix	NPL		
A008/002:100:30	Flint debitage	Axiii	119.76	219.38	105.401
A008/002:100:31	Clay pipe stem fragment	Axi	196.24	221.98	106.046
A008/002:100:32	Flint flake	Axi	199.26	220.31	105.593
A008/002:100:33	Flint flake	Axiii	199.48	220.78	107.129
A008/002:100:34	Flint flake	Axiii	199.46	221.15	107.105
A008/002:100:35	Flint flake	Axi	172.08	221.23	106.074
A008/002:100:36	Leinster cooking ware body sherd (12th-14th)	Axiii	202.97	223.94	107.063
A008/002:100:37	Local medieval body sherd (13th-14th)	Ax	209.95	247.45	106.017
A008/002:100:38	Flint flake	Ax	169.54	265.90	106.083
A008/002:100:39	Modern pottery	Axiii	202.82	218.54	105.402
A008/002:100:40	Flint retouched artefact	Avii	210.10	253.02	106.015
A008/002:100:41	Leinster cooking ware body sherd (12th-14th)	Aix	186.61	240.96	106.752
A008/002:100:42	Flint flake	Ax	206.80	240.94	106.103
A008/002:100:43	Flint flake	Ax	169.80	263.50	106.173
A008/002:100:44	Flint debitage	Ax	169.10	265.95	106.127
A008/002:100:45	Metal object	Ax	169.45	265.69	106.095
A008/002:100:46-51	Modern pottery (6 sherds)	Av	168.10	261.20	106.222
A008/002:100:52	Horseshoe fragment	Axiii	186.70	222.43	106.232
A008/002:100:53	Modern pottery	Av	163.95	260.55	106.160
A008/002:100:54	Worked stone	Av	166.75	260.75	106.165
A008/002:100:55	Metal object	Av	167.70	259.96	106.174
A008/002:100:56	Modern pottery	Av	166.68	260.12	106.222
A008/002:100:57	Modern pottery	Av	169.20	259.88	106.425
A008/002:100:58	Clay pipe stem fragment	Av	166.34	259.46	106.239
A008/002:100:59-65	Modern pottery (7 sherds)	Av	166.63	259.27	106.315
A008/002:100:66	Clay pipe stem fragment	Av	168.39	260.87	106.174
A008/002:100:67	Modern pottery	Av	168.88	259.97	106.2
A008/002:100:68	Modern pottery	Av	161.90	259.52	106.183

A008/002:100:69	Clay pipe stem fragment	Av	170	260	NPL
A008/002:100:70-72	Modern pottery (3 sherds)	Av	163.00	259.60	106.201
A008/002:100:73	Iron file	Aviii	182.53	232.30	106.012
A008/002:100:74	Iron pin/rod	Axv	199.87	200.15	105.146
A008/002:100:75	Clay pipe	Axii	188.87	199.36	105.490
A008/002:100:76	Flint debitage	Axii	185.91	190.02	106.341
A008/002:100:77	Iron loop/fixture	Axii	185.73	206.34	105.288
A008/002:100:78	Clay pipe stem	Axii	190.25	204.65	105.246
A008/002:100:79	Iron object	Axiii	199.34	210.01	105.124
A008/002:100:80	Local medieval body sherd (13th-14th)	Axiii	199.77	208.86	105.104
A008/002:100:81	Bottle stop	Axiii	195.99	205.70	105.129
A008/002:100:82	Local fineware body sherd (13th-14th)	Axiii	199.45	207.05	105.019
A008/002:100:83	Worked stone object	Av	162	255	104.506
A008/002:100:84	Flint flake	Axv	198.80	194.50	104.569
A008/002:100:85	Bone pin/needle	Axv	195.80	200.12	104.811
A008/002:100:86	Antler tooth segment blank	Axii	194.76	206.15	104.713
A008/002:100:87	Local medieval body sherd (13th-14th)	Axv	195.95	196.32	104.691
A008/002:100:88	Local fineware body sherd (13th-14th)	Axiii	202.33	208.29	105.17
A008/002:100:89	Flint flake	Axv	197.66	193.75	104.457
A008/002:100:90	Flint flake	Axiii	178.65	210.81	105.984
A008/002:100:91	Iron blade	Aviii	171.07	227.44	106.297
A008/002:100:92	Poss. Iron bracket	Aviii	170.00	227.75	106.309
A008/002:100:93	Flint side scraper	Aviii	164.50	236.00	106.233
A008/002:100:94	Flint flake	Axiii	205.25	212.07	105.929
A008/002:100:95	Flint debitage	Axiii	205.00	212.39	105.904
A008/002:100:96	Flint split pebble	Axv / Axii	199.35	183.60	105.308
A008/002:100:97	Flint flake	Axv	198.03	196.60	104.5
A008/002:100:98	Flint flake	Ax	205.70	246.03	105.839
A008/002:100:99	Flint blade	Avii	203.49	257.16	106.09
A008/002:100:100	Flint debitage	Avii	207.36	253.35	105.935
A008/002:100:101	Horseshoe	Av	164.00	265.46	105.724
A008/002:100:102	Flint retouched artefact	Aii	176.19	271.55	105.827
A008/002:100:103	Brown glazed earthenware		NPL		
A008/002:100:104	Brown glazed earthenware	Aix	NPL		
A008/002:101:1	Metal object	Avi	108.32	249.3	106.660
A008/002:104:1	Flint debitage	Ax	203.06	249.66	106.060
A008/002:106:1	Flint blade	Avi	194.50	260.59	105.960
A008/002:107:1	Flint retouched artefact	Avi	194.38	261.60	105.510
A008/002:107:2	Bone needle	Avii	203.60	262.00	105.964
A008/002:108:1	Limestone game board fragment	Avii	200.17	261.85	105.364
A008/002:108:2	Limestone honestone	Avii	200.56	261.42	105.284
A008/002:108:3	Bone awl	Avi	192.17	256.18	105.134
A008/002:109:1	Bone pin/needle fragment	Aix	196.27	239.70	106.270
A008/002:110:1	Iron knife	Avii	209.66	257.85	105.810
A008/002:110:2	Unworked bone – fragment of rib from sheep-sized animal				
A008/002:116:1	Flint retouched artefact	Avii	200	265.61	105.884
A008/002:118:1	Flint chunk	Axiii	203.13	226.10	105.340
A008/002:119:1-3	3 Bone pin fragments	Aix	196.20	225.20	105.793
A008/002:119:4	Bone needle	Aix	194.00	226.57	105.802
A008/002:119:5	Flint flake	Aix	NPL		
A008/002:120:1	Flint blade	Ax	202.43	234.23	105.864

A008/002:125:1	Flint debitage	Ax	206.95	242.38	106.010
A008/002:125:2	Flint flake	Ax	198.82	241.95	106.18
A008/002:131:1	Decorated bone comb fragment	Av	164.41	233.81	105.891
A008/002:131:2	E-ware pottery body/shoulder sherd	Av	163.79	233.69	105.518
A008/002:131:3	E-ware pottery body sherd	Av	164.19	233.35	105.452
A008/002:131:4	Worked bone, radius fragment from cow/horse	Av	181.19	229.01	106.219
A008/002:133:1	Iron pin	Axii	193.05	220.36	107.770
A008/002:135:1	Metal object	Aix	187.80	235.75	106.130
A008/002:135:2	Pointed iron rod	Aix	188.45	236.1	106.070
A008/002:135:3	Iron spearhead	Aix	187.75	235.75	106.115
A008/002:135:4	Iron object	Aix, Tr.E	180.90	244.27	106.775
A008/002:135:5	Flint retouched artefact	Aix	186.74	243.42	106.590
A008/002:136:1	Leinster cooking ware pottery sherd	Aix	182.60	232	106.415
A008/002:137:1	Struck debitage	Ax	240.79	204.95	105.910
A008/002:140:1	Flint blade	Aix	188.55	231.80	106.189
A008/002:142:1	Iron object	Axii	197.97	221.90	105.558
A008/002:143:1	Stone pencil	Av	165.00		
A008/002:143:2	Roof slate with markings	Av	AS ABOVE		
A008/002:143:3-4	2 Stone pencils	Av	AS ABOVE		
A008/002:143:5	Bottle stop/ marble	Av	AS ABOVE		
A008/002:143:6	Roof slate with 3 drawings	Av	AS ABOVE		
A008/002:143:7-10	4 Stone pencil	Av	AS ABOVE		
A008/002:143:11-13	3 Roof slates with markings	Av	AS ABOVE		
A008/002:143:14-16	3 Stone pencil	Av	AS ABOVE		
A008/002:143:17-28	12 Roof slates with markings	Av	AS ABOVE		
A008/002:143:29	Irish copper halfpenny George III c. 1766-1769	Av	AS ABOVE		
A008/002:143:30	Roof slate with markings	Av	AS ABOVE		
A008/002:143:31-46	Modern pottery (16 sherds)	Av	AS ABOVE		
A008/002:143:47-48	2 Glass bottle bases	Av	AS ABOVE		
A008/002:143:49	Tile	Av	AS ABOVE		
A008/002:143:50-51	Brown glazed earthenware (2 sherds)	Av	AS ABOVE		
A008/002:143:52-55	Brown glazed stoneware (4 sherds)	Av	AS ABOVE		
A008/002:143:56-57	Glass (2 pieces)	Av	AS ABOVE		
A008/002:143:58-60	Brown glazed stoneware (3 sherds)	Av	AS ABOVE		
A008/002:143:61-63	Glass (3 pieces)	Av	AS ABOVE		
A008/002:143:64	Glass bottle	Av	AS ABOVE		
A008/002:143:65	Wine glass fragment	Av	AS ABOVE		
A008/002:143:66-67	2 Clay pipe bowl fragments	Av	AS ABOVE		
A008/002:143:68-76	9 Clay pipe stem fragments	Av	AS ABOVE		
A008/002:143:77-87	11 Nails	Av	AS ABOVE		
A008/002:143:88-106	Modern pottery (19 sherds)	Av	AS ABOVE		
A008/002:143:107-110	4 Buttons	Av	AS ABOVE		
A008/002:143:111-113	3 Metal buttons	Av	AS ABOVE		
A008/002:143:114-116	Brown glazed earthenware (3 sherds)	Av	AS ABOVE		
A008/002:143:117	Glass bottle	Av	AS ABOVE		
A008/002:143:118-120	Cream glazed earthenware (3 sherds)	Av	AS ABOVE		
A008/002:143:121-128	Black glazed earthenware (8 sherds)	Av	AS ABOVE		
A008/002:143:129	Green glazed earthenware	Av	AS ABOVE		
A008/002:144:1	Bone pin fragment	Avi	NPL		
A008/002:144:2	Metal object	Avi	NPL		
A008/002:144:3	Bone pin	Avi	188.15	261.36	105.661

A008/002:145:1	Flint possibly struck	Avi	201.93	261.34	105.600
A008/002:145:2	Iron blade fragment	Avi	190.23	262.30	NPL
A008/002:145:3	Iron object	Avi	NPL		
A008/002:145:4	Iron object	Avi	180	260	105.550
A008/002:150:1	Flint possibly struck	Avi	NPL		
A008/002:151:1	Iron object	Avii	230.79	252.74	105.844
A008/002:151:2	Stone game board	Avii	202.36	261.45	105.700
A008/002:153:1	Flint struck	Avi	191.5	260.54	106.010
A008/002:153:2	Iron knife	Avi	190.25	260.59	106.160
A008/002:160:1	Worked bone	Axi	NPL		
A008/002:160:2	Bone pin fragment	Axii	190.36	219.82	105.086
A008/002:161:1	Lignite fragment	Axii	185.10	219.55	105.600
A008/002:161:2	Silver strip, decorated	Axi	175.56	221.92	105.704
A008/002:161:3	Worked bone	Axii	184.65	219.1	106.139
A008/002:161:4	Iron object	Axii	199.40	209.95	105.964
A008/002:161:5	Iron object	Aviii	173.38	221.46	105.618
A008/002:161:6	Fossil, possible bead	Axii, Tr.E	191.95	219.70	105.316
A008/002:161:7	Worked bone	Axii	NPL		
A008/002:162:1	Decorated bronze strap	Axi	172.50	223.93	106.064
A008/002:162:2	Stone object, poss. lamp	Axii	190.62	220.0	105.504
A008/002:162:3	Bone pin fragment	Axii	202.75	222.03	105.369
A008/002:162:4	Bone pin fragment	Axii	NPL		
A008/002:175:1	Bone pin	Aix, Tr.E	185.55	241.49	106.712
A008/002:175:2	Knife fragment	Aix, Tr.E	196.15	241.73	106.738
A008/002:175:3	Struck flint	Aix, Tr.E	185.86	240.90	106.584
A008/002:175:4	Medieval pottery	Aix, Tr.E	185.65	241.78	106.855
A008/002:175:5	Bone pin	Aix, Tr.E	186.10	241.35	106.794
A008/002:175:6	Poss. quern stone	Aix, Tr.E	186.63	241.83	106.839
A008/002:175:7	Poss. horn stone	Aix, Tr.E	185.65	241.42	106.712
A008/002:181:1	Metal object	Av	170.07	262.50	105.857
A008/002:181:2	Flint flake	Av	NPL		
A008/002:186:1	Struck flint	Axv	186.00	200.61	104.608
A008/002:186:2	Struck flint	Axv	204.09	201.60	104.306
A008/002:197:1	Flint flake	Axv	182.89	198.80	104.132
A008/002:211:1	Poss. worked bone	Ax	203.13	235.51	105.612
A008/002:211:2	Poss. worked bone	Ax	203.13	235.51	105.612
A008/002:220:1	Iron pin shaft	Aviii	NPL		
A008/002:227:1-3	3 comb fragments	Axii	NPL		
A008/002:235:1	Medieval pottery	Axii	189.88	204.60	105.059
A008/002:235:2	Iron knife blade	Axii	193.58	205.18	104.784
A008/002:235:3	Worked bone handle (assoc. with find	Axii	192.22	207.12	104.777

	4,5,6)				
A008/002:235:4	Worked bone handle (assoc. with find 3,5,6)	Axii	AS ABOVE		
A008/002:235:5	Worked bone handle (assoc. with find 3,4,6)	Axii	AS ABOVE		
A008/002:235:6	Worked bone handle (assoc. with find 3,4,5)	Axii	AS ABOVE		
A008/002:251:1	Iron punch/pin	Aix	195	235	106.229
A008/002:251:2	Iron tanged knife	Aix	194.15	245.10	106.226
A008/002:251:3	Iron object	Aix	196.06	241.22	105.986
A008/002:255:1	Bone pin fragment	Aix	196.20	239.65	106.204
A008/002:255:2	Iron object		NPL		
A008/002:279:1	Metal object		NPL		
A008/002:363:1	Iron object, poss. pin	Bii, Tr.2	NPL		
A008/002:400:1	Medieval pottery	Bix	NPL		
A008/002:400:2	Iron knife blade	Biii	NPL		
A008/002:400:3	Medieval pottery sherd	Bix	NPL		
A008/002:400:4	Heavily corroded iron nail	Bix	NPL		
A008/002:400:5	Fragment of round headed iron nail	Biii	115.15	168.30	102.706
A008/002:400:6	Heavily corroded iron object	Biii	NPL		
A008/002:400:7	Fragment of round headed iron nail		NPL		
A008/002:400:8	Fragment of iron object	Biii	136.17	163.65	104.564
A008/002:400:9	Struck flint	Biii	NPL		
A008/002:400:10	Blue glass bead	Biii	134.24	165.75	104.627
A008/002:400:11	Struck flint	Biii	133.14	171.68	105.163
A008/002:400:12	Iron blade with wooden handle remains	Biii	114.40	188.67	104.854
A008/002:400:13	Struck flint	Bii	92.00	180.00	104.747
A008/002:400:14	Medieval pottery		NPL		
A008/002:400:15	Medieval pottery	Bii	98.63	180.65	105.185
A008/002:400:16	Flint debitage	Bii	98.51	183.05	105.255
A008/002:400:17	Copper-alloy pin shaft	Bii	92.09	182.98	103.948
A008/002:400:18	Iron pin fragment	Bii	91.94	180.75	104.318
A008/002:400:19	Iron pin fragment	Bii	89.50	182.50	104.995
A008/002:400:20	Struck flint	Bii	84.44	172.20	103.769
A008/002:400:21	Iron hook	Bii	96.33	200.80	104.680
A008/002:400:22	Medieval pottery	Biii, Tr.4	120.67	200.77	104.21
A008/002:400:23	Medieval pottery	Biii, Tr.3	102.00	165.31	105.465
A008/002:400:24	Flint debitage	Bvi	NPL		
A008/002:400:25	Flint debitage	Biii	103.70	200.65	104.778
A008/002:400:26	Flint debitage	Bii, Tr.2	87.65	194.10	104.838
A008/002:400:27	Fragment of iron object	Bii	95.18	190.15	104.809
A008/002:400:28	Fragment of iron object	Biii	103.47	201.00	104.757
A008/002:400:29	Fragment of iron object. Possibly modern.	Bvi	NPL		
A008/002:400:30	Medieval pottery	Bvi	145	135	NPL
A008/002:400:31	Flint debitage	Biii	102.10	198.90	104.744
A008/002:400:32	Flint debitage	Biii	101.84	200.25	104.798
A008/002:400:33	Medieval pottery	Biii	106.26	198.05	NPL
A008/002:400:34	Fragment of round headed iron nail	Bii	98.50	177	105.335
A008/002:400:35	Flint arrowhead	Bv, Tr.6	83.80	182.08	104.775
A008/002:400:36	Worked bone	Bvii	155.05	145.45	104.355
A008/002:400:37	Flint debitage	Bii	84.93	192.55	104.645
A008/002:400:38	Flint debitage	Bii	94.50	118.90	104.685
A008/002:400:39	Medieval pottery	Bvi	132.10	161.40	104.535
A008/002:400:40	Black glazed earthenware	Bvi	125.40	151.90	103.988
A008/002:400:41	Corroded iron nail	Bvi	127.30	144.32	103.738
A008/002:400:42	Flint debitage	Bvi	128.05	134.18	103.338
A008/002:400:43	Flint debitage	Bvi	NPL		
A008/002:400:44	Blue glass bead fragment	Biii, Tr.5	129.70	166.12	103.774

A008/002:400:45	Flint debitage	Bvi	133.82	148.64	103.725
A008/002:400:46	Flint debitage	Bvi	134.66	141.70	103.615
A008/002:400:47	Struck flint	Bvi	124.65	149.56	104.264
A008/002:400:48	Pottery sherd, souterrain ware?	Bvi	110.92	130.30	103.952
A008/002:400:49	Clay pipe stem	Bvi	119.47	134.33	103.508
A008/002:400:50	Flint debitage	Bvi	98.95	145.35	104.192
A008/002:400:51	Copper-alloy pin fragment	Bv	107.15	135.40	103.784
A008/002:400:52	Medieval pottery	Bvi	85.61	172.08	103.682
A008/002:400:53	Struck flint	Bii	111.50	129.40	103.263
A008/002:400:54	Flint debitage	Bvi	118.81	126.77	103.242
A008/002:400:55	Struck flint	Bvi	85.46	172.37	103.722
A008/002:400:56	Black glazed earthenware	Bix, Tr.7	124.25	133.35	104.455
A008/002:400:57	Fragment of iron pin	Bvi	106	146.20	104.213
A008/002:400:58	Incised stone, possible pin sharpener	Bvi	108.23	121.53	103.040
A008/002:400:59	Poss. fossil bead	Bvi	106.71	122.50	103.049
A008/002:400:60	Poss. rubbing stone fragment	Bvi	102.46	137.90	103.834
A008/002:400:61	Flint debitage	Bix	112.77	112.82	102.700
A008/002:400:62	Medieval pottery	Bix	107.31	119.00	103.219
A008/002:400:63	Poss. crucible fragment	Bii	87.25	174.10	103.858
A008/002:400:64	Iron pin	Bii	87.14	173.26	104.634
A008/002:400:65	Copper-alloy pin shaft	Bii	87.80	194.88	104.530
A008/002:400:66	Flint debitage	Bii	92.81	174.23	105.170
A008/002:400:67	Flint debitage	Bv	92.69	156.70	104.802
A008/002:400:68	Struck flint	Bix, Tr.7	132.25	109.02	103.580
A008/002:400:69	Yellow bead fragment	Bii	90.30	191.30	104.743
A008/002:400:70	Blue glass bead	Bvi	115.86	151.50	104.216
A008/002:400:71	Iron blade	Bii	98.09	193.70	104.889
A008/002:400:72	Green glazed medieval pottery	Biii	NPL		
A008/002:400:73	Poss. rubbing stone	Bii	NPL		
A008/002:400:74	Javelin/flint scraper	Bvi	NPL		
A008/002:400:75	Green glazed pottery	Biii, Tr.6	NPL		
A008/002:400:76	Iron needle	Bvi, Tr.9	158.48	131.08	104.123
A008/002:400:77	Worked bone	Bvi, Tr.9	158.02	130.83	104.118
A008/002:400:78	Black glazed earthenware	Bvi, Tr.9	158.02	132.54	104.205
A008/002:400:79	Black glazed earthenware	Bvii	159.20	134.58	104.204
A008/002:400:80	Worked bone	Biii, Tr.5	114.43	170.97	105.357
A008/002:400:81	Struck flint	Biii, Tr.5	114.17	180.40	105.722
A008/002:400:82	Struck flint	Bvi, Tr.7	139.60	160.27	104.46
A008/002:400:83	Iron ring pin with twisted looped head	Bii	NPL		
A008/002:400:84	Iron nail	Bvi, Tr.7	137.50	142.95	104.306
A008/002:400:85	Struck flint	Bix, Tr.4	112.73	114.30	103.588
A008/002:400:86	Struck flint	Bx, Tr.10	176.40	119.70	103.420
A008/002:400:87	Worked flint	Biii, Tr.6	141.18	162.91	104.555
A008/002:400:88	Burnt struck flint	Bii, Tr.2	86.44	178.91	104.727
A008/002:400:89	Brown glazed earthenware	Bvii, Tr.9	150.75	161.40	104.310
A008/002:400:90	Iron blade	Bii, Tr.3	97.51	184.95	105.065
A008/002:400:91	Struck flint	Bvi, Tr.4	108.02	145.57	104.905
A008/002:400:92	Copper-alloy piece	Bix, Tr.5	116.93	117.66	103.685
A008/002:400:93	Dublin type coarse ware	Bix, Tr.5	112.73	114.30	103.588
A008/002:400:94	Struck flint	Bix, Tr.5	113.82	113.25	103.493
A008/002:400:95	Struck flint	Bx, Tr.10	174.94	117.64	103.23
A008/002:400:96	Struck flint	Bvi, Tr.5	113.77	131.00	103.983
A008/002:400:97	Flint debitage	Bvi, Tr.5	116.14	114.65	103.527
A008/002:400:98	Flint debitage	Bvi, Tr.4	108.02	145.57	104.905
A008/002:400:99	Iron fragment	Bii, Tr.3	91.30	161.56	105.020
A008/002:400:100	Iron object	Bv	165.57	113.00	103.912
A008/002:400:101	Lignite bracelet fragment	Bii, Tr.2	87.80	169.55	104.247
A008/002:400:102	Medieval pottery	Bii	NPL		
A008/002:401:1	Medieval pottery	Biii, Tr.6	125.64	200.80	105.000
A008/002:401:2	Iron pin/nail fragment	Biii, Tr.5	115.98	188.66	104.802

A008/002:401:3	Struck flint	Biii, Tr.5	133.5	187.74	104.856
A008/002:401:4	Copper-alloy ring pin	Bvi, Tr.4	111.77	132.90	104.011
A008/002:401:5	Flint debitage	Bvi, Tr.4	102.90	130.13	104.307
A008/002:401:6	Flint	Bvi, Tr.4	106.30	130.48	103.977
A008/002:401:7	Unidentified iron tool.	Bvi, Tr.4	102.20	132.25	104.275
A008/002:401:8	Flint debitage	Bvi, Tr.5	111.72	130.37	103.783
A008/002:401:9	Flint blade	Bvi, Tr.5	116.15	129.88	104.013
A008/002:401:10	Fragment of iron object	Bvi, Tr.5	115.47	135.67	104.234
A008/002:401:11	Iron object, slotted punch	Biii, Tr.6	128.90	168.80	103.885
A008/002:401:12	Flint arrowhead	Bvi, Tr.5	118.59	134.24	104.199
A008/002:401:13-14	Fragments of socketed iron blade	Biii, Tr.6	125.40	177.25	105.037
A008/002:401:15-16	Copper-alloy pin	Bvi, Tr.6		NPL	
A008/002:401:17	Stone ball	Bvi, Tr.5	119.69	132.20	104.890
A008/002:401:18	Medieval pottery	Bii, Tr.3	94.57	197.10	104.486
A008/002:401:19	Animal bone with trial decoration	Biii, Tr.7		NPL	
A008/002:401:20	Merels (Nine-Men's-Morris) gaming board	Biii, Tr.5	115.68	189.00	104.907
A008/002:401:21	Animal bone with trial decoration	Biii		NPL	
A008/002:408:1	Heavily corroded iron object.	Biii		NPL	
A008/002:412:1	Animal bone with trial decoration	Biii		NPL	
A008/002:414:1	Flint debitage	Biii, Tr.5	116.30	189.10	104.546
A008/002:414:2	Corroded iron nail	Biii, Tr.6		NPL	
A008/002:414:3	Bone pin fragment	Biii		NPL	
A008/002:414:4	Animal bone with trial decoration	Biii		NPL	
A008/002:416:1	Copper-alloy stud with tinning	Biii, Tr.5	114.61	190.22	104.262
A008/002:417:1	Iron blade	Biii, Tr.5	114.70	190.25	104.330
A008/002:417:2	Iron nail	Biii		NPL	
A008/002:422:1	Bone comb fragment with copper-alloy rivets	Biii, Tr.5	115.90	189.44	104.471
A008/002:422:2	Bone comb fragment with copper-alloy rivets	Biii, Tr.5	115.90	189.44	104.471
A008/002:422:3	Flint debitage	Biii, Tr.5	114.64	189.72	104.505
A008/002:423:1	Fragment of iron object	Biii, Tr.6		NPL	
A008/002:426:1	Copper-alloy object	Bvi, Tr.6	130.55	135.98	103.551
A008/002:429:1	Copper-alloy ring pin	Bvi, Tr.5	117.65	133.40	104.677
A008/002:429:2	Copper-alloy fragment	Bvi, Tr.5	118.15	133.15	104.351
A008/002:429:3	Iron blade	Bvi, Tr.4/5	110.00	127.84	103.618
A008/002:429:4	Struck flint	Bvi, Tr.4	106.54	129.22	103.695
A008/002:432:1	Worked antler	Bvi		NPL	
A008/002:432:2	Stone mould	Bvi, Tr.4/5	110.23	131.79	102.997
A008/002:432:3	Animal bone with trial decoration	Bvi		NPL	
A008/002:437:1	Corroded iron object	Bvi	99.90	133.60	103.730
A008/002:437:2	Bone pointer	Bvi, Tr.5	111.52	131.43	103.670
A008/002:438:1	Unidentified iron tool	Bvi, Tr.4	103.84	132.20	104.126
A008/002:438:2	Curving iron object. ring fragment	Bvi, Tr.4	104.60	130.52	103.973
A008/002:438:3	Lignite bracelet fragment	Bvi, Tr.4	105.87	133.05	104.085
A008/002:438:4	Struck flint	Bvi, Tr.4	104.79	131.83	103.432
A008/002:438:5	Unidentified iron tool	Bvi, Tr.4	104.60	130.52	103.973
A008/002:438:6	Iron blade	Bvi, Tr.5	111.22	131.60	103.632
A008/002:438:7	Copper-alloy object	Bvi, Tr.5	111.06	133.00	103.770

A008/002:438:8	Copper-alloy object	Bvi, Tr.5	112.72	133.96	104.035
A008/002:440:1	Fragment of iron object	Bvi, Tr.4	106.24	131.53	103.261
A008/002:447:1	Horseshoe fragment?	Bvi		NPL	
A008/002:453:1	Iron object	Biii, Tr.5	111.43	190.90	104.856
A008/002:453:2	Flint debitage	Biv, Tr.6	128.00	155.60	104.144
A008/002:455:1	Iron blade fragment	Biii, Tr.5	110.64	193.30	104.715
A008/002:455:2	Iron object	Biii, Tr.6	128.54	164.10	103.800
A008/002:455:3-4	Iron object (broken in 2 pieces)	Biii, Tr.6		NPL	
A008/002:473:1	Fragment of iron object	Bii, Tr.2	82.60	189.06	104.142
A008/002:473:2	Fragment of iron object	Bii	82.60	189.06	104.142
A008/002:473:3	Iron ring (xray)	Bii	83.87	190.34	104.062
A008/002:473:4	Stone spindle whorl	Bii, Tr.2	76.35	186.60	104.455
A008/002:473:5	Flint debitage	Bii		NPL	
A008/002:473:6	Flint debitage	Bii, Tr.2	82.73	187.07	103.514
A008/002:473:7	Iron object	Bii, Tr.2	101.26	192.80	104.384
A008/002:473:8	Pottery sherd	Bii. Tr.2	84.41	189.93	104.152
A008/002:473:9	Copper-alloy piece (poss. pin shaft fragment)	Biii, Tr.4	109.58	195.87	103.689
A008/002:473:10	Medieval pottery sherd	Biii, Tr.4	101.73	197.33	104.368
A008/002:474:1	Fragment of large headed iron nail	Bii, Tr.2	100.66	193.20	104.277
A008/002:476:1	Iron replaced/clay object., assoc. with A008/002:476:5 (	Bii		NPL	
A008/002:476:2	Copper-alloy pin shaft	Biii	139.20	166.40	104.313
A008/002:476:3	Iron knife blade fragment	Bii	76.95	190.30	104.302
A008/002:476:4	Heavily corroded iron object, possible coulter	Biii			
A008/002:476:5	Iron replaced/ clay object, assoc. with A008/002:476:1	Biii		NPL	
A008/002:484:1	Wooden bucket stave	Bii, Tr.2	96.50	193.00	103.420
A008/002:484:2	Lignite bracelet fragment	Biii, Tr.4	109.01	196.29	104.716
A008/002:484:3	Wooden bucket stave	Bii, Tr.3	92.22	195.51	103.530
A008/002:491:1	Copper-alloy object	Biii, Tr.6	125.26	172.62	103.694
A008/002:491:2	Yellow glass bead fragment	Biii, Tr.6	126.67	166.96	104.101
A008/002:491:3	Green glass bead (broken)	Biii, Tr.6	126.20	167.02	104.059
A008/002:491:4	Perforated bone object	Biii, Tr.6		NPL	
A008/002:492:1	Blue glass bead	Bvi, Tr.7	131.83	144.75	104.135
A008/002:492:2	Struck flint	Bvi, Tr.7	115.73	141.19	103.880
A008/002:500:1	Copper-alloy fragment	Bii	97.60	173.10	104.693
A008/002:506:1	Possible iron pin	Bii	98.34	166.88	104.222
A008/002:506:2	Iron pin fragment	Bii	98.60	166.80	104.191
A008/002:512:1	Medieval pottery	Biii, Tr.4	101.80	166.44	104.948
A008/002:513:1	Struck flint	Biii	101.80	166.92	104.467
A008/002:513:2	Copper-alloy stick pin “watchwinder head”	Biii	101.31	167.73	104.970
A008/002:513:3	Perforated slate tile	Biii		NPL	
A008/002:513:4	Iron object	Biii		NPL	
A008/002:518:1	Fragment of iron object	Biii	103.92	164.20	104.320
A008/002:518:2	Fragment of iron object	Biii	103.92	164.20	104.320
A008/002:518:3	Fragment of iron object	Biii	103.92	164.20	104.320
A008/002:518:4	Fragment of iron object, assoc. with	Biii	103.92	164.20	104.320

	A008/002:518:7				
A008/002:518:5	Fragment of iron object	Biii	103.92	164.20	104.320
A008/002:518:6	Fragment of iron object	Biii	103.92	164.20	104.320
A008/002:518:7	Fragment of iron object, assoc. with A008/002:518:4	Biii	103.92	164.20	104.320
A008/002:535:1	Animal bone with trial decoration	Biii	NPL		
A008/002:545:1-3	Iron blade (broken in 3 pieces)	Bv	93.75	151.02	104.681
A008/002:552:1	Blue glass toggle	Biv	94.27	158.06	104.150
A008/002:554:1	Modern pottery	Bvi	136.18	142.30	104.150
A008/002:554:2	Modern glass	Bvi	NPL		
A008/002:554:3	Corroded iron nail	Bvi, Tr.4	103.85	121.90	103.572
A008/002:556:1	Modern glass	Bvi, Tr.5	134.65	116.15	104.720
A008/002:566:1	Unidentified iron tool.	Bvi, Tr.4/5	112.90	151.76	104.830
A008/002:566:2	Iron pin fragment	Bvi	109.42	148.55	104.860
A008/002:566:3	Yellow bead fragment	Bvi	109.08	148.32	104.960
A008/002:566:4	Iron knife fragment	Bvi	108.10	146.90	104.835
A008/002:566:5	Fragment of iron object	Bvi, Tr.5	117.30	154.90	105.085
A008/002:566:6	Corroded iron object	Bvi, Tr.4	106.55	146.90	104.980
A008/002:566:7	Corroded iron object	Biii, Tr.4	105.91	145.48	104.825
A008/002:566:8	Ceramic crucible fragment	Bvi	107.11	146.46	104.966
A008/002:566:9	Corroded iron object	Bvi	104.64	144.53	104.778
A008/002:566:10	Unidentified iron tool	Bvi, Tr.4	108.81	147.75	104.875
A008/002:566:11	Fossil bead	Bvi, Tr.4	108.81	147.75	104.875
A008/002:566:12	Fragment of iron object	Bvi, Tr.4	108.81	147.75	104.875
A008/002:566:13	Struck flint	Bvi, Tr.4	108.81	147.75	104.875
A008/002:566:14	Fragment of iron object	Bvi, Tr.4/5	104.59	145.08	104.876
A008/002:566:15	Copper-alloy ring pin with spiral ribbed ring	Bvi, Tr.4	103.88	143.21	104.752
A008/002:566:16	Struck flint	Bvi, Tr.4	109.8	149.15	104.849
A008/002:566:17	Struck flint	Bvi, Tr.4/5	104.95	142.80	104.755
A008/002:566:18	Bone pin fragment	Bvi, Tr.4	104.17	140.83	104.563
A008/002:566:19-21	Iron object, poss. socketed blade (re-adhered into one with treatment)	Bvi, Tr.5	117.66	155.23	104.951
A008/002:566:22	Iron object with looped head	Bvi, Tr.4	105.67	144.00	104.820
A008/002:566:23	Lignite bracelet fragment	Bvi, Tr.4/5	104.00	140.34	104.594
A008/002:566:24	Iron knife blade tip	Bvi, Tr.4/5	106.57	146.16	104.790
A008/002:570:1	Poss. hammer stone	Bvi, Tr.5	116.84	148.94	104.846
A008/002:570:2	Amber bead (broken)	Bvi, Tr.5	120.52	153.53	104.665
A008/002:580:1	Bone pin fragment	Bii, Tr.3	94.05	173.05	105.150
A008/002:580:2	Worked bone/ antler	Bii, Tr.3	94.33	172.76	104.880
A008/002:590:1	Copper-alloy pin fragment	Bvi, Tr.5	115.20	140.58	104.491
A008/002:598:1	Glass	Bvi	105.73	126.10	103.581
A008/002:598:2	Copper-alloy attachment/strap/buckle back	Bvi, Tr.5	114.42	133.45	103.715
A008/002:598:3	Bone pin	Bvi, Tr.4	101.90	122.20	103.470
A008/002:598:4	Iron nail	Bvi, Tr.7	132.55	147.70	104.031
A008/002:598:5	Medieval pottery	Bvi, Tr.7	127.58	127.58	103.967
A008/002:598:6	Corroded iron nail	Bvii	148.29	144.30	104.216
A008/002:598:7	Flint debitage	Bvi, Tr.6	122.30	140.15	104.159

A008/002:601:1a/b	2 Copper-alloy rings	Bvi, Tr.4	109.29	148.35	104.613
A008/002:601:2	Fragment of unidentified iron tool.	Bvi, Tr.5	119.62	156.36	103.880
A008/002:615:1	Copper-alloy pin shaft	Bii, Tr.3	92.43	170.91	104.815
A008/002:615:2	Iron object	Bii, Tr.3	93.02	171.29	105.018
A008/002:619:1	Flint debitage	Bii, Tr.3	93.52	179.15	104.989
A008/002:620:1	3 Fragments of a copper-alloy pin	Bii	96.87	178.316	104.839
A008/002:620:2	Broken stone object	Bii, Tr.3	97.03	178.10	104.996
A008/002:620:3	Corroded fragment of iron object	Bii, Tr.3	96.40	179.05	105.201
A008/002:620:4	Bone pin	Bii, Tr.3	98.82	193.08	105.010
A008/002:620:5	Iron object	Bii, Tr.2	88.20	178.55	104.414
A008/002:623:1	Struck flint	Bii, Tr.3	97.71	177.32	105.158
A008/002:639:1	Decorated bone pin fragment	Bii, Tr.3	93.09	173.70	105.047
A008/002:643:1	Bone pin	Bvi, Tr.4/5	107.45	147.10	104.039
A008/002:643:2	Iron object	Bvi, Tr.4/5	118.20	147.98	104.039
A008/002:643:3	Looped iron object	Bvi, Tr.4/5	104.98	144.33	108.778
A008/002:643:4	Iron object. Blade fragment	Bvi, Tr.4/5	108.60	148.52	104.771
A008/002:643:5	Iron ring pin	Bvi, Tr.4/5	106.10	142.07	104.257
A008/002:643:6	Corroded iron object	Bvi, Tr.4/5	109.80	149.15	104.582
A008/002:643:7	Iron object, latch lifter?	Bvi, Tr.4/5	134.16	142.69	104.416
A008/002:643:8	Corroded iron object	Bvi, Tr.4/5	134.16	142.69	104.416
A008/002:643:9	Corroded iron object	Bvi, Tr.4/5	104.22	142.29	104.431
A008/002:643:10	Iron object. Round headed nail/stud.	Bvi, Tr.4/5	121.46	157.31	104.679
A008/002:643:11	Iron pin	Bvi. Tr.4/5	103.93	142.40	104.484
A008/002:643:12	Corroded fragment of iron object	Bvi, Tr.4/5	104.60	140.83	104.508
A008/002:643:13	Corroded fragment of iron object	Bvi, Tr.4/5	103.93	142.40	104.484
A008/002:654:1	Round stone (gaming piece?)	Bvi, Tr.5	117.15	149.90	104.476
A008/002:654:2	Worked flint	Bvi, Tr.5	117.37	139.77	104.323
A008/002:656:1	Iron knife blade	Bvi, Tr.5	116.78	140.16	104.313
A008/002:657:1	Flint debitage	Bvi, Tr.6	121.63	150.46	104.846
A008/002:658:1	Flint debitage	Bvi, Tr.5	118.98	121.98	103.191
A008/002:665:1	Round headed iron nail	Bvi, Tr.5	120.73	142.20	104.578
A008/002:671:1	Iron shaft	Bvi, Tr.5	123.24	140.23	104.189
A008/002:674:1	Iron object	Bvi, Tr.6	125.90	157.97	104.189
A008/002:685:1-3	Animal bone with trial decoration	Bvi	NPL		
A008/002:686:1	Iron blade	Bvi, Tr.5	115.71	115.63	103.267
A008/002:689:1	Unfinished bone pin	Bii, Tr.2	89.64	172.85	104.810

A008/002:702:1	Modern pottery	Bvi, Tr.7	132.80	141.38	104.365
A008/002:731:1	Unidentified iron object	Bvi, Tr.5	119.61	123.73	NPL
A008/002:733:1	Copper-alloy needle	Bii, Tr.3	90.57	169.98	104.154
A008/002:736:1	Lignite bracelet fragment	Bii, Tr.2	86.30	165.35	104.600
A008/002:736:2	Lignite bracelet fragment	Bii, Tr.3	93.92	172.15	105.219
A008/002:736:3	Iron knife	Bii, Tr.2	89.30	164.30	104.600
A008/002:747:1	Struck quartz	Bvi, Tr.3	127.00	130.00	103.351
A008/002:765:1	Copper-alloy wheel mount	Bix, Tr. 4	105.00	116.40	103.445
A008/002:771:1	Copper-alloy piece with perforation	Bv, Tr.3	94.08	157.72	104.938
A008/002:772:1	E-ware (fits with find 805:1)	Bvi, Tr.4	107.85	140.05	104.007
A008/002:782:1	Struck quartz	Bvi, Tr.7	138.53	154.01	104.332
A008/002:782:2	Struck flint	Bvi, Tr.7	139.74	156.05	104.470
A008/002:805:1	E-ware rim sherd (fits with find 772:1)	Bvi, Tr.4	104.24	139.90	104.228
A008/002:809:1	Copper-alloy ring from spiral ring pin	Biii	133.94	140.24	104.250
A008/002:809:2	Copper-alloy pin shaft	Biii	133.94	140.24	104.250
A008/002:826:1	Fragment of iron object	Bvi, Tr.5	114.88	156.02	104.032
A008/002:862:1	Corroded iron blade	Bvi, Tr.7	135.46	138.54	104.260
A008/002:893:1	Struck flint	Bvi, Tr.5	110.48	135.45	104.737
A008/002:893:2	Copper-alloy object (broken)	Bii, Tr.5	111.25	135.23	104.193
A008/002:906:1	Struck flint	Bix, Tr.4	107.60	93.60	102.743
A008/002:906:2	Flint blade	Bix, Tr.4	104.00	103.04	102.861
A008/002:907:1	Flint debitage	Bix	103.50	103.90	102.853
A008/002:938:1	Iron object	Bix	108.81	109.18	103.245
A008/002:941:1	Iron ring	Biii	134.00	183.10	104.674
A008/002:946:1	Iron ring	Biii, Tr.7	133.50	174.2	104.150
A008/002:952:1	Fragment of iron object	Biv, Tr.8	146.20	178.29	104.290
A008/002:952:2	Iron object	Biv, Tr.8	NPL		
A008/002:963:1	Fragment of iron object	Bvii, Tr. 9	152.30	192.40	104.200
A008/002:963:2	Iron blade	Bvii	162.93	135.67	103.863
A008/002:966:1	Copper-alloy buckle	Bvii, Tr. 8	148.89	130.90	104.243
A008/002:968:1	Struck flint	Bxi, Tr. 10	164.15	119.03	103.318
A008/002:972:1	Copper-alloy pin shaft fragment	Bix, Tr. 7	137.90	118.80	104.095
A008/002:993:1	Iron object, poss. chisel	Bvii, Tr. 9	97.65	114.95	103.413

A008/002:993:2	Iron bracket	Bx	102.23	117.33	103.189
A008/002:933:3	Iron object	Bx	102.49	119.66	103.108
A008/002:993:4	Struck flint	Bx	101.58	118.87	103.013
A008/002:993:5	Struck flint	Bvii	98.05	115.31	103.365
A008/002:998:1	Struck flint	Bix, Tr. 4	110.02	112.40	102.972
A008/002:1035:1	Flint flake	Bix	112.88	104.72	103.227
A008/02:1059:1	Concave scraper	Bix, Tr. 4	104.25	109.40	103.106
A008/002:1064:1	Flint debitage	Bvi Tr. 7	138.93	157.95	104.290
A008/002:1081:1	Blue glass bead	Biv, Tr. 8	143.90	167.90	103.606
A008/002:1105:1	Copper-alloy clasp	Biv	145.06	116.55	103.638
A008/002:1172:1	Crucible fragment (non metal) similar in material to A008/002:400:63	Bv, Tr. 3	90.85	156.60	104.552
A008/002:1182:1	Blue glass bead	Bii, Tr.2	88.77	164.52	104.649
A008/002:1183:1	Iron bar	Bii, Tr.2	91.15	165.00	104.589
A008/002:1196:1	Iron fragment	Bvi, Tr.7	140.74	158.75	104.410
A008/002:1218:1	Flint debitage	Bix, Tr.4	103.10	99.95	102.774
A008/002:1218:2	Flint debitage	Bix, Tr.4	105.90	108.85	102.970
A008/002:1240:1	Struck flint	Bix, Tr.6	108.35	93.90	102.777
A008/002:1240:2	Flint debitage	Bix. Tr.6	109.40	94.00	102.706
A008/002:1240:3	Flint debitage	Bix, Tr.6	109.10	94.10	102.709
A008/002:1240:4	Struck flint	Bix, Tr.6	108.10	92.00	102.763
A008/002:1266:1	Iron blade fragment	Bii	95.99	178.52	104.247
A008/002:1273:1	Struck flint	Bv	92.11	154.73	104.895
A008/002:1285:1	Bone pin	Bv, Tr.3	98.33	123.38	104.518
A008/002:1285:2-4	3 Iron objects	Bv, Tr.3	98.35	124.80	104.518
A008/002:1291:1	Animal bone with trial decoration	Bviii, Tr.3	98.55	117.90	103.549
A008/002:1291:2	Iron knife	Bviii	98.15	118.30	103.545
A008/002:1291:3	Struck flint	Bvii	97.45	116.16	103.413
A008/002:1295:1	Iron fragment	Bii, Tr.3	97.45	116.16	103.413
A008/002:1296:1	Iron blade	Bii, Tr.3	93.34	172.55	104.662
A008/002:1301:1	Iron fragment	Bii, Tr.3	92.88	167.16	104.878
A008/002:1301:2	Iron object, possible staple fragment/key	Bii, Tr.3	NPL		
A008/002:1312:1	Iron bolt	Bii, Tr.3	92.26	162.95	104.290
A008/002:1321:1-25	Bone comb with 7 iron rivets (re-adhered where possible)	Bii, Tr.3	92.77	160.06	104.980
A008/002:1449:1	E-ware rim sherd	Bii	NPL		

A008/002:1455:1	Iron object	Bii, Tr.3	97.80	194.55	104.307
A008/002:1484:1	Medieval pottery	Bi	NPL		
A008/002:1521:1	Iron object, poss. knife fragment	Bii, Tr.3	90.00	188.75	104.688

APPENDIX 3 *Sample List*

Sample no	Context no	Results
1	144	16g burnt bone
2	108	4g snail shells
3	111	14g charcoal
4	120	18g coprolite
7	144	18g charcoal
10	165	Organic material in flot
11	106	5g charcoal
12	145	33g charcoal
13	107	8g charcoal
14	107	7g charcoal
15	175	<1g charcoal, 3 seeds and organic material in flot
17	111	2g snail shells
18	106	5g charcoal
19	108	7g charcoal
20	151	15g charcoal
23	136	8g snail shells
24	158	7g snail shells
27	160	3g charcoal
28	162	4g oyster shell
29	186	10g oyster / scallop shell
30	160	24g mollusc shell
31	137	5g charcoal
32	137	Organic material in flot, animal bone and bone in residue
33	126	Organic material in flot
34	176	Organic material in flot
35	177	Animal bone fragments in residue
36	125	Organic material in flot, animal teeth and bone in residue
37	200	Organic material in flot
38	201	3g charcoal
39	111	7g charcoal
40	108	3g charcoal
41	111	4g charcoal
42	110	4g charcoal
43	269	Bone fragments in residue
44	106	Organic material and seeds in flot and bone fragments in residue
45	150	Bone fragments in residue
46	111	Organic material in flot, animal bone and tooth in residue
47	110	Organic material and charcoal flecks in flot, bone fragments in residue
48	151	Organic material in flot, bone fragments in residue
49	144	Organic material and seeds in flot, bone fragments in residue, 8g charcoal
50	108	Bone fragments, burnt bone and possible human tooth in residue
51	194	Bone in residue
52	198	Nothing
53	197	Animal tooth in residue
54	111	Nothing
55	108	21g charcoal
56	144	35g charcoal
57	112	Organic material in flot, bone fragments in residue
58	107	Organic material in flot, bone fragments in residue
59	162	Charcoal flecks, seeds and organic material in flot, bone fragments in residue

60	161	Organic material and seeds in flot, bone fragments in residue
61	224	Organic material in flot, bone fragments in residue
62	209	Organic material in flot
63	210	Organic material in flot, bone in residue
64	211	Animal bone in residue
65	265	Nothing
66	109	Organic material and seeds in flot, bone in residue
67	252	Organic material in flot, animal tooth in residue
68	117	4g charcoal
69	119	Organic material in flot, burnt and unburnt bone in residue
70	256	Organic material, seeds (80%) and 3g charcoal in flot
72	160	2g charcoal
74	160	<1g fruit seed, bone fragments in residue
76	135	Shell fragments in residue
77	136	Organic material in flot
80	135	7g snail shells
81	273	Nothing
82	220	Organic material and seeds in flot, bone fragments in residue
83	131	Bone fragments in residue
84	221	Bone fragments and animal tooth in residue
85	229	Animal bone in residue
86	228	Nothing
87	227	Nothing
88	145	3g charcoal
89	284	Organic material and seeds in flot, bone in residue
90	138	Organic material, seeds, 1g charcoal in flot, bone in residue
91	140	Organic material in flot, burnt bone in residue
92	275	Organic material and seeds in flot
93	160	4g charcoal
94	279	Organic material, 6g charcoal and seeds in flot, bone in residue
105	229	2g snail shells
106	287	4g charcoal
107	287	Organic material and 3 seeds in flot, bone in residue
108	237	Nothing
109	151	6g mollusc shell
110	161	1g charcoal
111	162	4g snail shells
112	162	2g marine mollusc sample
113	188	Nothing
114	185	Nothing
115	186	Nothing
116	158	Animal bone fragment and tooth in residue
123	470	Nothing
130	508	1g burnt bone in residue
131	448	Nothing
132	500	22g charcoal
133	506	9g charcoal
140	511	3g charcoal
142	511	Nothing
144	415	1g snail shell
144	1499	Organic material in flot
145	507	Nothing
146	448	11g charcoal
147	506/507	9g charcoal

148	569	19g charcoal
149	655	50g animal bone in residue, 43g charcoal in flot
150	671	Nothing
151	678	Nothing
152	619	20g charcoal
153	570	18g charcoal
154	689	12g charcoal
155	656	1g bone fragments in residue
156	672	Nothing
158	570	9g charcoal
159	697	6g charcoal and charred grain in flot, 6g charcoal in residue
159	697	Seeds in flot
160	696	Charred grain (95%) in flot
161	621	5g charcoal
163	610	3g charcoal
165	422	19g charcoal
166	421	5g charcoal
169	620	7g charcoal
170	566	3g charcoal
171	656	35g burnt and unburnt bone in residue
172	655	Bone fragments in residue
173	655	Bone fragments in residue
174	670	4g burnt bone in residue
176	566	13g charcoal
177	513	14g charcoal
178	514	17g charcoal
179	512	14g charcoal
180	518	6g charcoal
181	522	6g burnt bone
182	521	Bone fragments in residue
183	518	Bone fragments in residue
184	531	Nothing
185	532	Nothing
191	191	5g burnt bone
195	412	3g sea shell
196	440	9g oyster shell
197	830	Burnt bone and seeds in residue
199	996	Animal bone in residue
200	777	Charred grain (100%) in flot
204	563	Nothing
205	590	Nothing
206	835	Organic material in flot
208	566	<1g hazelnut shell and seeds
209	570	Animal tooth in residue
210	860	Nothing
211	693	Organic material in flot
212	420	Nothing
213	566	9g charcoal
214	1014	Nothing
215	884	Nothing
216	822	Nothing
217	931	Charred grain (100%) in flot
218	643	1g burnt hazelnut shell
219	824	Organic material and seeds in flot

220	665	Nothing
221	714	Nothing
222	888	Nothing
223	1109	Nothing
224	784	Nothing
225	727	Nothing
226	601	Nothing
227	800	Seeds and charcoal in flot, bone in residue
228	566	Organic material and 3g charcoal in flot
229	661	Nothing
230	694	Nothing
231	858	Bone in residue
232	643	24g charcoal and 4g burnt and unburnt bone in residue
233	425	1g snail shell
234	794	Nothing
236	427	6g charcoal
237	566	8g charcoal
239	1111	1g bone fragments in residue
240	868	Nothing
242	1108	Nothing
247	744	Burnt bone in residue
248	469	14g mollusc shell
249	412	1g snail shell
251	1012	Nothing
252	491	11g snail shells
253	400	Slag
255	1078	Charred grain in flot
256	987	Charcoal flecks in flot, bone in residue
257	747	1g bone fragments in residue
258	535	3g snail shell
259	535	3g charcoal
260	674	12g charcoal
261	1174	Nothing
262	703	Nothing
263	1171	Nothing
263	1172	Nothing
264	1169	Nothing
265	1089	Charcoal and seeds in flot, bone fragments in residue
266	1179	Nothing
267	1181	6g charcoal
268	687	Nothing
269	652	Bone fragments in residue
270	648	Bone fragments in residue
271	713	Bone fragments in residue
272	761	Nothing
273	562	Nothing
274	826	Bone fragments in residue
275	818	Nothing
276	570	9g charcoal
278	1124	Nothing
279	663	8g charcoal
280	1161	4g charcoal
283	1276	Organic material and 3g charcoal
284	1308	Organic material, charcoal flecks and 6g seeds in flot

285	1309	15g charcoal
286	1163	Nothing
287	1281	Nothing
288	1285	Organic material, 2g charcoal in flot, burnt and unburnt bone in residue
289	952	Seeds in flot
290	938	Nothing
291	1192	15g charcoal
292	1281	15g charcoal
293	1196	5g charcoal
294	1023	Bone in residue
295	598	3g snail shell
296	598	6g charcoal
297	1279	26g charcoal
299	1296	Burnt bone and 2g charcoal
300	1295	7g charcoal
304	546	Charred grain in flot
305	548	Burnt seeds and 8g charcoal
306	542	Charred grain and charcoal flecks
307	545	Organic material and 1g charcoal in flot, burnt bone in residue
308	1272	10g charcoal
309	1312	26g charcoal
310	1299	5g charcoal
312	1347	Charcoal flecks
314	1298	5g charcoal
316	771	2g snail shells
318	549	13g charcoal
319	547	5g charcoal
320	1299	4g charcoal
321	353	Nothing
322	1479	Nothing
323	361	Nothing
324	1473	Nothing
325	1385	Nothing
326	365	Organic material and 1g charcoal in flot, burnt and unburnt bone in residue
327	1449	Nothing
328	1496	Nothing
330	1403	Nothing
331	1515	Bone fragments in residue
335	1296	13g charcoal
336	1295	6g charcoal
337	963	12g burnt and unburnt bone fragments
The following material was collected by hand during excavation		
400	110	13g burnt bone
401	111	6g burnt bone
402	130	6g burnt bone
403	145	5g burnt bone
404	151	15g burnt bone
405	192	2g burnt bone
406	287	1g burnt bone
407	472	1g burnt bone
408	163	1g burnt bone
409	500	1g burnt bone
410	605	2g burnt bone

411	106	4g burnt bone
412	107	25g burnt bone
413	108	8g burnt bone
414	109	15g burnt bone
415	112	7g burnt bone
416	115	98g burnt bone
417	120	6g burnt bone
418	131	15g burnt bone
419	135	<1g burnt bone
420	136	3g burnt bone
421	137	4g burnt bone
422	150	2g burnt bone
423	152	2g burnt bone
424	160	25g burnt bone
425	161	27g burnt bone
426	161/162	1g burnt bone
427	162	19g burnt bone
428	167	1g burnt bone
429	175	10g burnt bone
430	220	7g burnt bone
431	221	1g burnt bone
432	223	8g burnt bone
433	224	3g burnt bone
434	227	19g burnt bone
435	227/228	1g burnt bone
436	229	2g burnt bone
437	253	9g burnt bone
438	256	11g burnt bone
439	261	16g burnt bone
440	269	5g burnt bone
441	273	5g burnt bone
442	279	6g burnt bone
443	349	2g charcoal flecks in residue
444	400	46g burnt bone
445	401	3g burnt bone
446	413	8g burnt bone
447	414	6g burnt bone
448	418	1g burnt bone
449	420	6g burnt bone
450	424	2g burnt bone
451	431	17g burnt bone
452	436	7g burnt bone
453	437	2g burnt bone
454	439	2g burnt bone
455	442	4g burnt bone
456	447	13g burnt bone
457	448	2g burnt bone
458	455	1g burnt bone
459	472	2g burnt bone
460	476	2g burnt bone
461	482	8g burnt bone
462	483	3g burnt bone
463	484	1g burnt bone
464	490	2g burnt bone

465	506	2g burnt bone
466	512	7g burnt bone
467	549	12g burnt bone
468	566	61g burnt bone
469	570	20g burnt bone
470	580	1g burnt bone
471	590	3g burnt bone
472	608	10g burnt bone
473	619	6g burnt bone
474	620	16g burnt bone
475	624	6g burnt bone
476	634	9g burnt bone
477	636	<1g burnt bone
478	635	10g burnt bone
479	639	2g burnt bone
480	643	28g burnt bone
481	647	2g burnt bone
482	649	107g burnt bone
483	654	15g burnt bone
484	663	5g burnt bone
485	674	3g burnt bone
486	676	4g burnt bone
487	689	3g burnt bone
488	736	3g burnt bone
489	782	4g burnt bone
490	818	3g burnt bone
491	820	3g burnt bone
492	858	3g burnt bone
493	907	5g burnt bone
494	963	6g burnt bone
495	1097	11g burnt bone
496	1184	<1g burnt bone
497	1201	10g burnt bone
498	1208	15g burnt bone
499	1254	3g burnt bone
500	1266	2g burnt bone
501	1269	1g burnt bone
502	1270	4g burnt bone
503	1273	3g burnt bone
504	1276	19g burnt bone
505	1281	13g burnt bone
506	1285	72g burnt bone
507	1291	6g burnt bone
508	1295	17g burnt bone
509	1296	36g burnt bone
510	1334	3g burnt bone
511	1362	3g burnt bone
512	1482	4g burnt bone
513	418	2g burnt bone
514	27	2g burnt bone
515	41	6g burnt bone
516	100	122g burnt bone
517	101	38g burnt bone
518	107	2g burnt bone

519	109	7g burnt bone
520	115	9g burnt bone
521	118	22g burnt bone
522	120	2g burnt bone
523	126	5g burnt bone
524	127	1g burnt bone
525	144	3g burnt bone
526	145	<1g burnt bone
527	150	2g burnt bone
528	160	7g burnt bone
529	160-163	1g burnt bone
530	161	6g burnt bone
531	162	6g burnt bone
532	163	2g burnt bone
533	175	7g burnt bone
534	186	4g burnt bone
535	205	1g burnt bone
536	209	3g burnt bone
537	220	3g burnt bone
538	233	3g burnt bone
539	252	2g burnt bone
540	255	4g burnt bone
541	507	Organic material, snail shells and seeds in flot

APPENDIX 4 *Topsoil Assessment: Maria Lear & Stuart Rathbone*

PROJECT DETAILS

Project	Metal Detection: M3 Clonee to North of Kells, Contract 2
Archaeologists	Maria Lear & Stuart Rathbone
Project Start	13 June 2005
Report by	Maria Lear & Stuart Rathbone

List of Figures

1. INTRODUCTION

The proposals for archaeological resolution included an assessment of the potential for finds retrieval from topsoil at archaeological sites. This assessment was achieved by a program of metal detecting at ploughed and pasture fields. As per the *Method Statement for Topsoil Assessment Including Metal Detection*, metal detection of the topsoil began within Contract 2 on June 13, 2005. This report details the results of the two phases of metal detection and the field walking survey of Roestown 2a & 2b

2. ARCHAEOLOGICAL ASSESSMENT

2.1 Metal Detection Methodology

1. A grid was established as follows – a baseline was marked on one side of each site along the long axis. Perpendicular offset lines were marked at 10m intervals along the baseline to form stints and these were subdivided along the offset line to form parallel transects 2m wide.
2. The metal detection commenced at one end of the baseline and provided for a 2m 'sweep' along each transect, thus providing for 100% coverage of topsoil deposits at each site.
3. The location of all metal 'hits' was marked on the ground with tags.
4. All metal 'hits' in the sod or topsoil were tested by careful hand excavation of the sod/topsoil. Stratified artefacts were left *in situ*.
5. All artefacts were bagged and numbered citing DOE record number, context and individual number. Their location was also recorded.

2.2 Field Walking Survey Methodology

1. A grid was established as follows – a baseline was marked on one side of each site along the long axis. Perpendicular offset lines were marked at 10m intervals along the baseline to form stints and these were subdivided along the offset line to form parallel transects 4m wide.
2. Each transect was assigned a letter and each stint a number so that each stint would have a unique reference.
3. The field walking took place along each transect and will provided for 2m coverage (i.e.: 1m either side of the walker's path), thus providing 50% coverage of the site.
4. The location of all artefacts was marked on the ground with tags.
5. All artefacts were bagged and numbered citing DOE record number, context and individual number. Their location was also recorded.

2.3 Test Pit Methodology

When deemed necessary, a number of pre-designated test pits were dug at various locations within the site. The test pits measured $1m^2$ and their precise position was surveyed. Each test pit was dug by hand to the depth of subsoil with the resulting loose topsoil sifted on site for the recovery of finds. All finds were bagged and numbered citing DOE record number, context and individual number. Their location was recorded with reference to the specific test pit from where it was collected.

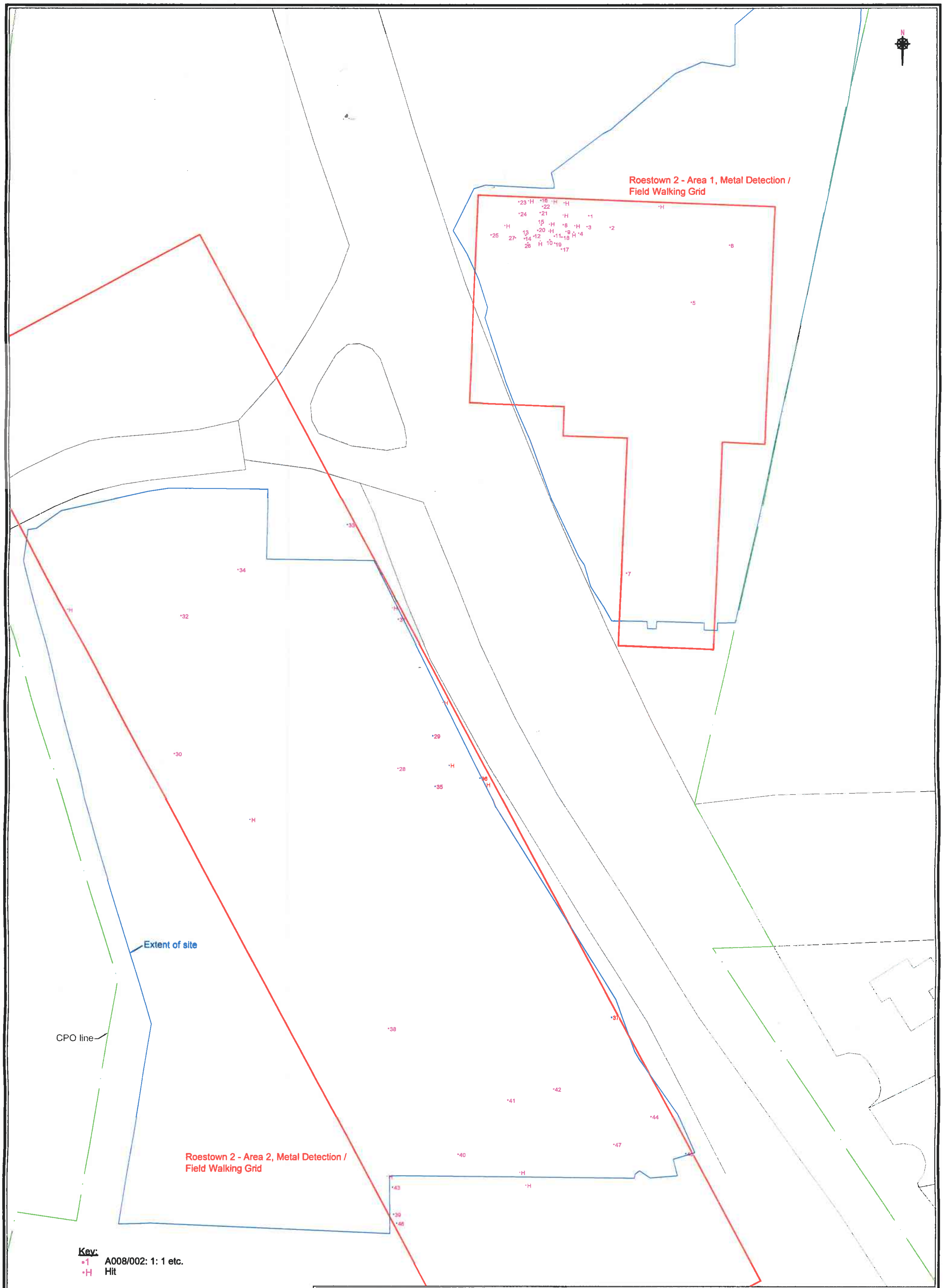
2.4 Results

The first phase of metal detection dealt with the sod layer only and finds recovered were labelled as being from context 1. Initial metal detection of the Roestown 2a and 2b site produced a moderate number of 'hits'. A total of 67 'hits' were recorded with 47 finds recovered and 20 *in situ* 'hits'. The second phase of metal detection was completed after the sod was removed and dealt with the topsoil layer only. These topsoil finds were recorded under context number 2. This second phase produced a total of 72 'hits' with 72 finds recovered. Field walking of Roestown 2a and 2b resulted in the additional collection of 28 finds. All of the finds recovered were of modern date and consisted of items associated with a modern timeframe (nails, nuts/bolts, wires and modern pottery/ceramic). A total of 43 test pits were completed with a total of 5 flint finds recovered.

2.5 List of Finds

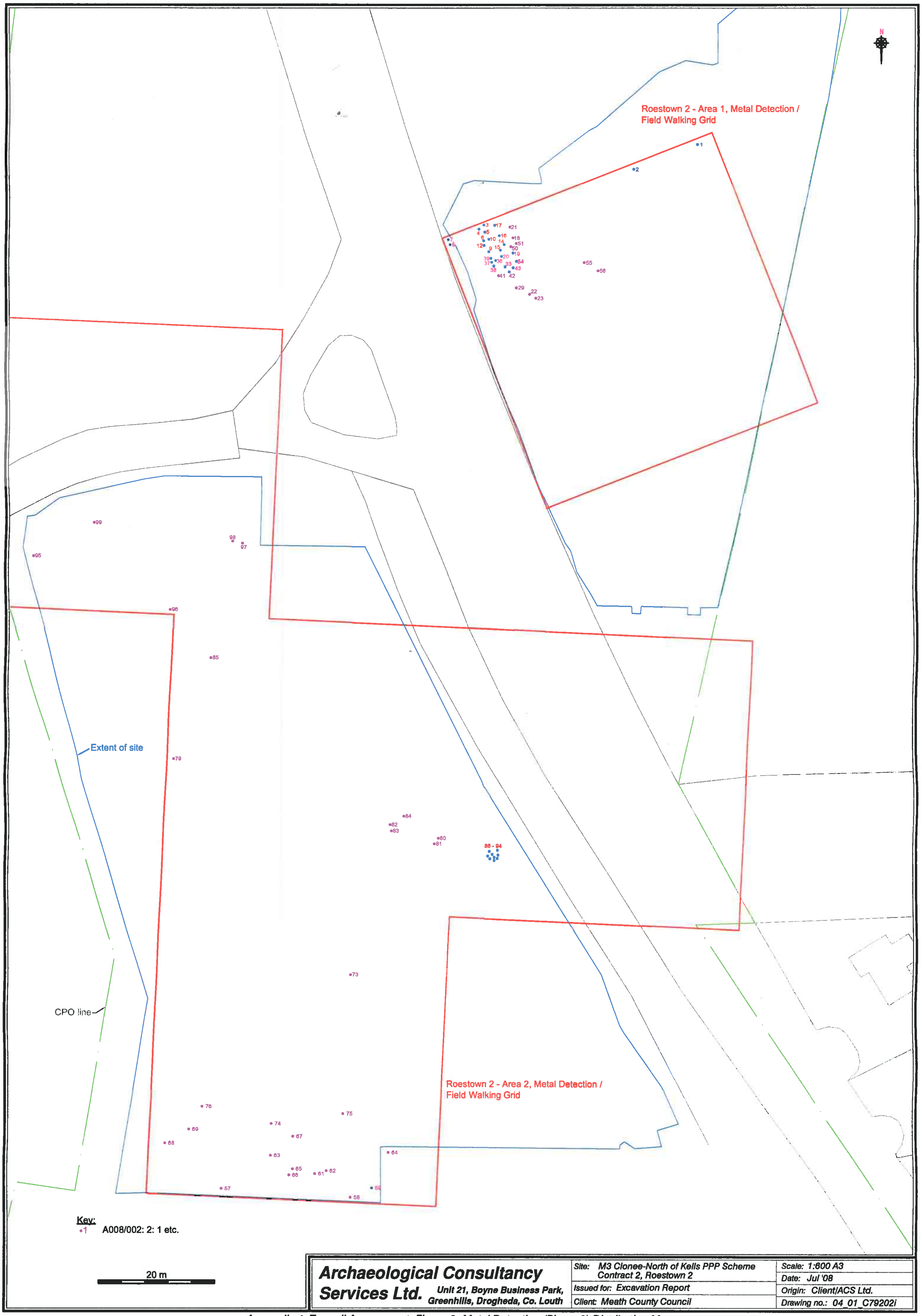
Find Number	Description
A008/002:1:1	Nail
A008/002:1:2	Bolt
A008/002:1:3	Mid-sized modern iron object
A008/002:1:4	Mid-sized modern iron object
A008/002:1:5-6	Wires
A008/002:1:7	Iron peg
A008/002:1:8	Modern knife
A008/002:1:9	Shotgun cartridge
A008/002:1:10-15	Modern metal objects
A008/002:1:16	Modern iron object
A008/002:1:17	Staple
A008/002:1:18	Nail
A008/002:1:19	Mid-sized iron object
A008/002:1:20	Nail
A008/002:1:21-23	3 modern metal objects
A008/002:1:24	Brace
A008/002:1:25	Hook
A008/002:1:26	Handle
A008/002:1:27	Small modern metal object
A008/002:1:28-30	3 modern metal objects
A008/002:1:31	Wire
A008/002:1:32	Circular nut
A008/002:1:33	Modern metal object
A008/002:1:34	Wire
A008/002:1:35	Metal bar
A008/002:1:36	Wire
A008/002:1:37-40	4 modern metal objects
A008/002:1:41	Trailer pin
A008/002:1:42	Modern metal object
A008/002:1:43	Tap washer
A008/002:1:44	Wire
A008/002:1:45	Nail
A008/002:1:46	Modern metal object
A008/002:1:47	Nail
A008/002:2:1-2	2 Modern iron objects
A008/002:2:3	Iron strap
A008/002:2:4	Iron plate
A008/002:2:5-6	2 Nails
A008/002:2:7	Horseshoe
A008/002:2:8-9	2 Modern metal objects
A008/002:2:10	Iron bar
A008/002:2:11	Modern ceramic
A008/002:2:12	Iron strap
A008/002:2:13	Modern ceramic
A008/002:2:14	Modern iron object
A008/002:2:15	Iron plate
A008/002:2:16	Modern iron object
A008/002:2:17-18	2 Iron plates
A008/002:2:19	Modern iron object

A008/002:2:20	Metal plate
A008/002:2:21	Horseshoe
A008/002:2:22	Wire
A008/002:2:23	Possible machine part fragment
A008/002:2:24	Modern pottery
A008/002:2:25-28	4 sherds of modern pottery/ceramic
A008/002:2:29	Modern iron object
A008/002:2:30-32	3 sherds of modern pottery
A008/002:2:33	Modern iron object
A008/002:2:34-35	Modern glass
A008/002:2:36	Iron strap
A008/002:2:37	Nail
A008/002:2:38	Modern metal plate
A008/002:2:39	Modern iron object
A008/002:2:40	Modern pottery
A008/002:2:41-43	3 Modern iron objects
A008/002:2:44-49	6 sherds of modern pottery
A008/002:2:50-51	2 Modern iron objects
A008/002:2:52-53	2 sherds of modern pottery
A008/002:2:54-56	3 Modern iron objects
A008/002:2:57	Wire
A008/002:2:58	Bolt
A008/002:2:59	Modern iron fragment
A008/002:2:60	Modern pottery
A008/002:2:61-63	3 Modern iron objects
A008/002:2:64	Nail/Bolt
A008/002:2:65-68	4 Iron objects
A008/002:2:69	Bolt
A008/002:2:70-71	2 sherds of modern pottery
A008/002:2:72	Clay pipe stem
A008/002:2:73	Machine part fragment
A008/002:2:74	Modern iron object
A008/002:2:75	Nail
A008/002:2:76	Modern iron object
A008/002:2:77-78	2 sherds of modern pottery
A008/002:2:79	Iron pipe
A008/002:2:80-81	Wires
A008/002:2:82-83	Wires
A008/002:2:84	Modern iron objects
A008/002:2:85	Bolt
A008/002:2:86-94	Wires
A008/002:2:95	Barbed wire
A008/002:2:96	Wrench
A008/002:2:97	Nail
A008/002:2:98	Machine part
A008/002:2:99	Horseshoe
A008/002:2:100	Modern pottery
A008/002:3:1	Flint flake
A008/002:3:2	Burnt flint flake
A008/002:3:3	Flint scraper
A008/002:3:4	Flint flake
A008/022:3:5	Flint core

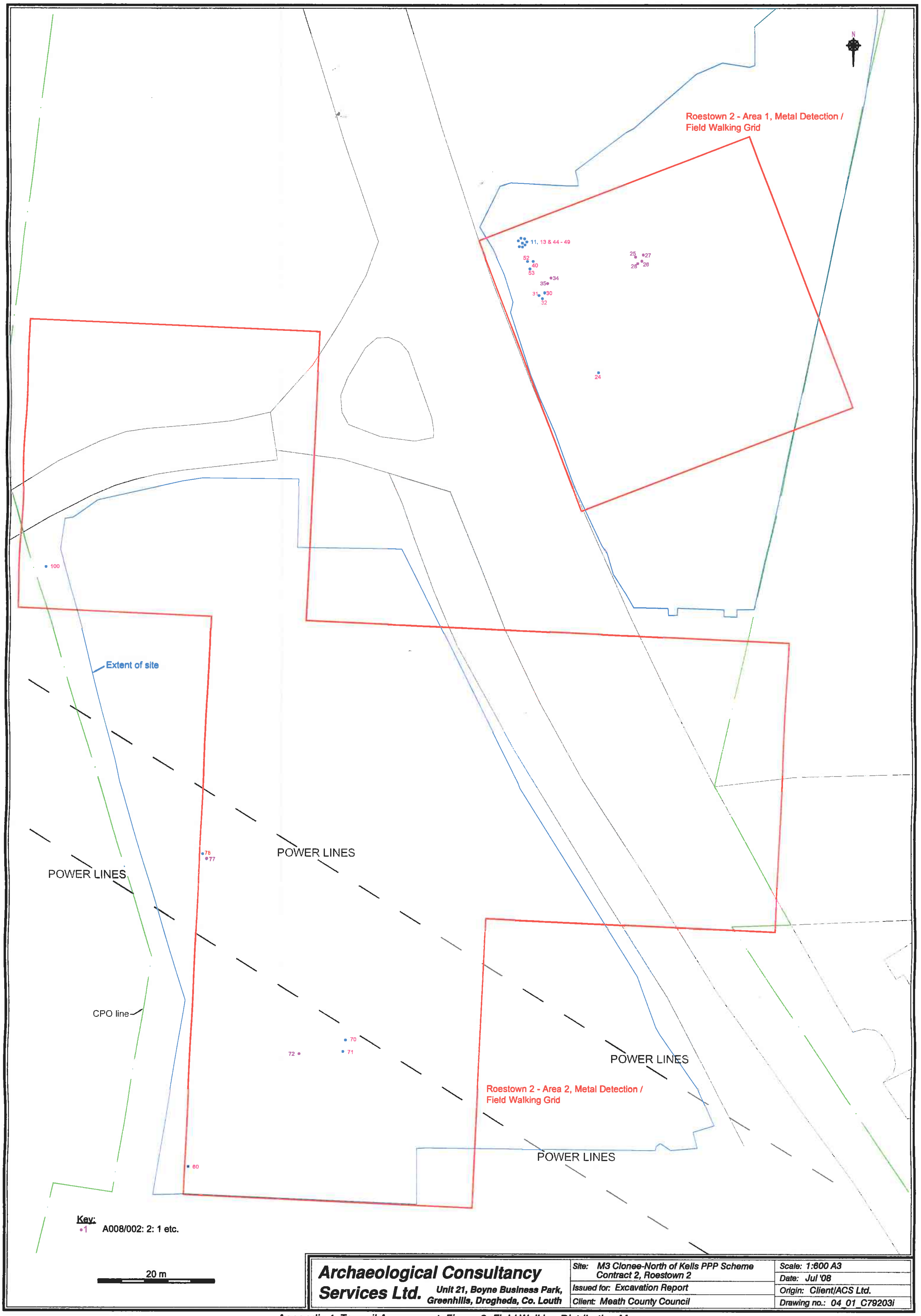


Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:600 A3
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C79201i

Appendix 4, Topsoil Assessment, Figure 1: Metal Detection (Phase 1) Distribution Map



Appendix 4, Topsoil Assessment, Figure 2: Metal Detection (Phase 2) Distribution Map



Appendix 4, Topsoil Assessment, Figure 3: Field Walking Distribution Map

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:600 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C79204i

Appendix 4, Topsoil Assessment, Figure 4: Test Pit Distribution Map

APPENDIX 5: Radiocarbon dates *by Beta Analytic*

Context	Sample No	Material	Species ID/ Weight	Beta Code	Date Type	Lab calibrated date 2-sigma	Oxcal Date 2 sigma	Conventional Date (+/- 40 BP)	13C/12C Ratio ‰
108: Fill of Enclosure 3 ditch 113	4	A/bone	Domestic chicken tarsometatarsu	219002	AMS (Adv)	AD 650-780	AD 647-775	1320	-20.7
116: Fill of Enclosure 6 ditch 132	3	A/bone	Dog, left radius (18g)	219003	AMS(Adv)	AD 630-710	AD 605-769	1360	-21.3
119: Deposit enclosed by Enclosure 3	71	Charcoal	Alder (5.5g)	229293	AMS (Std)	AD 680-890	AD 684-887	1230	-26.3
135: Fill of Enclosure 5 ditch 134	1	A/bone	Horse proximal phalange (37g)	219004	AMS (Adv)	AD 1440-1640	AD 1450-1635	360	-23.3
144: Fill of Enclosure 3 ditch 239	2	A/bone	Pig, right 4th metatarsal (12g)	219005	AMS (Adv)	AD 620-690	AD 580-765	1380	-22.1
418:Fill of Enclosure 1 ditch 404	5	A/bone	Dog, left tibia (10g)	220114	AMS (Std)	AD 710-910 & AD 920-960	AD 690-946	1200	-20.8
427:Fill of Enclosure 1 ditch 405	6	A/bone	Horse/cattle rib fragment (33g)	220115	AMS (Std)	AD 530-650	AD 441-652	1480	-22.2
484: Fill of Enclosure 1 ditch 450	7	A/bone	Dog, left humerus (21g)	220116	AMS (Std)	AD 770-980	AD 725-976	1170	-21
548: FIll of western partition ditch 1319	305	Grain	Charred barley grain (14mg)	246964	AMS (Std)	AD 870-1010	AD 783-1018	1110	-21.1
549: Fill of western partition ditch 550	318	Charcoal	Hazel (393mg)	246965	AMS (Std)	AD 890-1020	AD 889-1022	1080	-25.2
655: Fill of cereal drying kiln 677	149	Charcoal	Maloideae (135mg)	246966	AMS (Std)	AD 690-900	AD 687-937	1210	-25.5
697: Fill of cereal drying kiln 698	159	Grain	Charred barley grain (43mg)	246697	AMS (Std)	AD 550-660	AD 546-656	1450	-23.6
777: Fill of cereal drying kiln 776	200	Grain	Charred barley grain (15mg)	246968	AMS (Std)	AD 600-680	AD 573-688	1390	-23.6
963: Fill of Enclosure 12 ditch 945	1	A/bone	Cattle cervical vertebrae (50g)	231959	AMS (Std)	AD 350-540	AD 343-542	1620	-20.6
1362: Fill of ditch 1319	309	Charcoal	Willow (1039mg)	246969	AMS (Std)	AD 780-980	AD 778-980	1150	-27.1

APPENDIX 7 *Animal bone report: Rachel Sloan*

04_01, M3 Clonee to North of Kells Road Scheme

Analysis of mammalian bone remains from Roestown 2, Co. Meath

(A008/002)

April 2009

Rachel Sloane

Contents

List of Tables

List of Figures

List of Plates

04_01, Roestown 2 (A008/002), analysis of mammalian bone remains:

1. Introduction

This report details analysis of the extensive collection of mammalian bone remains retrieved from archaeological excavations at the site of Roestown 2. Excavation took place from 19th September 2005 – 30th March 2007 as part of the M3 Clonee-North of Kells Road Scheme. The phasing established by the excavation director was applied to the mammalian bone collection and material was recorded from Phase 1A, 1B, 2A, 2B, 3A, 3B, 4, 5 and 6 as well as from F507, Unphased Area A and Unphased Area B. For presentation of zooarchaeological data and discussion of findings, this phasing was respected although some phases were combined for more concise presentation of results. This combination of phases is clearly outlined in Table 2 and is also specified throughout the report where applicable. In addition to the Tables, Figures and Plates of the main report any tables referred to with the prefix A may be viewed in Appendix 1. Similarly any figures with the prefix A may be consulted in Appendix 2.

2. Methodology

2.1 Quantification

The quantification method applied is based on that used for Knowth by McCormick and Murray (2007). This in turn is a modified version of that used by Albarella and Davis (1996). It entails a selective approach to quantification which, rather than counting every fragment of bone, results in the production of NISP values i.e. number of identifiable specimens. The method involves examination of all faunal bone remains but specimens found to be of low-grade information value are not recorded. Consequently the recording of a narrower range of clearly defined bone elements is ensured. Selected elements are recorded provided at least 50% of the diagnostic zone survives. This procedure avoids multiple counting of very fragmented elements (*Ibid*).

The range of quantified elements includes any of the following;

- Mandible, where one or more teeth of dP4/P4-M3 row are present or where the mandibular hinge is present, (presence of alveolus is considered as representative of a tooth).
- Scapula, where glenoid articulation is present.
- Ulna, where olecrannon process is present.
- Patella, where at least 50% is present.
- Atlas or axis, where at least 50% is present.
- Astragalus, where distal end is present.
- Calcaneum, where sustentaculum is present.
- Carpal 3 (or 2+3).
- Scafocuboid.

- Loose mandibular teeth or loose teeth (including loose maxillary teeth and those that could not be positively classified as either mandibular or maxillary) where the occlussal surface is present.
- Distal and proximal epiphyses of long bones including humerus, radius, metacarpal, femur, tibia, metatarsal and phalanges where at least 50% of the zone is present (lateral metapodials of horse and pig are not recorded).
- Pelvis, where ilium and/or the ischial section of the acetabulum are present.
- Horncores and antlers, where a complete transverse section is found.
- Cranium, where zygommatic arch is present or where maxilla is present with three or more teeth of dP4/P4-M3 row, (presence of alveolus is considered as representative of a tooth).

Ribs and vertebrae (with the exception of atlas and axis) are not quantified. Any specimen not meeting the above criteria for quantification but found to be of interest due to factors such as indicating pathology, unusual species, butchery, or other significant evidence are recorded as 'non-countable' i.e. the evidence they display is recorded but the elements are not included in quantification of the assemblage.

The MNI i.e. minimum number of individuals will be calculated for all species. This estimates the minimum number of animals that the recorded faunal remains could have come from (Chaplin 1971, 70). It is calculated through dividing the recorded value of each element for a species by its frequency in the skeleton. The resulting highest value is the MNI for that particular species. While both sides and proximal or distal are taken into account for MNI calculations, ageing data is not. When calculating NISP and MNI, any cattle or sheep/goat second metacarpal or second metatarsal are counted as representing 0.5 units (Albarella and Davis 1996, 3-5). This is because the metacarpal and metatarsal of these species consists of two separate units that fuse together as the bone develops (Schmid 1972, 128-129). Specimens consisting of just one of these units in effect represent half of a metapodial and therefore are recorded as such. Any specimens of the central two pig metapodials are also counted as representing 0.5 units following Albarella and Davis (1996, 5).

2.2 Database Recording

As each element is examined those suitable for quantification (i.e. countable specimens) will be individually recorded on an electronic database. Information including archaeological context, species and element identification, side, zone and percentage of element present, state of fusion, condition of element, evidence of butchery, gnawing, burning or pathology, metrical data, ageing data and any other notable observations will be recorded. A separate database is used for recording of non-countables.

2.3 Identification

Identification of the assemblage will involve reference to Schmid (1972) and Hillson (1992) as well as comparison with the author's reference material and on occasion, the reference collection of the School of Geography, Archaeology and Palaeoecology at Queen's University Belfast (QUB). Wherever relevant, attempts will be made to distinguish the very similar species of sheep and goat based on recognised morphological and metrical factors. Morphological differentiation will be attempted for the dP_4 (deciduous fourth premolar) after Payne (1985, 139-147), for the distal humerus, distal and proximal tibia, astragalus, distal metatarsal and phalanx 1 after Boessneck (1969, 339-341, 350-357), Kratochvil (1969, 483-490) and Prummel and Frisch (1986, 569-574). Scapula and pelvis will be separated as far as possible through comparison of all specimens with the author's and/or QUB reference collection. Metrical differentiation will be attempted for distal metacarpals following Payne (1969, 295-305) and Davis (1992, fig. 2) and for calcaneus following Boessneck (1969, 353). Where positive identification to either species can be made they will be referred to as sheep and as goat accordingly. Where positive distinction between the two species is not possible elements will be referred to as sheep/goat.

2.4 Ageing

In analysing mammalian bone remains two main methods are used to determine the age of animals. The more reliable of these involves recording eruption and wear patterns of teeth. Recording the state of epiphyseal fusion is the second and less reliable method. Tooth eruption and wear stages will be recorded for the following mandibular teeth; dP_4 (deciduous fourth premolar), P_4 (fourth premolar), M_1, M_2 and M_3 (first, second and third molars) of cattle, sheep/goat and pig. Tooth wear stages (TWS) for cattle and pig follow those of Grant (1982). For sheep/goat, tooth wear stages are after Payne (1973 and 1987). Examination of tooth wear of mammal teeth is based on the alterations that occur in the surface morphology in relation to exposure of dentine as a result of enamel wear (Reitz and Wing 1999, 75). Where the innermost tooth was present in mandible specimens or where loose mandibular M3s were recorded, mandible wear stages have been assigned after Higham (1967). This allows inference of a minimum age the animal in question had reached before its death.

Recording of state of epiphyseal fusion involves examining the rate of development the metaphysis or epiphysis has reached. The metaphysis is the growing end of the shaft of a developing long bone while the epiphysis is a part of a bone that develops from a separate ossification centre but later fuses with the bone (Davis 1987, 16). States of fusion will be recorded under categories set out in the electronic database. A specimen will be recorded as fusing (code J) where spicules of bone joined the metaphysis and epiphysis across the epiphyseal plate although openings still existed between metaphysis and epiphysis. If traces of this fusion line are no longer visible, a specimen will be recorded as fused (code F). Distinctions will made in the recording of unfused specimens including unfused metaphysis (code UM), unfused epiphysis (code UE) and if both metaphysis and epiphysis are found together but still unfused (code UX). For cattle, sheep and pig epiphyseal fusion data follows Reitz and Wing (1999, 76). States of epiphyseal fusion for horse and dog are after Silver (1969, 285-286) and for cat are after Habermehl (1961, 146-153) and Smith (1969, 523-530).

2.5 Economy/Farming Practise

Through the establishment of age/slaughter patterns for the main domesticates where possible, interpretation of the livestock economy or farming practices at Roestown 2 will be discussed.

2.6 Biometrical Data

Measurements will be recorded as appropriate for all fused bones or fused bone fragments. In any case where the physical nature of a specimen has been distorted by factors such as burning or pathology, measurements will not be recorded. The majority of measurements follow the specifications of von den Driesch (1976) using vernier callipers or in some cases a measuring box. For recording the outer curve of horncores a soft tape measure is used. All measurements are recorded in millimetres with most to an accuracy of 0.1mm although some are recorded to 1mm accuracy. Some measurements defined by other authors are used including Payne (1969, 296), Boessneck (1969, 353), Payne and Bull (1988, 42) Davis (1992, fig. 2 and 1982) and Eisenmann (1986). Wherever applicable, biometrical data will be used to calculate estimated shoulder heights. Calculation of estimated shoulder height will follow the multiplication factors as outlined by von den Driesch and Boessneck (1974) those of Harcourt (1974, 154) will be applied for dog.

2.7 Sex Determination

Determination of the sex of faunal remains is possible through examination and analysis of certain elements. In the case of pig, the morphology of the root of the permanent canine tooth or the alveolus (where the canine is absent) should be considered in order to distinguish males and females. Goat horncores may be classified as male or female based on morphology. Cattle metacarpals may be defined as male or female through calculation of the slenderness index

(McCormick 1992). Alternatively, if complete metacarpals are few, identification of the sex of cattle metacarpals may be attempted through examination of the greatest distal width (Bd) (McCormick 1997, 822). The presence of antlers for deer or baculum (*os penis*) for carnivores would indicate male animals.

2.8 Butchery/Gnawing/Burning

Any evidence for butchery will be recorded under the categories of cut, chopped, chopped and cut, sawn or sawn and cut. Wherever relevant, evidence for the detachment of horns from the heads of cattle will be classified after Armitage (1990, 85-86). All specimens will be checked for evidence of rodent or carnivorous gnawing. All specimens will also be examined for evidence of burning. Wherever noted, burning will be recorded as either singed i.e. partially burnt, calcined i.e. white, sometimes with blue hue or burnt/blackened i.e. 90-100% burnt.

2.9 Pathology/Injury

For all specimens, the discovery of any pathology or injury will be recorded. Genetic traits such as the absence of the P1 in pig or the P2 in cattle and sheep/goat will also be noted as will any unusual tooth wear patterns.

2.10 Comparative Studies

If possible, the evidence produced for this assemblage will be compared to that for other contemporary or similar sites that have produced animal bone assemblages that have been analysed.

2.11 Storage Recommendations

The analyst will comment regarding the ultimate curation of the mammalian bone from Roestown 2. The ultimate decision on permanent storage of the assemblage will be made by the National Museum of Ireland following dialogue with the excavation licence holder.

3. Results of Analysis

3.1 Summary of Findings

The total Number of Identifiable Specimens (NISP) for Roestown 2 is 10,238. The separate database of non-countable bone fragments contains 137 entries. The range of species evident includes cattle (*Bos taurus*), pig (*Sus sp.*), sheep (*Ovis aries*), sheep/goat (*Ovis/Capra*), horse (*Equus caballus*), dog (*Canis familiaris*), cat (*Felis catus*), red deer (*Cervus elaphus*) and mouse (*Apodemus/Mus*). The three main domesticates of cattle, sheep/goat and pig comprise 91.9% of the total NISP. Horse, dog and cat make up a further 7.9% while red deer and mouse account for the remaining 0.24%. Bird bone specimens were observed during recording of the assemblage and were packed separately for analysis by a bird bone specialist. Having produced such a large collection of countable material, Roestown 2 offers the potential for production of reliable datasets less hindered by the limitations that often apply to smaller collections of animal bone.

The total Minimum Number of Individuals (MNI) is 435 animals. If one considers the three main domesticates, it is clear that cattle are the dominant species in terms of NISP, MNI and Meat Values for all phases at Roestown 2. Sheep/Goat is the second most dominant for the majority of phases although pig is more common in terms of NISP for Unphased Area A and in terms of MNI for Phase 2A and Unphased Area A. Meat values were calculated based on the calculations applied by McCormick and Murray for Knowth. Figure 3 shows that cattle comprise in the region of 80% of the meat represented for all phases (Note: Meat values were calculated only for phases where MNI = > 5). Pig is more significant than sheep/goat for all phases, unsurprising when one considers that pigs tended to be reared almost exclusively for meat consumption and yield a higher percentage of meat per carcass than sheep or cattle. Tables A1-A12 detail NISP and MNI values for each phase. Table A13 illustrates the % meat weight calculated for the three main domesticates.

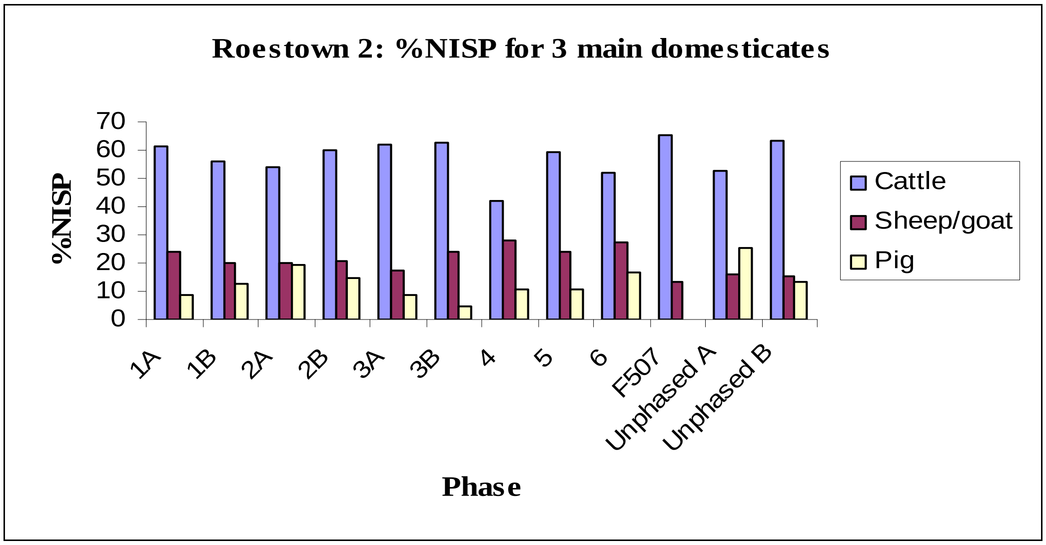


Figure 1 Roestown 2: %NISP for three main domesticates.

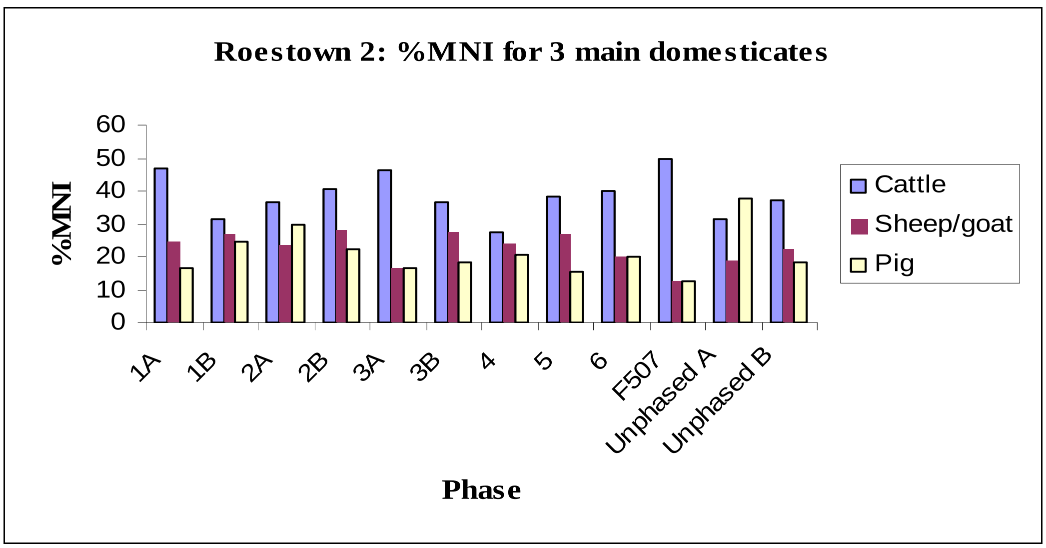


Figure 2 Roestown 2: %MNI for three main domesticates.

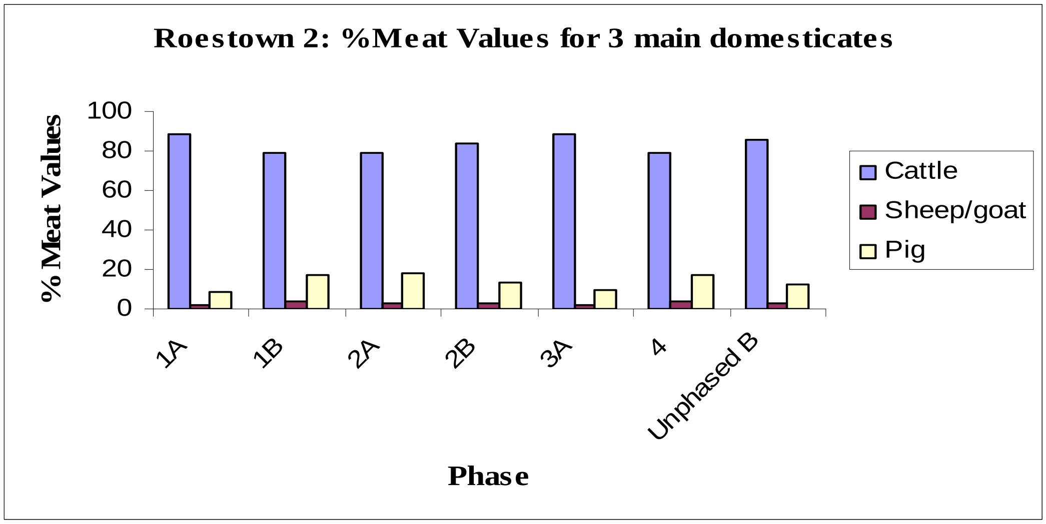


Figure 3 Roestown 2: %Meat values for three main domesticates.
Estimated live weight = 450kg for cattle, 23kg for sheep and 80kg for pig.
Dressing-out weight = 50% for cattle & sheep & 80% for pig (McCormick and Murray 2007, 147).

The species distribution pattern for the three main domesticates was compared with those established for other contemporary animal bone assemblages. The patterns show a high level of consistency particularly for cattle with a greater degree of variation between the quantities of sheep/goat or pig evident at different sites. With the exceptions of Knowth and Dun Eoghanachta all sites were excavated as part of the M3 Road Scheme. Data from the non M3 sites is reproduced from McCormick and Murray (2007). All but one of the mid 6th-8th century datasets confirm cattle as the most significant species as its MNI value ranges from 31.7% (Roestown Phase 1B) to 51% (Knowth Stage 8). The one exception is Castlefarm Phase 2 where pig has the highest MNI value of 39.4% as opposed to 34.6% for cattle (Foster 2009a, 15). It is suggested that this occurrence may be due to Castlefarm 1 being a high status site (*Ibid*). The distribution pattern for sheep/goat and pig does not conform to the same extent as for cattle. Out of twelve datasets, both species have an almost equal %MNI value in two instances. For Knowth Stage 8 they both account for 19.5% and 19.6% of MNI respectively (McCormick and Murray 2007, 148) while at Dowdstown 2 Phase 3 MNI values of 17.6% were calculated for both (Coles 2009, 47). In six instances sheep/goat have a higher %MNI value than pig with values ranging from 19.6% to 28.1%. Four of the datasets indicate a higher %MNI value for pig ranging from 20% to 29.5%. As already mentioned, the highest %MNI observed for pig is at Castlefarm 1 where in Phase 2 it accounts for 39.4% while cattle make up 34.6% and sheep/goat 12.6% of the MNI.

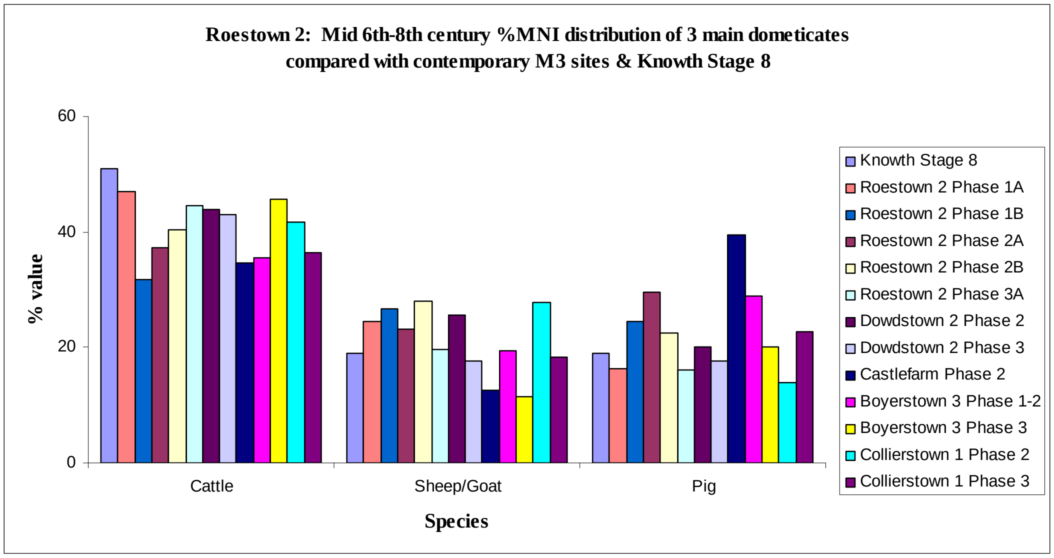


Figure 4 Roestown 2: Comparison of %MNI distribution for three main domesticates with other mid 6th to 8th century data.

Comparison of 10th-11th century data shows that Roestown 2 and Knowth Stage 9 correspond in terms of cattle having the highest %MNI of the three species. Pig has a higher MNI value than sheep at Knowth which contrasts with Roestown 2 where the opposite is true. The different distribution displayed for Dun Eoghanachta may be explained by its geographical location. Situated on Inis Mor of the Aran Islands, Co. Galway, sheep would have been more suitable than the other two species for life in this exposed setting hence their dominance of 34.6% of the MNI.

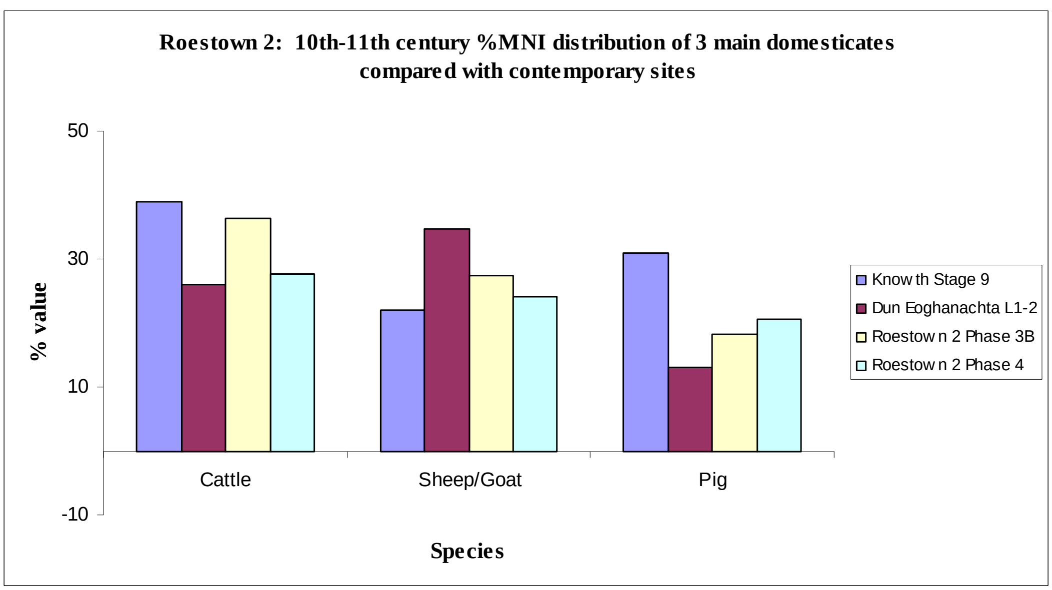


Figure 5 Roestown 2: Comparison of %MNI distribution for three main domesticates with other 10th to 11th century data.

Horse is present for all phases with the exception of F507, but as one might expect, there is a significant drop in NISP and MNI values from the three main domesticates in comparison to the other species present. Dog and cat are represented in small amounts while red deer is evident mainly due to the presence of antler fragments. Only one post-cranial specimen of red deer, a distal radius fragment, was observed amongst the Roestown 2 assemblage. A total of 24 rodent bones were identified as wood/house mouse.

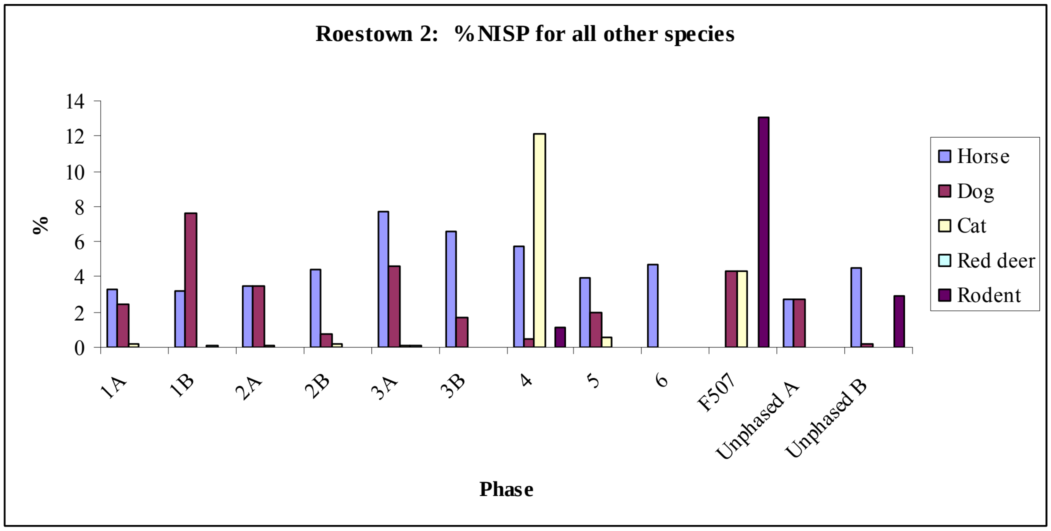


Figure 6 Roestown 2: Species distribution by %NISP for all species other than the three main domesticates.

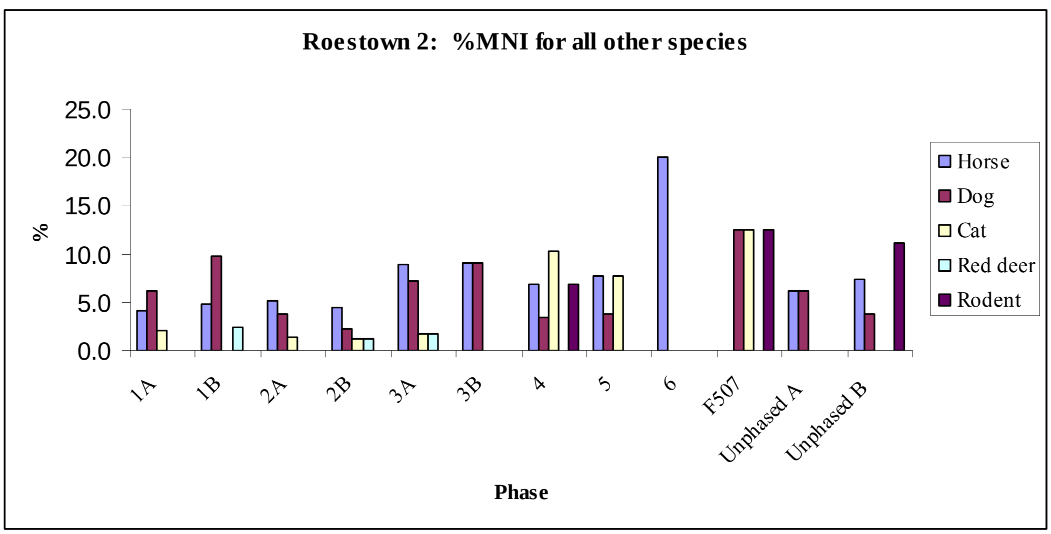


Figure 7 Roestown 2: Species distribution by %MNI for all species other than the three main domesticates.

3.1.1 Retrieval Methods

The majority of the Roestown 2 assemblage was retrieved by hand during excavation. Some systematic sieving did take place within Enclosure 3 of Area A where many of the deposits were put through a 10mm mesh sieve. The excavation director estimates that approximately 15-20% of the total volume of this enclosure was sieved. Only small fragments of larger bones were recovered using this method. The operation ceased on these grounds and was not used again. The bone recovered through the sieving programme was added to the bulk of the hand-collected material for analysis (O'Hara pers. comm.).

3.1.2 Condition of Assemblage

Overall, the assemblage was found to be in a good state. The quality of preservation of each specimen was considered and recorded as either in excellent, good, fair or poor condition. The majority of the countable material, 91.5%, was classified as of good condition, 4.1% was of excellent condition while 3.7% and 0.7% were observed as of fair and poor condition respectively. For elements classified as in fair or poor condition, the outer surface was eroded to varying degrees. In some instances degradation of specimens was due to carnivorous or rodent gnawing (this evidence is detailed in section 3.6.2). In terms of fragmentation of the assemblage, the whole bone equivalent (WBE) was recorded for each specimen and Table 1 indicates that a considerable portion of the assemblage survived as complete elements.

WBE Surviving	%Value
Complete	41.1
1-10%	7.5
11-20%	12.9
21-30%	7.1
31-40%	7.1
41-50%	3.6
51-60%	3.4
61-70%	4.8
71-80%	4.9
81-90%	4.6
91-99%	2.4
Not stated	0.6

Table 1 Roestown 2: Whole Bone Equivalent (WBE) surviving for countable assemblage.

Regarding disturbance levels a number of specimens whose state of fusion was recorded as UX were observed from Phases 1A, 1B, 2A, 2B, 3A, 4 and Unphased Area A. This means that these elements survived with the unfused metaphysis and unfused epiphysis together but obviously still separate units from each other. The fact that they survived to be retrieved in this state would suggest that they were not subjected to any significant ground disturbance between the time they were deposited and their retrieval during excavation. The excavation director observed that in considering the whole site, significant disturbance was evident, especially to the main enclosing elements in Areas A and B. In particular, Enclosure 1 and 3 saw multiple re-cuts as well as truncation from later features. This would have had the effect of mixing and spreading a number of deposits beyond their original limits. Within Enclosure 1 there was quite a bit of truncation between surviving features, particularly in the northwest corner of the site. A large amount of the surviving features within this enclosure were assigned to Phase 1-2. The excavation director argues that the interior of the site was raised in later periods (Phase 2-3) and consequently animal bone retrieved from surviving features may not be too disturbed although most of it came from ditch deposits (O'Hara pers. comm.).

3.1.3 Range of Elements Present

Most of the various body parts are represented in the animal bone assemblage for the three main domesticates. The majority of bones were disarticulated and in a fragmentary state. Remains of the different species were retrieved mixed up together and no specialised dumps of bone e.g. specific carcass parts discarded during primary butchery, were identified. These findings would suggest that the Roestown 2 assemblage largely represents ordinary domestic refuse. The fact that the majority of body parts are evident indicates that animals were butchered and consumed at the site.

3.1.4 Survival Rates

Based on research methods devised by Brain (1969) the survival rates for elements of the three main domesticates were plotted in relation to the MNI for each phase. For example, cattle bone survival rates for Phase 1A depict scapula as having the highest survival rate. This is not surprising as the shoulder is one of the primary beef joints. The rump of the animal would also be a significant beef provider and therefore, a reasonable representation of pelvis specimens might also be expected. This is borne out by the Roestown 2 evidence where for most phases survival rate of pelvis is over 50%. Other meat-bearing bones such as humerus, femur and tibia are generally well represented with high survival rates for humerus and tibia in particular.

Other trends that are commonly identified in survival rate patterns are evident for Roestown 2. It is recognised that more fragile bones tend to have a lower survival rate than those that are characteristically more robust. For example, proximal humerus is more porous than the sturdier distal humerus. As the distal zone of this element is early fusing it becomes tougher and more resistant to degradation at an earlier age. In contrast, the proximal humerus is a late fusing zone of softer spongy nature. This means that the distal is much more likely to display a high survival rate while the proximal humerus might be expected to present a much lower rate of survival. This is quite clearly the case for cattle humeri for all phases as proximal survival rates are much less than for distal. Low survival rates for small bones such as carpals and phalanges are also trends often identified. This is likely to be partially influenced by recovery bias as it is inevitable that larger elements will be more easily retrieved than very small ones. Proximal mandible also demonstrates a high survival rate for cattle. This part of the element is sturdy and has deteriorated to a lesser extent than the distal of the element which is more fragile and susceptible to damage/fragmentation. Only for Unphased Area B does the distal mandible survive to a higher rate than the proximal but as this material is not as stratigraphically significant as other phases, the data cannot be relied on as confidently.

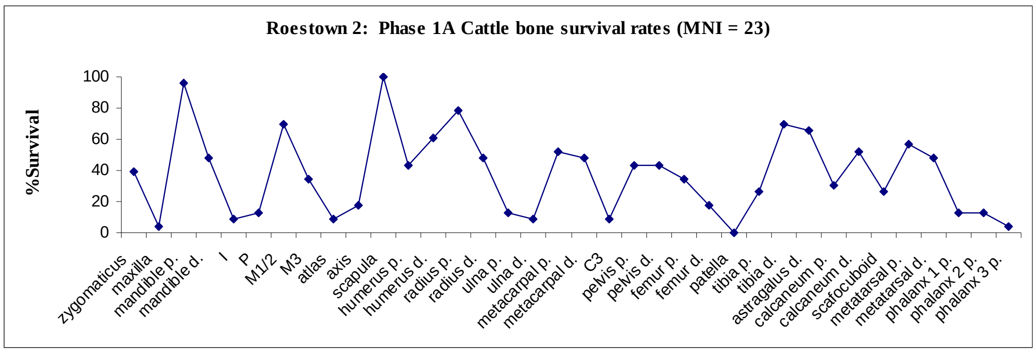


Figure 8 Roestown 2: Phase 1A %Survival rates for cattle bones.

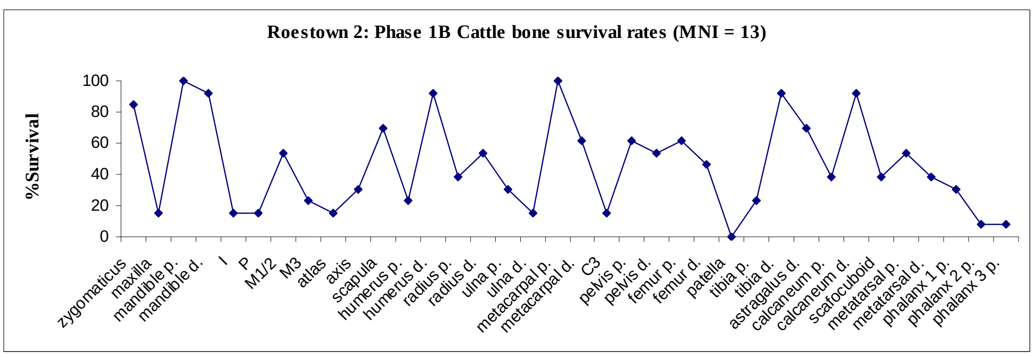


Figure 9 Roestown 2: Phase 1B %Survival rates for cattle bones.

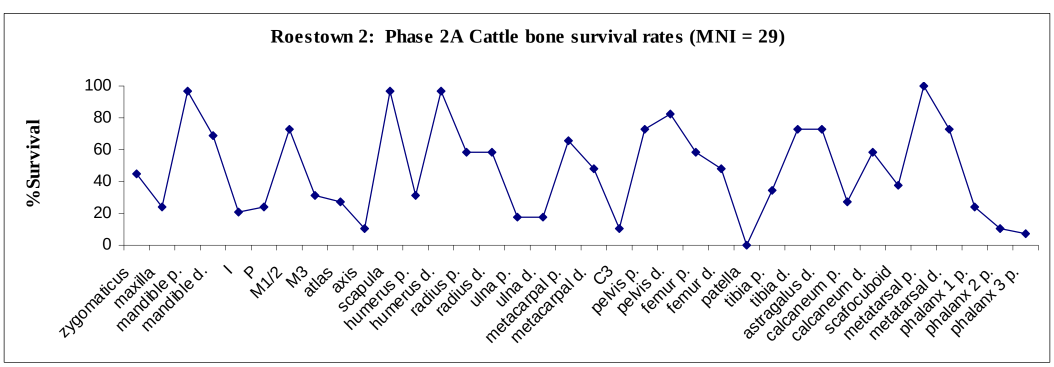


Figure 10 Roestown 2: Phase 2A %Survival rates for cattle bones.

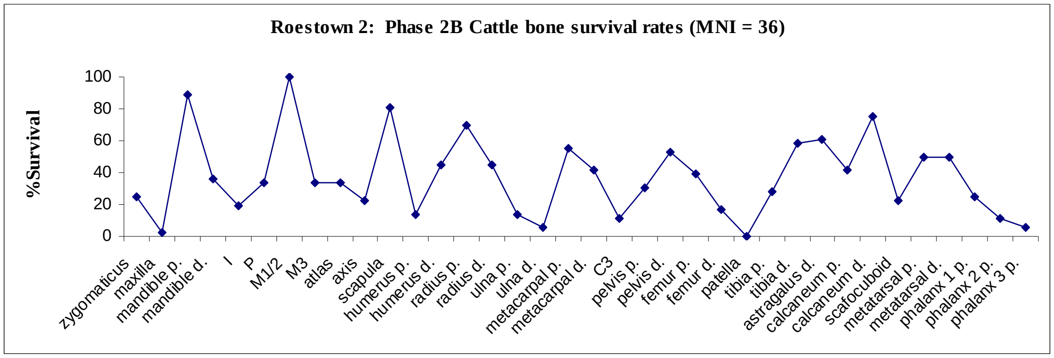


Figure 11 Roestown 2: Phase 2B %Survival rates for cattle bones.

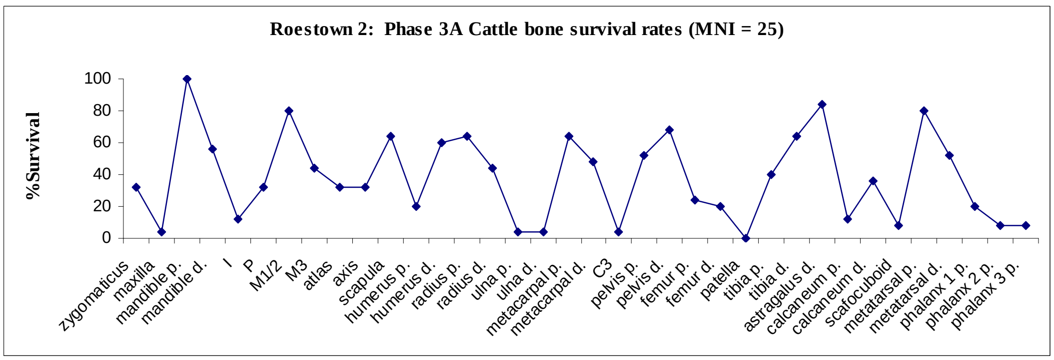


Figure 12 Roestown 2: Phase 3A %Survival rates for cattle bones.

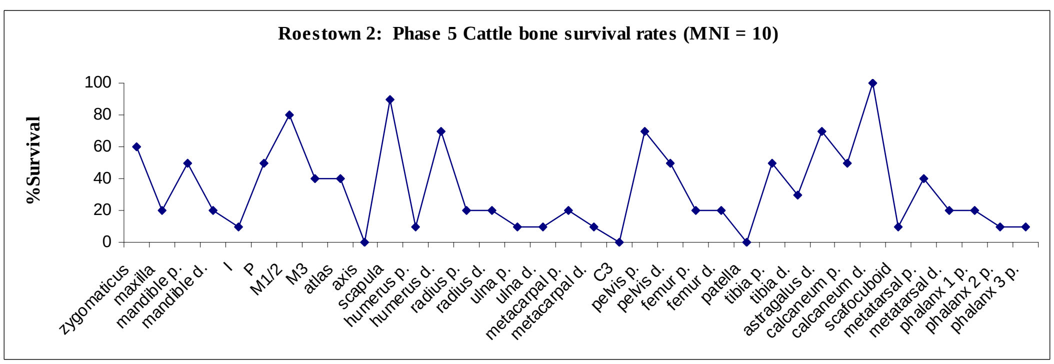


Figure 13 Roestown 2: Phase 5 %Survival rates for cattle bones.

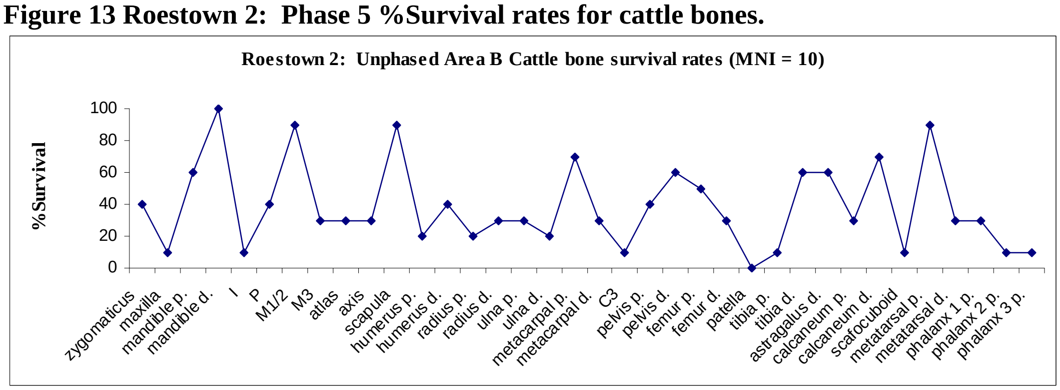


Figure 14 Roestown 2: Unphased Area B %Survival rates for cattle bones.

The survival rates for sheep/goat mandibles contrast to those for cattle as in all phases, the distal mandible survives to a greater extent than the proximal. The nature of the element is an obvious influence on such findings. The distal mandible of sheep/goat is more compact and strong while the proximal (i.e. condyle and coronoid process) is much smaller in size than that of cattle. This explains why one might expect a higher survival of distal over proximal for sheep/goat mandibles while a higher survival of proximal over distal for cattle mandibles is often the case. Other trends for sheep/goat are similar to those for cattle. Survival rates for scapula, pelvis, and meat-bearing bones such as humerus and tibia are significant.

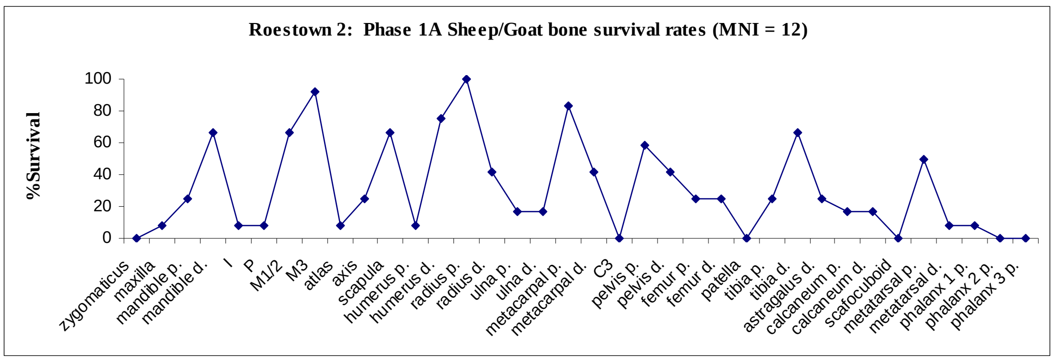


Figure 15 Roestown 2: Phase 1A %Survival rates for sheep/goat.

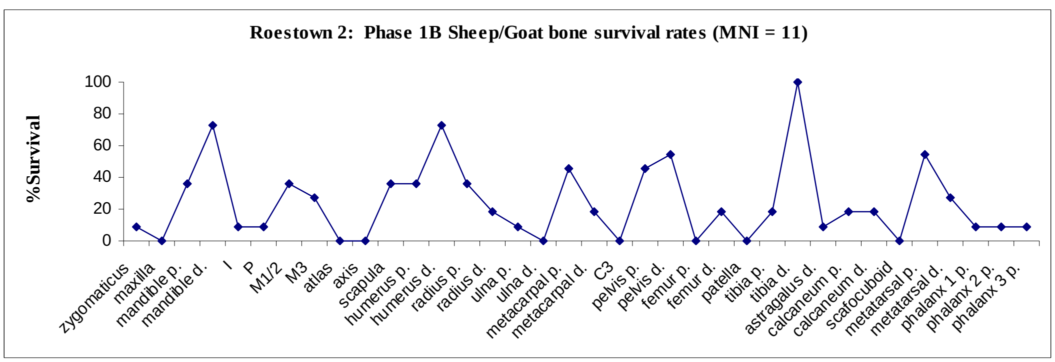


Figure 16 Roestown 2: Phase 1B %Survival rates for sheep/goat.

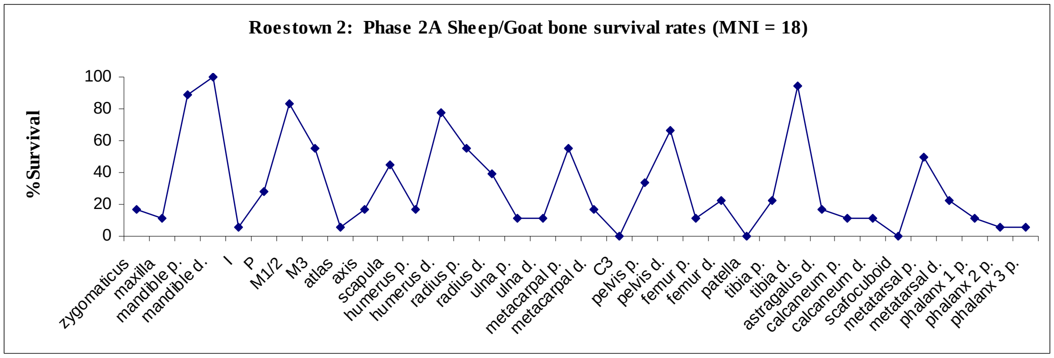


Figure 17 Roestown 2: Phase 2A %Survival rates for sheep/goat.

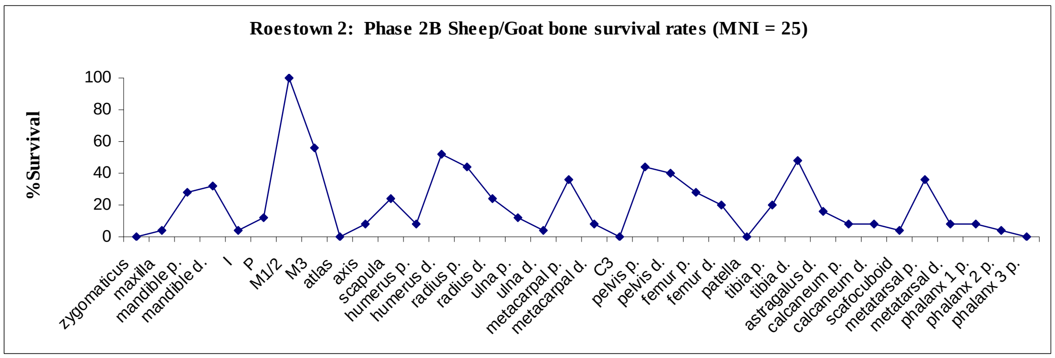


Figure 18 Roestown 2: Phase 2B %Survival rates for sheep/goat.

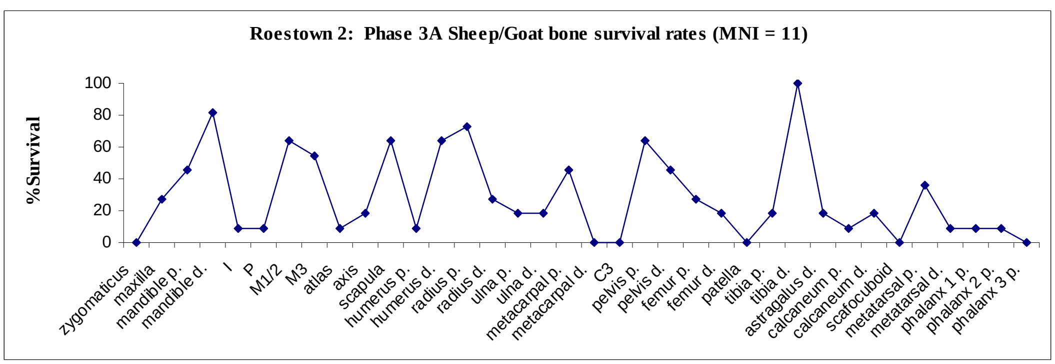


Figure 19 Roestown 2: Phase 3A %Survival rates for sheep/goat.

For pig high survival rates of scapula dominate although for Phase 2A mandibles have the highest survival rate. Pelvis is also reasonably well represented. Consistently high survival rates for pig mandibles have been identified in other collections e.g. Knowth (McCormick and Murray 2007, 47) an occurrence which is explained as due to the robust nature of the element. Phase 1B and 2B of Roestown 2 do not concur to this trend although mandibles are reasonably well represented for both. As pigs tended to be a one-purpose animal i.e. bred exclusively for meat consumption, it is most economical to slaughter them as they approach full size (*Ibid*, 60). Such practice means that pigs would be killed at a younger age than cattle or sheep/goat, many of which are kept to older ages as they are providers of secondary products. Consequently, in an animal bone assemblage one would expect that fully fused mature pig bones will occur much less than for the other two species. This is often reflected in survival rates data as discarded immature pig bones will suffer greater levels of deterioration due to taphonomic factors than would fully mature and hardened specimens. For Roestown 2, when one compares the survival rates of the meat-bearing bones such as humerus, femur and tibia, their survival rates are much lower than for cattle or sheep/goat. The higher survival rates for scapula and reasonable survival rates for pelvis is expected as these are early fusing elements.

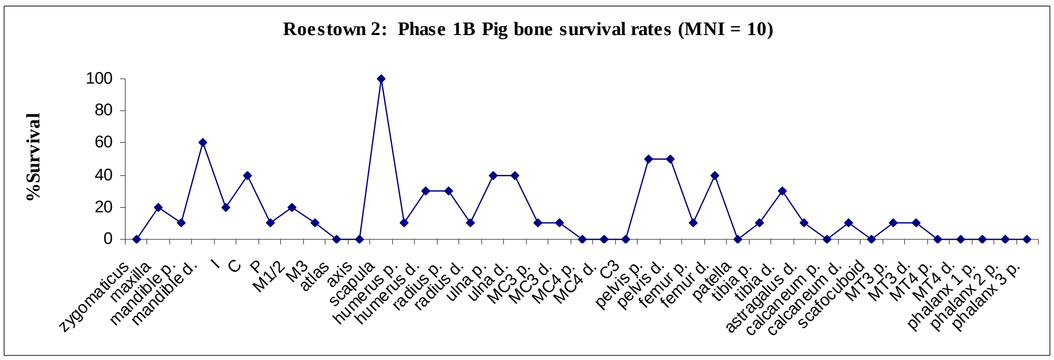


Figure 20 Roestown 2: Phase 1B %Survival rates for pig.

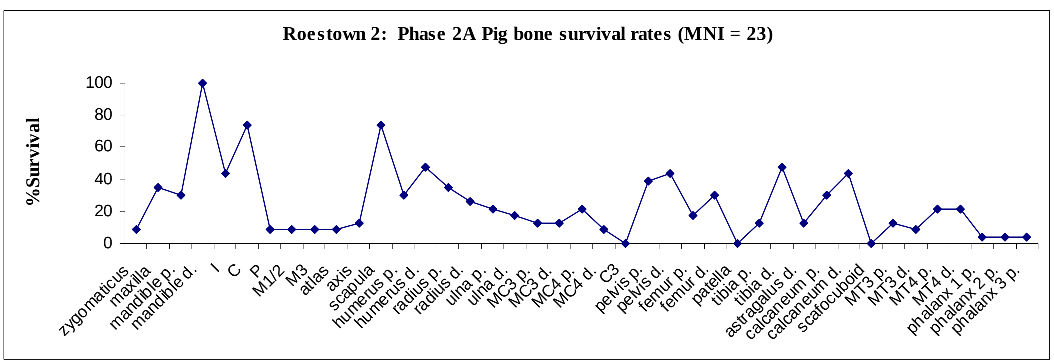


Figure 21 Roestown 2: Phase 2A %Survival rates for pig.

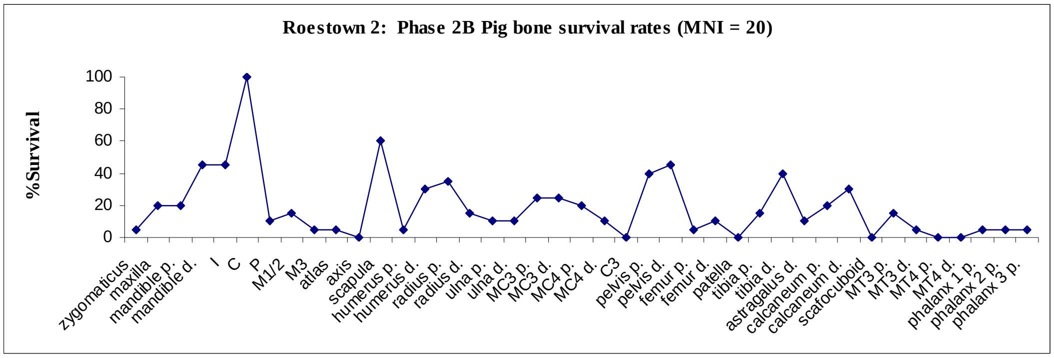


Figure 22 Roestown 2: Phase 2B %Survival rates for pig.

Bones remains from all parts of the body were present for horse while loose teeth accounted for approximately 39% of the horse bone assemblage. 41% of horse elements were complete while a further 21% had a whole bone equivalent of 50% or greater. A range of disarticulated elements of dog were identified amongst the Roestown 2 collection. Three articulated dog skeletons were also retrieved. Cat bones were present including specimens from all parts of the body. For red deer, as previously mentioned, only one post-cranial specimen was observed while fragments of antler were also identified. A number of bones were identified as mouse and as will be discussed in more detail, the majority of these were from the unphased material while some were retrieved from the souterrain (F507).

3.2 Ageing Data and its Interpretation

Both forms of ageing data were recorded for cattle, sheep/goat and pig. Epiphyseal fusion data only, was recorded for horse, dog and cat. Tooth wear data was initially recorded for the three main domesticates separately phase by phase. The resulting age-slaughter patterns can be seen in Figures A1-A6 and A25-A33. In order to allow more concise presentation of findings, the ageing data from several phases was combined as outlined in Table 2. Because of the limited amount of tooth and mandible wear data produced for some phases, it was not always possible to construct reliable age-slaughter patterns. Therefore presentation and discussion of patterns concentrates on the more reliable datasets while the smaller, more limited data is presented but could not be interpreted to the same extent.

Combined Phases:	Date:
Phase 1A, 1B & 2A	Mid 6th to Mid 7th century
Phase 2B & 3A	8th century
Phase 3B & 4	10th to 11th century
Phase 5	13th to 14th century
Phase 6	Post-Medieval to Modern
F507	
Unphased Area A	
Unphased Area B	

Table 2 Roestown 2: Combined phasing adopted for more concise presentation of zooarchaeological findings.

The age-slaughter patterns identified for Roestown 2 were then compared to findings for the Early Medieval animal bone assemblage from Knowth. The contemporary Phases/Stages are outlined in Table 3.

Roestown 2 Phase:	Knowth Stage:
Phase 1A, 1B, 2A, 2B & 3A (Mid 6th-8th century)	Stage 8 (7th-8th century)
Phase 3B, 4 (10th-11th century)	Stage 9 (10th-11th century)
Phase 5 (13th-14th century)	Stage 10 (late 12th-16th century)

Table 3 Roestown 2: Roestown 2 phases compared with contemporary Knowth stages.

In order to recognise animal husbandry practices that may be evident in age-slaughter patterns it should be borne in mind that if livestock are being bred for a meat-producing economy it would be best practice to slaughter animals as they approach maturity (Payne 1973, Davis 1987, 157 or McCormick and Murray 2007, 60). Contrasting with this, an economy centred on secondary products such as milk or wool production would require survival of livestock to older ages (Davis 1987, 158).

3.2.1 Cattle Tooth Wear (Phase 1A, 1B, 2A, 2B, 3A, 3B, 4 and 5)

It is fortunate that documentary evidence and substantial mammalian bone assemblages of Early Medieval date have provided valuable information regarding cattle exploitation for this period in Ireland. As a result, it has been possible to identify certain patterns that one might expect to find when analysing contemporary cattle tooth wear data. The typical age-slaughter pattern for Early Medieval Ireland would be one adhering to a cattle-based dairying economy. A proposed model of dairying, drawing on documentary sources and zooarchaeological evidence, suggests that under such a strategy, only a minority of calves would be slaughtered (McCormick 1992 and McCormick and Murray 2007, 52-54). This is especially applicable to calves younger than six months due to the fact that it was necessary to have the calf present in order that a cow would yield her milk (Kelly 2000, 38). Therefore in an Early Medieval assemblage one may expect to find little slaughter of young calves. In their analysis of cattle ageing data from Moynagh, Co. Meath (a reliable dataset due to its large size) McCormick and Murray have identified and interpreted particular trends which in general compare with their findings for contemporary Knowth (2007, 52-54). At Knowth the evidence indicates that few calves were slaughtered. The main peak in slaughter of cattle occurs in their second and third years (60% for Stage 8 and 53% for Stage 9) while animals older than 36 months account for smaller proportions (35% for Stage 8 and 41% for Stage 9). Moynagh presents a similar pattern. Animals killed in the second and third years are interpreted as being slaughtered specifically as a meat source. The older animals being kept up to four years and older are believed to be representative of males kept for traction and breeding and females kept for dairying. For Knowth and other contemporary sites, biometrical data has indicated that this older age group of cattle is dominated by females. Consequently, the conclusion is that the majority of the animals slaughtered for meat in their second and third years are male (*Ibid*).

A summary of mandible wear stages recorded for cattle from all phases is detailed in Table A15. For Roestown 2, it is immediately apparent that old animals dominate the cattle assemblage from the mid 6th up to the 14th century (Phase 1A to Phase 5). Slaughter of animals below the age of 13 months is minimal (1.7% for Phase 1A, 1B & 2A and 1.8% for Phase 2B & 3A) as would be expected for an Early Medieval setting. More substantial slaughter of animals occurs in their second and third years (43.3% for Phase 1A, 1B & 2A, 16% for Phase 2B & 3A, 41.6% for Phase 3B & 4 and 10% for Phase 5). But it is animals over the age of three years that strongly outnumber any other age category (55% for Phase 1A, 1B & 2A, 82.5% for Phase 2B & 3A, 58.3% for Phase 3B & 4 and 90% for Phase 5). As illustrated in Figure 23, the majority of these older animals are in the age range of 40 to over 50 months old.

The Roestown 2 age-slaughter patterns have been compared with the contemporary Knowth data to investigate the similarities or differences occurring. Phases 1A, 1B, 2A, 2B and 3A of Roestown 2 span the mid 6th to 8th century while Knowth Stage 8 equates to 7th to 8th century. The pattern of slaughter contrasts at the two sites. While the main peak in slaughter at Roestown 2 clearly targets animals over three years, cattle at Knowth are predominantly in the two to three years age bracket when killed. Slaughter of calves below the age of one year is similarly meagre for both sites. The policy of slaughtering two and three year old animals is evident for Roestown 2 and may be interpreted as livestock providing a meat source to the inhabitants. However, it cannot be disputed that cattle beyond the age of three years are most prevalent. If one refers to Figures A1-A5 where age slaughter data is presented individually for each phase, most of the cattle from this period are 40-50 months or over 50 months of age.

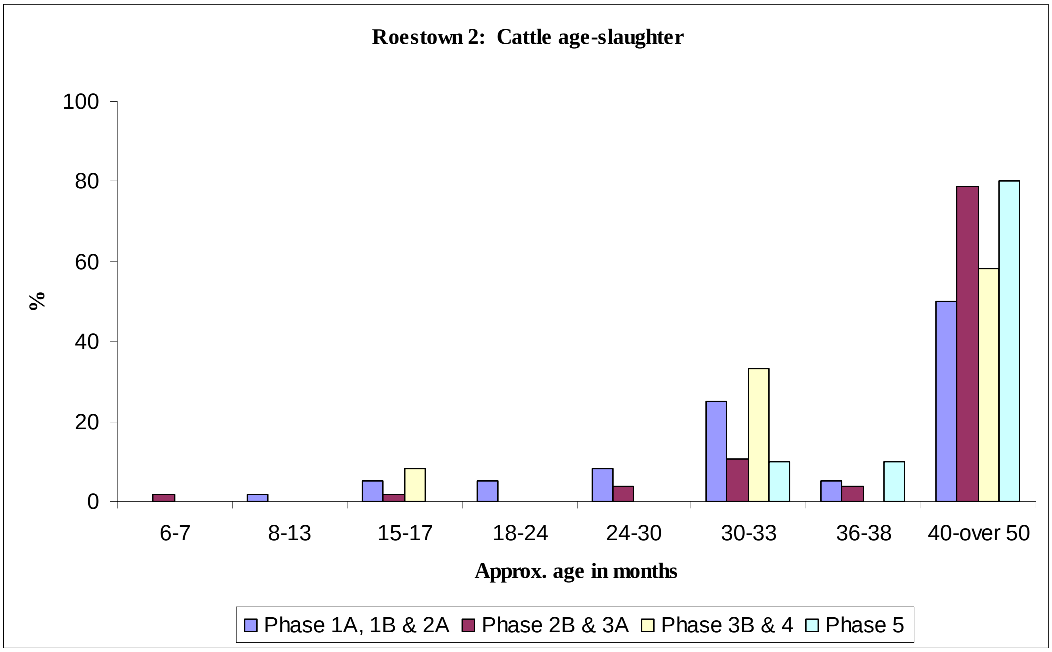


Figure 23 Roestown 2: Cattle age-slaughter compared for combined phases following Grant (1982, 92) and Higham (1967, 104).
Phase 1A, 1B & 2A = mid 6th to mid 7th century (N=60). Phase 2B & 3A = 8th century (N=57), Phase 3B & 4 = 10th to 11th century (N=12), Phase 5 = 13th to 14th century (N=10).

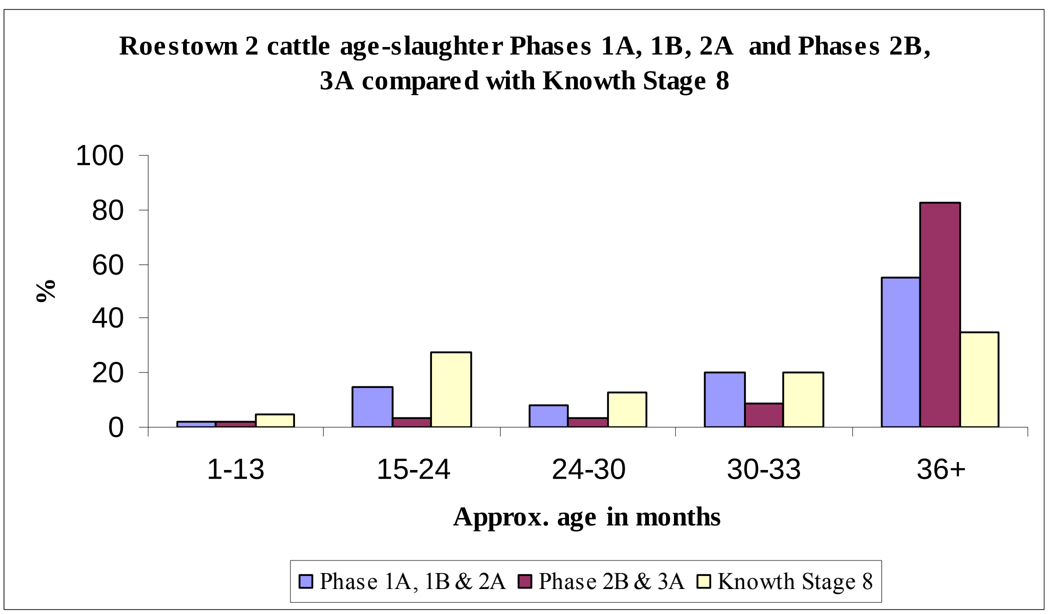


Figure 24 Roestown 2: Cattle age-slaughter for Phases 1A, 1B & 2A combined, Phases 2B & 3A combined compared with Knowth Stage 8.
Phase 1A, 1B & 2A = mid 6th to mid 7th century. Phase 2B & 3A = 8th century. Knowth Stage 8 = 7th to 8th century.
Phase 1A, 1B & 2A N = 60. Phase 2B & 3A N = 57. Knowth Stage 8 N = 20.

Roestown 2 Phase 3B and 4 and Knowth Stage 9 are 10th to 11th century in date. The Roestown 2 pattern is hampered by being based on a small dataset (N = 12). However, the trend is similar to that established for the earlier phases. Again Roestown 2 is dominated by the slaughter of animals older than three years while although less common, a practice of killing animals in their second and third year is also evident. There is no slaughter of calves younger than one year for this period. Of the 12 Roestown 2 specimens, one was assigned an age of 40 months, two 50 months and four over 50 months (Higham 1967, 104). The pattern for Knowth shows some consistency with that identified for Stage 8 in that a minor amount of slaughter of young calves is observed while the peak slaughter continues to be of animals in their second and third year. However there is a marked change as a greater proportion of the Stage 9 animals are killed beyond three years old. For 7th to 8th century Knowth 60% of cattle were killed in their second or third year while 35% were killed at a later age. For the 10th to 11th century material, 53% were slaughtered in the former age group while 41% were slaughtered as older animals. This higher incidence of older animals for Stage 9 is highlighted by McCormick and Murray as being irregular when compared with other contemporary sites such as Moynagh or Deer Park Farms (2007, 57-58). The patterns for Roestown 2 would therefore appear to be considerably more irregular as the incidence of older cattle is even greater.

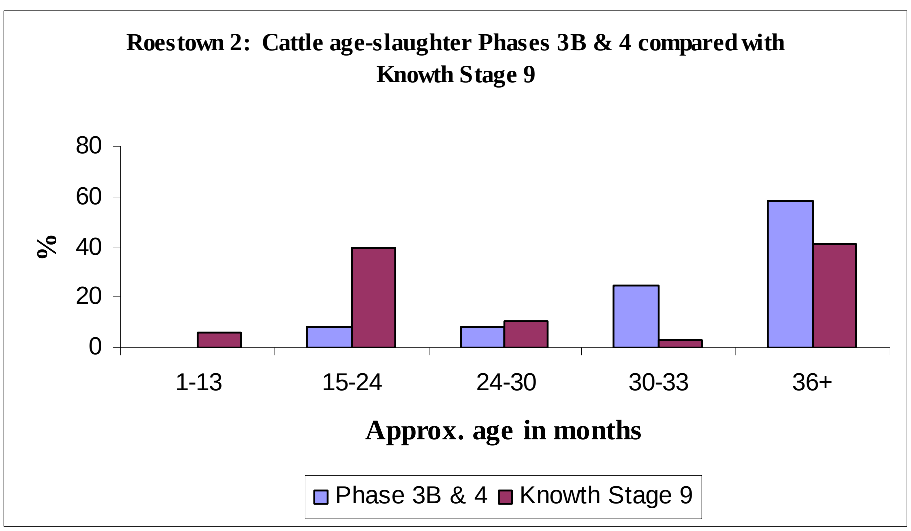


Figure 25 Roestown 2: Cattle age-slaughter for Phases 3B & 4 combined compared with Knowth Stage 9.
Phase 3B & 4 = 10th to 11th century. Knowth Stage 9 = 10th to 11th century.
Phase 3B & 4 N = 12. Knowth Stage 9 N = 61.

The significant increase in older cattle for Knowth Stage 9 is considered as possibly indicative of post-ringfort settlement where the livestock economy has changed dramatically as the dairy cow loses its previous status as the principal currency of the Early Medieval period (*Ibid*, 57). The extent of older cattle is highlighted as coming close to the distribution observed for the 10th to early 11th century urban site of Fishamble Street, Dublin (*Ibid*). As an urban site, provision of beef required supply from outside producers and consequently there would have been less availability of younger cattle than for rural settings. The zooarchaeological data established that older animals dominated the Dublin meat market in the form of male and female animals that had gone beyond usefulness for dairying, traction and reproduction (*Ibid*). In considering this evidence, McCormick and Murray propose that Knowth Stage 9, demonstrating a similar trend, may represent uncharacteristic rural settlement. Rather than its food being supplied through produce of its own and of clients, it seems credible that some of the beef supply is being provided on a commercial basis from outside suppliers (*Ibid*). This theory is not applicable to the earlier Roestown 2 evidence i.e. Phase 1A-3A, as this data dates within the period when the dairy cow was still the principle unit of currency in Ireland. It is also before the establishment of Viking urban settlement. Nonetheless Figure 26 clearly illustrates the close similarity between the Roestown 2 slaughter patterns of mid 6th to 11th century date and the Fishamble Street data. The husbandry practices evident at these two sites appear to have a lot in common.

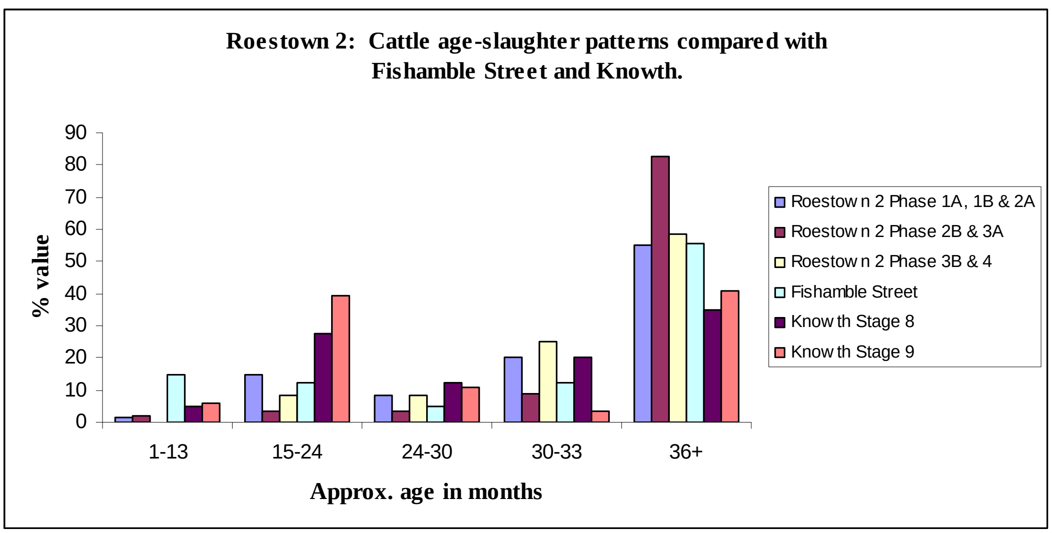


Figure 26 Roestown 2: Cattle age-slaughter pattern for Roestown 2 compared with Fishamble Street and Knowth.

It has recently emerged, through evidence from other large Early Medieval assemblages retrieved from M3 sites, that age-slaughter patterns for cattle indicate a dominance of animals older than 3 years. The findings from contemporary phases of Dowdstown 2 (Coles 2009), Castlefarm 1 (Foster 2009a), Boyerstown 3 (Foster 2009b) and Collierstown 1 (Foster 2009c) will be discussed below.

The Roestown 2 Phase 5 and Knowth Stage 10 datasets are both small (N = 10 and 5 respectively). The dominance of animals older than three years continues at Roestown 2 and as Figure A6 specifies, animals 40-50 and over 50 months old account for 70% and 10% of this phase respectively. As already mentioned, caution is required when interpreting such a small amount of data and it is not possible to present definitive conclusion for a dataset as limited as this one.

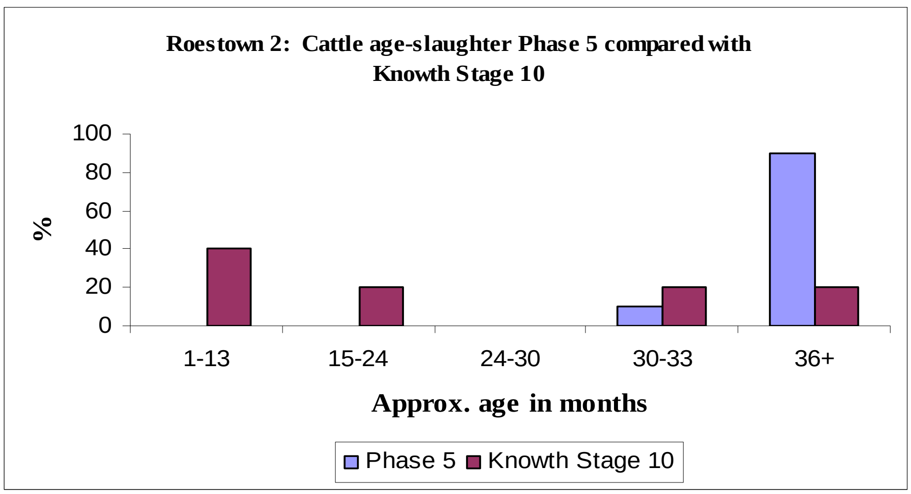


Figure 27: Cattle age-slaughter for Phase 5 compared with Knowth Stage 10.
Phase 5 = 13th to 14th century. Knowth Stage 10 = late 12th to 16th century. Phase 5 N = 10. Knowth Stage 10 N = 5.

Overall the Roestown 2 evidence seems to suggest a cattle economy that deviates to a considerable extent from that previously established for other contemporary sites. The overwhelming dominance of cattle beyond the age of three and in some cases four years could potentially be biased by processes of taphonomy as discussed earlier (section 3.1.3). Taphonomy may be defined as “The study of the environmental phenomena and processes that affect organic remains after death”, (Davis 1987, 17). Such processes may include a wide variety of influences e.g. nature of soil, practices of inhabitants such as tendency to leaving animal bones exposed when discarded thereby creating the potential to be gnawed by carnivores and rodents, be trampled under foot or damaged by weathering. If calf mandible specimens from Roestown 2 have not survived the taphonomic factors they were exposed to due to their more fragile nature, the resulting under-representation may partially explain the dominance of older animals.

By considering the tooth wear evident for loose mandibular first and second molars (M1 or M2) as well as for deciduous fourth premolars (dP4), it should be possible to identify if the mandible wear data is biased towards older animals. As loose teeth should survive even if the mandibles they belong to are immature and do not survive, the presence of unworn M1 or M2 and dP4 in early wear should indicate the presence of calves that might be overlooked when the ageing of mandibles is applied. Unworn M1 and M2 signify cattle in the age range of 0-18 months while dP4 that are in wear indicate the presence of animals in the age range of 1-32 months (McCormick and Murray 2007, 55). Figures A7-A24 show the wear stages assigned to all M1 and M2s and dP4s for cattle. It is clear that the number of unworn M1 and M2s present is very small and while larger amounts of dP4s in wear are present e.g. for Phase 2A, 2B or 3A, the majority of these have been assigned older wear stages. Therefore, it would appear that the age-slaughter patterns produced from tooth and mandible wear data do not under-represent younger cattle at Roestown 2.

Figure 28 provides convincing evidence for the dominance of cattle older than 36 months, not only at Roestown 2 but also at some of the other contemporary sites excavated as part of the M3 Road Scheme. This was the case for Dowdstown 2 Phase 3 (Coles 2009), Castlefarm 1 Phase 2 (Foster 2009a), Boyerstown 3 Phase 3 and Boyerstown 3 Phase 4 (Foster 2009b) where 59%, 44.9%, 66.7% and 75% respectively were slaughtered in this age category. In four groups out of the eleven illustrated here, more animals were slaughtered in their second and third year than at an older age. For Dowdstown 2 Phase 2 (Coles 2009), Castlefarm 1 Phase 3-5 (Foster 2009a), Boyerstown 3 Phase 1-2 (Foster 2009b) and Collierstown 1 Phase 1-3 (Foster 2009c) majorities of 43.1%, 45%, 44.4% and 51.6% respectively were killed during their second or third year. Therefore it would appear that two practices are evident in the Early Medieval cattle slaughter patterns for the larger M3 assemblages. In one, peak slaughter occurs in 2-3 year old animals and in the other peak slaughter occurs in animals above the age of 36 months. So the slaughter patterns previously established for Early Medieval cattle (such as at Knowth, Moynagh and Deer Park Farms) with minimal slaughter of calves below 12 months, peak slaughter in animals of 2-3 years old as a meat source and a lesser percentage of slaughter in animals older than 36 months are replicated in some of the M3 datasets. However it is also clear that in other cases, the dominance of older animals is real as it occurs in seven out of the eleven datasets presented below. A conscious replacement of one of these strategies with the other does not seem likely as they are not separated chronologically but co-exist.

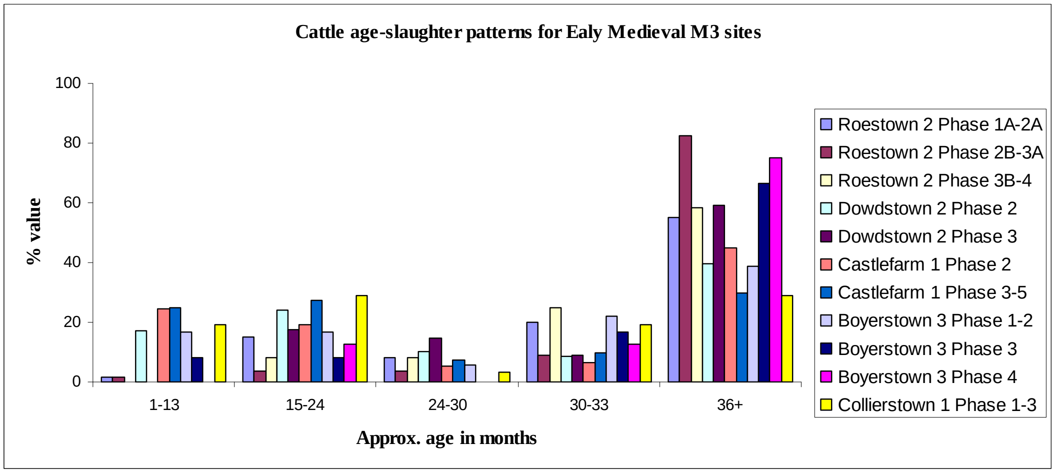


Figure 28 Roestown 2: Cattle age-slaughter patterns compared with those for other Early Medieval M3 sites.
Roestown 2 Phase 1A-2A = mid 6th-mid 7th century (N = 60). Roestown 2B-3A = 8th century (N = 57). Roestown 3B-4 = 10th-11th century (N = 12).
Dowdstown 2 Phase 2 = 5th-7th century (N = 58). Dowdstown 2 Phase 3 = 7th-10th century (N = 34).
Castlefarm 1 Phase 2 = 7th-9th century (N = 78). Castlefarm 1 Phase 3-5 = 8th-10th century (N = 40).
Boyerstown 3 Phase 1-2 = 5th-7th century (N = 18). Boyerstown 3 Phase 3 = 7th-9th century (N = 12). Boyerstown 3 Phase 4 = 7th-10th century (N = 8).
Collierstown 1 Phase 1-3 = 5th-7th century (N = 31).

The zooarchaeological evidence has shown that as the full range of skeletal elements was present and in some cases pre-natal or young elements were recorded, cattle were bred, reared, slaughtered and consumed at these M3 sites. The dominance of older cattle contrasts with previously established patterns. But considering that it is evident for various phases at different contemporary M3 sites, this makes it more likely that these patterns genuinely represent a livestock management practice commonly adhered to throughout the Early Medieval period. This evidence may simply indicate that the inhabitants of these sites practiced farming methods where the majority of cattle lived to at least four or five years old as they were exploited foremost for dairy products, traction and breeding.

3.2.2 Cattle Epiphyseal Fusion (Phase 1A, 1B, 2A, 2B, 3A, 3B, 4 and 5)

Various authors have outlined some of the problems associated with the reliability of epiphyseal fusion data. It is therefore considered only briefly for comparative purposes with the tooth and mandible wear based age patterns. Tables A16-A18 illustrate the fusion data observed for all cattle specimens. States of epiphyseal fusion were compiled under the early, middle and late fusing categories of Reitz and Wing (1999, 76). An example of how this data is interpreted may be seen if one considers the proximal metapodium of Phase 1A. A total of 42.5 specimens were observed as fully fused while a single specimen was unfused. This indicates that the 42.5 specimens came from post-natal animals while the unfused specimen suggests the presence of a pre-natal calf. A total of five proximal metapodial cattle specimens were observed as unfused. All were retrieved from the mid 6th-8th century material. This evidence suggests at least some cattle breeding was practiced at Roestown at this time. It is clear that a dominance of older animals is represented in the fusion data as fused specimens outweigh unfused in every category and for all phases from the mid 6th -14th century. Even in the late fusing data, i.e. where bones do not fuse until the age range of 42-48 months, fused specimens are more prevalent thereby indicating a higher frequency of mature and old than immature cattle.

3.2.3 Cattle Ageing Data (F507, Phase 6, Unphased Area A and B)

The ageing data for cattle from F507 (occupation deposit of the souterrain), Post-Medieval to Modern Phase 6, and Unphased Areas A and B is limited. Where mandible wear stages could be assigned, no animal below the age of two years is represented while some are over 50 months. (See Table A14 for summary of tooth wear for N < 10). A single dP4 in early wear from F507 was observed while one unworn M1/2 and two dP4s in early wear from Unphased Area B are evident of young calves. The fusion data also indicates more mature animals as the norm.

3.2.4 Sheep/Goat Tooth Wear (Phase 1A, 1B, 2A, 2B and 3A)

The age-slaughter data for sheep/goat suggests that older animals also dominate for this species at Roestown 2. A summary of mandible wear stages recorded for all phases is provided in Table A20. Animals of 28+ months are the most plentiful age category for all phases from mid 6th to 14th century. However, the amount of mandible wear data varied and for some phases it is so small that definitive patterns could not be established (this includes Phase 3B, 4 and 5). Fortunately more extensive datasets were recorded for the mid 6th to 8th century phases allowing establishment of a more reliable age-slaughter pattern for this period. The Phase 1A, 1B & 2A pattern is based on 73 specimens while the Phase 2B and 3A pattern was constructed based on 46 specimens. Figure 29 shows that for the former group a minor amount of lambs (6.9%) were killed below the age of one year. A more substantial amount of animals (35.5%) were slaughtered between the ages of 12-28 months while the majority (57.5%) were older than 28 months when slaughtered. In the Phase 2B and 3A group, a single specimen (2.2%) died under the age of five months some animals (30.5%) were slaughtered in the 12-28 months but once again, slaughter of animals over the age of 28 months is most prevalent (67.4%).

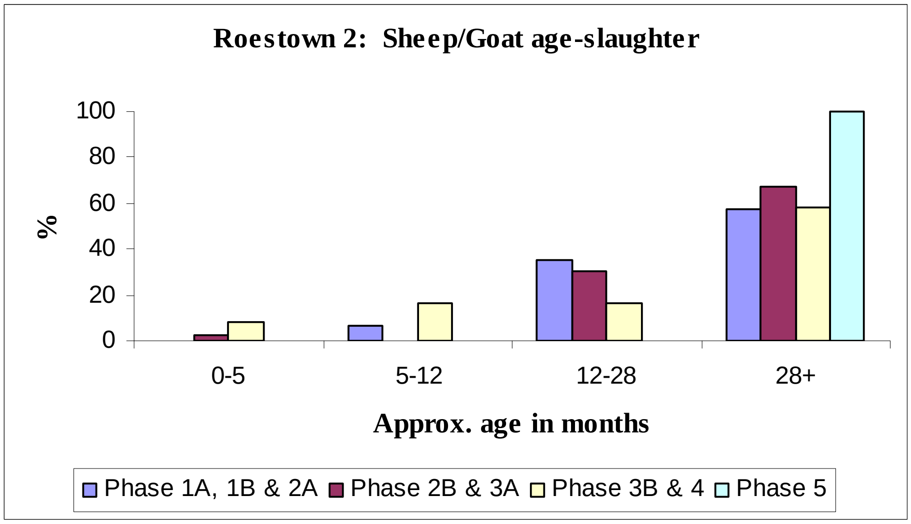


Figure 29 Roestown 2: Sheep/Goat age-slaughter compared for combined phases following Payne (1973 and 1987) and Higham (1967, 106).
Phase 1A, 1B & 2A = mid 6th to mid 7th century (N=73). Phase 2B & 3A = 8th century (N=46), Phase 3B & 4 = 10th to 11th century (N=12), Phase 5 = 13th to 14th century (N=4).

The Roestown 2 pattern is in stark contrast to that found at contemporary Knowth where the majority of animals were slaughtered between 12-28 months, only a small number were killed as lambs below 12 months and few lived beyond 28 months (McCormick and Murray 2007, 58-59). This peak in slaughter has also been identified for sheep/goat at other contemporary sites (*Ibid*). The Knowth slaughter pattern would suggest a focus on sheep/goat as a meat source rather than being bred primarily for secondary products such as milk or wool. However, from Early Medieval documentary sources, Kelly has established that the prime role of sheep was as wool suppliers and their meat was not considered of any particular importance. This is borne out by a legal passage that outlines the qualities of sheep as it is mainly concerned with quality of the fleece and skin and does not refer to the meat at all (2000, 67). The consumption of mutton is referred to where payment of food-rents included mutton of wethers i.e. male castrates (apart from the few animals selected to grow for breeding purposes, males were castrated after weaning) (*Ibid*, 69). One suggested interpretation of the Knowth pattern is that the 12-28 month peak indicates killing of wethers for meat (McCormick and Murray 2007, 59). An alternative interpretation is also presented. The documentary evidence makes it clear that the sheep of Early Medieval Ireland were predominantly brown and black fleeced while white-fleeced sheep were uncommon (Kelly 2000, 70). It is known from the primitive breeds of today such as the Soay sheep of Saint Kilda, Outer Hebrides, that wool of the brown/black fleeced varieties is more oily and coarse so that young sheep provide fleeces for finer quality wool than more mature animals (McCormick and Murray 2007, 59). Therefore, it is possible that sheep were slaughtered at an earlier age in Ireland but that this is reflective of an economy focused on provision of wool rather than meat. The low occurrence of older sheep in the Knowth assemblage has been identified at other contemporary sites such as Deer Park Farms, Moynagh and Fishamble Street (*Ibid*). Up until now the evidence has suggested that older sheep were only kept in small numbers in Early Medieval Ireland (*Ibid*).

The Roestown 2 results do not conform to this pattern. Figure 30 shows those animals older than 28 months dominate both the mid 6th to mid 7th century and the 8th century groups of data. If one examines the individual age-slaughter patterns constructed for each phase (Figures A25-A29) it can be seen that in all phases animals over 28 months account for at least 54% of specimens aged by tooth and mandible wear. In Phases 1A and 1B 62.5% and 58.3% (respectively) of sheep/goat were of the mature or adult age categories. For Phase 2A mature, adult or old animals accounted for 54.1% of the aged specimens. Mature or adult animals comprised 64.3% of those from Phase 2B while Phase 3A included 72.2% in the mature, adult and old categories. It would therefore seem that the exploitation of sheep/goat at Roestown 2 is subject to different influences than those that dictate the animal husbandry practice at Knowth or some of the other contemporary sites previously referred to.

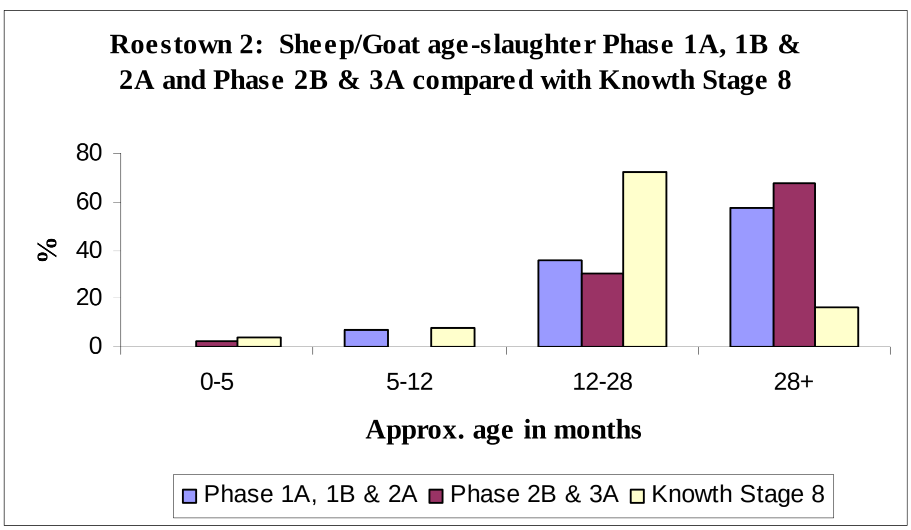


Figure 30 Roestown 2: Sheep/Goat age-slaughter for Phases 1A, 1B & 2A combined, Phases 2B & 3A combined compared with Knowth Stage 8.
Phase 1A, 1B & 2A = mid 6th to mid 7th century. Phase 2B & 3A = 8th century. Knowth Stage 8 = 7th to 8th century. Phase 1A, 1B & 2A N = 73. Phase 2B & 3A N = 46. Knowth Stage 8 N = 25.

There was some focus on slaughter of animals in the 12-28 month age category (35.5% for Phase 1A, 1B & 2A and 30.5% for Phase 2B & 3A) and perhaps these animals, as at other contemporary sites, represent those slaughtered for provision of finer quality fleeces and wethers used as a meat source. But other explanations must be explored for interpretation of the larger distribution of older animals.

When the age distribution for sheep/goat from Roestown 2 is compared with that of other contemporary M3 sites it shows there is variation with peak slaughter occurring in 12-28 month olds for Dowdstown 2 Phase 2 (Coles 2009), Castlefarm 1 Phase 2 and Phase 3-5 (Foster 2009a) and Collierstown Phase 1-3 (Foster 2009c). Animals older than 28 months are dominant for Dowdstown 2 Phase 3 (Coles 2009) and Boyerstown 3 Phase 1-2 (Foster 2009b). These varying distributions cannot be attributed to intentional change in strategy at a given period in time as the 12-28 month peak is observed for datasets ranging in date from 5th to 7th century, 7th to 9th century and 8th to 10th century. Similarly the peak in animals older than 28 months is evident for 5th to 7th century and 7th to 10th century datasets. Consequently some other factors must have influenced the different practices that have been identified.

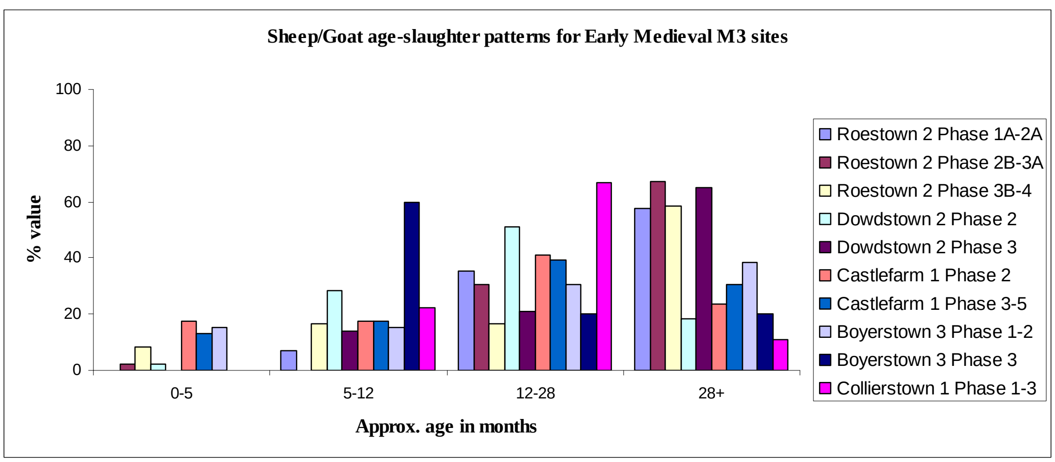


Figure 31 Roestown 2: Sheep/Goat age-slaughter pattern compared with those for other Early Medieval M3 sites.
Roestown 2 Phase 1A-2A = mid 6th-mid 7th century (N = 73). Roestown 2B-3A = 8th century (N = 46). Roestown 3B-4 = 10th-11th century (N = 12).
Dowdstown 2 Phase 2 = 5th-7th century (N = 49). Dowdstown 2 Phase 3 = 7th-10th century (N = 43).
Castlefarm 1 Phase 2 = 7th-9th century (N = 17). Castlefarm 1 Phase 3-5 = 8th-10th century (N = 23).
Boyerstown 3 Phase 1-2 = 5th-7th century (N = 13). Boyerstown 3 Phase 3 = 7th-9th century (N = 5).
Collierstown 1 Phase 1-3 = 5th-7th century (N = 18).

3.2.5 Sheep/Goat Epiphyseal Fusion (Phase 1A, 1B, 2A, 2B and 3A)

The epiphyseal fusion data for sheep corroborates the low incidence of young lambs identified in the tooth and mandible wear data (Tables A21-A23). In the early fusing age category a minimum of 95% of all specimens were fused for the mid 6^{th} to 8^{th} century material. Fused specimens are more prevalent in the middle fusing category although a greater proportion of unfused elements are evident. This indicates the presence of some animals below the age of 15-28 months (Reitz and Wing 1999, 76) also reflected in the tooth and mandible wear records. In the late fusing category, in some phases unfused specimens are dominant e.g. Phase 2A, 2B and 3A display 57%, 56% and 52% of elements as unfused thereby indicating the animals represented were younger than 30-42 months or 36-42 months when slaughtered. However, the fusion data also suggests that for Phase 1A and 1B, 65% and 58% of late fusing elements were fused so that these sheep had at least achieved 30-42 or 36-42 months of age before death (*Ibid*). Only one proximal metapodial was found to be unfused indicating that the animal it belonged to was pre-natal (*Ibid*). This specimen was from Unphased Area B so its significance in signifying breeding of sheep is unreliable in stratigraphical terms.

3.2.6 Sheep/Goat Ageing Data (Phase 3B, 4, 5, F507, 6, Unphased Area A and B)

Table A19 shows the mandible wear stages assigned for specimens from all other phases. For Phases 3B, 4, 5, 6 and Unphased Area A the total number of mandible wear stages assigned was less than 10 therefore, age-slaughter patterns were not constructed for these more limited datasets. A dominance of older animals is again demonstrated although the Phase 4 data includes three much younger specimens aged at 3-5 months, 9-10 months and 10-11 months (Higham 1967, 106). The age-slaughter pattern derived for Unphased Area B is illustrated in Figure A30. No young animals are evident with animals aged 21-26 months accounting for 50% while mature and adult specimens comprise 20% and 30% respectively. No mandible wear stages were assigned for F507 material. In terms of epiphyseal fusion data, the 10^{th} to 11^{th} century material of Phases 3B and 4 suggest prevalence of older animals (Table A22). Phase 3B in particular is dominated by fully fused specimens with 25% of the late fusing category being the only portion in an unfused state. 66.7% of the Phase 4 late fusing category was observed as unfused indicating that the animals they belonged to were not yet 36-42 months old when slaughtered. Therefore, it is still possible that these animals were older than the prime slaughter age of 12-28 months identified for other sites. The Phase 5 data shows that for this 13-14^{th} century material over 90% of early and middle fusing specimens were fused (Table A22). In the late fusing category only 36% were fused while 64% were unfused but this only indicates that 64% were below the age ranges of 30-42 or 36-42 months (Reitz and Wing 1999, 67). No sheep/goat specimens with state of fusion were retrieved from F507. For the Post-Medieval to Modern Phase 6, Unphased Area A and Unphased Area B epiphyseal fusion data is displayed in Tables A22-A23.

3.2.7 Pig Tooth Wear (Phase 1A, 1B, 2A, 2B and 3A)

Pigs differ from cattle or sheep/goat in that they do not provide secondary products like milk or wool, therefore they may be considered as being reared entirely for meat supply (McCormick and Murray 2007, 60). Lard derived from pigs also appears to have been consumed in preference to that of cattle or sheep in Early Medieval Ireland (Kelly 2000, 86). In such a scenario it is most efficient to slaughter livestock when they reach full size, or at least when the rate of growth starts to decline (McCormick and Murray 2007, 60). The Early Medieval documentary sources inform us that piglets were born in spring and kept in the farm area until the beginning of August (Kelly 2000, 81). They were then considered strong enough to be moved to feeding and living in woodland. This new woodland location might be close to or far from home and was overseen by swineherds (*Ibid*, 82). A large variety of food types were fed to pigs but acorns were a particularly significant source (*Ibid*, 82-83). Acorn crops, ready for consumption in September and October, facilitated fattening of young animals prior to their impending slaughter or building up of reserves to enable their survival through the winter (*Ibid*, 83).

It was possible to assign mandible wear stages to 79 pig specimens from Roestown 2. Age-slaughter patterns can be considered as reliable for the mid 6th to 8th century data only as for all other phases the number of specimens was less than ten. Figure 32 shows a minor amount of slaughtering of animals between 7 and 12 months of age with a clear dominance of killing pigs in the 17 to 23 months age range. The presence of a minor amount of animals over 27 months most likely represents older animals that had been kept until this age for breeding purposes. For Phase 1A, 1B and 2A no animals below the age of 17 months were evident, 76.8% were slaughtered in the 17-23 months old age range while animals older than 23 months accounted for 23.2%. The Phase 2B and 3A data displays the same trend as 5% of the pigs from this period were slaughtered between the ages of 7 and 12 months, a majority of 80% were killed in the 17-23 months category and 15% of the animals lived beyond the age of 23 months.

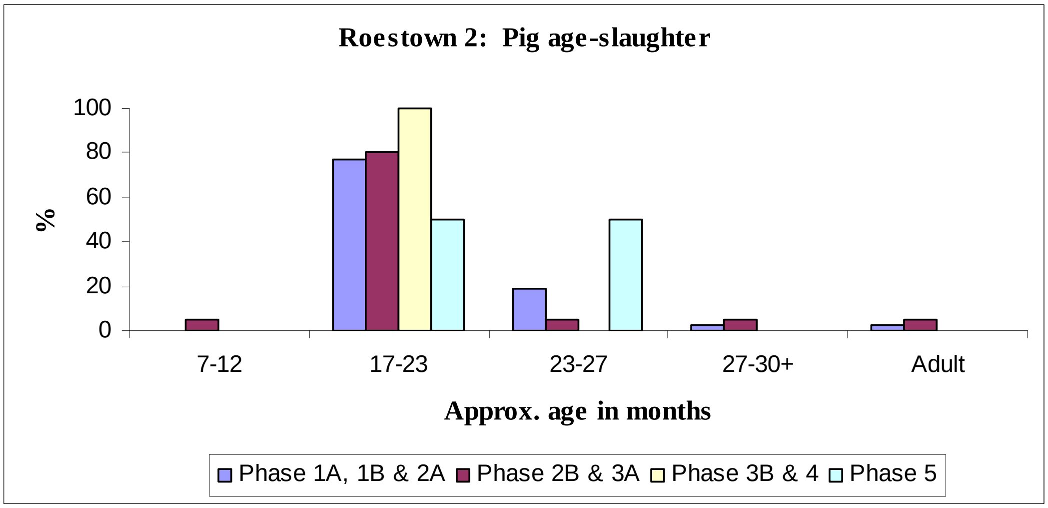


Figure 32 Roestown 2: Pig age-slaughter compared for combined phases following Grant (1982, 94) and Higham (1967, 105).
Phase 1A, 1B & 2A = mid 6th to mid 7th century (N=43). Phase 2B & 3A = 8th century (N=20), Phase 3B & 4 = 10th to 11th century (N=2), Phase 5 = 13th to 14th century (N=2).

Figure 33 demonstrates that the Roestown 2 pattern is in strong agreement with that established for contemporary Knowth Stage 8. There, a small slaughter peak was observed during the first autumn/winter (at approx. 7-11 months old) while the main peak occurred the following autumn/winter in animals aged 17-23 months (McCormick and Murray 2007, 60-61).

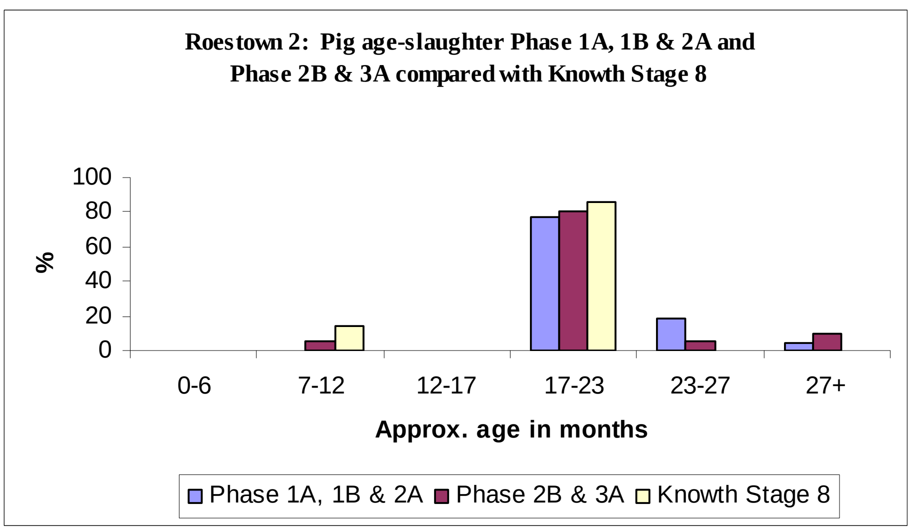


Figure 33 Roestown 2: Pig age-slaughter for Phases 1A, 1B & 2A combined, Phases 2B & 3A combined compared with Knowth Stage 8.
Phase 1A, 1B & 2A = mid 6th to mid 7th century. Phase 2B & 3A = 8th century. Knowth Stage 8 = 7th to 8th century.
Phase 1A, 1B & 2A N = 43. Phase 2B & 3A N = 20. Knowth Stage 8 N = 20.

This is a pattern evident at other contemporary rural sites such as Moynagh and Deer Park Farms (*Ibid*, 62) and confirms a pig-rearing economy focused on providing meat. It was possible to determine sex for 28 mandibles from Knowth and the youngest of these were identified as male. This is considered a small dataset but the larger assemblage from Fishamble Street, Dublin provided a similar pattern as all of the older pigs here were confirmed as female (*Ibid*, 62-63). The evidence is interpreted as indicating only a few males tended to be retained for breeding purposes with all other males being killed for meat as they reached full size in their second winter. Females were kept as they could all potentially produce litters. Assuming that sows first reproduce at two years old, the zooarchaeological evidence suggests that they were kept to produce one litter and then were slaughtered as few sows aged 30 months or more were evident amongst the Fishamble Street assemblage (*Ibid*). The presence of neonatal bones would indicate the breeding and rearing of pigs at a location. Neonatal bones were retrieved for all three stages at Knowth as well as at other contemporary sites including Deer Park Farms, Marshes Upper and Fishamble Street (*Ibid*, 63).

For Roestown 2, it was only possible to determine sex for eleven specimens with mandible wear stages. Consequently it was not possible to infer how livestock was managed in terms of older animals being dominated by females or males. Sex was determined based on examination of the morphology of the canine tooth. The root of the male canine tooth is very wide and as a result it often survives in situ in mandible specimens. In contrast to this, the female canine narrows significantly towards the root. Canine teeth for pig were classified when recorded to database as F (female based on morphology of tooth), M (male based on morphology of tooth), Fa (female based on morphology of alveolus in absence of tooth), Ma (male based on morphology of alveolus in absence of tooth), P (tooth present but sex indeterminate) or A (alveolus present but sex indeterminate). Table A26 shows that eight males and two females with assigned ages have been confirmed in the mid 6th to 8th century material. Nine of these were at least 17 months old while a single male specimen from Phase 3A is the youngest animal represented and falls into the 10-11 month age category. This is likely to have been an animal selected for slaughter during its first autumn/winter. The oldest sexed animals are in the 23-25 month age range where one female and one male are evident. Unfortunately, reliable conclusion on the sex distribution of pigs at Roestown 2 is not possible due to the limited number of aged mandibles with sex determined. Sex determination for pig was also considered for loose mandibular and maxillary canine teeth. Details of these findings are recorded in Tables A27 and A28 and will be discussed in section 3.5.

Although the age-slaughter patterns for Roestown 2 pigs repeat those established for Knowth and contemporary sites such as Moynagh and Deer Park Farms (McCormick and Murray 2007, 62), when they are compared with other M3 sites, more variation is evident. The Roestown data clearly illustrates that peak slaughter occurs in animals aged between 17 and 23 months (although Phase

3B-4 is based on only 2 specimens). However, Dowdstown 2 Phase 3 is the only other dataset where peak slaughter (31.3%) is in this category (Coles 2009). An equal peak is shared with the older category of 23-27 months as 31.3% of animals from Dowdstown 2 Phase 3 were slaughtered at this age (*Ibid*). A strategy of slaughtering younger pigs seems to have been in operation for Dowdstown 2 Phase 2 (*Ibid*) and Castlefarm 1 Phase 3-5 (Foster 2009a) where peak slaughter occurred in 12-17 month olds. Boyerstown 3 Phase 1-2 had two equal peaks with 36.4% being killed at 7-12 and 12-17 months (Foster 2009b). Phase 3 of Boyerstown 3 demonstrated a peak in slaughter of piglets below the age of seven months (*Ibid*). While this may indicate deliberate slaughter of animals for consumption of suckling pig, it should be kept in mind that this particular pattern is based on a small dataset of only nine specimens (*Ibid*, 19). Overall, the data suggests that a variety of management strategies were applied to the herds of pigs represented at the M3 sites, some were killed at younger ages than the optimal for meat supply. Only at Roestown 2 and Dowdstown 2 Phase 3 does peak slaughter occur in the 17-23 month age category which is considered the norm based on previous research.

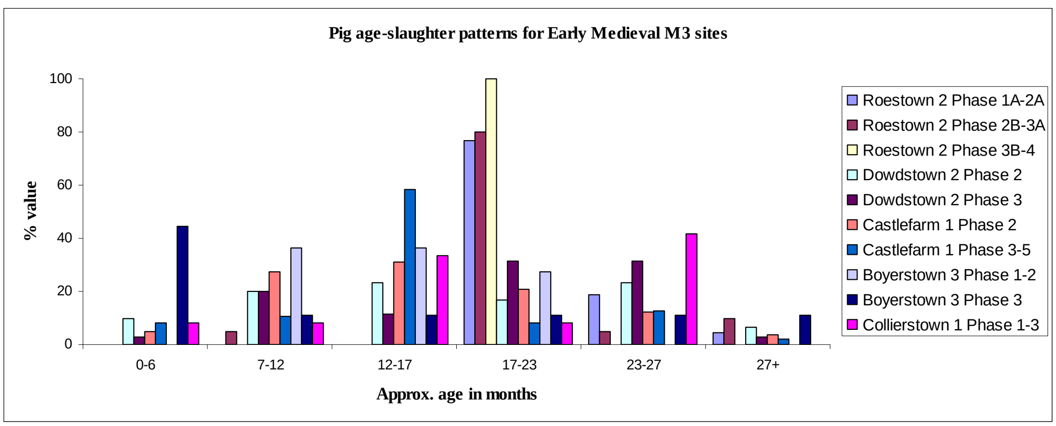


Figure 34 Roestown 2: Pig age-slaughter pattern compared with those for other Early Medieval M3 sites.

Roestown 2 Phase 1A-2A = mid 6th-mid 7th century (N = 43). Roestown 2B-3A = 8th century (N = 20). Roestown 3B-4 = 10th-11th century (N = 2).
Dowdstown 2 Phase 2 = 5th-7th century (N = 30). Dowdstown 2 Phase 3 = 7th-10th century (N = 35).
Castlefarm 1 Phase 2 = 7th-9th century (N = 81). Castlefarm 1 Phase 3-5 = 8th-10th century (N = 48).
Boyerstown 3 Phase 1-2 = 5th-7th century (N = 11). Boyerstown 3 Phase 3 = 7th-9th century (N = 9).
Collierstown 1 Phase 1-3 = 5th-7th century (N = 12).

3.2.8 Pig Epiphyseal Fusion (Phase 1A, 1B, 2A, 2B and 3A)

The mid 6th to 8th century fusion data reflects the slaughter pattern identified through the tooth and mandible wear evidence (Tables A29-A30). In the early fusing age category only one specimen (Phase 2B) suggests breeding of pigs at the site. An unfused proximal metapodial was recorded, as this zone fuses before birth (Reitz and Wing 1999, 76) its unfused state signifies a pre-natal animal. Other unfused specimens in this category represent animals younger than 12 months when slaughtered. Once again, a practice of killing pigs in their first autumn/winter is indicated. The majority of late fusing specimens were observed as in an unfused state. This is in agreement with the hypothesis that only a small amount of animals were kept alive beyond three years old.

3.2.9 Pig Ageing Data (Phase 3B, 4, 5, 6, F507, Unphased Area A and B)

As previously mentioned pig tooth and mandible wear data for phases later than the mid 6th to 8th century material was too limited to facilitate reliable interpretation. The few mandible wear stages assigned for Phase 4 (10th to 11th century), Phase 5 (13th to 14th century) and Phase 6 (Post-Medieval to Modern) represent animals aged 19 months and older (Higham 1967, 105). Five mandible wear stages were assigned to Unphased Area A specimens while the same number were allocated for specimens from Unphased Area B. Three young specimens are indicated by age ranges of 4-6, 9-10 and 11-12 months. The remaining seven specimens were from animals older than 17 months (*Ibid*). (See Table A24 for full details). Fusion data for the 10th to 11th century material is very limited (N = 11) but reflects a similar pattern to that found for the mid 6th to 8th century material. Fused specimens dominate the early fusing category, one fused and two unfused specimens in the middle fusing category signify an animal at least two years old and an animal(s) below this age (*Ibid*). Three specimens from the late fusing category were all unfused as one might expect, signifying an animal(s) having been slaughtered before reaching three years old. Phase 5 (13th to 14th century) displays similar trends as do the specimens recorded from Unphased Area A and Area B. (See Tables A30-A31 for full details).

3.2.10 Horse Ageing Data

The epiphyseal fusion data for horse remains from all phases is dominated by fully fused specimens (Tables A32-A34). A small number of unfused specimens indicate the presence of animals below the age of 3-3.5 years, 20-24 months and 13-15 months while an unfused distal femur was also recorded. It seems unlikely that horses were bred at Roestown 2 a suggestion that is strengthened by the fact that the teeth present for horse were permanent. The main functions of horse in Early Medieval Ireland were as working animals used for traction and transport (McCormick 2007, 93). Therefore, it is usual that their remains in archaeological settings are dominated by mature animals as they were kept until no longer suitable for working life.

3.2.11 Dog Ageing Data

Epiphyseal fusion data for dog shows the majority of this species to be mature animals (Tables A35-A37). An unfused specimen from Phase 1B and Phase 3A indicate the presence of an animal(s) below the age of 11-12 months (Silver 1969, 285-286) while one specimen from Phase 4 is less than 15 months of age (*Ibid*). Dog teeth were all found to be permanent and some were well worn, one canine tooth was observed to be so worn that its occlusal surface was almost completely dilapidated. Ante-mortem tooth loss was noted for a mandible from Phase 5 where the P1 and P3 had been lost.

3.2.12 Cat Ageing Data

Once again mature animals are most prevalent although some unfused specimens of cat were observed (Tables A38-A39). One unfused element from Phase 1 represents an animal younger than the 11.5-20 months age category (Habermehl 1961). For Phase 4 while 60% of specimens were found to be fused, 40% were unfused indicating the presence of some very young animals, below the age of 8.5 months while others were less than 11.5-20 months at the age of death. The only cat specimen with fusion data from F507 also indicates a very young individual below 8.5 months (*Ibid* and Smith 1969).

3.2.13 Red deer Ageing Data

Only one post-cranial specimen of red deer was found amongst the Roestown 2 assemblage. This was a distal radius which was fully fused (Table A40).

3.3 Biometrical Data

Biometrical data was recorded for all fused bones or fused bone fragments as appropriate. Summaries of measurements for cattle, sheep/goat and pig are detailed in Tables A41-A51. Number of specimens (N), mean, minimum, maximum, standard deviation and coefficient of variation is provided for all measurements where N > 5. All measurements recorded for horse, dog and cat are listed in Tables A52-A54. The majority of measurements follow the specifications of von den Driesch (1976) although other sources including Davis (1992 and 1982), Payne and Bull (1988), Payne (1969), Boessneck (1969) and Eisenmann (1986) are used. Definitions for all measurements used in analysis of the Roestown 2 assemblage are provided in Table A55. Estimated withers heights were calculated for all complete long bones of cattle, sheep/goat, pig, horse and dog. The multiplication factors of Harcourt (1974, 154) were used for dog while those quoted in von den Driesch and Boessneck (1974) were used for the other four species.

3.3.1 Cattle

The estimated withers heights for cattle ranged from 105-123cm (see Table A56). They were calculated following Fock and Matolcsi as outlined in von den Driesch and Boessneck (1974, 336). This stature compares as quite similar to that of contemporary Knowth where a range between 102 and 120cm was observed (McCormick and Murray 2007, 80).

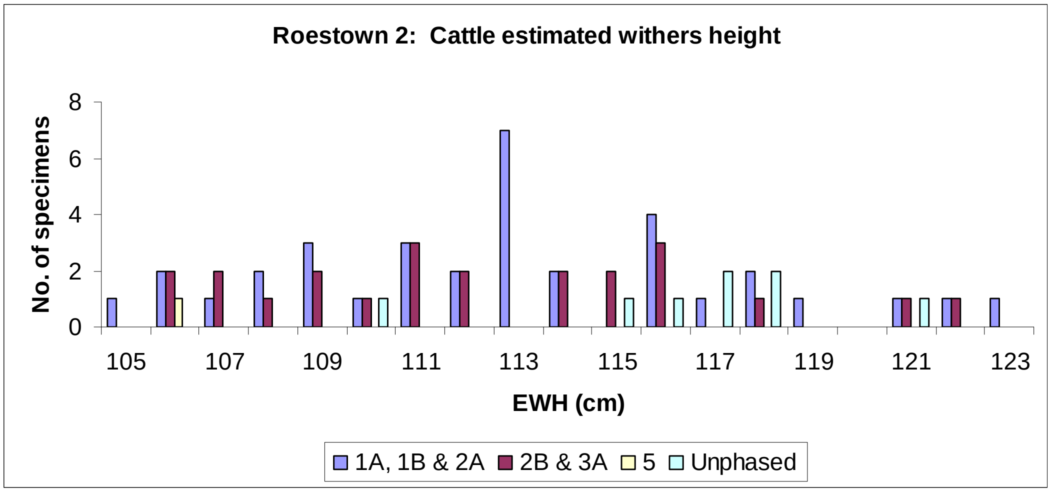


Figure 35: Roestown 2: Estimated withers heights for cattle following Fock and Matolcsi as quoted in von den Driesch and Boessneck (1974, 336).
Phase 1A, 1B & 2A N = 35, Phase 2B & 3A N = 23, Phase 5 N = 1, Unphased N = 8.

3.3.2 Sheep/Goat

For calculation of estimated withers heights, sheep/goat specimens were assumed to be sheep and the multiplication factors of Teichert as specified in von den Driesch and Boessneck were applied (1974, 339). The stature for sheep at Roestown 2 ranged from 49-61cm (see Table A57). In comparison, heights calculated for sheep at Knowth (Stage 9) ranged from 50-62cm with a mean height of 54cm (McCormick and Murray 2007, 90). The mean estimated withers height for the mid 6th to 8th century specimens at Roestown 2 is 56.1cm. This compares closely to the mean values for Lagore and Moynagh, which were 57.3cm and 56.7cm respectively (*ibid*, 185). The heights observed for these two sites were noted as representing animals of slightly larger stature than those at Knowth, Cahercommaun or Ballinderry I (*Ibid* 90 & 185).

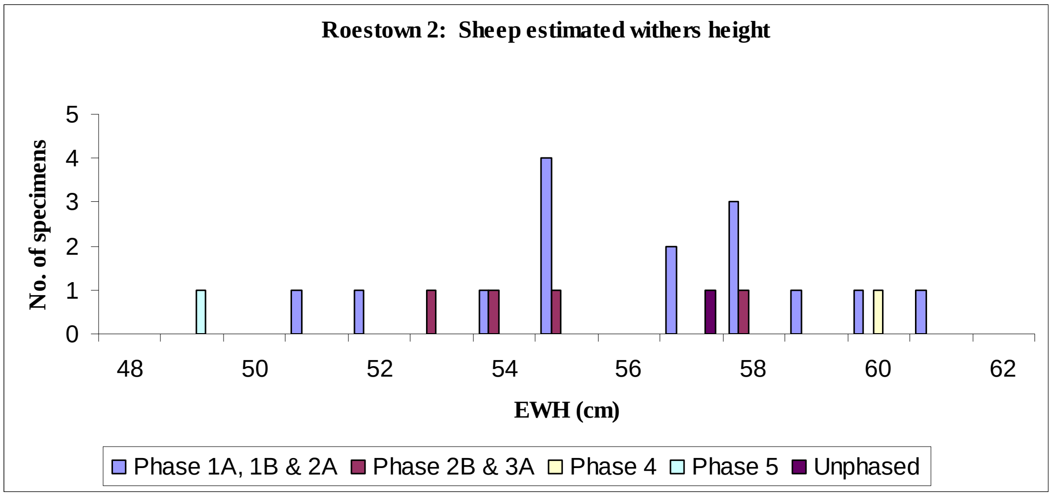


Figure 36 Roestown 2: Estimated withers heights for sheep/goat following Teichert as quoted in von den Driesch and Boessneck (1974, 339).
Phase 1A, 1B & 2A N = 15, Phase 2B & 3A N = 4, Phase 4 N = 1, Phase 5 N = 1, Unphased N = 1.

Research in England based on analysis of Bd measurements (greatest breadth of distal end) for tibiae and metapodials has indicated an increase in size of sheep in the Romano-British and Anglo-Saxon periods (*Ibid*, 95). Mean Bd values for Iron Age datasets provided few examples greater than 25mm. Contrasting with this, some of the highest means observed were for Anglo-Saxon sites and ranged from 25-26.3mm. It is suggested that this is brought about by the introduction of improved stock and/or better husbandry practices (*Ibid*). The data for Early Medieval Ireland does not reflect any such development as the stature of sheep from this time corresponds more closely with pre-improvement animals of the Iron Age than with those of Romano-British or Anglo-Saxon Britain (McCormick 1991b, 42-43). The Knowth data is in agreement with this trend as the mean Bd for Stage 8 was 24.2mm and for Stage 9 was 23mm (McCormick and Murray 2007, 95). The measurements recorded for Roestown 2 are in line with the pattern observed for Knowth and other contemporary Irish sites. The mean Bd for Phase 1A-3A was 23.1mm (N = 63) and for Phase 3B-4 was 22.8mm (N = 4), therefore the mid 6th to 8th century and 10th to 11th century sheep at Roestown 2 do not suggest any improvement in livestock but rather reflect similar stature to the unimproved British types.

Positive identification of specimens as either sheep or goat was considered during analysis when close inspection for recognised distinguishing morphological traits was carried out. A total of 309 specimens were positively identified as sheep (Table A58) and no specimens were confirmed as goat. Biometrical data was also analysed in case it would demonstrate the presence of goat. Measurements recorded for calcanei, humeri and distal metacarpals were plotted as illustrated in Figures A34-A39 however none of these measurements stood out as potential evidence for goat being present at Roestown 2. In addition, index calculations were considered for the Ddm, maximum depth of medial trochlea (Davis 1992) and Dtm, depth of external trochlea of medial condyle (Payne 1969) of distal metacarpals. Boessneck found that the index calculated for sheep metacarpals was always over 63 while for goat the index of one specimen was confirmed as exactly 63 but for all others it was below this (1969, 354-355). Table A59 shows that the index calculations for 11 Roestown 2 specimens were all above 63 with 64.1 being the lowest index calculated. This provides further indication that the majority of animals at Roestown 2 were sheep. The lack of evidence for goat is in agreement with general findings for the Early Medieval period as it only occurs rarely in rural animal bone assemblages (McCormick and Murray 2007, 42). Therefore while reference is made throughout this report to sheep/goat, the morphological and metrical evidence suggests that the assemblage must consist almost entirely of sheep.

3.3.3 Pig

Only one pig longbone specimen was suitable for calculation of estimated withers height, this was a radius from Phase 2A. It is a common finding that pig bone remains facilitate less biometrical data than either cattle or sheep as they tended to be slaughtered at an earlier age before many of the middle or late fusing bones have fully developed. Calculation was based on the multiplication factor of Teichert as quoted in von den Driesch and Boessneck (1974, 341). The radius specimen produced an estimated withers height of 69.2cm (Table A60). This indicates a larger animal than one from Dowdstown 2 Phase 3 (AD 680-920) as Coles calculated one estimated withers height of 67.7cm for pig (2009, 31).

3.3.4 Horse

A total of seven horse specimens were suitable for calculation of estimated withers height. Five of these belonged to the mid 6th to 8th century material while two were from the Unphased part of the assemblage. For the former group, stature ranged from almost 128-144cm with a mean withers height of almost 135cm. These calculations followed the factors of Kiesewalter as quoted in von den Driesch and Boessneck (1974, 333).

Phase	Element	GLl	EWH
1B	Metacarpal	215.5	138.1
2B	Metacarpal	199.4	127.8
1A	Metatarsal	270.2	144.0
2B	Metatarsal	248.8	132.6
2B	Metatarsal	247	131.7
UNPHASED (A)	Metatarsal	263.8	140.6
UNPHASED (B)	Metatarsal	248	132.2

Table 4 Roestown 2: Estimated withers heights for horse following Kiesewalter as quoted in von den Driesch and Boessneck (1974, 333).

The range is partially similar to that found at Knowth where four metapodials provided estimated withers heights ranging from 121-141cm (McCormick and Murray 2007, 96). Estimated withers heights calculations for horse from Dowdstown 2 phase 2 (5th to 7th century) and phase 3 (7th to 10th century) were calculated as 142.3cm for the earlier phase and 135.9cm and 148.7cm for the later phase (Coles 2009, 19 and 30). Metrical data for horse in the Early Medieval period suggests a peak in shoulder heights of 130-134cm (McCormick 2007, 95). McCormick highlights the fact that all horses greater than 137cm come from royal sites such as Lagore and Knowth (*Ibid*). Of the five Roestown 2 specimens of mid 6th-8th century date, two represent animals with shoulder heights larger than 137cm. This may be further indication of the high status nature of the site, a theory proposed by the excavation director, particularly in relation to its earliest phase (O'Hara 2008, 63). When data from Viking Dublin is compared with that of contemporary rural sites it is clear that the rural animals were larger than those of the urban setting. Mean shoulder height for horses in Viking Dublin is 129.6cm as opposed to 130.7cm for rural sites (McCormick 2007, 95).

3.3.5 Dog

Estimtated shoulder heights were calculated for all complete long bones of three articulated dog skeletons and are discussed in section 3.4 below. In addition, greatest length (GL) measurements were recorded for two other specimens, a radius and a femur. Both were from the mid 6th to 8th century material and estimated shoulder heights were calculated following the multiplication factors of Harcourt (1974, 154). The radius (from phase 3A) produced an estimated shoulder height of 53.1cm while the femur (from phase 1A) provided an estimated shoulder height of 59.9cm.

Based on biometrical data for a number of contemporary sites, McCormick and Murray (2007, 98-99 and McCormick 1991a, 9) suggest that two distinct groups of dogs were present in Ireland during the Early Medieval period. Distinction between the two groups is based on size. A smaller sized group of dogs with shoulder heights in the range of 26-40cm and a larger sized group with shoulder height ranges of 48-72cm are recognised (*Ibid*). The existence of two separate size groups leads to the conclusion that breeding was carefully controlled at this time and care was taken that interbreeding between the two groups did not occur (*Ibid*). Complete dog bones from Knowth (Stage 8 and 9) produced estimated shoulder heights ranging from 57.7cm – 66.3cm which represent some of the largest dogs known in Ireland for the seventh-eleventh centuries (*Ibid*). The calculations for the two individual Roestown 2 specimens represent dogs that belong to the larger sized group and are of similar stature to some of the Knowth examples.

3.3.6 Cat

A small amount of biometrical data was recorded for cat as detailed in Table A54. GL and SD measurements for femur and tibia specimens were plotted against similar data to examine how the Roestown 2 animals compare. The data for all other sites is reproduced from McCormick and Murray (2007, 101-102). The Roestown 2 Phase 4 material dates to the eleventh century so that it is earlier than that of Knowth Stage 10. As Figure 37 illustrates, the Roestown 2 femora compare most closely to one of the Dublin specimens although this is one of the larger examples recorded for that urban setting while some of the other Dublin specimens are much smaller than those from Roestown 2. The Roestown 2 specimens are noticeably larger than the Knowth femur which is in turn significantly smaller than most of the other examples. Decline in the size of cats has been observed when Early Medieval rural data is compared with that of urban assemblages. Cats belonging to Early Medieval rural sites, where they most likely lived a comfortable life as a treasured pet, have generally been found to be larger and have lived longer than those from urban Medieval sites (McCormick 1988). Both zooarchaeological findings and documentary evidence suggests cats in Viking and Medieval urban settings were bred for their pelts (*Ibid*). The small size of the Knowth specimen, which dates to the thirteenth or fourteenth century, has been interpreted as possibly signifying this decline occurring in a rural settlement (McCormick and Murray 2007, 101). The earlier Roestown 2 specimens do not suggest this deterioration has commenced there in the eleventh century. None of the cat specimens from Roestown 2 displayed any evidence of butchery or skinning. This further strengthens the view that the urban policy of breeding cats as a commercial commodity had not transferred to eleventh century Roestown 2.

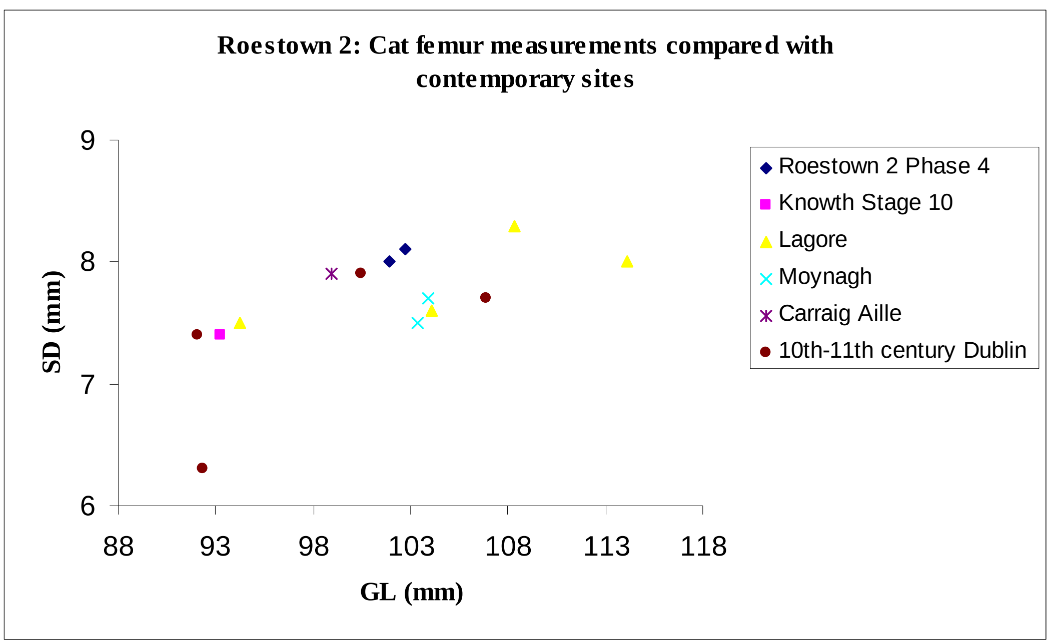


Figure 37 Roestown 2: Measurements of cat femora compared with other sites. Data for all sites except Roestown 2 reproduced from Figure 4.23 of McCormick and Murray (2007, 102).

Figure 38 demonstrates that measurements for the two cat tibiae from Roestown 2 Phase 4 are very similar and their closest parallel is one of the Lagore specimens although they are not far removed from some of the tenth to eleventh century Dublin examples. The Phase 5 specimen is significantly smaller with only four other specimens having a smaller GL value. Perhaps by this later date of thirteenth to fourteenth century, which is contemporary with the Knowth Stage 10 femur, the decline in quality of life for cats observed there is also true of Roestown 2.

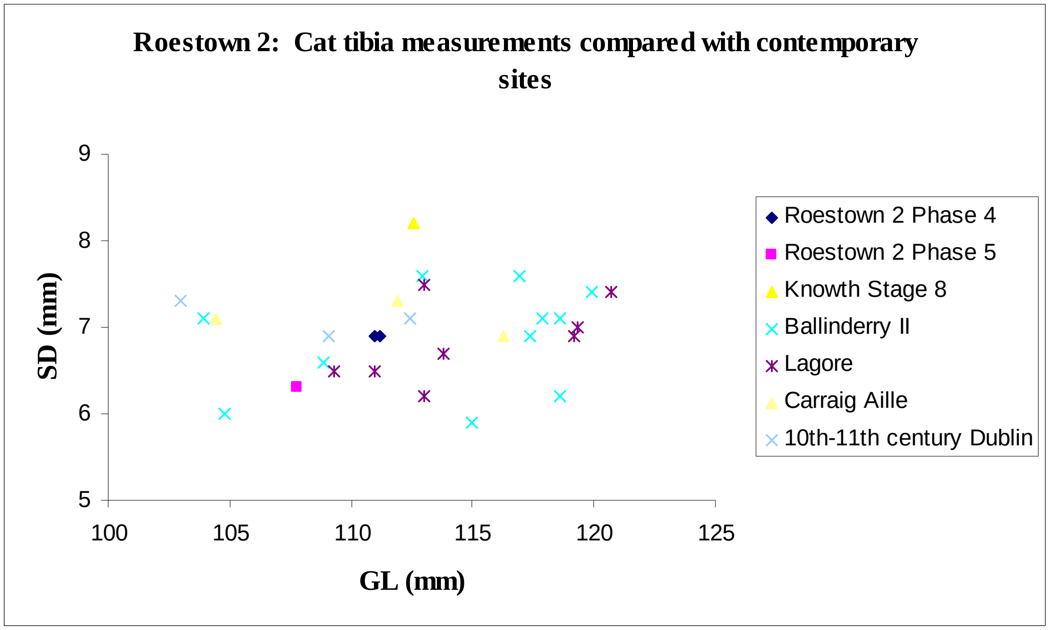


Figure 38 Roestown 2: Measurements of cat tibiae compared with other sites. Data for all sites except Roestown 2 reproduced from Figure 4.21 of McCormick and Murray (2007, 101).

3.4 Articulated Dog Skeletons

The articulated remains of three dog skeletons were retrieved during excavations at Roestown 2. Two sets of remains came from Area B (F418 and F484) while the third skeleton came from Area A (F116). All were inspected, analysed and recorded following the methodology previously outlined (section 2). The specimens from Area B were in good condition and survived quite well in tact. The Area A skeleton was much more fragmented. Tables A61-A63 provide details of the countable elements recorded for each skeleton. Radiocarbon dates were obtained for all three animals.

Feature	Radiocarbon Date	Lab Code	Specimen Dated
F418	AD 690-946	Beta 220114 (Oxcal Calibrated)	Left tibia
F484	AD 725-976	Beta 220116 (Oxcal Calibrated)	Left humerus
F116	AD 605-769	Beta 219003 (Oxcal Calibrated)	Left radius

Table 5 Roestown 2: Radiocarbon dates obtained for articulated dog skeletons.

F418 (Area B)

In addition to the countable specimens listed in Table A61, rib fragments, vertebrae (apart from the atlas or axis), carpals/tarsals (apart from C3 or scafocuboid) and fibula were retained for permanent storage but not recorded. The elements were generally in a very good state of preservation with many surviving fully or largely in tact. The permanent teeth were all fully developed suggesting that this was a fully-grown animal. States of epiphyseal fusion were observed as outlined in Table A64. Amongst other elements, the femur was fully fused at both the proximal and distal extremities. This indicates that the F418 dog lived to at least 1.5 years old (Silver 1969, 285-286).

F484 (Area B)

The countable specimens recorded for this dog are listed in Table A62. In addition rib fragments, vertebrae (apart from atlas or axis) and fibulae were retained for permanent storage but not recorded. The skeleton of this animal was also in a very good state of preservation with elements remaining fully/largely in tact. Both mandibles had permanent teeth surviving in situ indicating a mature animal. Epiphyseal fusion data was recorded for all elements where applicable and once again, the femur was fully fused at both the proximal and distal extremities (Tables A65a-A65b). This indicates that the F418 dog lived to at least 1.5 years old (*ibid*).

F116 (Area A)

Details of the countable elements recorded from this skeleton are given in Table A63. While some elements survived in good condition and a small number were relatively in tact, this set of remains was the most fragmented of the three dog skeletons. Rib fragments, vertebrae (apart from atlas or axis), some disarticulated and very fragmented pieces of bone were retained but not recorded. Some fragments were recognisable but did not have the zones present to make them qualify as countable specimens. These were also retained for permanent storage. The skull was severely damaged and survived as a collection of very small fragments. Both mandibles had permanent teeth surviving in situ indicating a mature animal. Epiphyseal fusion data was recorded for all relevant elements. As Table A66 indicates this animal was also older than 1.5 years as proximal and distal femur and proximal tibia were fully fused (*ibid*).

3.4.1 Biometrical data for articulated dog skeletons

Measurements were recorded for fully fused bones or bone fragments following von den Driesch (1976). As some elements were complete this facilitated recording of greatest length (GL) measurements which were used to calculate estimated shoulder heights for all three dogs following Harcourt (1974, 54). As already mentioned, previous zooarchaeological analysis has indicated the presence of two different dog groups in Early Medieval Ireland, a smaller sized group with shoulder heights ranging from 26-40cm and a larger sized group ranging from 48-72cm (McCormick and

Murray 2007, 98-99 and McCormick 1991a, 9). Tables 6-8 show that the articulated dogs from Roestown 2 are mostly in agreement with this. The F484 dog produced a mean estimated shoulder height of 51.3cm while the F116 animal had an estimated shoulder height of 61.8cm based on a single humerus. Therefore, both dogs fit comfortably into the larger sized dog group of the Early Medieval period. The F418 dog is interesting as its mean estimated shoulder height is just marginally out of the smaller sized group at 40.5cm. This calculation was based on four complete elements. A radius and tibia both place this animal in the small sized dog group while a humerus and femur give a stature that falls in between the two clearly defined groups. The F418 dog returned a radiocarbon date of AD 690-946 (Beta 220114 Oxcal Calibrated) and it may indicate that dogs of stature outside of the two previously established groups did exist in Early Medieval Ireland. However, reliable conclusion of this being a common occurrence will only be possible based on a much larger body of data than one individual animal.

Feature	Element	GL (mm)	ESH (cm)
418	Humerus	131	42.3
418	Radius	114	38.2
418	Femur	139.8	42.6
418	Tibia	129.9	38.9
MEAN ESH		**40.5cm**	

Table 6 Roestown 2: Estimated shoulder height (ESH) calculated for F418 dog.

Feature	Element	GL (mm)	ESH (cm)
484	Humerus	154.7	50.4
484	Radius	158.5	52.4
484	Tibia (Right)	171.7	51.1
484	Tibia (Left)	172.2	51.2
MEAN ESH		**51.3cm**	

Table 7 Roestown 2: Estimated shoulder height (ESH) calculated for F484 dog.

Feature	Element	GL (mm)	ESH (cm)
116	Humerus	187.9	61.8

Table 8 Roestown 2: Estimated shoulder height (ESH) calculated for F116 dog.

Contemporary evidence from Knowth produced estimated shoulder heights of 57.7cm – 66.3cm representing some of the largest dogs known in Ireland for the seventh-eleventh centuries (*Ibid*). So the F116 animal from Roestown 2 would be of similar stature to these Knowth specimens while the F484 dog is smaller. Stature of dogs was calculated for specimens from some other sites along the route of the M3. An articulated dog retrieved from excavations at Lismullin (AD 1023-1206, Beta 233922 Oxcal calibrated) had a mean estimated shoulder height of 50cm which places it towards the smaller scale of the larger-sized dog group (Sloane 2008, 1-4). Although later in date the Lismullin dog is of very similar stature to the Roestown 2 F484 animal. From Dowdstown 2, Phase 2 (AD 420-660, Beta 220119 Oxcal calibrated) two small dogs (31.3cm and 31.9cm) and one extremely large animal (71.6cm) were recorded (Coles 2009, 19). It is considered that the latter may be wolf due to its extreme height and the presence of some very large canine teeth (*Ibid*). Fifteen dog specimens from Early Medieval Castlefarm 1 allowed estimation of shoulder height ranging from 31.5-62.7cm (Foster 2009a). Therefore both small and large sized dogs are evident but there is no other evidence for animals with a stature outside of the two clearly defined groups.

Figures 39 and 40 compare GL and SD measurements from Roestown 2 with those recorded for other Early Medieval sites. The humeri from Phase 1B, 2A and 3A belong to the articulated dogs F116, F418 and F484 respectively. The Phase 2A and 3A tibiae are from the F418 and F484 animals. When plotted, the Roestown 2 specimens are seen to fit comfortably within the range of contemporary measurements.

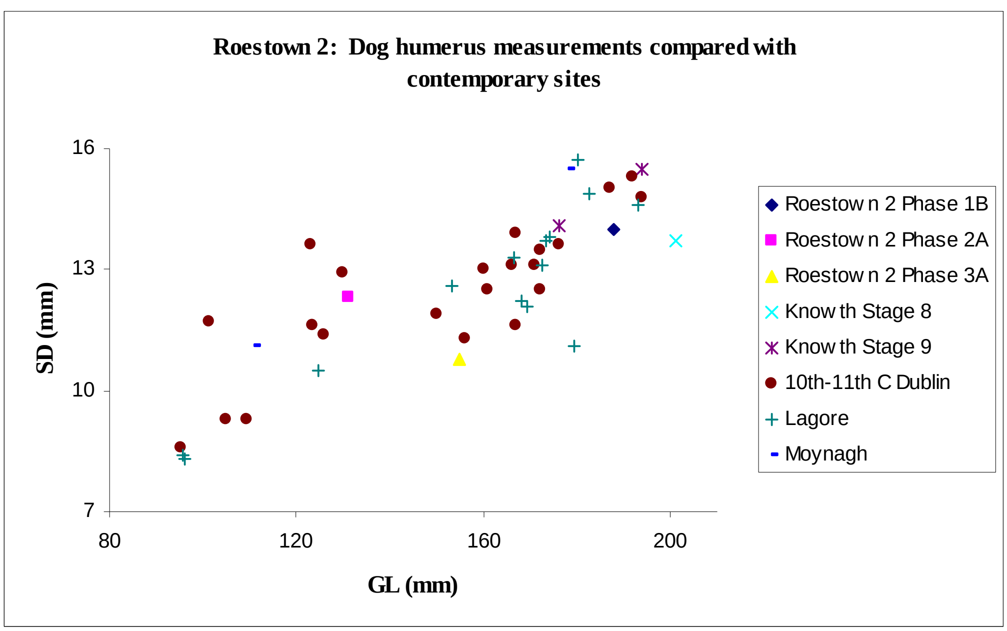


Figure 39 Roestown 2: Measurements of dog humeri compared with other sites. Data for all sites except Roestown 2 reproduced from Figure 4.19 of McCormick and Murray (2007, 99).

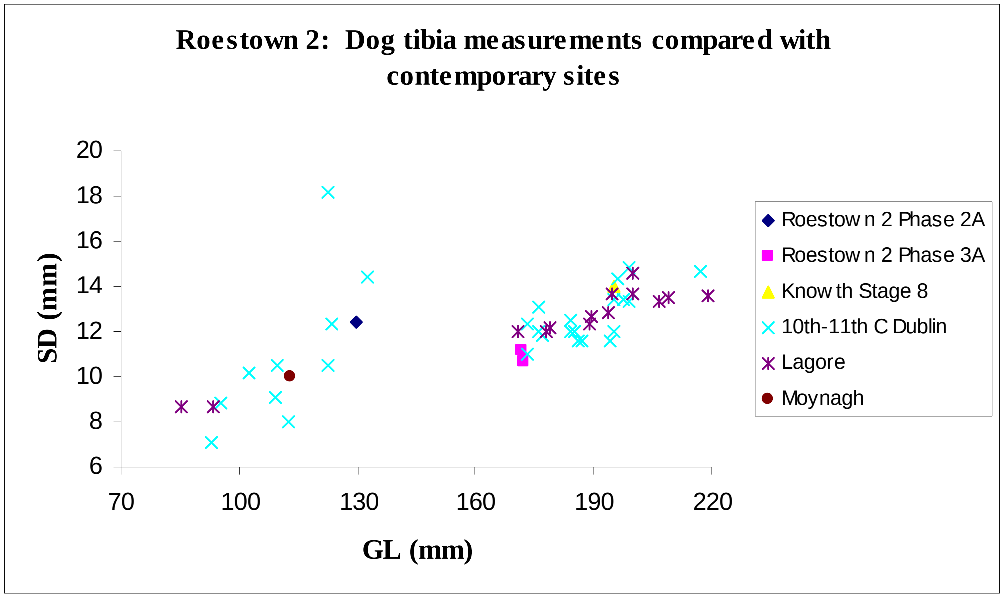


Figure 40 Roestown 2: Measurements of dog tibiae compared with other sites. Data for all sites except Roestown 2 reproduced from Figure 4.20 of McCormick and Murray (2007, 99).

There is no evidence to suggest the presence of lapdogs at Roestown 2. The Early Medieval documentary sources inform that miniature dogs were kept by those of high status and had a particular association with queens and women of high rank (Kelly 2000, 120). As Roestown 2 has been interpreted as representing a high-status site, it would not be unexpected to have come across evidence for lapdogs**.** They were present at the royal site of Lagore including the smallest example with an estimated shoulder height of 26cm (McCormick 1991a, 8) but as at Roestown 2, they are absent from contemporary Knowth (McCormick and Murray 2007, 98). The documentary sources refer to different types of herd dogs including ‘herd dog of large livestock’, ‘herd dog of calves’ and ‘herd dog of sheep’ (Kelly 2000, 119). As O’Hara has suggested that some of the enclosures at Roestown 2 may have functioned as livestock corrals (2008, 7, 8 & 11), perhaps some of the dog remains represent animals who worked with the site’s farmers in the herding of livestock.

3.4.2 Pathology for articulated dog skeletons

Evidence of pathology and injury was detected on four elements belonging to the F116 dog. The left humerus displayed severe deformity towards the distal end of the shaft on its posterior surface (Plate 1). Extensive additional bone growth had occurred, most likely as a result of some sort of trauma and resulting infection. Exostosis and traces of eburnation were observed on two first phalanges while exostosis only was present on another first phalanx. The level of exostosis observed distorted the morphology of all three phalanges. Both suggest degenerative joint disease.

Plate 1 Roestown 2: Dog humerus, severely deformed due to trauma and resulting infection.

3.4.3 Butchery for articulated dog skeletons

Two small cut marks were observed on the medial side of the right distal femur of the F116 animal. This was the only evidence for butchery of dog at Roestown 2. Therefore it may be concluded that butchery or skinning of dogs was not a common practice.

3.4.4 Gnawing for articulated dog skeletons

There was no evidence to suggest gnawing of the dog skeletons which implies that the animals were not left exposed for any considerable time after death. There was no evidence for burning indicated on the dog remains.

3.5 Sex Determination

Sex determination for cattle was attempted by analysis of the metrical data recorded for distal metacarpals. This data is presented in two forms and displayed in Figures 41 and 42. Distal breadth (Bd) was plotted against the slenderness index (SI) (McCormick 1992) for complete metacarpal specimens. Unfortunately the number of complete metacarpals from Roestown 2 was small and a total of 11 specimens could be examined by this method. The data shows a fairly even distribution between females (towards left of chart) and males (towards right of chart) for these mid 6th to 8th century specimens. In a dairy-focused economy one might expect this distribution to be more dominated by female animals e.g. when the same measurements were plotted for Knowth Stages 8 and 9, nine female specimens and only one male specimen were evident (McCormick and Murray 2007, 82).

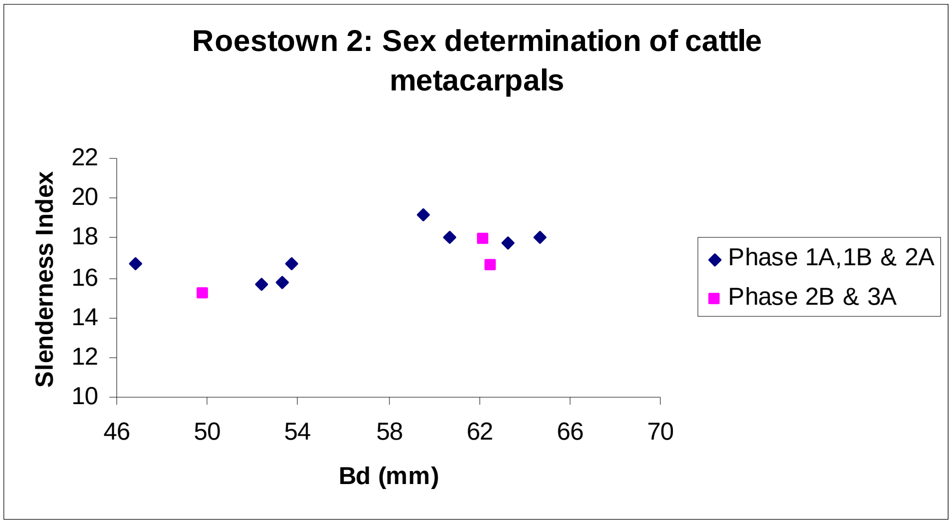


Figure 41 Roestown 2: Sex determination of cattle metacarpals based on comparison of distal breadth (Bd) and slenderness index (SI).
SI = SD/GL x 100. Phase 1A, 1B, & 2A N = 8. Phase 2B & 3A N = 3.

By examining only the distal metrical data, it is possible to enhance the dataset. Analysis of a very large collection of distal cattle metacarpals from the Viking levels at Fishamble Street, Dublin, led McCormick to the finding that a distal width measurement less than 56mm represents a female animal while a distal width greater than 57.5mm is male with measurements in between being classed as indeterminate (1997, 822). In applying this method to the Roestown 2 material, a dominance of female animals (cluster towards LHS) is evident while a smaller portion of the distribution is made up of male specimens (cluster towards RHS).

Once again the number of males is larger than that for Knowth Stage 8 and 9 and may indicate a larger amount of male animals lived beyond the age of 2-3 years at Roestown 2 than at other contemporary locations although females are still the majority. Fusion of the distal metacarpal occurs in the age range of 2-3 years (Reitz and Wing 1999, 76) therefore a distribution of mainly females where fusion has occurred, suggests that it is predominantly males that are slaughtered as younger animals. As already outlined, this is a practice one might expect to find in a dairying economy.

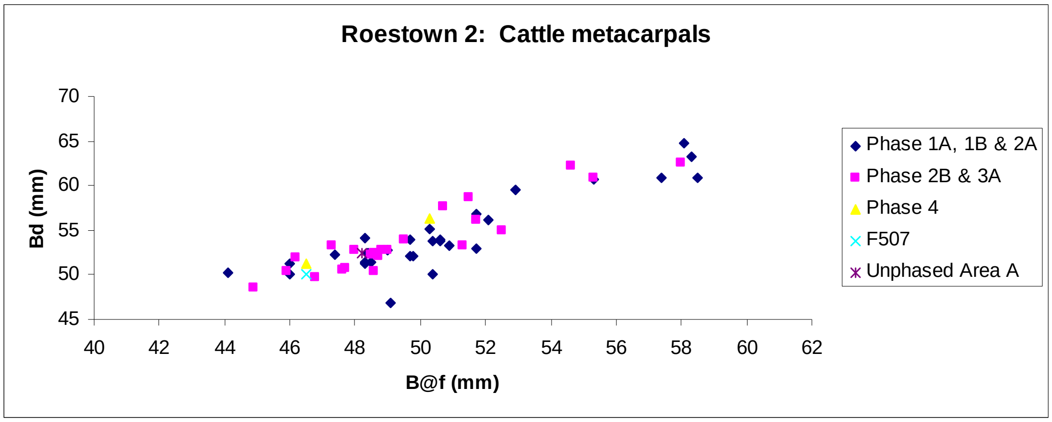


Figure 42 Roestown 2: Cattle metacarpals comparison of distal width (Bd) and distal diaphyseal width (B@f) measurements.
Phase 1A, 1B & 2A N = 29, Phase 2B & 3A N = 23, Phase 4 N = 2, F507 N = 1, Unphased Area A N = 1.

Table 9 summarises the sex distribution observed for Roestown 2 with the predominantly female specimens reflecting dairy-focused farming practices. The percentage of female and male animals was compared with those recorded for the M3 sites of Castlefarm 1, Boyerstown 3, Collierstown 1 and Dowdstown 2 (Table 10). The only datasets from these sites with a reasonable number of metacarpal specimens present is Dowdstown 2 Phase 2 (N = 15) and Phase 3 (N = 22). Female and male specimens from Phase 2 account for 80% and 13.3% of the sexed metacarpals respectively while Phase 3 produces a breakdown of 77.3% female and 9.1% male. It is possible that the higher distribution of males at Roestown 2, with 71.9% female and 21.9% male in Phases 1A-2A and 68% female and 16% male in Phases 2B-3A, is partially due to possible external influences.

A possible explanation for the higher than normal male element might be one that will also be considered when discussing the age-slaughter patterns for cattle. This is the possibility that Roestown 2 was not only a settlement with farming and craft activity but also a destination where client tribute or revenue to the church was deposited. It is therefore plausible that the sex distribution is partially influenced by outside sources. Consequently while cows dominate the herd the male population, which is larger than for other sites, may include animals brought here as tribute from other locations.

Phase	N.	F	M	I
1A, 1B & 2A	32	23	7	2
2B & 3A	25	17	4	4
3B & 4	4	3	0	1
F507	1	1	0	0
Unphased Area A	1	1	0	0
Unphased Area B	1	0	1	0

Table 9 Roestown 2: Summary of sex determination for cattle based on Bd measurements of metacarpals (McCormick 1997, 822).
N. = number of specimens, F = female, M = male, I = indeterminate.

Site & Phase	N	%F	%M	%I
Roestown 2 Phase 1A-2A	32	71.9	21.9	6.3
Roestown 2 Phase 2B-3A	25	68.0	16.0	16.0
Roestown 2 Phase 3B-4	4	75.0	0.0	25.0
Castlefarm 1 Phase 2	8	75.0	12.5	12.5
Castlefarm 1 Phase 3-5	5	40.0	40.0	20.0
Castlefarm 1 Phase 6	2	50.0	50.0	0.0
Boyerstown 3 Phase 1-2	2	100.0	0.0	0.0
Boyerstown 3 Phase 3	1	100.0	0.0	0.0
Boyerstown 3 Phase 5	2	100.0	0.0	0.0
Colliertown 1 Phase 2	3	100.0	0.0	0.0
Colliertown 1 Phase 3	2	50.0	50.0	0.0
Colliertown 1 Phase 4	2	50.0	50.0	0.0
Dowdstown 2 Phase 2	15	80.0	13.3	6.7
Dowdstown 2 Phase 3	22	77.3	9.1	13.6

Table 10 Roestown 2: % sex distribution for cattle based on Bd measurements of metacarpals compared with Castlefarm 1 (Foster 2009a), Boyerstown 3 (Foster 2009b), Collierstown 1 (Foster 2009c) and Dowdstown 2 (Coles 2009)
N. = number of specimens, %F = female, %M = male, %I = indeterminate.

Sex was also determined for pig where possible through analysis of the morphology of the canine tooth or its alveolus as previously outlined (Section 3.2.7). It has already been established that it was possible to determine sex for a total of eleven pig mandibles (also Section 3.2.7), which is unfortunately a small dataset. Sex determination for mandibles without wear stages as well as for loose mandibular and maxillary canines provides a larger amount of data. A total of 122 mandibular canine specimens from the mid 6th to 8th century phases were sexed and 48 were confirmed as female while 74 were classified as male (Table A27). Seven female and 19 male specimens were identified for the same period when maxillary canines were examined (Table A28).

It would appear that males are more dominant than females, an outcome found for other assemblages from the M3. Table 11 shows that where sex was determined for canine teeth a higher number were recorded as male than female for each site/phase in twelve instances. Only for Castlefarm 1 Phase 3-5 were there more female specimens than male while Collierstown 1 produced one specimen of each sex for both phases 3 and 4. Taphonomic factors may be influential in these patterns. As male canine teeth are larger and more robust than female's they are more likely to survive in the archaeological record.

Site and Phase	N	F	M
Roestown 2 Mid 6th-8th century	122 (MN)	48	74
Roestown 2 Mid 6th-8th century	26 (MX)	7	19
Castlefarm 1 Phase 1	1	0	1
Castlefarm 1 Phase 2	38	16	22
Castlefarm 1 Phase 3-5	23	13	10
Castlefarm 1 Phase 6	4	0	4
Boyerstown 3 Phase 1-2	6	1	5
Boyerstown 3 Phase 3	8	3	5
Boyerstown 3 Phase 4	3	0	3
Boyerstown 3 Phase 5	1	0	1
Boyerstown 3 Phase 6	2	0	2
Collierstown 1 Phase 3	2	1	1
Collierstown 1 Phase 4	2	1	1
Dowdstown 2 Phase 2	21	9	12
Dowdstown 2 Phase 3	20	10	10

Table 11 Roestown 2: Summary of sex determination for pig based on morphology of canine teeth for various M3 sites.
N = Number of specimens, F = Female, M = Male.
(MN) = mandibular specimens (MX) = maxillary specimens.

3.6 Butchery/Gnawing/Burning/Pathology/Injury

3.6.1 Butchery

Figure 43 shows that over 90% of cattle specimens for all phases displayed no traces of butchery. The most common form of butchery observed was chopping. Evidence of bones having been chopped was noted in two forms, either as actual chopmarks visible on surviving specimens or without the presence of chopmarks but the state of the surviving edge indicating that the element had clearly been chopped. The majority of chopped bones consist of the large meat-bearing bones that were most likely chopped during dismemberment of carcasses. Metapodials were often chopped through the shaft, most likely for the extraction of marrow. One Phase 2A cattle metatarsal displayed many small chopmarks at the proximal end of the element (Plate 2). Chopmarks were observed for some vertebrae but there were not enough to determine a systematic butchery method. Some pelvis and scapula specimens also displayed chopmarks but again, the number of examples was too few to define a consistent pattern of butchery. Some horncore and cranium specimens had been chopped and in one instance a cranium had been cleanly chopped in half so that only the left side survived. In five cases it was possible to determine that horncores had been chopped by Armitage's method 'a' which supports the premise that these remains are due to butchery activity (1990, 84-85).

Plate 2 Roestown 2: Cattle metatarsal displaying large amount of small chopmarks.

Although there was some evidence for cutmarks, it was a very small amount in comparison to that of chopmarks. A cutmark observed on a horncore specimen may be due to removal of the horn sheath for craft working while similar evidence was found on a skull that may relate to skinning. The amount of butchery evidence produced for Roestown 2 cattle is too small to allow confirmation of specific butchery practices.

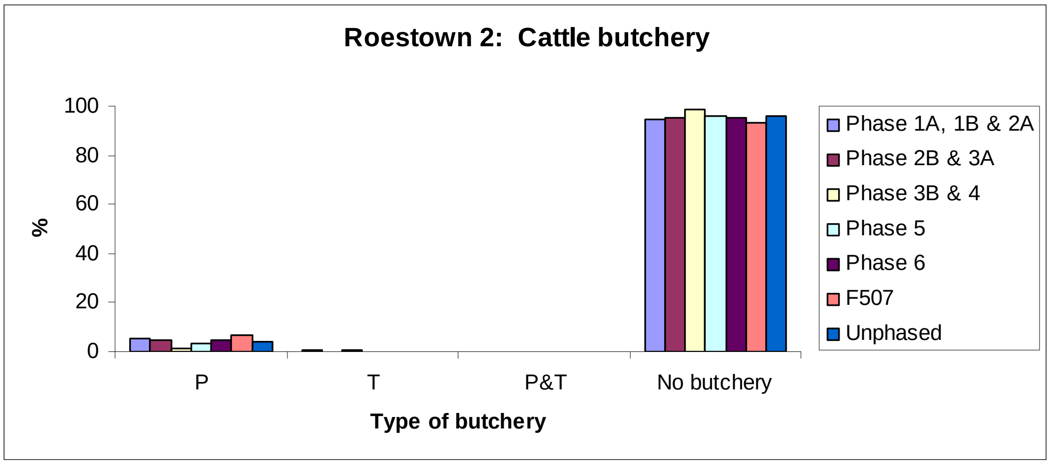


Figure 43 Roestown 2: Butchery recorded for cattle specimens.
P = chopped, T = cut, P&T = chopped & cut
NOTE: For Phase 1A, 1B & 2A: T = 0.4%. For Phase 2B & 3A: T = 0.3%, P&T = 0.1%.
For Phase 3B & 4: T = 0.4%. For Phase 5: T = 0.3%

For sheep/goat, evidence of butchery was even less than for cattle as a least 97% of countable specimens for all phases had no butchery (Figure 44). Evidence of specimens having been chopped was the most common form with minimum evidence for cutmarks observed. Some of the larger meat-bearing bones had been chopped through the shaft, most commonly in the case of the tibia. Cutmarks were observed for a variety of elements including scapula, humerus, pelvis and calcaneum as well as two axis vertebrae. A number of metapodials had been chopped through the shaft. Some of this evidence is obviously butchery while some may be the result of skinning.

Minimal butchery evidence was observed for pig with a minor amount of evidence of chopmarks recorded. Over 96% of countable specimens did not display any butchery evidence. Several longbones had been chopped through including radius, femur and tibia specimens. In two cases, chopmarks were visible on scapulae immediately above the glenoid cavity while a third scapula had been chopped through so that at least half of the blade including the spine had been removed.

Evidence of butchery was found on a number of horse specimens, consisting mainly of longbones that had been chopped through while three examples of cutmarks on a humerus, a metacarpal and a metapodial were also noted. This indicates that occasional butchery and skinning of horses occurred at Roestown 2.

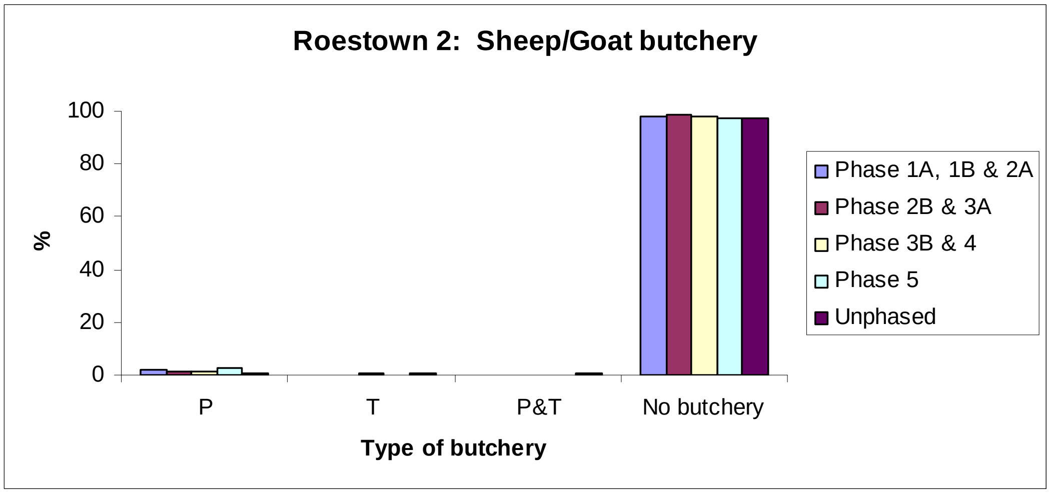


Figure 44 Roestown 2: Butchery recorded for sheep/goat specimens.
P = chopped, T = cut, P&T = chopped & cut
NOTE: For Phase 1A, 1B & 2A: T = 0.3%. For Phase 2B & 3A: T = 0.1%.
For Phase 3B & 4: T = 0.6%. For Unphased: P = 0.8%, T = 0.8%, P&T = 0.8%.

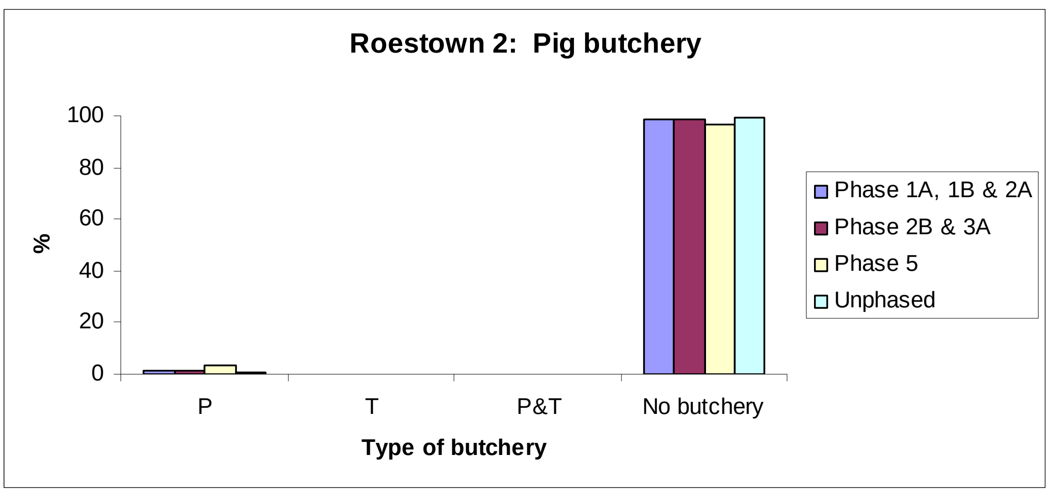


Figure 45 Roestown 2: Butchery recorded for pig specimens.
P = chopped, T = cut, P&T = chopped & cut
NOTE: For Unphased: P = 0.7%.

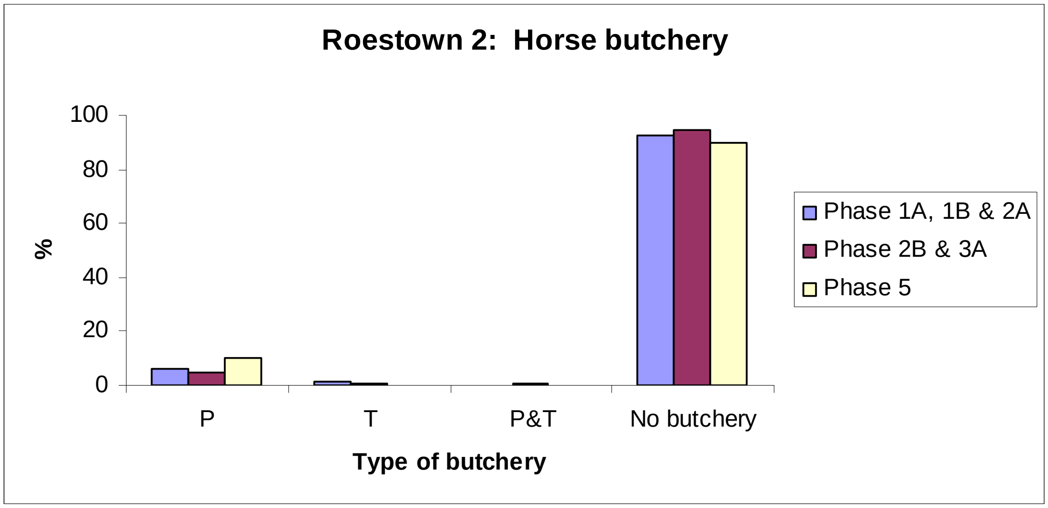


Figure 46 Roestown 2: Butchery recorded for horse specimens.
P = chopped, T = cut, P&T = chopped & cut. NOTE: For Phase 2B & 3A: T = 0.5%, P&T = 0.5%.

Butchery of dog was evident in only one case, the right femur of the F116 articulated dog already discussed (section 3.4.3). This suggests that butchery of dogs was not commonly carried out by the Roestown 2 inhabitants. A total of 137 specimens were recorded as 'non-countables' for this site and the majority of these (104 specimens) were deemed worthy of being recorded due to the presence of some form of butchery evidence.

3.6.2 Gnawing

A total of 59 specimens displayed evidence of having been gnawed, details of which are presented in Table A67. The majority of these specimens, 51 in total, showed traces of gnawing by carnivores, six had been gnawed by rodents while two specimens demonstrated both carnivorous and rodent gnawing. In an animal bone assemblage that produced 10,238 countable and 137 non-countable specimens, the proportion of material with evidence of gnawing is trivial and suggests than generally, animal carcass waste was disposed of in a manner that meant it was not left exposed for long periods during which it was subjected to the activities of carnivorous or rodent scavengers.

3.6.3 Burning

Only 16 cases of burning were observed for the Roestown 2 assemblage. Details are provided in Table A68 which demonstrates that cases of calcined, burnt/blackened and singed material were present. As outlined in Section 2.8, singed refers to specimens that have been partially burnt, calcined is the term applied to specimens observed as white in colour, sometimes with blue hue while burnt/blackened specimens are those found to be 90-100% burnt. Cattle, sheep/goat and pig specimens demonstrated evidence of burning but such a small collection of burnt elements prevents identification of any cooking or potential waste processing practices.

3.6.4 Pathology/Injury

A total of 25 cases displaying palaeopathological evidence are detailed in Table A69. Degenerative joint disease is the possible diagnosis assigned in 17 of the 25 cases. These include nine cattle, four horse, three dog specimens and one cervical vertebra of either cattle or horse. As the tooth and mandible wear data has indicated a prevalence of older cattle, it is unsurprising that the most commonly observed palaeopathological condition is degenerative joint disease. This was observed for two pelvis, two femur, two metatarsal and one first phalanx specimens. Two mandible specimens displayed pitting on the condyle surface, this is a degenerative characteristic associated with older animals due to the actions of cud chewing. A cattle or horse cervical vertebra displayed symptoms of possible osteoarthritis (Plate 3) while it was possible to confirm two other cattle specimens, a femur (Plate 4) and a first phalanx, as indicative of osteoarthritis as exostosis, osteophytes and eburnation were all evident. The cattle specimens are therefore primarily suffering from conditions that are due to their old age and in some cases, the heavy work carried out during their lifetime.

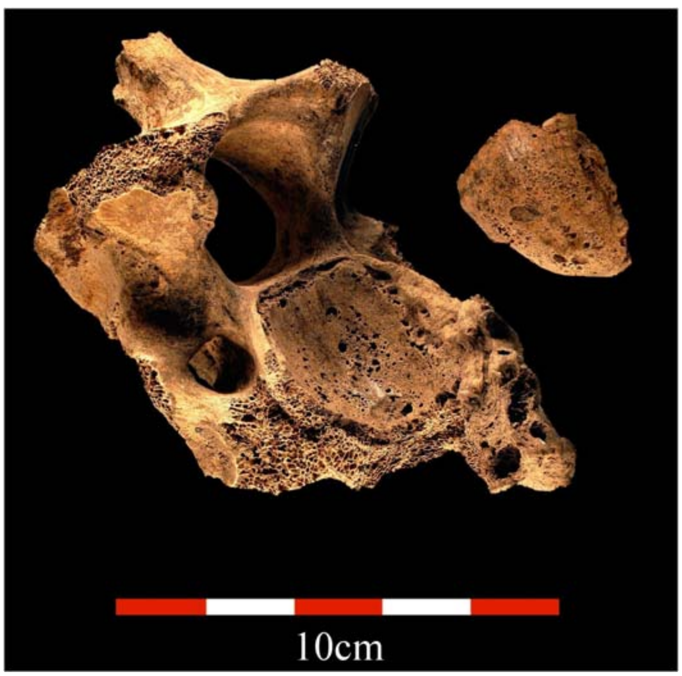


Plate 3 Roestown 2: Cervical vertebra displaying possible osteoarthritis.

Plate 4 Roestown 2: Cattle proximal femur displaying osteoarthritis.

Plate 5a Roestown 2: Cattle metacarpal displaying periostitis (remodelling with thin plaques of woven bone) and depression indicative of an over-lying soft-tissue tumour.

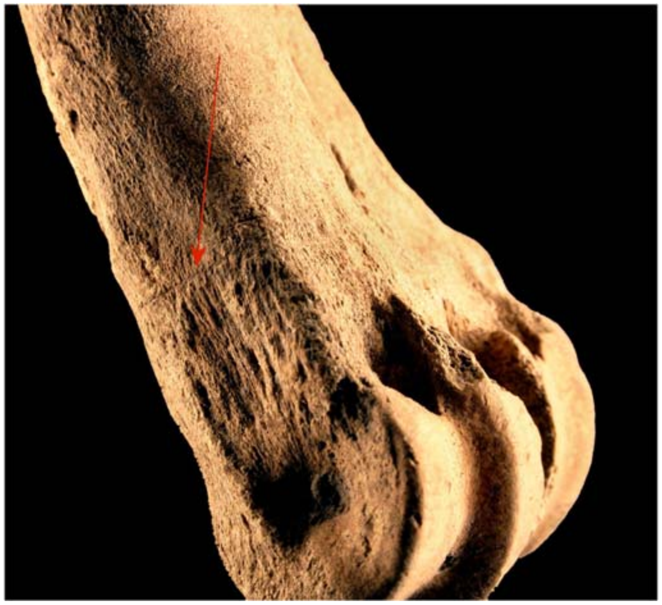


Plate 5b Roestown 2: Cattle metatarsal displaying cutmarks evident of skinning.

Infection was detected in a number of cattle specimens including a mandible with evidence for the existence of a sinus on the condyle. Ante-mortem tooth loss in the area of the dP4/P4 was observed for another cattle mandible as well as alveolur bone resorption which may indicate infection in this specimen. Infection and periostitis (remodelling of bone) were observed for a cattle metacarpal that had a depression visible on the shaft of the bone suggesting the possible existence of an overlying tumour (Plate 5a). Evidence of skinning was also observed on this specimen with marks evident towards the distal end of the metacarpal shaft (Plate 5b). One cattle metatarsal (non-countable specimen) showed evidence of trauma or trauma and infection. Excessive bone growth indicative of exostosis was present on the posterior surface of a shaft fragment. It appears to be the result of a fracturing of the bone that later healed.

A congenital condition or developmental defect was observed for a sheep/goat specimen where two complete second phalanges were fused together as a single unit (Plate 6). This was the only sheep/goat specimen found to display palaeopathological evidence. One pig mandible, confirmed as female, demonstrated infection as the area of the first and second molars was severely distorted with evidence also for alveolur bone recession (Plate 7). Out of a total of five horse specimens with palaepathological evidence, four were diagnosed as degenerative joint disease. A metacarpal, third carpal and two metatarsals all displayed exostosis that suggest a disease known as spavin. This condition usually affects the tarsal bones of horses or carpal bones of cattle limiting mobility (Baker and Brothwell 1980, 117-118). There are a range of causes that may result in this condition some of which include hereditary factors, faulty shoeing and heavy working (*Ibid*, 118). Therefore, as is suggested for cattle, the palaeopathological conditions observed for horses may largely relate to the working lives they endured at Roestown 2. One case of possible trauma or infection was observed in a horse first phalanx (Plate 8). The distal end of the specimen displayed excessive bone growth however it was not typical of exostosis. Some form of trauma or infection may have caused the condition. Four specimens from the articulated dog F116 had palaeopathological evidence and have already been discussed in section 3.4.2.

Plate 6 Roestown 2: Sheep/goat second phalanges, two specimens fused together indicative of congenital disease.

Plate 7 Roestown 2: Female pig mandible displaying infection and alveolur bone recession.

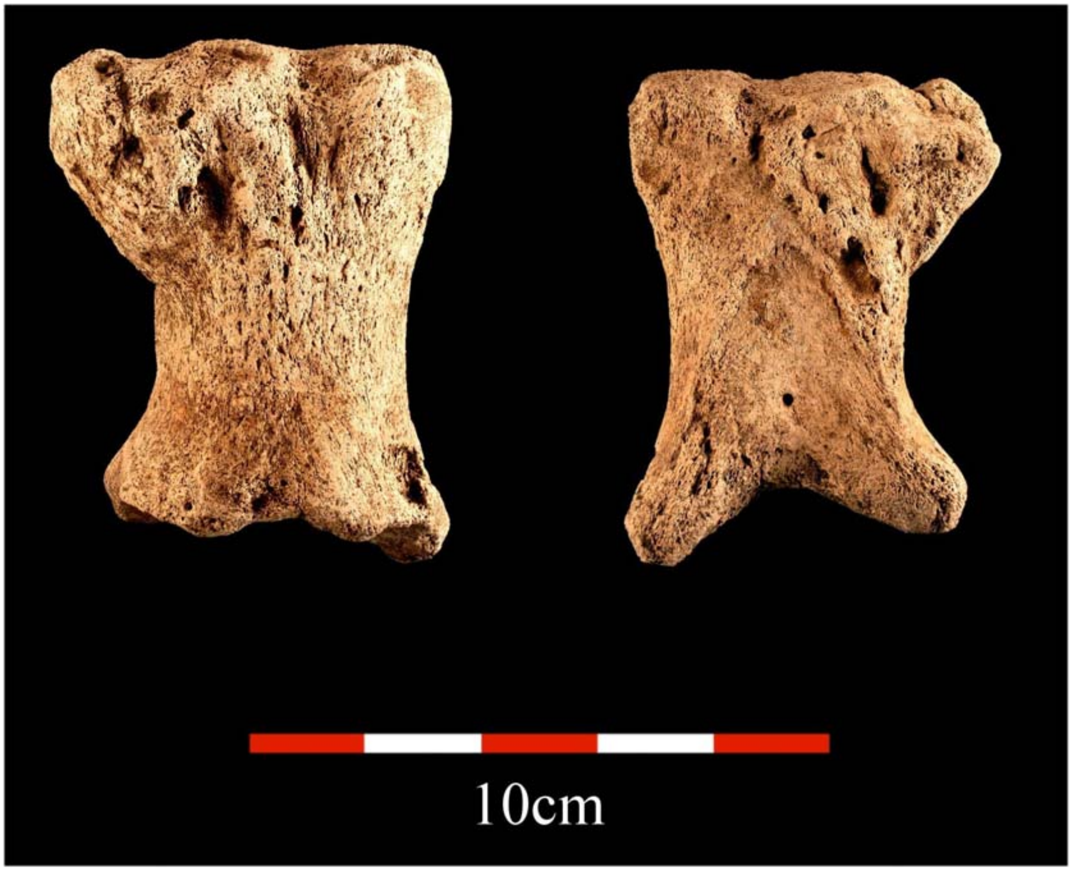


Plate 8 Roestown 2: Horse first phalange with excessive bone growth suggestive of trauma/infection.

Table A70 details dental observations and anomalies recorded for the Roestown 2 assemblage. During inspection and recording of the animal bone assemblage any non-metric genetic traits such as congenital absence of the mandibular P1 in pigs or the mandibular P2 in cattle and sheep/goat were noted. In the case of three pig mandibles and five cattle mandibles these respective absences were observed. Malocclusion or irregular wear was evident for seven cattle teeth while for one first or second mandibular molar one cusp was out of correct alignment. A particularly interesting specimen was a third molar in situ in its mandible. It was from Phase 2B and has the most severely worn occlusal surface the current author has witnessed (Plate 9). The animal that this specimen belonged to would have been well over the age of 50 months and reflects the presence of old cattle that is so profuse in the age-slaughter patterns of Roestown 2. Ante-mortem tooth loss was observed for one sheep/goat and one dog specimen. In four instances for sheep/goat, loose teeth or mandible specimens suggest that the correct alignment of the tooth row was impinged upon by adjacent teeth. Malocclusion was observed for a pig mandibular third molar while the polished nature of the occlusal surface of another specimen is most likely due to taphonomic factors. A dental anomaly was recorded for one maxillary horse tooth, either a P3, P4, M1 or M2. This specimen had two bulbous additions visible on the buccal aspect of the tooth, the cause of this was not determined.

Plate 9 Roestown 2: Cattle mandible containing surviving part of third molar with extremely worn occlusal surface.

Two other observations of note are listed in Table A71. A horse metatarsal displayed some irregular pitting at different areas along the length of its shaft but this is believed to be due to taphonomic factors rather than any palaepathology. One specimen from a four-horned or polycerate sheep was identified from Roestown 2. Only the stump of the smaller horncore is present and it is diminutive in comparison to a regular horncore (Plate 10). Specimens of this type were not a common finding on contemporary M3 sites. One specimen was recorded from Collierstown 1 (Foster 2009c, 15) while a different type of specimen was observed at Dowdstown 2 (Coles 2009, 21-22). The latter was a split horncore rather than a true polycerate specimen so that it is a single horncore at its base but split into two horncores approximately half-way along its surviving length (*Ibid*). Putelat points out that the spread of polycerate sheep through the Baltic, North Sea, British Isles and Iceland reflects the areas of activity of Nordic sailors and may have been the result of trading or migration of people before the Vikings expanded into these areas (2006). In his study of the Early Medieval Irish documentary sources, Kelly did not come across any references to four-horned sheep (2000, 73). Archaeological evidence from Early Medieval Moynagh suggests that such breeds were reasonably common, at least at this site where 12% of sheep skulls were of the four-horned type (*Ibid*, 74). One of the main uses of this raw material appears to have been for comb making and four-horned animals would obviously have provided a greater quantity of horn (*Ibid*). Contrary to this, the M3 assemblage doesn't indicate a significant presence of four- horned breeds

Plate 10 Roestown 2: Sheep horncore indicative of a four-horned sheep, only the diminutive second horncore survives in situ.

4. Further Discussion

In terms of species distribution, Roestown 2 has shown a high level of consistency with other contemporary sites with cattle, sheep/goat and pig accounting for the vast majority of assemblages. These three species account for 72.4% of the 11th century Phase 4 assemblage while for all other phases they comprise a minimum of 80.3%. The distribution for cattle is most consistent amongst the compared sites while there is greater variance between the proportions of sheep/goat or pig. As is usually found for material of this date, the other commonly present species of horse, dog, cat and red deer occur in much smaller amounts than the three main domesticates and account for less than 10% of MNI in most instances. Mouse was the only other species represented in the animal bone assemblage and its seemingly high representation in F507 (12.5%) is exaggerated by the low MNI for that feature. When the similar species of sheep and goat are considered, it is usual for Early Medieval assemblages to be dominated by sheep with a much lesser occurrence of goat. This trend is borne out at Roestown 2. Where it was possible to determine specimens as one or other species, all were confirmed as sheep and no goat specimens were observed. Therefore, while referring to sheep/goat throughout the report, it is assumed that the majority of animals at Roestown 2 were sheep.

Although only present in very small amounts, unfused proximal metapodials of cattle and pig were recorded which confirms that breeding took place at Roestown 2. An unfused metapodial was recorded for sheep/goat but this was from the unphased material. The range of body parts represented for the three main domesticates suggests that butchery of animals and consumption of their meat took place at the site. There are no obvious patterns of certain skeletal parts being noticeably absent or present in exceptionally large numbers or concentrations that might be expected if specific joints of meat were being imported or exported by the inhabitants. No specialised dumps of bones were detected and those of the various species were found mixed together. Therefore the Roestown 2 assemblage is characteristic of domestic refuse.

As already discussed (section 3.2.1) an unusually high percentage of older cattle was identified for Knowth Stage 9 and was interpreted as a consequence of the dairy cow no longer being the main unit of wealth (McCormick and Murray 2007, 57). As this age distribution was seen to be more in line with that of urban Fishamble Street, it was concluded that by the 10^{th} to 11^{th} century, Knowth was possibly being supplied with some of its beef from outside sources therefore accounting for a higher than normal level of older cattle (*Ibid*). The dominance of older cattle is much greater and earlier at Roestown 2 as it occurs right from the beginning of settlement in the mid sixth century. Therefore it is being practised here while the dairy cow is still firmly established as the primary unit of wealth and before the establishment of Viking urban settlement. Consequently the dominance of older cattle at Roestown 2 has to be the result of other circumstances.

The age-slaughter patterns for cattle and sheep/goat at Roestown 2 have clearly established that old animals are most prevalent from the mid sixth to the fourteenth century. The high percentages of older animals are in contrast to livestock management patterns previously determined for Early Medieval assemblages of seventh to eleventh century date such as Knowth, Moynagh or Deer Park Farms. Considering that the Roestown 2 patterns are consistent for most of the Early Medieval period, it seems reasonable to conclude that they reflect a genuine animal husbandry practice that up until now has not been commonly demonstrated through animal bone assemblages. As the prevalence for greater proportions of older cattle and to a lesser extent older sheep has also been observed for other recently analysed collections from the M3, it confirms that the Roestown 2 patterns are not unique. Rather, the dominance of older cattle and sheep, as demonstrated at Dowdstown 2 (Coles 2009), Castlefarm 1 (Foster 2009a) and Boyerstown 3 (Foster 2009b) can now be seen as a more common occurrence than previously thought in the Early Medieval period. While these similar trends have been identified at different sites, the propensity for slaughtering of older animals is more pronounced at Roestown 2. This may simply be due to a deliberate livestock management practice where cattle and sheep/goat were predominately slaughtered older than the age of four years after their optimum use for dairying, traction and breeding in the case of cattle or wool production and breeding in the case of sheep/goat. Alternatively a variety of other factors or circumstances may have had an influence. In attempting to determine these, other archaeological evidence as well as the historical setting for Roestown 2 must be contemplated.

Late sixth to early seventh century Roestown 2 is characterised by a secular high status ringfort with associated enclosures and field systems and the practice of metalworking and other crafts (O'Hara 2008, 63). The crafts evident include weaving and textile production, bone working and leather working (*Ibid*, 49). Based on the relatively small number of artefacts retrieved, O'Hara has concluded that these crafts appear to have been carried out on a small-scale basis and were not central to the site's economy (*Ibid*, 63). It is possible that the dominance of older cattle and sheep/goat may be partially due to their use as raw materials by the craft workers of Roestown 2. Cattle and sheep/goat that had surpassed their use for dairying, traction or reproduction may have been slaughtered for exploitation of their hides, horns and possibly wool. This however cannot solely explain the dominance of old animals. If exploitation of raw materials such as hides and horns were a priority, one would expect to find more evidence of cutmarks to areas such as the frontal skull, base of horncores and extremities such as toe bones. The butchery evidence has shown there is no major concentration of such evidence so while the presence of older animals may be partially due to slaughtering for hides and horns, it does not provide a full explanation. If sheep were primarily being exploited for wool, their age distribution contradicts the theory applied to Knowth that sheep were slaughtered at the earlier age range of 12-28 months in order to provide a softer, less oily fleece (McCormick and Murray 2007, 59). Some of the artefacts retrieved during excavation at Roestown 2 provided direct evidence for the production of textiles including spindle whorls, a bone needle holder and copper alloy or iron needles (O'Hara 2008, 50). One particularly interesting find was a possible knitting needle which consisted of a curved antler object that had a notch cut into one end (*ibid*). The excavation director also suggests that some of the metal artefacts provisionally identified as knives and blades may be fragments of broken shears (*Ibid*). This evidence strengthens the likelihood that at least some of the sheep at Roestown 2 were exploited for wool in spite of their older age and possibly coarser fleece. The documentary sources make reference to a type of wool called *cintecal* which was too rough for the production of clothing but could be used for making rugs (Kelly 2000, 71). A range of other products such as bed-clothing and outer-clothing could be made from sheepskins with the wool left in place (*Ibid*). It seems likely that such items could be satisfactorily produced from the skins and fleeces of older animals and would not have necessitated the finer quality raw material that younger sheep would have provided. Some of the older sheep evident at Roestown 2 may be animals who were exploited for their fleece to be used for manufacturing of products that did not require finer quality fleece but could satisfactorily make use of coarser material for their production.

Another possible factor that may have influenced the age distribution pattern is the potential association between Roestown 2 and the nearby royal site of Lagore. The excavation director points out that Roestown 2 has to be interpreted in terms of its proximity to Lagore and the similarities in material culture of the two sites (O'Hara pers. comm.). Lagore is located less than 2km to the southeast and it would seem that the earliest phases of both sites originated as settlements approximately at the same time (O'Hara 2008, 64). Based on this it is suggested that Roestown 2 may have been intentionally located and developed in relation to the royal site of Lagore (*Ibid*). It is proposed that Roestown 2 and other contemporary sites may have had the role of providing intermediates between clients and king, possibly acting as centres to receive tribute and food rent from clients as well as forming a protective ring around the seat of royal power (*Ibid*). If this was the case, then it may provide further explanation for the strong presence of older cattle at Roestown 2 as older animals may have been deliberately selected to be sent as the tribute due from clients, thereby resulting in a dominance of older cattle and sheep/goat obtained from outside sources. Documentary sources inform that the food rent paid to a lord by clients would include "A wether for a feast" (Kelly 2000, 72) i.e. castrate sheep. So it is possible that, as for cattle, a large portion of the sheep at Roestown 2 came from outside sources and therefore the dominance of older animals may be partly due to clients paying tribute with older animals, rather than a livestock management system that is under the exclusive control of the site's inhabitants.

While the development of Roestown 2 and its surrounding landscape changes a great deal from it origins up to the eleventh century, the age distributions for cattle and sheep/goat remain constant. It would therefore seem that whatever political, social or religious changes may have impacted on the Roestown 2 inhabitants over half a millennium, dramatic change is not reflected at any stage in the management and exploitation of livestock. Some significant changes occurred during the second phase of activity with the appearance of cereal-drying kilns and the souterrain (O'Hara 2008, 64). The kilns are located at the centre of the Area B settlement and are interpreted as representing significant change in the site's economy (*Ibid*). O'Hara suggests a change in ownership at this time with Roestown 2 being acquired by either the monastic site of Trevet or Dunshaughlin, both of which are located in proximity and have abbot lists from the eighth century (*Ibid*). He also states that, "Both Trevet and Dunshaughlin were most likely part of the paruchia of Armagh, which was among the richest monasteries on the island and in the ninth century appointed stewards (maer) to collect revenues from holdings in Brega," (*Ibid*, 65). This is particularly interesting as it raises the possibility that Roestown 2, already potentially a centre at which tribute was deposited in its earlier secular phase, may have maintained a similar function into the ninth century when revenue due to the Church may have been gathered here from the inhabitants of South Brega. Once again, the circumstances seem to exist where it is possible that the animal bone assemblage does not solely represent the livestock of the Roestown 2 inhabitants. It may incorporate animals from outside sources that were delivered to this location as revenue due to an associated church.

None of these explanations can be proven to be the overriding factor determining the age-slaughter patterns evident at Roestown 2. It is likely that a combination of influences are at play including some deposition of tribute or revenue, exploitation of animals as raw materials for craftwork and textile production and a deliberately implemented practice where a much greater proportion of livestock were kept alive to older ages than previously demonstrated by Early Medieval collections. The patterns evident at Roestown 2 are significant because they provide evidence for alternative trends to those already identified for the Early Medieval period in Ireland. While the dominance of older cattle and sheep/goat is much more pronounced here it is not unique as various phases from some of the other large M3 assemblages indicate similar levels of old animals. This suggests that the animal husbandry practices of Roestown 2 are more widespread.

When the age-slaughter patterns for pig were examined, they were found to be much more consistent with those already determined for contemporary sites like Knowth, Moynagh and Deer Park Farms. The typical practice previously observed is one where slaughter most commonly occurs in animals of 17-23 months old. This was the finding for Roestown 2 from the mid sixth to the eighth century (later datasets were too small to facilitate reliable patterns). One could argue that as pigs were a 'one-purpose' animal i.e. a source of meat and lard, there is less likelihood for a lot of variation in slaughter patterns. This is the outcome for Roestown 2 where the exploitation of pigs mirrors that previously established for the Early Medieval period. However, when the recently constructed slaughter patterns for contemporary M3 sites are compared, a greater variance in utilisation of pigs is evident. Apart from Roestown 2, the only other dataset where peak slaughter occurs between 17-23 months is for Dowdstown 2 Phase 3. Peak slaughter of animals aged 12-17 months, 7-12 months and less than 7 months have been observed suggesting a greater variation in management of pig herds than previously demonstrated.

In summary, the age-slaughter patterns established for Roestown 2 and their comparison with contemporary assemblages from the M3 indicate that there is greater variety in animal husbandry practices of the Early Medieval period than it had been possible to determine prior to analysis of these important collections.

Ageing data for the other species present at Roestown 2 was found to be consistent with established patterns. Mature specimens were most common for horse, dog and cat. As the main use of horses was as working animals for transport and traction it is usual for their bone remains to be mature as they would have been kept until beyond use for these duties. The dogs of Roestown 2 may have been used for guarding, herding, hunting or kept as pets. Only one element, a distal femur, was found to have cutmarks so it is unlikely that they were exploited to any extent for their pelts or flesh. Cats were not exploited in this manner either as no butchery evidence was observed. Animals younger than 8.5 months were evident although mature specimens were more common. It is likely that their chief role was as pets and possibly in pest control.

The biometrical data recorded for Roestown 2 facilitated comparison of the size of animals with contemporary evidence. Some interesting findings were made, particularly in relation to horse and dog. The estimated withers heights calculated for cattle ranged from 105-123cm and compared similarly to stature for cattle from contemporary Knowth. Those for sheep ranged from 49-61cm and the mean estimated shoulder height values from Roestown 2 were closer to the sheep of Lagore and Moynagh than Knowth where they were of slightly smaller height. As has been commonly observed for sheep of the Early Medieval period in Ireland, there was no indication of improvements in sheep breeding at Roestown 2. Improvement is characteristic of sheep in Britain in the Romano-British and Anglo-Saxon periods and has been interpreted as the result of adopting superior husbandry practice and/or the introduction of improved breeds. Until now, no such improvements have been observed in sheep of the Early Medieval period in Ireland and Roestown 2 conforms to this as the animals there are more in line with the pre-improvement sheep of the British Iron Age. Biometrical data for pig was more limited than for the other two main domesticates. This is a common occurrence due to the tendency for pigs to be slaughtered before they are fully developed hence less fully fused bones appear in the archaeological assemblages for analysis. A single estimated shoulder height of 69.2cm was recorded which is larger than one observed for Dowdstown 2. There a Phase 3 specimen produced an estimated shoulder height of 67.7cm (Coles 2009, 31). Comparison with Knowth was not possible as no pig specimen facilitated estimation of shoulder heights. Five specimens of horse of mid sixth to eighth century date produced estimated withers heights ranging from 128-144cm with a mean value of approximately 135cm. Peak shoulder height for Early Medieval horses has been found to range from 130-134cm while it has also been observed that any horses of stature greater than 137cm have come from royal sites including Lagore and Knowth (McCormick 2007, 95). Two of the five Roestown 2 specimens are indicative of animals greater than 137cm with one being considerably larger at 144cm. Roestown 2 has been interpreted as a high status site, especially in its earlier phases (O'Hara 20008, 63) and the two horses over 137cm in estimated withers height are another form of evidence to support this suggestion. Two animals, one of fifth to seventh century date and one of seventh to tenth century date provided estimated shoulder heights of 142.3cm and 148.7cm respectively for Dowdstown 2 (Coles 2009, 19 & 31) suggesting this site also reflects some high status characteristics.

The biometrical data for dogs produced some interesting findings as both isolated specimens and the remains of three articulated skeletons allowed calculations of estimated shoulder height. In contrast to some of the horse data that suggested high status or royal site characteristics, no lapdogs were evident at Roestown 2, something that might have been expected, as they were associated with wealthy people of high status or royalty. The majority of stature calculations fit comfortably within one or other of the two distinct dog groups that have been identified for Early Medieval dogs in Ireland based on previous research. The smaller sized group ranges from 26-40cm while the larger sized group ranges from 48-72cm (McCormick and Murray 2007, 98-99 and McCormick 1991a, 9). Interestingly the F418 articulated dog produced a number of estimated shoulder height calculations that are outside of the two previously defined categories. Of four complete longbone specimens two provided estimated shoulder heights above the limit of the smaller sized group with values of 42.3cm (humerus) and 42.6cm (femur). The mean estimated shoulder height for F418 was 40.5cm, which is just marginally above the maximum 40cm of the small sized group. The F418 dog was the only example from contemporary M3 sites that produced estimated shoulder height values outside of the previously established separate dog groups of the period. This may signify that the stature of Early Medieval dogs was of greater range than previously thought. It will be interesting to see if more examples of dogs outside of the currently existing groups come to light in the future. Some of the biometrical data recorded for cats was compared with contemporary measurements. This led to the conclusion that in eleventh century Roestown 2 there was no indication that the decline in size of cats observed for some sites in the later part of the Early Medieval period (such as Knowth Stage 10) is underway. This is based on the fact that the Roestown 2 femur specimens were noticeably larger than the Knowth femur which is itself significantly smaller than most of the other comparative specimens. Two tibia specimens from eleventh century Roestown 2 (Phase 4) were most similar to a specimen from Lagore but were also not far removed from some of the tenth to eleventh century Dublin examples. A tibia of thirteenth to fourteenth century date was found to be significantly smaller and it is possible that by this time, which is contemporary with Knowth Stage 10, the decline in quality of life for cats is happening at Roestown 2 as well as Knowth.

Considering the size of the Roestown 2 assemblage there was very little evidence of butchery visible on the animal bone remains. For cattle, sheep/goat and pig over 90%, 97% and 96% of the countable specimens respectively did not display any traces of butchery. At least 90% of countable specimens of horse similarly showed no signs of butchery while a single specimen of dog displayed butchery. That most commonly observed for cattle was chopmarks, particularly for the larger meat-bearing bones which is likely to have occurred during dismemberment of carcasses. Metapodials were also chopped for the extraction of marrow. In comparison to the amount of evidence for chopping, that for cutmarks was very small. A cutmark on a horncore specimen may have resulted from removal of the horn sheath for craftworking while on a skull may be due to skinning activity.

Like cattle, the most common occurrence on sheep/goat specimens was evidence of chopping with a minor amount of skinning recorded. For pig a minor amount of chopmarks were observed but the majority of specimens did not display butchery evidence. Occasional butchery and skinning of horses is reflected where some longbones had been chopped through and three examples of cutmarks were detected. This could indicate consumption, albeit occasional, of horse by the people of Roestown 2 or perhaps use of horsemeat for feeding dogs. A single case of dog butchery was noted where a femur from the F116 articulated dog displayed two cutmarks. Therefore it may be concluded that this was not common practice. 76% of the specimens recorded as non-countables were recorded due to evidence of butchery, as for the main assemblage the butchery evidence for this group was dominated by chopping evidence with a lesser amount of cutmarks present.

Some evidence of gnawing, both by carnivores and rodents, was observed although it was such a small amount that it implies the bone debris resulting from butchery, food or craftworking waste was not left exposed over lengthy periods of time at Roestown 2. Rather, it would appear that such refuse was generally discarded and covered up efficiently. Evidence of burning was also quite meagre with a total of 16 cases recorded including calcined, burnt/blackened and singed remains. All three of the main domesticates provided evidence of having been burnt. The state of the remains may have been the result of roasting of meat or burning of waste material. With such a small amount of burning evidence any systematic patterns of either activity cannot be reliably asserted.

A number of palaeopathologies and dental anomalies were observed amongst the Roestown 2 assemblage. Out of a total of 25 palaeopathologies 17 were classified as degenerative joint disease for cattle, horse and dog. This complements the tooth and mandible wear data which confirmed a predominance of older cattle. The pathologies evident on cattle specimens are mainly conditions resulting from old age combined in some cases with heavy work. Infection and a case of trauma or trauma and infection were also evident for cattle but degenerative joint disease was the most common occurrence. Only one palaeopathology was observed for sheep/goat and this was a congenital condition where two second phalanges had fused together. A single specimen representing a four-horned sheep was also present for Roestown 2. One case of severe infection was detected for pig in a female mandible specimen the shape of which was acutely distorted in the area of the first two molars. As was the case for cattle, horse specimens with pathologies were mainly diagnosed as degenerative joint disease. Again this suggests they were kept as working animals until they were too old to be used anymore in this manner. The diseases they suffered also appear to have been directly related to the manner in which they were utilised. Four specimens of dog, all from the articulated skeleton F116, were the only examples of palaeopathology for this species. The deformity and excessive bone growth of a humerus was caused by some form of trauma and resulting infection. Three first phalanges of this animal suffered symptoms of degenerative joint disease. The dental anomalies observed for various species ranged from irregular tooth wear, congenital absence of first premolar in pigs and second premolar in cattle to cases of ante-mortem tooth loss. In four cases for sheep/goat teeth were impinged upon by those adjacent while an interesting third molar in situ in a cattle mandible proved to be the most worn specimen the current author has ever observed and represented an animal well beyond the age of 50 months.

When sex determination was considered for cattle metacarpals, females were more plentiful than males although there were higher proportions of males represented than has been found for other contemporary assemblages. It is possible that this finding provides further evidence that the livestock distribution found at Roestown 2 is not representative of it alone but may be partially due to external influences with higher percentages of older males being the result of animals coming to Roestown 2 from outside sources. Based on the determination of sex for pig canine teeth, there seems to have been a dominance of male animals although taphonomic factors may be somewhat responsible for this outcome given that male specimens are larger and potentially more durable than female specimens therefore more of them may have survived into the archaeological record.

Overall, one of the most striking outcomes from analysis of the Roestown 2 assemblage is the predominance of older cattle and sheep/goat which prevails from the mid sixth to the fourteenth century. Such large proportions of older animals are contrary to previously established patterns for the Early Medieval period. The trends identified at Roestown 2 are reflected in some phases for other contemporary M3 assemblages that have also recently been analysed. It would therefore seem reasonable to conclude that Roestown 2 and some phases of the other M3 assemblages discussed in this report provide evidence for a more varied animal husbandry practice than previous data has indicated.

5. Conclusion

The Roestown 2 animal bone assemblage represents an extensive dataset from the Early Medieval period that in some ways compares similarly to findings previously established for this period through analysis of contemporary large collections of animal bone. Contrary to this some of the findings for Roestown 2 are quite different to those already in existence. Examples of this include the unprecedented prevalence of large proportions of older cattle and sheep/goat or the possible indications that dogs of the Early Medieval period may have been of more wide-ranging sizes than previous evidence has demonstrated. The broader material culture and archaeological evidence of Roestown 2 has indicated a site of high status with possible strong links to the adjacent royal site of Lagore and to one or other of the ecclesiastical centres at Dunshaughlin or Trevet (O’Hara 2008). It has been suggested here that perhaps these relationships are at least partially influential factors in the age-slaughter patterns for cattle and sheep/goat which are atypical of those already commonly established for animal bone assemblages of the period. While some of the Roestown 2 findings are in contrast, they are not unique as similar trends in livestock management and exploitation have been identified for other recently excavated sites such as Dowdstown 2 (Coles 2009), Castlefarm 1 (Foster 2009a) and Boyerstown 3 (Foster 2009b). This suggests that the M3 collections have provided the opportunity to detect a different and genuine variation in livestock utilisation during the Early Medieval period than has been evident through analysis of assemblages up until now.

6. Recommendations

The significance of the Roestown 2 animal bone assemblage must not be understated. At the time of writing it is the largest assemblage retrieved from Contracts 1, 2, 3 or 5 of the M3 Clonee to North of Kells Road Scheme. It is an assemblage of good quality preservation that has provided a large amount of ageing and biometrical data particularly dating from the mid sixth to eleventh centuries. It is an important collection not only in its own right but also as a significant comparative source for future research. It is the current author's opinion that the majority of the Roestown 2 collection of countable and non-countable specimens discussed here should be strongly considered for permanent storage. Material from Phase 1A, 1B, 2A, 2B, 3A, 3B, 4, 5 and F507 should be prioritised while that from Phase 6 (Post-Medieval to Modern), Unphased Area A and Unphased Area B may be viewed as of lesser significance, due to its late date or unphased nature, and therefore not requiring curation. The ultimate decision on permanent storage of the assemblage will be made by the National Museum of Ireland following dialogue with the excavation licence holder. Until then it is recommended that the material is stored in National Museum approved low-acid box (as used by ACS Ltd.) and left ready for transfer to NMI along with the other significant mammalian bone remains retrieved from archaeological excavation along the route of the M3 Clonee to North of Kells Road Scheme.

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Appendix 1
Tables A1-A72

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Total
Horncore	11	5					16
Cranium	17	1	1				19
Loose teeth	127	52	14	15	3		211
Loose lower incisor	20	2	13				35
Loose lower canine			10				10
Loose lower premolar	31	10	3				44
Loose lower P/M				1			1
Loose lower M1/2	61	32	3				96
Loose lower M3	15	22	1	1			39
Mandible	63	21	17	2	1		104
Atlas	2	1	1		1		5
Axis	4	3					7
Scapula	41	15	5	2			63
Humerus	31	18	7	2	2		60
Radius	49	23	1	4	4		81
Ulna	5	2			2		9
Metacarpal	33	16.5	1.5				51
C3	3						3
Pelvis	32	10	8	1	2		53
Femur	27	10	4	1	3	1	46
Tibia	38	17	6	3	3		67
Astragalus	22	4	5	1			32
Calcaneum	18	4			3		25
Metatarsal	31.5	11	1.5	2	4		50
Metapodial	7.5	5.5		1	2	1	17
Scafocuboid	6						6
Phalanx 1	24	7	1	2			34
Phalanx 2	20			2			22
Phalanx 3	8		1				9
NISP	747	292	104	40	30	2	1215
%NISP	61.5	24.0	8.6	3.3	2.5	0.2	
MNI	23	12	8	2	3	1	49
%MNI	46.9	24.5	16.3	4.1	6.1	2.0	

[11]Table A1 Roestown 2: Phase 1A Number of identifiable specimens (NISP) by element and species.

[11] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 1230 but the NISP value was 1215).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Red deer	Total
Horncore	6						6
Cranium	21	1	4		5		31
Loose teeth	90	25	12	8	5		140
Loose lower incisor	13	1	8				22
Loose lower canine			7		1		8
Loose lower premolar	16	4	5		1		26
Loose lower M1/2	25	14	6		1		46
Loose lower M3	5	5	1				11
Mandible	48	20	12		7		87
Atlas	2						2
Axis	4						4
Scapula	18	8	15	1	2		44
Humerus	23	16	4	2	3		48
Radius	21	9	4	1	3	1	39
Ulna	6	1	4		2		13
Metacarpal	22	7	0.5	4	8		41.5
C3	3			2			5
Pelvis	19	12	11	2	3		47
Femur	25	4	7		2		38
Tibia	25	19	5	3	1		53
Astragalus	14	2	2				18
Calcaneum	20	3	1	1			25
Metatarsal	16	10	1		1		28
Metapodial	2.5	2.5	1	3	7		16
Scafocuboid	7				1		8
Phalanx 1	25	8	1	1	7		42
Phalanx 2	7	2			3		12
Phalanx 3	3	1			3		7
NISP	486.5	174.5	111.5	28	66	1	867.5
%NISP	56.1	20.1	12.9	3.2	7.6	0.1	
MNI	13	11	10	2	4	1	41
%MNI	31.7	26.8	24.4	4.9	9.8	2.4	

[12]Table A2 Roestown 2: Phase 1B Number of identifiable specimens (NISP) by element and species.

Note: the dog M1/2 is an M2.

[12] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.

For calculation of MNI;

Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.

In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.

In the case of pig MC/MT/MP were counted as 0.5 units.

(This explains why the total number of countable elements was 875 but the NISP value was 867.5).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Total
Horncore	22	12					34
Cranium	36	6	16	1	4		63
Loose teeth	223	82	66	22	12		405
Loose lower incisor	41	2	59				102
Loose lower canine			34				34
Loose lower premolar	69	16	8	4			97
Loose lower P/M				3			3
Loose lower M1/2	83	59	7		1		150
Loose lower M3	17	20	3				40
Mandible	92	55	55		3	2	207
Atlas	8	1	2	1	1		13
Axis	3	3			1		7
Scapula	53	16	32	4	3		108
Humerus	60	29	23	5	3		120
Radius	62	28	20	2	2		114
Ulna	10	3	9		2		24
Metacarpal	44.5	18	6.5	4	10		83
C3	3						3
Pelvis	68	23	26	5	3		125
Femur	58	11	17	4	2		92
Patella				1			1
Tibia	66	35	18	2	1		122
Astragalus	36	5	6	2	2		51
Calcaneum	33	3	18	1	3		58
Metatarsal	58.5	14	5	4	9		90.5
Metapodial	9	4.5	6.5	6			26
Scafocuboid	16			2	1		19
Phalanx 1	54	13	4	4	13		88
Phalanx 2	17	2	5	3	5		32
Phalanx 3	15	1	4	1	1		22
NISP	1257	461.5	450	81	82	2	2333.5
%NISP	53.9	19.8	19.3	3.5	3.5	0.1	
MNI	29	18	23	4	3	1	78
%MNI	37.2	23.1	29.5	5.1	3.8	1.3	

[13]Table A3 Roestown 2: Phase 2A Number of identifiable specimens (NISP) by element and species.

Note: the dog M1/2 is an M1.

[13] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.

For calculation of MNI;

Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.

In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.

In the case of pig MC/MT/MP were counted as 0.5 units.

(This explains why the total number of countable elements was 2360 but the NISP value was 2333.5).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Red deer	Total
Antler							1	1
Horncore	11	6						17
Cranium	19	1	6					26
Loose teeth	325	113	68	29	7	1		543
Loose lower incisor	51	5	54	1				111
Loose lower canine			39					39
Loose lower premolar	93	22	17	4				136
Loose lower P/M				8				8
Loose lower M1/2	143	98	12	2				255
Loose lower M3	24	27	2	3				56
Mandible	82	24	21	1	3			131
Atlas	12		1	1				14
Axis	8	2		1				11
Scapula	47	10	22	4				83
Humerus	39	21	11	2	1	1		75
Radius	79	19	12	13	1			124
Ulna	8	3	3		1	1		16
Metacarpal	56	15	6.5	2	1			80.5
C3	6							6
Pelvis	48	23	22	5				98
Femur	37	19	7	2	1			66
Patella				1				1
Tibia	61	33	14	7	1	1		117
Astragalus	41	7	4	2				54
Calcaneum	49	2	10	1	1			63
Metatarsal	51.5	15	2	2				70.5
Metapodial	12	5	2.5	7				26.5
Scafocuboid	13	1						14
Phalanx 1	68	11	8	3				90
Phalanx 2	27	7	1	1				36
Phalanx 3	15		1	3				19
NISP	1425.5	489	346	105	17	4	1	2387.5
%NISP	59.7	20.5	14.5	4.4	0.7	0.2	0.04	
MNI	36	25	20	4	2	1	1	89
%MNI	40.4	28.1	22.5	4.5	2.2	1.1	1.1	

[14]Table A4 Roestown 2: Phase 2B Number of identifiable specimens (NISP) by element and species.

[14] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 2413 but the NISP value was 2387.5).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Red deer	Total
Antler							2	2
Horncore	9	7						16
Cranium	15	5	6	1	2			29
Loose teeth	195	51	19	35	4			304
Loose lower incisor	20	1	9					30
Loose lower canine			15	3				18
Loose lower premolar	48	3	4					55
Loose lower P/M				3				3
Loose lower M1/2	79	25	4	2				110
Loose lower M3	21	11						32
Mandible	67	26	22	6	6	1		128
Atlas	8	1			3			12
Axis	8	2		1	1			12
Scapula	29	12	14	3	2			60
Humerus	38	13	6	4	1			62
Radius	47	16	5	6	5			79
Ulna	2	3	3		2			10
Metacarpal	39.5	7	2	2	8			58.5
C3	2							2
Pelvis	43	16	5	13	2			79
Femur	20	8	3	5	1			37
Tibia	41	24	6	9	4	1		85
Astragalus	41	3	1	2	1			48
Calcaneum	15	2	1	2	2			22
Metatarsal	48	8	1.5	1	8			66.5
Metapodial	5.5	2	1	3				11.5
Scafocuboid	4							4
Phalanx 1	38	4	1	8	11			62
Phalanx 2	12	1		2	5			20
Phalanx 3	16			2				18
NISP	911	251	128.5	113	68	2	2	1475.5
%NISP	61.7	17.0	8.7	7.7	4.6	0.1	0.1	
MNI	25	11	9	5	4	1	1	56
%MNI	44.6	19.6	16.1	8.9	7.1	1.8	1.8	

[15]Table A5 Roestown 2: Phase 3A Number of identifiable specimens (NISP) by element and species.

[15] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 1487 but the NISP value was 1475.5).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Total
Horncore	1					1
Cranium	1					1
Loose teeth	27	6		2	1	36
Loose lower incisor			1			1
Loose lower canine			3			3
Loose lower premolar	4	1				5
Loose lower M1/2	6	3				9
Loose lower M3	4	1				5
Mandible	6	5			1	12
Scapula			1	1		2
Humerus	2			1		3
Radius	4	1		1		6
Metacarpal	2.5	1				3.5
Pelvis	4	5		1		10
Femur	3	4				7
Tibia	1	1	1			3
Astragalus	1					1
Calcaneum	1					1
Metatarsal	2.5					2.5
Metapodial				1		1
Scafocuboid	2					2
Phalanx 1	4	1		1		6
NISP	76	29	6	8	2	121
%NISP	62.8	24.0	5.0	6.6	1.7	
MNI	4	3	2	1	1	11
%MNI	36.4	27.3	18.2	9.1	9.1	

[16]Table A6 Roestown 2: Phase 3B Number of identifiable specimens (NISP) by element and species.

[16] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 122 but the NISP value was 121).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Rodent	Total
Horncore	4	2						6
Cranium	1	2	3			2		8
Loose teeth	45	29	6	7		1		88
Loose lower incisor	5	2	10					17
Loose lower canine			8					8
Loose lower premolar	15	6	1	2				24
Loose lower P/M				1				1
Loose lower M1/2	29	25	1					55
Loose lower M3	5	4		1				10
Mandible	14	10	7	1		2		34
Atlas		1				1		2
Axis		1						1
Scapula	8	3	3			2		16
Humerus	8	4	1		1	4		18
Radius	2	7	2	1		5		17
Ulna	1					2		3
Metacarpal	5	2	1					8
C3				2				2
Pelvis	3	3		1		4	1	12
Femur	6	1	1	2		4	1	15
Tibia	5	7	1	2		4	3	22
Astragalus	5	2	1					8
Calcaneum	6	3	1			2		12
Metatarsal	6	4	1					11
Metapodial	2	3				20		25
Scafocuboid	5							5
Phalanx 1	6	6		3	1	2		18
Phalanx 2	5			2				7
Phalanx 3				1				1
NISP	191	127	48	26	2	55	5	454
%NISP	42.1	28.0	10.6	5.7	0.4	12.1	1.1	
MNI	8	7	6	2	1	3	2	29
%MNI	27.6	24.1	20.7	6.9	3.4	10.3	6.9	

[17]Table A7 Roestown 2: Phase 4 Number of identifiable specimens (NISP) by element and species.

[17] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.

For calculation of MNI;

Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.

In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.

In the case of pig MC/MT/MP were counted as 0.5 units.

(This explains why the total number of countable elements was 458 but the NISP value was 454).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Total
Horncore	2						2
Cranium	11	1	2				14
Loose teeth	85	26	5	5	7		128
Loose lower incisor	6	4	4				14
Loose lower canine			2				2
Loose lower premolar	19	1	2	1			23
Loose lower P/M				1			1
Loose lower M1/2	31	21					52
Loose lower M3	8	2	1	1			12
Mandible	10	8	7	1	1		27
Atlas	4						4
Axis		1					1
Scapula	15	6	7	2	1		31
Humerus	9	10	3				22
Radius	6	8	3				17
Ulna	2		3				5
Metacarpal	3	2	2	1			8
Pelvis	13	7	2				22
Femur	9	3	1				13
Tibia	10	14	3	2		3	32
Astragalus	8	1	1				10
Calcaneum	12	1					13
Metatarsal	7.5	1	2.5				11
Metapodial	0.5	1	1	1			3.5
Scafocuboid	1						1
Phalanx 1	16	2	1	3	1		23
Phalanx 2	5	1	1	1			8
Phalanx 3	6			1			7
NISP	299	121	53.5	20	10	3	506.5
%NISP	59.0	23.9	10.6	3.9	2.0	0.6	
MNI	10	7	4	2	1	2	26
%MNI	38.5	26.9	15.4	7.7	3.8	7.7	

[18]Table A8 Roestown 2: Phase 5 Number of identifiable specimens (NISP) by element and species.

[18] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 514 but the NISP value was 506.5).

Element	Cattle	Sheep/Goat	Pig	Horse	Total
Loose teeth	3	2			5
Loose lower incisor	2		4		6
Loose lower P/M				1	1
Loose lower M1/2	3		1		4
Loose lower M3		1			1
Mandible	1	2	2		5
Scapula	2				2
Humerus	1	1			2
Ulna	1				1
Metacarpal	1				1
Pelvis	1				1
Femur	1	1			2
Tibia	1	1			2
Metatarsal	1				1
Metapodial		0.5			0.5
Scafocuboid		1			1
Phalanx 1	2	2		1	5
Phalanx 2	2				2
NISP	22	11.5	7	2	42.5
%NISP	51.8	27.1	16.5	4.7	
MNI	2	1	1	1	5
%MNI	40	20	20	20	

[19]Table A9 Roestown 2: Phase 6 Number of identifiable specimens (NISP) by element and species.

[19] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 43 but the NISP value was 42.5).

Element	Cattle	Sheep/Goat	Dog	Cat	Rodent	Total
Cranium			1			1
Loose teeth	3	2				5
Loose lower premolar	1					1
Mandible	5	1				6
Scapula	1					1
Radius	1					1
Metacarpal	1					1
Pelvis					1	1
Femur	1			1	2	4
Metatarsal	1					1
Phalanx 1	1					1
NISP	15	3	1	1	3	23
%NISP	65.2	13.0	4.3	4.3	13.0	
MNI	4	1	1	1	1	8
%MNI	50	12.5	12.5	12.5	12.5	

[20]Table A10 Roestown 2: F507 Number of identifiable specimens (NISP) by element and species.

[20] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
(No cattle or sheep/goat MC2/MT2/MP2 present, therefore total number of countable elements and NISP value was 23).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Total
Horncore		1				1
Cranium	6		1			7
Loose teeth	15	11	11	1		38
Loose lower incisor	8	1	13	1		23
Loose lower canine			5			5
Loose lower premolar	10		2			12
Loose lower M1/2	14	4	1			19
Loose lower M3		3	1			4
Mandible	11		6		1	18
Atlas				1		1
Axis	2					2
Scapula	7	3	10	2		22
Humerus	2	2	3			7
Radius	9	3	3			15
Ulna	2		1			3
Metacarpal	5	2	2.5			9.5
Pelvis	10	2	1	1		14
Femur	4	1				5
Tibia	8	7	3		1	19
Astragalus					1	1
Calcaneum	1		1		1	3
Metatarsal	6	2	0.5	1	3	12.5
Metapodial	1.5					1.5
Scafocuboid	1					1
Phalanx 1	9		1			10
Phalanx 2	3					3
Phalanx 3	3					3
NISP	137.5	42	66	7	7	259.5
%NISP	53.0	16.2	25.4	2.7	2.7	
MNI	5	3	6	1	1	16
%MNI	31.3	18.8	37.5	6.3	6.3	

[21]Table A11 Roestown 2: Unphased Area A Number of identifiable specimens (NISP) by element and species.

[21] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 264 but the NISP value was 259.5).

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Rodent	Total
Horncore	3						3
Cranium	9	1	8				18
Loose teeth	87	15	9	9		3	123
Loose lower incisor	5	2	8				15
Loose lower canine			3				3
Loose lower premolar	14		1				15
Loose lower P/M				1			1
Loose lower M1/2	34	5	1				40
Loose lower M3	5	5	4				14
Mandible	28	16	10			3	57
Atlas	3						3
Axis	3	1					4
Scapula	16	3	3	1			23
Humerus	10	1	5	3	1		20
Radius	9	2	1	2			14
Ulna	3					1	4
Metacarpal	11.5	4	1				16.5
C3	2			1			3
Pelvis	13	10	10	1			34
Femur	16	4	3	4		1	28
Tibia	11	5	3			5	24
Astragalus	11	1	1				13
Calcaneum	11	5	3	1			20
Metatarsal	16	1	0.5	1			18.5
Metapodial	3	1.5		1		3	8.5
Scafocuboid	2						2
Phalanx 1	18	2					20
Phalanx 2	7						7
Phalanx 3	1						1
NISP	351.5	84.5	74.5	25	1	16	552.5
%NISP	63.6	15.3	13.5	4.5	0.2	2.9	
MNI	10	6	5	2	1	3	27
%MNI	37.0	22.2	18.5	7.4	3.7	11.1	

[22]Table A12 Roestown 2: Unphased Area B Number of identifiable specimens (NISP) by element and species.

[22] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for cattle and sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Premolars were divided by 6, M1/2 were divided by 4, M3 were divided by 2 and phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.
In the case of cattle or sheep/goat metapodials MC2/MT2/MP2 were counted as 0.5 units.
In the case of pig MC/MT/MP were counted as 0.5 units.
(This explains why the total number of countable elements was 555 but the NISP value was 552.5).

	MNI	Meat Weight (kg)	% Meat Weight
		Phase 1A	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	23	5175	88.8
Sheep	12	138	2.4
Pig	8	512	8.8
Total		**5825**	
		Phase 1B	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	13	2925	79.2
Sheep	11	126.5	3.4
Pig	10	640	17.3
Total		**3691.5**	
		Phase 2A	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	28	6525	79.5
Sheep	18	207	2.5
Pig	23	1472	17.9
Total		**8204**	
		Phase 2B	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	36	8100	83.8
Sheep	25	287.5	3.0
Pig	20	1280	13.2
Total		**9667.5**	
		Phase 3A	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	25	5625	88.9
Sheep	11	126.5	2.0
Pig	9	576	9.1
Total		**6327.5**	
		Phase 4	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	8	1800	79.5
Sheep	7	80.5	3.6
Pig	6	384	17.0
Total		**2264.5**	
		Unphased Area B	
	MNI	Meat Weight (kg)	% Meat Weight
Cattle	10	2250	85.3
Sheep	6	69	2.6
Pig	5	320	12.1
Total		**2639**	

Table A13 Roestown 2: Meat values for the 3 main domesticates for all phases where MNI = > 5.

Estimated live weight = 450kg for cattle, 23kg for sheep and 80kg for pig.

Dressing-out weight = 50% for cattle & sheep & 80% for pig (McCormick and Murray 2007, 147).

Cattle		Grant TWS					Higham MWS	Approx. age in months
Phase	Element type	dP4	P4	M1	M2	M3		
3B	LMT					g	20	40
3B	LMT					j	22	50
3B	LMT					k	23	over 50
3B	LMT					k	23	over 50
4	LMT					b	15	30-31
4	LMT					c	16	31-32
4	LMT					j	22	50
4	LMT					k	23	over 50
4	LMT					k	23	over 50
4	MN				X	d	17	32-33
4	MN		X	h	g	a	14	30
4	MN	j	-	f	V	0	8	15-16
6	MN		X	g	g	b	15	30-31
Unphased A	MN				X	b	15	30-31
	MN		a	j	g	b	15	30-31
	MN		H	j	g	b	15	30-31
	MN		X	P	c	C	12	24
Unphased B	LMT					a	14	30
	LMT					g	20	40
	LMT					g	20	40
	LMT					g	20	40
	LMT					j	22	50
	MN				X	k	23	over 50
	MN			k	j	g	20	40
	MN			X	A	m	23+	over 50

Table A14 Roestown 2: Summary of cattle mandible wear for phases where N = < 10. Tooth wear stages after Grant (1982, 92) and mandible wear stages after Higham (1967, 104).
LMT = loose mandibular tooth, MN = mandible.
Phase 3B N = 4, 4 N = 8, 6 N = 1, Unphased A N = 4, Unphased B N = 8.

Higham MWS	Approx. age in months	Roestown 2 Cattle										
		1A	1B	2A	2B	3A	3B	4	5	6	Unphased A	Unphased B
1	foetal											
2	birth/3weeks											
3	1-4											
4	5-6											
5	6-7					1						
6	7-9											
7	8-13			1								
8	15-16			1				1				
9	16-17	2				1						
10	17-18											
11	18-24		2	1								
12	24	1	1	1		1					1	
13	24-30	1		1		1						
14	30		1	2		1		1				1
15	30-31	3		3	2	1		1	1	1	3	
16	31-32	2		1		2		1				
17	32-33	1		2				1				
18	36				1							
18/19	36-38			2								
19	38			1		1			1			
20	40	6	2	3	8	9	1		3			4
21	40-50				1							
22	50	3		4	6	5	1	1	4			1
23	Over 50		1		5	5	2	2	1			1
23+		4	4	3	4	2						1
	Total	23	11	26	27	30	4	8	10	1	4	8

Table A15 Roestown 2: Summary of mandible wear stages for cattle following Higham (1967, 104) assigned to loose mandibular M3s and mandibles for all phases.
Tooth wear stages after Grant (1982, 92)

CATTLE		Age in months	Phase 1A		Phase 1B		Phase 2A		Phase 2B	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	42.5	1	32	0	80.5	0	71.5	1
	acetabulum	6-10	11	0	6	3	23	2	13	3
	scapula d.	7-10	29	1	14	0	31	2	29	0
	humerus d. radius p.	12-18	49	5	28	1	74	6	66	10
	phalanx 1&2 p.	18-24	40	4	25	4	55	13	79	7
	Total early fusing		**171.5**	**11**	**105**	**8**	**263.5**	**23**	**258.5**	**21**
	%		**94**	**6**	**92.9**	**7.1**	**92**	**8**	**92.5**	**7.5**
Middle fusing	tibia d. metapodium d.	24-36	52	20.5	26	16	80.5	32.5	74.5	29
	calcaneum p.	36-42	6	5	6	3	5	6	15	9
	Total mid fusing		**58**	**25.5**	**32**	**19**	**85.5**	**38.5**	**89.5**	**38**
	%		**69.5**	**30.5**	**62.7**	**37.3**	**69**	**31**	**70.2**	**29.8**
Late fusing	humerus p. radius d., ulna p. femur p. & d. tibia p.	42-48	54	20	33	15	91	34	62	38
	Total late fusing		**54**	**20**	**33**	**15**	**91**	**34**	**62**	**38**
	%		**73**	**27**	**68.75**	**31.25**	**72.8**	**27.2**	**62**	**38**

Table A16 Roestown 2: Phase 1A, 1B, 2A & 2B Number of fused (fused and fusing) and unfused cattle specimens classified under early, middle or late-fusing stages following Reitz and Wing (1999, 76). p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology. Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

CATTLE		Age in months	Phase 3A		Phase 3B		Phase 4		Phase 5		Phase 6	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	60	3	3.5	0	5.5	0	8	0	1	0
	acetabulum	6-10	13	4	1	2	2	0	3	3	1	0
	scapula d.	7-10	19	1	0	0	4	0	4	1	1	1
	humerus d. radius p.	12-18	52	3	4	0	8	0	9	1	0	0
	phalanx 1&2 p.	18-24	49	1	4	0	10	0	17	3	3	0
	Total early fusing		**193**	**12**	**12.5**	**2**	**29.5**	**0**	**41**	**8**	**6**	**1**
	%		**94.1**	**5.9**	**86.2**	**13.8**	**100**	**0**	**83.7**	**16.3**	**85.7**	**14.3**
Middle fusing	tibia d. metapodium d.	24-36	57.5	14	2	0	7	3.5	4.5	4.5	0	1
	calcaneum p.	36-42	5	0	0	0	1	1	6	0	0	0
	Total mid fusing		**62.5**	**14**	**2**	**0**	**8**	**4.5**	**10.5**	**4.5**	**0**	**1**
	%		**81.7**	**18.3**	**100**	**0**	**64**	**36**	**70**	**30**	**0**	**100**
Late fusing	humerus p. radius d., ulna p. femur p. & d. tibia p.	42-48	49	15	5	1	7	4	17	4	2	2
	Total late fusing		**49**	**15**	**5**	**1**	**7**	**4**	**17**	**4**	**2**	**2**
	%		**76.6**	**23.4**	**83.3**	**16.7**	**63.6**	**36.4**	**81**	**19**	**50**	**50**

Table A17 Roestown 2: Phase 3A, 3B, 4, 5 & 6 Number of fused (fused and fusing) and unfused cattle specimens classified under early, middle or late-fusing stages following Reitz and Wing (1999, 76). p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology. Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

CATTLE		Age in months	F507		Unphased Area A		Unphased Area B	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	0	0	9	0	24.5	0
	acetabulum	6-10	0	0	4	0	5	1
	scapula d.	7-10	1	0	4	0	9	1
	humerus d. radius p.	12-18	0	0	3	2	10	1
	phalanx 1&2 p.	18-24	1	0	10	2	22	2
	Total early fusing		**2**	**0**	**30**	**4**	**70.5**	**5**
	%		**100**	**0**	**88.2**	**11.8**	**93.4**	**6.6**
Middle fusing	tibia d. metapodium d.	24-36	2	0	11	2	16	7
	calcaneum p.	36-42	0	0	1	0	2	3
	Total mid fusing		**2**	**0**	**12**	**2**	**18**	**10**
	%		**100**	**0**	**85.7**	**14.3**	**64.3**	**35.7**
Late fusing	humerus p. radius d., ulna p. femur p. & d. tibia p.	42-48	1	1	8	7	18	7
	Total late fusing		**1**	**1**	**8**	**7**	**18**	**7**
	%		**50**	**50**	**53.3**	**46.7**	**72**	**28**

Table A18 Roestown 2: F507, Unphased Area A & B Number of fused (fused and fusing) and unfused cattle specimens classified under early, middle or late-fusing stages following Reitz and Wing (1999, 76). p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.

Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

Sheep/Goat		Payne TWS					Higham MWS	Approx. age in months
Phase	Element type	dP4	P4	M1	M2	M3		
3B	LMT	-	-	-	-	11G	17	adult
3B	MN	-	X	9A	9A	8G	15	26-28
3B	MN	-	12S	10A	9A	11G	17	adult
4	LMT	-	-	-	-	11G	17	adult
4	LMT	-	-	-	-	11G	17	adult
4	LMT	-	-	-	-	4A	14	25-26
4	MN	-	14S	15A	10A	11G	17	adult
4	MN	13L	-	E	0	0	4/5	3-4
4	MN	16L	-	8A	6A	9G	16	mature
4	MN	16L	-	9A	9A	11G	17	adult
4	MN	14L	-	5A	C	0	9	9-10
4	MN	16L	-	6A	E	0	10	10-11
5	LMT	-	-	-	-	11G	17	adult
5	LMT	-	-	-	-	11G	17	adult
5	MN	-	11A	10A	9A	11G	17	adult
5	MN	-	9A	X	9A	9G	16	mature
6	LMT	-	-	-	-	11G	17	adult
6	MN	-	-	X	2A	C	13	21-24
Unphased A	LMT	-	-	-	-	11G	17	adult
	LMT	-	-	-	-	11G	17	adult
	LMT	-	-	-	-	4A	14	25-26

Table A19 Roestown 2: Summary of sheep/goat mandible wear for phases where N = < 10. Tooth wear stages after Payne (1973 and 1987) and mandible wear stages after Higham (1967, 106).
LMT = loose mandibular tooth, MN = mandible.
Phase 3B N = 3, 4 N = 9, 5 N = 4, 6 N = 2, Unphased Area A N = 3.

Higham MWS	Approx. age in months	Roestown 2 Sheep/Goat										
		1A	1B	2A	2B	3A	3B	4	5	6	Unphased A	Unphased B
Higham MWS	Approx. age in months											
1	foetal											
2	birth-6weeks											
3	1.5-3											
4	3							0.5				
5	4					1		0.5				
6	5											
7	5-7			1								
8	7-9	1		1								
9	9-10		1					1				
10	10-11							1				
11	11-12			1								
12	12-21		1	1								
13	21-24			3	1					1		2
14	25-26	8	3	8	6	3		1			1	3
15	26-28			2	3	1	1					
16	mature	6	1	2	1	1		1	1			2
17	adult	9	6	17	17	11	2	4	3	1	2	3
18	old					1						
18+				1								
	Total	**24**	**12**	**37**	**28**	**18**	**3**	**9**	**4**	**2**	**3**	**10**

Table A20 Roestown 2: Summary of mandible wear stages for sheep/goat following Higham (1967, 106) assigned to loose mandibular M3s and mandibles for all phases.
Tooth wear stages after Payne (1973 & 1987).

SHEEP		Age in months	Phase 1A		Phase 1B		Phase 2A		Phase 2B	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	26.5	0	14	0	31	0	29	0
	humerus d. radius p.	3-10	35	0	20	0	46	0	30	3
	scapula d.	6-8	6	0	6	0	7	0	5	0
	acetabulum	6-10	3	0	5	0	9	0	10	1
	phalanx 1&2 p.	6-16	5	1	8	1	15	0	17	0
	Total early fusing		**75.5**	**1**	**53**	**1**	**108**	**0**	**91**	**4**
	%		**98.7**	**1.3**	**98.1**	**1.9**	**100**	**0**	**95.8**	**4.2**
Middle fusing	tibia d.	15-24	12	2	17	0	17	8	19	5
	metapodium d.	18-28	10	4.5	8.5	0	10	3.5	6.5	3.5
	calcaneum p.	30-36	1	1	2	1	2	1	2	0
	Total mid fusing		**23**	**7.5**	**27.5**	**1**	**29**	**12.5**	**27.5**	**8.5**
	%		**75.4**	**24.6**	**96.5**	**3.5**	**69.9**	**30.1**	**76.4**	**23.6**
Late fusing	femur p.	30-42	2	3	0	0	1	3	4	7
	humerus p. radius d. ulna p. femur d. tibia p.	36-42	15	6	7	5	16	20	14	16
	Total late fusing		**17**	**9**	**7**	**5**	**17**	**23**	**18**	**23**
	%		**65.4**	**34.6**	**58.3**	**41.7**	**42.5**	**57.5**	**43.9**	**56.1**

Table A21 Roestown 2: Phase 1A, 1B, 2A & 2B Number of fused (fused and fusing) and unfused sheep specimens classified under early, middle or late-fusing stages following Reitz and Wing 1999, 76).

Any sheep/goat elements with stage of fusion recorded were assumed to be sheep rather than goat when assigning age ranges.

p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.

Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

SHEEP		Age in months	Phase 3A		Phase 3B		Phase 4		Phase 5		Phase 6	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	15	0	1	0	6	0	3	0	0	0
	humerus d. radius p.	3-10	24	0	1	0	7	0	15	1	0	0
	scapula d.	6-8	6	0	0	0	2	0	3	0	0	0
	acetabulum	6-10	6	2	2	0	1	0	3	0	0	0
	phalanx 1&2 p.	6-16	3	1	1	0	3	3	3	0	2	0
	Total early fusing		**54**	**3**	**5**	**0**	**19**	**3**	**27**	**1**	**2**	**0**
	%		**94.7**	**5.3**	**100**	**0**	**86.4**	**13.6**	**96.4**	**3.6**	**100**	**0**
Middle fusing	tibia d.	15-24	16	4	1	0	4	1	11	1	1	0
	metapodium d.	18-28	3	1	0	0	1	4	1	0	0	0.5
	calcaneum p.	30-36	0	1	0	0	2	1	1	0	0	0
	Total mid fusing		**19**	**6**	**1**	**0**	**7**	**6**	**13**	**1**	**1**	**0.5**
	%		**76**	**24**	**100**	**0**	**53.8**	**46.2**	**92.9**	**7.1**	**66.7**	**33.3**
Late fusing	femur p.	30-42	1	3	2	0	1	0	0	3	0	1
	humerus p. radius d. ulna p. femur d. tibia p.	36-42	9	8	1	1	1	4	4	4	0	1
	Total late fusing		**10**	**11**	**3**	**1**	**2**	**4**	**4**	**7**	**0**	**2**
	%		**47.6**	**52.4**	**75**	**25**	**33.3**	**66.7**	**36.4**	**63.6**	**0**	**100**

Table A22 Roestown 2: Phase 3A, 3B, 4, 5 & 6 Number of fused (fused and fusing) and unfused sheep specimens classified under early, middle or late-fusing stages following Reitz and Wing 1999, 76).

Any sheep/goat elements with stage of fusion recorded were assumed to be sheep rather than goat when assigning age ranges.

p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.

Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

SHEEP		Age in months	Unphased Area A		Unphased Area B	
			No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	4	0	3	1
	humerus d. radius p.	3-10	3	0	1	0
	scapula d.	6-8	3	0	1	0
	acetabulum	6-10	0	0	3	1
	phalanx 1&2 p.	6-16	0	0	1	1
	Total early fusing		**10**	**0**	**9**	**3**
	%		**100**	**0**	**75**	**25**
Middle fusing	tibia d.	15-24	5	1	5	0
	metapodium d.	18-28	1	1	1	2.5
	calcaneum p.	30-36	0	0	2	2
	Total mid fusing		**6**	**2**	**8**	**4.5**
	%		75	25	**64**	**36**
Late fusing	femur p. humerus p. radius d.	30-42	1	0	3	1
	ulna p. femur d. tibia p.	36-42	1	2	0	2
	Total late fusing		**2**	**2**	**3**	**3**
	%		**50**	**50**	**50**	**50**

Table A23 Roestown 2: Unphased Area A & B Number of fused (fused and fusing) and unfused sheep specimens classified under early, middle or late-fusing stages following Reitz and Wing 1999, 76).

Any sheep/goat elements with stage of fusion recorded were assumed to be sheep rather than goat when assigning age ranges.

p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.

Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

(No fused/unfused specimens from F507).

Pig		Grant TWS					Higham MWS	Approx. age in months
Phase	Element type	dP4	P4	M1	M2	M3		
1B	LMT					b	20	21-23
1B	MN	-	-	-	-	d	22	25-27
1B	MN	-	-	X	e	b	20	21-23
1B	MN	-	b	k	c	E	19	19-21
1B	MN (female)	-	b	f	c	E	19	19-21
1B	MN (male)	-	b	c	b	H	19	19-21
2B	LMT					c	21	23-25
2B	MN	-	-	-	-	H	19	19-21
2B	MN	-	-	X	A	f	24	30+
2B	MN	-	-	X	f	b	20	21-23
2B	MN	-	-	X	m	g	25	Adult
4	MN	-	-	-	-	E	19	19-21
4	MN	-	-	X	A	b	20	21-23
5	LMT					b	20	21-23
5	MN	-	-	-	X	c	21	23-25
6	MN	-	-	X	g	b	20	21-23
6	MN	-	d	m	h	c	21	23-25
Unphased A	LMT					f	24	30+
Unphased A	MN	-	-	X	U	C	18	17-19
Unphased A	MN	-	b	f	b	V	18	17-19
Unphased A	MN	e	-	H	-	-	6.5	4-5/5-6
Unphased A	MN (female)	-	d	-	-	c	21	23-25
Unphased B	LMT					b	20	21-23
Unphased B	MN	-	c	e	c	U	19	19-21
Unphased B	MN	-	-	-	X	H	13	11-12
Unphased B	MN	-	a	d	b	C	18	17-19
Unphased B	MN	-	-	c	V	0	11	9-10

Table A24 Roestown 2: Summary of pig mandible wear for phases where N = < 10. Tooth wear stages after Grant (1982, 94) and mandible wear stages after Higham (1967, 105).

LMT = loose mandibular tooth, MN = mandible.

Phase 1B N = 6, 2B N = 5, 4, N = 2, 5 N = 2, 6 N = 2, Unphased A N = 5, Unphased B N = 5.

Higham MWS	Approx. age in months	Roestown 2 Pig									
		1A	**1B**	**2A**	**2B**	**3A**	**4**	**5**	**6**	**Unphased A**	**Unphased B**
1	foetal										
2	birth-1week										
3	1-4 weeks										
4	4-7 weeks										
5	2-4										
6	4-5									0.5	
7	5-6									0.5	
8	6-7										
9	7-8										
10	8-9										
11	9-10										1
12	10-11					1					
13	11-12										1
14	12-14										
15	14-15										
16	15-16										
17	16-17										
18	17-19	1		4		7				2	1
19	19-21	3	3	12	1	1	1				1
20	21-23	4	2	4	1	6	1	1	1		1
21	23-25	2		4	1			1	1	1	
22	25-27		1	1							
23	27-29			1							
24	30+				1					1	
25	Adult	1			1						
26	Late maturity										
27	Old										
	Total	**11**	**6**	**26**	**5**	**15**	**2**	**2**	**2**	**5**	**5**

Table A25 Roestown 2: Summary of mandible wear stages for pig following Higham (1967, 105) assigned to loose mandibular M3s and mandibles for all phases.

Tooth wear stages after Grant (1982, 94)

Higham MWS	**Approx. age in months**	**Phase 1A**		**Phase 1B**		**Phase 2A**		**Phase 3A**		**Unphased A**	
		F	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**
1	foetal										
2	birth-1week										
3	1-4 weeks										
4	4-7 weeks										
5	2-4										
6	4-5										
7	5-6										
8	6-7										
9	7-8										
10	8-9										
11	9-10										
12	10-11								1		
13	11-12										
14	12-14										
15	14-15										
16	15-16										
17	16-17										
18	17-19						1				
19	19-21		1	1	1		1				
20	21-23								2		
21	23-25	1					1			1	
22	25-27										
23	27-29										
24	30+										
25	Adult										
26	Late maturity										
27	Old										
Total no. of female specimens = 3											
Total no. of male specimens = 8											

Table A26 Roestown 2: Mandible wear stages for sexed pig mandibles from Phase 1A, 1B, 2A, 3A & Unphased Area A.
F = female, M = male.

Phase	Element	Sex	N.
1A	LMT	F	7
1A	LMT	M	3
1A	MN	F	4
1A	MN	M	1
Total F			**11**
Total M			**4**
Phase	**Element**	**Sex**	**N.**
1B	LMT	F	3
1B	LMT	M	4
1B	MN	F	1
1B	MN	M	1
Total F			**4**
Total M			**5**
Phase	**Element**	**Sex**	**N.**
2A	LMT	F	15
2A	LMT	M	18
2A	MN	F	1
2A	MN	M	5
Total F			**16**
Total M			**23**
Phase	**Element**	**Sex**	**N.**
2B	LMT	F	10
2B	LMT	M	29
2B	MN	F	1
2B	MN	M	1
Total F			**11**
Total M			**30**
Phase	**Element**	**Sex**	**N.**
3A	LMT	F	6
3A	LMT	M	9
3A	MN	F	0
3A	MN	M	3
Total F			**6**
Total M			**12**

Phase	Element	Sex	N.
3B	LMT	M	3
Total F			**0**
Total M			**3**

Phase	Element	Sex	N.
4	LMT	F	6
4	LMT	M	2
4	MN	F	0
4	MN	M	1
Total F			**6**
Total M			**3**

Phase	Element	Sex	N.
5	LMT	F	0
5	LMT	M	2
5	MN	F	1
5	MN	M	2
Total F			**1**
Total M			**4**

Phase	Element	Sex	N.
Unphased A	LMT	F	1
Unphased A	LMT	M	4
Unphased A	MN	F	1
Unphased A	MN	M	0
Total F			**2**
Total M			**4**

Phase	Element	Sex	N.
Unphased B	LMT	F	1
Unphased B	LMT	M	2
Unphased B	MN	F	0
Unphased B	MN	M	3
Total F			**1**
Total M			**5**

Table A27 Roestown 2: Sex determination for pig based on morphology of mandibular canine.

LMT = loose mandibular tooth. MN = mandible. F = female, M = male. N. = number of specimens.

Phase	Element	Sex	N.
1A	Loose maxillary tooth	F	2
1A	Loose maxillary tooth	M	1
1B	Loose maxillary tooth	F	0
1B	Loose maxillary tooth	M	2
2A	Loose maxillary tooth	F	2
2A	Loose maxillary tooth	M	5
2B	Loose maxillary tooth	F	3
2B	Loose maxillary tooth	M	6
3A	Loose maxillary tooth	F	0
3A	Loose maxillary tooth	M	5
4	Loose maxillary tooth	F	0
4	Loose maxillary tooth	M	1
5	Loose maxillary tooth	F	1
5	Loose maxillary tooth	M	0
Unphased A	Loose maxillary tooth	F	0
Unphased A	Loose maxillary tooth	M	2
Unphased B	Loose maxillary tooth	F	1
Unphased B	Loose maxillary tooth	M	0

Table A28 Roestown 2: Sex determination for pig based on morphology of maxillary canine.

F = female, M = male. N. = number of specimens.

PIG		Age in months	Phase 1A		Phase 1B		Phase 2A		Phase 2B	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	3	0	2.5	0	15.5	0	9.5	0.5
	scapula d. radius p. acetabulum	12	5	0	16	1	46	7	29	3
	phalanx 2 p. humerus d.	12-18	6	0	3	0	11	8	9	1
	Total early fusing		**14**	**0**	**21.5**	**1**	**72.5**	**15**	**47.5**	**4.5**
	%		**100**	**0**	**95.6**	**4.4**	**82.9**	**17.1**	**91.3**	**8.7**
Middle fusing	tibia d. phalanx 1 p.	24	3	3	3	3	4	14	12	8
	metapodium d.	24-27	1.5	1.5	0	1	4	11	2	4.5
	calcaneum p.	24-30	0	0	0	0	1	9	0	7
	Total mid fusing		**4.5**	**4.5**	**3**	**4**	**9**	**25**	**14**	**19.5**
	%		**50**	**50**	**42.9**	**57.1**	**26.5**	**73.5**	**41.8**	**58.2**
Late fusing	ulna p.	36-42	0	0	0	4	0	9	1	2
	humerus p. radius d. femur p. & d. tibia p.	42	1	6	3	9	5	38	1	13
	Total late fusing		**1**	**6**	**3**	**13**	5	47	**2**	**15**
	%		**14.3**	**85.7**	**18.8**	**81.3**	**9.6**	**90.4**	**11.8**	**88.2**

Table A29 Roestown 2: Phase 1A, 1B, 2A & 2B Number of fused (fused and fusing) and unfused pig specimens classified under early, middle or late-fusing stages following Reitz and Wing (1999, 76).

p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.

Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

PIG		Age in months	Phase 3A		Phase 3B		Phase 4		Phase 5	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	4.5	0	0	0	2	0	5	0
	scapula d. radius p. acetabulum	12	11	1	0	0	1	1	8	0
	phalanx 2 p. humerus d.	12-18	5	0	0	0	1	0	2	1
	Total early fusing		**20.5**	**1**	**0**	**0**	**4**	**1**	**15**	**1**
	%		**95.3**	**4.7**			**80**	**20**	**93.75**	**6.25**
Middle fusing	tibia d. phalanx 1 p.	24	2	4	1	0	0	1	3	1
	metapodium d.	24-27	0	2	0	0	0	1	0	3.5
	calcaneum p.	24-30	0	1	0	0	0	0	0	0
	Total mid fusing		**2**	**7**	**1**	**0**	**0**	**2**	**3**	**4.5**
	%		**22.2**	**77.8**	**100**	**0**	**0**	**100**	**40**	**60**
Late fusing	ulna p.	36-42	0	3	0	0	0	0	0	3
	humerus p. radius d. femur p. & d. tibia p.	42	0	9	0	0	0	3	0	3
	Total late fusing		**0**	**12**	**0**	**0**	**0**	**3**	**0**	**6**
	%		**0**	**100**			**0**	**100**	**0**	**100**

Table A30 Roestown 2: Phase 3A, 3B, 4 & 5 Number of fused (fused and fusing) and unfused pig specimens classified under early, middle or late-fusing stages following Reitz and Wing (1999, 76). p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.
Fusion zone recorded by current author for acetabulum is that between ilium and ischium. (No fused/unfused specimens from Phase 6).

PIG		Age in months	Unphased Area A		Unphased Area B	
			No. fused	No. unfused	No. fused	No. unfused
Early fusing	metapodium p.	fused before birth	3	0	1.5	0
	scapula d. radius p. acetabulum phalanx 2 p.	12	8	3	9	0
	humerus d.	12-18	2	1	5	0
	Total early fusing		**13**	**4**	**15.5**	**0**
	%		**76.5**	**23.5**	**100**	**0**
Middle fusing	tibia d. phalanx 1 p.	24	2	1	2	1
	metapodium d.	24-27	1.5	1.5	0	1
	calcaneum p.	24-30	0	1	0	0
	Total mid fusing		**3.5**	**3.5**	**2**	**2**
	%		**50**	**50**	**50**	**50**
Late fusing	ulna p.	36-42	0	1	0	0
	humerus p. radius d. femur p. & d. tibia p.	42	0	4	0	4
	Total late fusing		**0**	**4**	**0**	**4**
	%		**0**	**100**	**0**	**100**

Table A31 Roestown 2: Unphased Area A & B Number of fused (fused and fusing) and unfused pig specimens classified under early, middle or late-fusing stages following Reitz and Wing (1999, 76).

p. = proximal, d. = distal. Scapula d. of Reitz and Wing equates to scapula p. of current author's methodology.

Fusion zone recorded by current author for acetabulum is that between ilium and ischium.

(No pig specimens from F507).

HORSE Element	**Ossification Centre**	**Age of Fusion**	Phase 1A		Phase 1B		Phase 2A		Phase 2B	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Scapula	Bicipital tuberosity	20 mts	1	0	0	0	3	0	2	0
Humerus	Proximal epiphysis	3-3.5 yrs	0	0	1	0	1	0	0	0
	Distal epiphysis	15-18 mts	2	0	1	0	5	0	2	0
Radius	Proximal epiphysis	15-18 mts	1	0	1	0	1	0	5	0
	Distal epiphysis	3.5 yrs	3	0	0	0	1	0	7	1
Ulna	Olecranon	3.5 yrs	0	0	0	0	0	0	0	0
Metacarpus	Proximal epiphysis	Before birth	0	0	4	0	4	0	1	0
	Distal epiphysis	15-18 mts	0	0	1	0	2	0	2	0
1st phalanx	Proximal epiphysis	13-15 mts	2	0	1	0	4	0	3	0
	Distal epiphysis	Before birth	2	0	1	0	4	0	3	0
2nd phalanx	Proximal epiphysis	9-12 mts	1	0	0	0	3	0	1	0
	Distal epiphysis	Before birth	1	0	0	0	3	0	1	0
3rd phalanx	No true epiphysis	Partly ossified at birth	0	0	0	0	1	0	3	0
Pelvis	Fusion of main bones	1.5-2 yrs	1	0	2	0	3	0	4	0
Femur	Proximal epiphysis	3-3.5 yrs	1	0	0	0	0	0	1	0
	Distal epiphysis	Fuses with tibia 1-3 mts	0	0	0	0	2	0	1	0
Tibia	Proximal epiphysis	3-3.5 yrs	1	1	0	1	1	0	1	0
	Distal epiphysis	20-24 mts	0	1	2	0	0	1	6	0
Calcaneum	Tuber calcis	3 yrs	0	0	1	0	1	0	1	0
Metatarsal	Proximal epiphysis	Before birth	2	0	0	0	4	0	2	0
	Distal epiphysis	16-20 mts	1	0	0	0	0	0	2	0
Metapodial	Proximal epiphysis	Before birth	0	0	0	0	0	0	0	0
	Distal epiphysis	15-20 mts	1	0	3	0	6	0	7	0
Total fused and unfused			**20**	**2**	**18**	**1**	**49**	**1**	**55**	**1**
% Total fused and unfused			**90.9**	**9.1**	**94.7**	**5.3**	**98**	**2**	**98.2**	**1.8**

Table A32 Roestown 2: Phase 1A, 1B, 2A & 2B Number of fused (fused and fusing) and unfused horse specimens present with age of fusion after Silver (1969, 285-286).

HORSE Element	Ossification Centre	Age of Fusion	Phase 3A		Phase 3B		Phase 4		Phase 5		Phase 6	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Scapula	Bicipital tuberosity	20 mts	2	0	1	0	0	0	1	0	0	0
Humerus	Proximal epiphysis	3-3.5 yrs	1	0	1	0	0	0	0	0	0	0
	Distal epiphysis	15-18 mts	3	0	0	0	0	0	0	0	0	0
Radius	Proximal epiphysis	15-18 mts	2	0	0	0	0	0	0	0	0	0
	Distal epiphysis	3.5 yrs	3	1	1	0	0	0	0	0	0	0
Ulna	Olecranon	3.5 yrs	0	0	0	0	0	0	0	0	0	0
Metacarpus	Proximal epiphysis	Before birth	2	0	0	0	0	0	1	0	0	0
	Distal epiphysis	15-18 mts	1	0	0	0	0	0	1	0	0	0
1st phalanx	Proximal epiphysis	13-15 mts	8	0	1	0	2	1	1	0	1	0
	Distal epiphysis	Before birth	8	0	1	0	3	0	2	0	1	0
2nd phalanx	Proximal epiphysis	9-12 mts	2	0	0	0	2	0	1	0	0	0
	Distal epiphysis	Before birth	2	0	0	0	2	0	0	0	0	0
3rd phalanx	No true epiphysis	Partly ossified at birth	2	0	0	0	1	0	1	0	0	0
Pelvis	Fusion of main bones	1.5-2 yrs	7	0	1	0	0	0	0	0	0	0
Femur	Proximal epiphysis	3-3.5 yrs	3	0	0	0	0	1	0	0	0	0
	Distal epiphysis	Fuses with tibia 1-3 mts	0	1	0	0	1	0	0	0	0	0
Tibia	Proximal epiphysis	3-3.5 yrs	3	1	0	0	0	0	1	0	0	0
	Distal epiphysis	20-24 mts	5	0	0	0	2	0	2	0	0	0
Calcaneum	Tuber calcis	3 yrs	2	0	0	0	0	0	0	0	0	0
Metatarsal	Proximal epiphysis	Before birth	1	0	0	0	0	0	0	0	0	0
	Distal epiphysis	16-20 mts	1	0	0	0	0	0	0	0	0	0
Metapodial	Proximal epiphysis	Before birth	0	0	0	0	0	0	0	0	0	0
	Distal epiphysis	15-20 mts	3	0	1	0	0	0	1	0	0	0
Total fused and unfused			**61**	**3**	**7**	**0**	**13**	**2**	**12**	**0**	**2**	**0**
% Total fused and unfused			**95.3**	**4.7**	**100**	**0**	**86.7**	**13.3**	**100**	**0**	**100**	**0**

Table A33 Roestown 2: Phase 3A, 3B, 4, 5 & 6 Number of fused (fused and fusing) and unfused horse specimens present with age of fusion after Silver (1969, 285-286).

HORSE Element	**Ossification Centre**	**Age of Fusion**	Unphased Area A		Unphased Area B	
			No. fused	No. unfused	No. fused	No. unfused
Scapula	Bicipital tuberosity	20 mts	1	0	0	0
Humerus	Proximal epiphysis	3-3.5 yrs	0	0	1	0
	Distal epiphysis	15-18 mts	0	0	2	0
Radius	Proximal epiphysis	15-18 mts	0	0	1	0
	Distal epiphysis	3.5 yrs	0	0	1	0
Ulna	Olecranon	3.5 yrs	0	0	0	0
Metacarpus	Proximal epiphysis	Before birth	0	0	0	0
	Distal epiphysis	15-18 mts	0	0	0	0
1st phalanx	Proximal epiphysis	13-15 mts	0	0	0	0
	Distal epiphysis	Before birth	0	0	0	0
2nd phalanx	Proximal epiphysis	9-12 mts	0	0	0	0
	Distal epiphysis	Before birth	0	0	0	0
3rd phalanx	No true epiphysis	Partly ossified at birth	0	0	0	0
Pelvis	Fusion of main bones	1.5-2 yrs	1	0	0	0
Femur	Proximal epiphysis	3-3.5 yrs	0	0	1	0
	Distal epiphysis	Fuses with tibia 1-3 mts	0	0	3	0
Tibia	Proximal epiphysis	3-3.5 yrs	0	0	0	0
	Distal epiphysis	20-24 mts	0	0	0	0
Calcaneum	Tuber calcis	3 yrs	0	0	1	0
Metatarsal	Proximal epiphysis	Before birth	1	0	1	0
	Distal epiphysis	16-20 mts	1	0	1	0
Metapodial	Proximal epiphysis	Before birth	0	0	0	0
	Distal epiphysis	15-20 mts	0	0	1	0
Total fused and unfused			**4**	**0**	**13**	**0**
% Total fused and unfused			**100**	**0**	**100**	**0**

Table A34 Roestown 2: Unphased Area A & B Number of fused (fused and fusing) and unfused horse specimens present with age of fusion after Silver (1969, 285-286).
(No horse specimens from F507).

DOG Element	Ossification Centre	Age of Fusion	Phase 1A No. fused	Phase 1A No. unfused	Phase 1B No. fused	Phase 1B No. unfused	Phase 2A No. fused	Phase 2A No. unfused	Phase 2B No. fused	Phase 2B No. unfused
Scapula	Bicipital tuberosity	6-7 mts	0	0	1	0	1	0	0	0
Humerus	Proximal epiphysis	15 mts	1	0	2	0	2	0	0	0
	Distal epiphysis	8-9 mts	1	0	3	0	2	0	1	0
Radius	Proximal epiphysis	11-12 mts	3	0	2	0	2	0	0	0
	Distal epiphysis	11-12 mts	1	0	0	1	2	0	1	0
Ulna	Olecranon	9-10 mts	2	0	2	0	0	0	1	0
Metacarpus	Proximal epiphysis	Before birth	0	0	7	0	5	0	1	0
	Distal epiphysis	8 mts	0	0	3	0	6	0	0	0
1st phalanx	Proximal epiphysis	7 mts	0	0	6	0	13	0	0	0
	Distal epiphysis	Before birth	0	0	7	0	11	0	0	0
2nd phalanx	Proximal epiphysis	7 mts	0	0	3	0	5	0	0	0
	Distal epiphysis	Before birth	0	0	3	0	5	0	0	0
3rd phalanx	No true epiphysis	Partly ossified at birth	0	0	3	0	1	0	0	0
Pelvis	Fusion of main bones	6 mts	1	0	2	0	1	0	0	0
Femur	Proximal epiphysis	1.5 yrs	2	0	1	0	2	0	1	0
	Distal epiphysis	1.5 yrs	2	0	2	0	2	0	0	0
Tibia	Proximal epiphysis	1.5 yrs	2	0	1	0	1	0	0	0
	Distal epiphysis	13-16 mts	1	0	0	0	1	0	1	0
Calcaneum	Tuber calcis	13-16 mts	2	0	0	0	2	0	1	0
Metatarsal	Proximal epiphysis	Before birth	4	0	1	0	9	0	0	0
	Distal epiphysis	10 mts	2	0	0	0	9	0	0	0
Metapodial	Proximal epiphysis	Before birth	0	0	0	0	0	0	0	0
	Distal epiphysis	8-10 mts	2	0	7	0	0	0	0	0
Total fused and unfused			**26**	**0**	**56**	**1**	**82**	**0**	**7**	**0**
% Total fused and unfused			**100**	**0**	**98.25**	**1.75**	**100**	**0**	**100**	**0**

Table A35 Roestown 2: Phase 1A, 1B, 2A & 2B Number of fused (fused and fusing) and unfused dog specimens present with age of fusion after Silver (1969, 285-286).

DOG Element	Ossification Centre	Age of Fusion	Phase 3A		Phase 4		Phase 5	
			No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
Scapula	Bicipital tuberosity	6-7 mts	2	0	0	0	0	0
Humerus	Proximal epiphysis	15 mts	1	0	0	1	0	0
	Distal epiphysis	8-9 mts	1	0	0	0	0	0
Radius	Proximal epiphysis	11-12 mts	3	0	0	0	0	0
	Distal epiphysis	11-12 mts	3	1	0	0	0	0
Ulna	Olecranon	9-10 mts	2	0	0	0	0	0
Metacarpus	Proximal epiphysis	Before birth	8	0	0	0	0	0
	Distal epiphysis	8 mts	4	0	0	0	0	0
1st phalanx	Proximal epiphysis	7 mts	11	0	1	0	0	0
	Distal epiphysis	Before birth	11	0	1	0	1	0
2nd phalanx	Proximal epiphysis	7 mts	5	0	0	0	0	0
	Distal epiphysis	Before birth	5	0	0	0	0	0
3rd phalanx	No true epiphysis	Partly ossified at birth	0	0	0	0	0	0
Pelvis	Fusion of main bones	6 mts	2	0	0	0	0	0
Femur	Proximal epiphysis	1.5 yrs	1	0	0	0	0	0
	Distal epiphysis	1.5 yrs	1	0	0	0	0	0
Tibia	Proximal epiphysis	1.5 yrs	2	0	0	0	0	0
	Distal epiphysis	13-16 mts	4	0	0	0	0	0
Calcaneum	Tuber calcis	13-16 mts	2	0	0	0	0	0
Metatarsal	Proximal epiphysis	Before birth	8	0	0	0	0	0
	Distal epiphysis	10 mts	7	0	0	0	0	0
Metapodial	Proximal epiphysis	Before birth	0	0	0	0	0	0
	Distal epiphysis	8-10 mts	0	0	0	0	0	0
Total fused and unfused			**83**	**1**	**2**	**1**	**1**	**0**
% Total fused and unfused			**98.8**	**1.2**	**66.7**	**33.3**	**100**	**0**

Table A36 Roestown 2: Phase 3A, 4 & 5 Number of fused (fused and fusing) and unfused dog specimens present with age of fusion after Silver (1969, 285-286).

(No fused/unfused specimens from Phase 3B. No dog specimens from Phase 6).

DOG Element	Ossification Centre	Age of Fusion	Unphased Area A		Unphased Area B	
			No. fused	No. unfused	No. fused	No. unfused
Scapula	Bicipital tuberosity	6-7 mts	0	0	0	0
Humerus	Proximal epiphysis	15 mts	0	0	1	0
	Distal epiphysis	8-9 mts	0	0	0	0
Radius	Proximal epiphysis	11-12 mts	0	0	0	0
	Distal epiphysis	11-12 mts	0	0	0	0
Ulna	Olecranon	9-10 mts	0	0	0	0
Metacarpus	Proximal epiphysis	Before birth	0	0	0	0
	Distal epiphysis	8 mts	0	0	0	0
1st phalanx	Proximal epiphysis	7 mts	0	0	0	0
	Distal epiphysis	Before birth	0	0	0	0
2nd phalanx	Proximal epiphysis	7 mts	0	0	0	0
	Distal epiphysis	Before birth	0	0	0	0
3rd phalanx	No true epiphysis	Partly ossified at birth	0	0	0	0
Pelvis	Fusion of main bones	6 mts	0	0	0	0
Femur	Proximal epiphysis	1.5 yrs	0	0	0	0
	Distal epiphysis	1.5 yrs	0	0	0	0
Tibia	Proximal epiphysis	1.5 yrs	0	0	0	0
	Distal epiphysis	13-16 mts	1	0	0	0
Calcaneum	Tuber calcis	13-16 mts	1	0	0	0
Metatarsal	Proximal epiphysis	Before birth	3	0	0	0
	Distal epiphysis	10 mts	2	0	0	0
Metapodial	Proximal epiphysis	Before birth	0	0	0	0
	Distal epiphysis	8-10 mts	0	0	0	0
Total fused and unfused			**7**	**0**	**1**	**0**
% Total fused and unfused			**100**	**0**	**100**	**0**

Table A37 Roestown 2: Unphased Area A & B Number of fused (fused and fusing) and unfused dog specimens present with age of fusion after Silver (1969, 285-286). (No fused/unfused specimens from F507).

CAT		Phase 1A		Phase 2B		Phase 3A	
Fusion Zone	**Age of fusion (months)**	No. fused	No. unfused	No. fused	No. unfused	No. fused	No. unfused
scapula cp.	8.5	0	0	0	0	0	0
humerus d.		0	0	0	0	0	0
radius p.		0	0	0	0	0	0
acetabulum		0	0	0	0	0	0
femur p.		1	0	0	0	0	0
calcaneum p.		0	0	0	0	0	0
ulna p.	10-11	0	0	1	0	0	0
phalanges p.		0	0	0	0	0	0
humerus p.	11.5-20	0	0	0	1	0	0
radius d.		0	0	0	0	0	0
*femur d.		0	0	0	0	0	0
tibia p. & d.		0	0	1	0	1	0
metapodials d.		1	0	0	0	0	0
Total fused and unfused		**2**	**0**	**2**	**1**	**1**	**0**
% Total fused and unfused		**100**	**0**	**66.7**	**33.3**	**100**	**0**

Table A38 Roestown 2: Phase 1A, 2B & 3A Number of fused (fused and fusing) and unfused cat specimens classified after Habermehl (1961) and *Smith (1969).

(No cat specimens from Phase 1B or 3B. No fused/unfused specimens from Phase 2A).

CAT **Fusion Zone**	**Age of fusion (months)**	Phase 4 No. fused	Phase 4 No. unfused	Phase 5 No. fused	Phase 5 No. unfused	F507 No. fused	F507 No. unfused
scapula cp.	8.5	2	0	0	0	0	0
humerus d.		3	0	0	0	0	0
radius p.		5	0	0	0	0	0
acetabulum		4	0	0	0	0	0
femur p.		2	2	0	0	0	1
calcaneum p.		0	2	0	0	0	0
				0	0	0	0
ulna p.	10-11	2	0	0	0	0	0
phalanges p.		2	0	0	0	0	0
				0	0	0	0
humerus p.	11.5-20	0	1	0	0	0	0
radius d.		2	3	0	0	0	0
*femur d.		2	2	0	0	0	0
tibia p. & d.		4	4	4	0	0	0
metapodials d.		8	10	0	0	0	0
Total fused and unfused		**36**	**24**	**4**	**0**	**0**	**1**
% Total fused and unfused		**60**	**40**	**100**	**0**	**0**	**100**

Table A39 Roestown 2: Phase 4, 5 & F507 Number of fused (fused and fusing) and unfused cat specimens classified after Habermehl (1961) and *Smith (1969).

(No cat specimens from Phase 6, Unphased Area A & B).

Phase/Feature	Species	Element	Fused/Unfused	No. of specimens
1B	Red deer	Radius d.	Fused	1
4	Rodent	Femur p.	Fused	1
4	Rodent	Tibia p.	Fused	1
4	Rodent	Femur d.	Unfused	1
4	Rodent	Tibia d.	Fused	3
F507	Rodent	Pelvis	Fused	1
F507	Rodent	Femur p.	Fused	2
F507	Rodent	Femur d.	Unfused	2
Unphased B	Rodent	Ulna p.	Fused	1
Unphased B	Rodent	Femur p.	Fused	1
Unphased B	Rodent	Tibia p.	Fused	4
Unphased B	Rodent	Metapodial p.	Fused	3
Unphased B	Rodent	Tibia d.	Fused	5
Unphased B	Rodent	Metapodial d.	Fused	3

Table A40 Roestown 2: Number of fused (fused and fusing) and unfused specimens present for all other species i.e. red deer and rodent.
(Rodent specimens identified as mouse).

Phase 1A, 1B & 2A Cattle	Measurement	N.	Mean	Min	Max	StDev	CV
Horncore	Wmin	27	38.08	12.2	50.6	7.18	0.19
Horncore	Wmax	28	52.64	16.1	72	9.90	0.19
Horncore	L	8	134.74	28	197	52.44	0.39
Scapula	GLP	47	63.00	48.2	74.7	5.16	0.08
Scapula	SLC	27	45.92	31	59.2	7.07	0.15
Humerus	SD	6	32.55	28.6	35.3	2.69	0.08
Humerus	BT	35	67.37	60.6	72.3	3.09	0.05
Humerus	HTC	60	29.89	25.7	36.2	1.92	0.06
Metacarpal	GL	16	185.10	169.8	197.3	6.80	0.04
Metacarpal	Bp	42	51.66	37.4	61.4	4.63	0.09
Metacarpal	Bd	32	54.68	46.8	64.7	4.51	0.08
Metacarpal	SD	22	30.64	27.9	34.8	2.19	0.07
Metacarpal	B@F	30	50.95	44.1	58.5	3.79	0.07
Pelvis	LA	20	64.56	53	71.9	4.76	0.07
Tibia	Bd	50	56.05	23.7	67.2	5.63	0.10
Astragalus	GLl	47	59.66	52	66.2	2.66	0.04
Astragalus	GLm	52	54.40	47.7	59.6	2.46	0.05
Astragalus	Bd	50	38.79	35	45.1	2.18	0.06
Astragalus	Dm	43	33.13	28.3	53.8	3.67	0.11
Astragalus	Dl	48	33.33	30.6	36.4	1.29	0.04
Calcaneum	GL	8	126.79	118	140	8.48	0.07
Metatarsal	GL	15	209.41	193	225	7.88	0.04
Metatarsal	Bp	50	43.54	36.8	53.4	3.35	0.08
Metatarsal	Bd	27	51.11	43.4	63	4.61	0.09
Metatarsal	SD	34	24.69	21.2	29.9	2.19	0.09

Table A41 Roestown 2: Phase 1A, 1B & 2A Summary of cattle measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 2B & 3A Cattle	Measurement	N.	Mean	Min	Max	StDev	CV
Horncore	Wmin	12	34.60	23.8	42.3	5.87	0.17
Horncore	Wmax	11	48.16	29.5	57.9	8.68	0.18
Scapula	GLP	31	64.18	58.7	73.1	4.15	0.06
Scapula	SLC	16	46.41	28.5	54.2	5.63	0.12
Humerus	BT	22	67.33	60.2	81.4	5.32	0.08
Humerus	HTC	34	29.49	25.2	36.5	2.86	0.10
Metacarpal	GL	10	186.32	173.7	195.7	6.22	0.03
Metacarpal	Bp	40	51.09	19.6	61.3	7.22	0.14
Metacarpal	Bd	25	54.17	48.6	62.5	3.87	0.07
Metacarpal	SD	19	28.15	12.1	33.3	4.52	0.16
Metacarpal	B@F	24	49.49	44.9	58	3.21	0.06
Pelvis	LA	14	64.81	59.1	69.5	3.17	0.05
Tibia	Bd	30	57.01	52.1	64.2	2.79	0.05
Astragalus	GLl	49	60.26	54.8	66.1	2.42	0.04
Astragalus	GLm	56	54.77	45.6	58.7	2.46	0.04
Astragalus	Bd	58	38.66	31.4	44.6	2.50	0.06
Astragalus	Dm	41	33.01	27.9	38	2.21	0.07
Astragalus	Dl	56	33.46	27.6	38.8	1.80	0.05
Calcaneum	GL	11	123.86	115	137	6.54	0.05
Metatarsal	GL	11	205.57	195	215.8	7.23	0.04
Metatarsal	Bp	44	43.30	34.5	51.7	3.67	0.08
Metatarsal	Bd	32	50.33	44.8	61.3	3.90	0.08
Metatarsal	SD	22	24.20	21.7	27.5	1.62	0.07

Table A42 Roestown 2: Phase 2B & 3A Summary of cattle measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 5 Cattle	Measurement	N.	Mean	Min	Max	StDev	CV
Astragalus	GLl	6	60.50	59.5	62	0.86	0.01
Astragalus	Bd	6	38.18	36.6	39.5	1.18	0.03
Astragalus	Dl	6	34.32	33	36.2	1.24	0.04

Table A43 Roestown 2: Phase 5 Summary of cattle measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Unphased Area A & B Cattle	Measurement	N.	Mean	Min	Max	StDev	CV
Scapula	GLP	8	58.94	46.3	65.2	7.09	0.12
	SLC	8	39.69	26.6	54.4	11.24	0.28
Metacarpal	Bp	8	53.36	49.9	58.9	3.25	0.06
Pelvis	LA	7	62.50	56.3	66.3	4.06	0.07
Tibia	Bd	6	57.63	52.3	63.7	4.64	0.08
Astragalus	Bd	9	37.24	32.7	45.6	4.14	0.11
Metatarsal	Bp	13	41.69	20	51	7.95	0.19
Metatarsal	Bd	7	50.97	46.6	61.1	4.67	0.09
Metatarsal	SD	6	25.13	22.7	30	2.68	0.11

Table A44 Roestown 2: Unphased Area A & B Summary of cattle measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 1A, 1B & 2A Sheep/Goat	Measurement	N.	Mean	Min	Max	StDev	CV
Horncore	Wmin	14	23.02	14.9	37.2	7.86	0.34
Horncore	Wmax	13	31.90	18.3	51.7	11.04	0.35
Scapula	GLP	16	28.37	25.7	31.3	1.42	0.05
Scapula	SLC	22	16.35	13	21.4	2.00	0.12
Humerus	BT	34	25.27	22.9	29.4	1.87	0.07
Humerus	HTC	48	12.63	11.1	14.2	0.80	0.06
Radius	Bp	42	27.15	23.5	30.2	1.63	0.06
Radius	SD	8	15.53	14.2	17	1.01	0.07
Metacarpal	GL	6	113.92	105.5	123	5.96	0.05
Metacarpal	Bp	32	20.86	18.2	23	1.28	0.06
Metacarpal	Bd	10	23.51	22	27.3	1.54	0.07
Metacarpal	SD	16	12.92	11	15.4	1.32	0.10
Metacarpal	DtM	9	10.09	9.3	11.4	0.70	0.07
Metacarpal	DtL	9	9.32	8.6	9.9	0.43	0.05
Metacarpal	Ddm	8	13.94	13.3	15	0.57	0.04
Metacarpal	Ddl	8	13.29	12.7	13.9	0.36	0.03
Metacarpal	BFdm	10	10.86	10	13	0.86	0.08
Metacarpal	BFdl	9	10.70	9.3	12.8	0.94	0.09
Pelvis	LA	10	26.07	24.2	27.6	1.07	0.04
Tibia	Bd	39	23.28	20.5	26.4	1.26	0.05
Tibia	SD	9	12.61	11.7	14.2	0.76	0.06
Astragalus	GLl	10	25.12	23.8	26.4	0.89	0.04
Astragalus	GLm	9	23.71	22.4	24.6	0.82	0.03
Astragalus	Bd	10	16.27	14.5	17.7	0.86	0.05
Astragalus	Dm	6	14.87	14.4	15.3	0.29	0.02
Astragalus	Dl	10	15.14	13.3	24.1	3.20	0.21
Metatarsal	Bp	25	18.21	14.8	20.5	1.27	0.07
Metatarsal	Bd	6	22.53	20.8	24.5	1.59	0.07
Metatarsal	SD	8	11.38	10.4	12.4	0.76	0.07

Table A45 Roestown 2: Phase 1A, 1B & 2A Summary of sheep/goat measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 2B & 3A Sheep/Goat	Measurement	N.	Mean	Min	Max	StDev	CV
Horncore	Wmin	10	19.74	16.4	23.5	2.12	0.11
Horncore	Wmax	10	32.11	24.4	54.5	8.68	0.27
Scapula	GLP	11	28.01	24.6	31.3	1.91	0.07
Scapula	SLC	12	16.39	14.5	18.1	1.25	0.08
Humerus	BT	16	24.82	20.6	29.1	2.07	0.08
Humerus	HTC	23	12.43	10.4	14	0.89	0.07
Radius	Bp	18	27.28	24.3	31	1.77	0.06
Radius	SD	6	14.65	12.7	16.4	1.35	0.09
Metacarpal	Bp	16	20.55	17.9	24	1.72	0.08
Pelvis	LA	12	25.48	21.7	28.3	1.81	0.07
Tibia	Bd	24	22.91	20.8	26	1.50	0.07
Astragalus	GLl	8	25.26	22.5	27	1.43	0.06
Astragalus	GLm	9	23.92	21.5	26	1.29	0.05
Astragalus	Bd	7	17.87	14.2	26.3	3.86	0.22
Astragalus	Dm	8	14.28	12.8	15.5	0.95	0.07
Astragalus	Dl	8	14.00	12.7	15.6	0.96	0.07
Metatarsal	Bp	18	18.79	16.7	28.9	2.62	0.14
Metatarsal	SD	6	10.97	10.4	11.3	0.34	0.03

Table A46 Roestown 2: Phase 2B & 3A Summary of sheep/goat measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 5 Sheep/Goat	Measurement	N.	Mean	Min	Max	StDev	CV
Humerus	BT	8	25.09	22.2	28.8	2.01	0.08
Humerus	HTC	9	12.78	11.5	14	0.85	0.07
Tibia	Bd	8	23.56	21.8	25	1.33	0.06

Table A47 Roestown 2: Phase 5 Summary of sheep/goat measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Unphased Area A & B Sheep/Goat	Measurement	N.	Mean	Min	Max	StDev	CV
Tibia	Bd	6	23.30	22	24.7	1.08	0.05

Table A48 Roestown 2: Unphased Area A & B Summary of sheep/goat measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 1A, 1B & 2A Pig	Measurement	N.	Mean	Min	Max	StDev	CV
Scapula	GLP	23	31.85	27.3	37	2.31	0.07
Scapula	SLC	31	21.30	17.8	24.3	1.71	0.08
Humerus	Bd	15	36.27	31	39.4	2.06	0.06
Humerus	BT	14	26.65	24.2	28.7	1.38	0.05
Humerus	HTC	18	18.63	16.6	28.6	2.66	0.14
Radius	BpP	10	26.76	22.3	29.1	2.00	0.07
Pelvis	LAR	16	27.22	21.7	29.2	1.78	0.07
Tibia	Bd	10	28.94	27.3	30.3	0.99	0.03
Astragalus	GLl	8	37.30	34.1	40	2.46	0.07

Table A49 Roestown 2: Phase 1A, 1B & 2A Summary of pig measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase 2B & 3A Pig	Measurement	N.	Mean	Min	Max	StDev	CV
Scapula	GLP	12	31.48	28.1	37.9	2.68	0.09
Scapula	SLC	13	19.71	18	21.4	1.07	0.05
Humerus	Bd	6	35.85	34.2	37.7	1.47	0.04
Humerus	BT	8	26.61	23.3	30.1	2.15	0.08
Humerus	HTC	9	18.20	16.4	19.1	0.99	0.05
Radius	BpP	9	25.52	21.4	27.7	1.93	0.08
Pelvis	LAR	8	26.44	25	28.5	1.26	0.05
Tibia	Bd	7	27.91	26.3	29.5	1.27	0.05

Table A50 Roestown 2: Phase 2B & 3A Summary of pig measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Unphased Area A & B Pig	Measurement	N.	Mean	Min	Max	StDev	CV
Scapula	GLP	7	32.06	29.9	34	1.44	0.04
Scapula	SLC	8	20.76	18.5	23.5	1.96	0.09
Humerus	Bd	6	37.13	35.7	38.1	0.90	0.02
Humerus	BT	7	26.44	18.2	31.2	4.31	0.16
Humerus	HTC	7	17.74	16.5	19.3	1.03	0.06

Table A51 Roestown 2: Phase Unphased Area A & B Summary of pig measurements.
Measurements where number of specimens (N.) = 5 or less are not included.

Phase	REC ID	Element	GL	Bp	Bd	SD	BT	HTC	BFd	GH	GLP	SLC	LA	LAR	Dp	Dd	GLI	EWH
2A	546	Scapula	-	-	-	-	-	-	-	-	97.8	-	-	-	-	-	-	-
2A	6657	Scapula	-	-	-	-	-	-	-	-	90.2	-	-	-	-	-	-	-
2B	2295	Scapula	-	-	-	-	-	-	-	-	90.2	54.1	-	-	-	-	-	-
2B	2877	Scapula	-	-	-	-	-	-	-	-	86.1	-	-	-	-	-	-	-
3A	5646	Scapula	-	-	-	-	-	-	-	-	85.3	50	-	-	-	-	-	-
3A	5721	Scapula	-	-	-	-	-	-	-	-	82.8	-	-	-	-	-	-	-
3B	9960	Scapula	-	-	-	-	-	-	-	-	90.3	-	-	-	-	-	-	-
Unphased	3397	Scapula	-	-	-	-	-	-	-	-	86.4	-	-	-	-	-	-	-
1A	6222	Humerus	-	-	72.1	-	66.9	33.5	-	-	-	-	-	-	-	-	-	-
1A	7797	Humerus	-	-	85	-	71.7	33.9	-	-	-	-	-	-	-	-	-	-
1B	10354	Humerus	-	-	-	-	-	32.4	-	-	-	-	-	-	-	-	-	-
2A	523	Humerus	-	-	-	-	71.4	39.4	-	-	-	-	-	-	-	-	-	-
2A	769	Humerus	-	-	-	32.8	-	-	-	-	-	-	-	-	-	-	-	-
2A	770	Humerus	-	-	-	31.8	69.8	35.6	-	-	-	-	-	-	-	-	-	-
2A	10232	Humerus	-	-	81.3	-	72.3	35.1	-	-	-	-	-	-	-	-	-	-
2B	3303	Humerus	-	-	-	-	68.8	33.6	-	-	-	-	-	-	-	-	-	-
3A	6598	Humerus	-	-	-	-	-	32.4	-	-	-	-	-	-	-	-	-	-
3A	6893	Humerus	-	-	-	-	65.6	32.5	-	-	-	-	-	-	-	-	-	-
Unphased	8897	Humerus	-	-	-	-	-	34.4	-	-	-	-	-	-	-	-	-	-
1A	6212	Radius	-	-	-	-	-	-	60.2	-	-	-	-	-	-	-	-	-
1A	6705	Radius	-	-	-	-	-	-	66.1	-	-	-	-	-	-	-	-	-
1A	7965	Radius	-	-	-	59	-	-	-	-	-	-	-	-	-	-	-	-
2A	4842	Radius	-	-	-	-	-	-	61.3	-	-	-	-	-	-	-	-	-
2B	611	Radius	-	-	-	-	-	-	56.7	-	-	-	-	-	-	-	-	-
2B	2372	Radius	-	-	-	-	-	-	62.2	-	-	-	-	-	-	-	-	-
2B	2513	Radius	-	-	-	-	-	-	63.9	-	-	-	-	-	-	-	-	-
2B	2515	Radius	-	-	-	-	-	-	60.6	-	-	-	-	-	-	-	-	-
2B	8403	Radius	-	-	-	-	-	-	63.4	-	-	-	-	-	-	-	-	-
3A	5670	Radius	-	-	-	-	-	-	63.5	-	-	-	-	-	-	-	-	-
3A	6936	Radius	-	-	-	-	-	-	64	-	-	-	-	-	-	-	-	-
3A	6937	Radius	-	-	-	-	-	-	59.7	-	-	-	-	-	-	-	-	-
3B	9896	Radius	-	-	-	-	-	-	61.8	-	-	-	-	-	-	-	-	-
Unphased	8951	Radius	-	-	-	-	-	-	59.6	-	-	-	-	-	-	-	-	-
1B	1821	Metacarpal	218.4	50.8	47.6	33.9	-	-	-	-	-	-	-	-	-	-	215.5	138.1
2A	3992	Metacarpal	-	-	44.5	32.1	-	-	-	-	-	-	-	-	-	-	-	-
2A	4831	Metacarpal	222.8	49.1	44.7	32.3	-	-	-	-	-	-	-	-	-	-	-	-
2A	5612	Metacarpal	-	49.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2A	7492	Metacarpal	-	44.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2B	3015	Metacarpal	-	-	50.6	-	-	-	-	-	-	-	-	-	-	-	-	-
2B	4216	Metacarpal	201.5	46.4	43.1	29.6	-	-	-	-	-	-	-	-	-	-	199.4	127.8
3A	7200	Metacarpal	-	45.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3A	8534	Metacarpal	207.2	45	44.3	-	-	-	-	-	-	-	-	-	-	-	-	-
5	8590	Metacarpal	221	52.2	45.7	33.4	-	-	-	-	-	-	-	-	-	-	-	-
1A	7726	Pelvis	-	-	-	-	-	-	-	-	-	-	63	56.8	-	-	-	-
2A	2148	Pelvis	-	-	-	-	-	-	-	-	-	-	61.6	55.9	-	-	-	-
2A	8495	Pelvis	-	-	-	-	-	-	-	-	-	-	69.2	59.5	-	-	-	-
2A	9535	Pelvis	-	-	-	-	-	-	-	-	-	-	63.2	55.7	-	-	-	-
2B	984	Pelvis	-	-	-	-	-	-	-	-	-	-	65.8	56.5	-	-	-	-
2B	1449	Pelvis	-	-	-	-	-	-	-	-	-	-	-	54.3	-	-	-	-
2B	2324	Pelvis	-	-	-	-	-	-	-	-	-	-	61.7	55.3	-	-	-	-
3A	5718	Pelvis	-	-	-	-	-	-	-	-	-	-	54.4	48.4	-	-	-	-
3A	5719	Pelvis	-	-	-	-	-	-	-	-	-	-	67.8	57.1	-	-	-	-
3A	7832	Pelvis	-	-	-	-	-	-	-	-	-	-	59.7	-	-	-	-	-
3B	10189	Pelvis	-	-	-	-	-	-	-	-	-	-	62.1	54.5	-	-	-	-
Unphased	1968	Pelvis	-	-	-	-	-	-	-	-	-	-	66.8	59.5	-	-	-	-
1A	7307	Tibia	-	-	-	34.4	-	-	-	-	-	-	-	-	-	-	-	-
5	1390	Tibia	328.5	-	-	36.5	-	-	-	-	-	-	-	-	-	-	-	-
2A	5784	Astragalus	-	-	-	-	-	-	49.4	-	-	-	-	-	-	-	-	-
2A	8188	Astragalus	-	-	-	-	-	-	-	60	-	-	-	-	-	-	-	-
2B	265	Astragalus	-	-	-	-	-	-	48	56.5	-	-	-	-	-	-	-	-
2B	2311	Astragalus	-	-	-	-	-	-	45.6	57	-	-	-	-	-	-	-	-
3A	8520	Astragalus	-	-	-	-	-	-	49.1	59	-	-	-	-	-	-	-	-
3A	9104	Astragalus	-	-	-	-	-	-	48.7	56	-	-	-	-	-	-	-	-
2A	4818	Calcaneum	105.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2B	607	Calcaneum	104.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3A	9103	Calcaneum	99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A	7473	Metatarsal	-	47.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A	7871	Metatarsal	274.2	48.8	45.7	30.1	-	-	-	-	-	-	-	-	-	-	270.2	144.0
2A	573	Metatarsal	-	49.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2A	8493	Metatarsal	-	-	-	30.2	-	-	-	-	-	-	-	-	-	-	-	-
2B	4215	Metatarsal	251.5	45.6	44.3	26.7	-	-	-	-	-	-	-	-	-	-	248.8	132.6
2B	9810	Metatarsal	251.7	49.1	45.7	29.6	-	-	-	-	-	-	-	-	-	-	247	131.7
3A	7226	Metatarsal	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-
Unphased	1956	Metatarsal	268.4	49.9	46.1	31.4	-	-	-	-	-	-	-	-	-	-	263.8	140.6
Unphased	8896	Metatarsal	256	45.5	44.3	28.4	-	-	-	-	-	-	-	-	-	-	248	132.2
1A	5196	PH1	80	-	-	-	-	-	40	-	-	-	-	-	36.6	24.9	-	-
1A	6765	PH1	-	-	-	-	-	-	-	-	-	-	-	-	36.2	-	-	-
1B	2715	PH1	75.7	-	-	-	-	-	42.2	-	-	-	-	-	33	23.8	-	-
2A	2601	PH1	83	-	-	-	-	-	43.4	-	-	-	-	-	35.9	26.6	-	-
2A	4807	PH1	-	-	-	-	-	-	44.1	-	-	-	-	-	36.1	27	-	-
2A	7402	PH1	74	-	-	-	-	-	40.6	-	-	-	-	-	37.3	25.1	-	-
2B	221	PH1	76.5	-	-	-	-	-	38.6	-	-	-	-	-	31.9	23.8	-	-
2B	1474	PH1	80.3	-	-	-	-	-	41.7	-	-	-	-	-	34.4	24.5	-	-
2B	4414	PH1	-	-	-	-	-	-	-	-	-	-	-	-	34.5	23	-	-
3A	5647	PH1	79.7	-	-	-	-	-	40.2	-	-	-	-	-	33.9	24.1	-	-
3A	5648	PH1	73	-	-	-	-	-	41.1	-	-	-	-	-	-	24	-	-
3A	5649	PH1	-	-	-	-	-	-	38.1	-	-	-	-	-	-	25.4	-	-
3A	6802	PH1	70.4	-	-	-	-	-	41.1	-	-	-	-	-	32.2	22.4	-	-
3A	6803	PH1	-	-	-	-	-	-	-	-	-	-	-	-	36.6	24.3	-	-
3A	6886	PH1	-	-	-	-	-	-	-	-	-	-	-	-	-	27.4	-	-
3A	6948	PH1	83.4	-	-	-	-	-	42.6	-	-	-	-	-	35.5	26.3	-	-
3A	9045	PH1	81	-	-	-	-	-	42	-	-	-	-	-	36.5	23.9	-	-
3B	9890	PH1	-	-	-	-	-	-	39.3	-	-	-	-	-	-	24.2	-	-
4	5230	PH1	72.3	-	-	-	-	-	-	-	-	-	-	-	30.6	-	-	-
5	8679	PH1	-	-	-	-	-	-	42.6	-	-	-	-	-	-	-	-	-
6	9117	PH1	-	-	-	-	-	-	36.6	-	-	-	-	-	-	23.8	-	-

Table A52 Horse measurements (in mm) with Estimated withers heights (in cm) after Kiesewalter as quoted in von den Driesch and Boessneck (1974, 333). Measurements are after von den Driesch (1976), Payne and Bull (1988), Davis (1982) and Eisenmann (1986).

Phase	REC ID	Element	GL	Bp	Bd	SD	LA	LAR	GLl	GLC	Dp	GLP	EWH
1B	124	Scapula	-	-	-	-	-	-	-	-	-	34.4	-
3A	69	Scapula	-	-	-	-	-	-	-	-	-	27.2	-
3A	70	Scapula	-	-	-	-	-	-	-	-	-	27.4	-
1A	5436	Humerus	-	-	-	-	-	-	-	-	38.9	-	-
1B	118	Humerus	187.9	-	-	14	-	-	186.5	183.6	46	-	61.8
2A	2	Humerus	131	-	-	12.3	-	-	128.3	125.8	136.9	-	42.3
3A	71	Humerus	154.7	-	-	10.8	-	-	152.5	151.6	37.4	-	50.4
Unphased	9262	Humerus	-	-	-	-	-	-	-	-	40	-	-
1A	5433	Radius	-	17.2	-	-	-	-	-	-	-	-	-
1A	5434	Radius	-	-	22.9	-	-	-	-	-	-	-	-
1A	5439	Radius	-	17.1	-	-	-	-	-	-	-	-	-
1A	7960	Radius	-	19.4	-	-	-	-	-	-	-	-	-
1B	122	Radius	-	20.8	-	-	-	-	-	-	-	-	-
1B	7354	Radius	-	23.9	-	-	-	-	-	-	-	-	-
2A	3	Radius	114	16.2	22.7	12.1	-	-	-	-	-	-	38.2
2A	50	Radius	-	17	-	-	-	-	-	-	-	-	-
2B	1415	Radius	-	-	20.4	-	-	-	-	-	-	-	-
3A	110	Radius	158.5	17.1	22.4	11.4	-	-	-	-	-	-	52.4
3A	111	Radius	-	-	22.3	11.4	-	-	-	-	-	-	-
3A	5674	Radius	-	22.7	-	-	-	-	-	-	-	-	-
3A	7223	Radius	161	17.2	22.5	13.2	-	-	-	-	-	-	53.1
1A	10114	Pelvis	-	-	-	-	27.7	22.2	-	-	-	-	-
1B	128	Pelvis	-	-	-	-	26.6	23.9	-	-	-	-	-
1B	7352	Pelvis	-	-	-	-	31.2	27.2	-	-	-	-	-
1B	7353	Pelvis	-	-	-	-	30.6	27.1	-	-	-	-	-
2A	23	Pelvis	-	-	-	-	22	20	-	-	-	-	-
2A	24	Pelvis	-	-	-	-	21.4	19.6	-	-	-	-	-
3A	78	Pelvis	-	-	-	-	24.1	19.5	-	-	-	-	-
3A	79	Pelvis	-	-	-	-	24.7	20.2	-	-	-	-	-
1A	10110	Femur	195	-	-	-	-	-	-	-	-	-	59.9
2A	5	Femur	139.8	-	-	12.7	-	-	-	-	-	-	42.6
3A	109	Femur	-	-	-	12.2	-	-	-	-	-	-	-
1A	5182	Tibia	-	-	26.2	24.3	-	-	-	-	-	-	-
1A	10112	Tibia	-	37.8	-	-	-	-	-	-	-	-	-
1B	125	Tibia	-	39.5	-	-	-	-	-	-	-	-	-
2A	21	Tibia	129.9	33.2	22.1	12.4	-	-	-	-	-	-	38.9
2B	2969	Tibia	-	-	22.6	-	-	-	-	-	-	-	-
3A	74	Tibia	172.2	32.2	21.3	10.7	-	-	-	-	-	-	51.2
3A	75	Tibia	171.7	32.5	21.3	11.2	-	-	-	-	-	-	51.1
3A	3550	Tibia	-	-	20.1	-	-	-	-	-	-	-	-
3A	8285	Tibia	-	-	21.5	-	-	-	-	-	-	-	-
Unphased	3363	Tibia	-	-	25.4	-	-	-	-	-	-	-	-
2A	25	Astragalus	24.8	-	-	-	-	-	-	-	-	-	-
3A	81	Astragalus	27.7	-	-	-	-	-	-	-	-	-	-
Unphased	3361	Astragalus	29.2	-	-	-	-	-	-	-	-	-	-
1A	8482	Calcaneum	42.3	-	-	-	-	-	-	-	-	-	-
1A	10115	Calcaneum	47.5	-	-	-	-	-	-	-	-	-	-
2A	7	Calcaneum	38.4	-	-	-	-	-	-	-	-	-	-
2A	26	Calcaneum	36.1	-	-	-	-	-	-	-	-	-	-
2B	1508	Calcaneum	36.7	-	-	-	-	-	-	-	-	-	-
3A	80	Calcaneum	40.2	-	-	-	-	-	-	-	-	-	-
3A	107	Calcaneum	39.4	-	-	-	-	-	-	-	-	-	-
Unphased	3362	Calcaneum	49.9	-	-	-	-	-	-	-	-	-	-

Table A53 Roestown 2: Dog measurements (in mm) with Estimated shoulder heights (in cm) after Harcourt (1974, 154). Measurements are after von den Driesch (1976).

Phase	REC ID	Element	GL	SD	GLP	SLC
4	6408	Scapula	-	-	13.2	-
4	6456	Scapula	-	-	12.3	11.1
4	6409	Radius	92	4.8	-	-
4	6395	Femur	102.7	8.1	-	-
4	6396	Femur	101.9	8	-	-
4	6393	Tibia	111	6.9	-	-
4	6394	Tibia	111.2	6.9	-	-
5	8699	Tibia	107.8	6.3	-	-

Table A54 Roestown 2: Cat measurements (in mm) after von den Driesch (1976).

Abbreviation	Description	Source
GL	Greatest length	vdD
GL	Greatest length (horse PH1)	Davis, Eisenmann
GLl	Greatest lateral length	vdD
Ll	Lateral length on outer side (only in horses)	vdD
GLC	Greatest length from caput (head) (Dog humerus)	vdD
BFdm	Maximum breadth of medial trochlea	Davis
BFdl	Maximum breadth of lateral trochlea	Davis
Ddm	Maximum depth of medial trochlea	Davis
Ddl	Maximum depth of lateral trochlea	Davis
Dtm	Depth of external trochlea of medial condyle	Payne
Dtl	Depth of external trochlea of lateral condyle	Payne
Dp	Depth of proximal end (Dog humerus)	vdD
Dp	Proximal depth (horse PH1)	Davis, Eisenmann
GLP	Greatest length of glenoid process (in scapula)	vdD
SLC	Smallest length of collum (in scapula)	vdD
Bd	Greatest breadth of distal end	vdD
BT	Greatest breadth of trochlea	Payne & Bull
HTC	Height of trochlea	Payne & Bull
B@F	Maximum breadth of distal fusion point in metapodials	Davis
CAc	Greatest length of articular facet	Boessneck
CAc+d	Greatest length of articular facet + lateral arm	Boessneck
Bp	Greatest breadth of proximal end	vdD
BpP	Greatest proximal width (used for pig radii)	Payne & Bull
SD	Smallest breadth of diaphysis	vdD
LA	Length of acetabulum including lip	vdD
LAR	Length of acetabulum on rim	vdD
L	Length along outer curve of horncore	vdD
Wmin	Minimum width at base of horncore	vdD
Wmax	Maximum width at base of horncore	vdD
GLm	Greatest length of medial half (in astragalus)	vdD
Dm	Greatest depth of medial half (in astragalus)	vdD
Dl	Greatest depth of lateral half (in astragalus)	vdD
GH	Greatest height (in astragalus of horse)	vdD
BFd	Breadth of distal articular surface	vdD
BFd	Distal width (horse PH1)	Davis
"	Distal articular breadth (horse PH1)	Eisenmann
Dd	Distal depth (horse PH1)	Davis
1	Total length of skull	vdD

Table A55 Roestown 2: Definitions of measurements recorded following von den Driesch (1976), Davis (1992) and (1982), Payne (1969), Payne and Bull (1988), Boessneck (1969) and Eisenmann (1986).

Species	Phase	REC ID	Element	EWH (cm)
Cattle	1A	7814	MC1 (F)	111.0
Cattle	1A	7975	MC1 (F)	112.8
Cattle	1B	3089	MC1 (F)	118.4
Cattle	2A	778	MC1 (F)	110.7
Cattle	2A	2108	MC1 (F)	110.9
Cattle	2A	2652	MC1 (F)	108.0
Cattle	2A	4987	MC1 (F)	108.7
Cattle	2A	5861	MC1 (F)	108.0
Cattle	2A	7396	MC1 (F)	110.4
Cattle	2B	4563	MC1 (F)	111.0
Cattle	2B	7385	MC1 (F)	109.0
Cattle	2B	7553	MC1 (F)	110.6
Cattle	3A	6813	MC1 (F)	111.5
Cattle	3A	6814	MC1 (F)	115.1
Cattle	UNPHASED	1951	MC1 (F)	109.5
Cattle	1A	1134	MC1 (M)	113.3
Cattle	1A	6698	MC1 (M)	119.1
Cattle	1B	1822	MC1 (M)	116.1
Cattle	1B	8001	MC1 (M)	106.1
Cattle	2A	2198	MC1 (M)	122.3
Cattle	2A	5518	MC1 (M)	113.1
Cattle	2B	940	MC1 (M)	122.3
Cattle	3A	3534	MC1 (M)	120.5
Cattle	3A	6103	MC1 (M)	115.9
Cattle	UNPHASED	8952	MC1 (M)	116.9
Cattle	2A	9559	MC1 (I)	118.2
Cattle	3A	3535	MC1 (I)	114.5
Cattle	3A	5887	MC1 (I)	106.4
Cattle	UNPHASED	9479	MC1 (I)	114.5
Cattle	1A	1141	MT1	115.5
Cattle	1A	1142	MT1	116.2
Cattle	1A	5412	MT1	122.6
Cattle	1A	7859	MT1	111.6
Cattle	1A	7872	MT1	105.2
Cattle	1B	7547	MT1	115.5
Cattle	2A	1105	MT1	112.2
Cattle	2A	3767	MT1	117.0
Cattle	2A	3770	MT1	108.9
Cattle	2A	3772	MT1	114.2
Cattle	2A	4034	MT1	112.5
Cattle	2A	4035	MT1	113.0
Cattle	2A	5611	MT1	112.8
Cattle	2A	8180	MT1	113.6
Cattle	2A	9562	MT1	120.9
Cattle	2B	242	MT1	111.7
Cattle	2B	260	MT1	117.6
Cattle	2B	675	MT1	111.9
Cattle	2B	1504	MT1	115.5
Cattle	2B	3297	MT1	113.9
Cattle	2B	4332	MT1	106.3
Cattle	2B	4427	MT1	108.5
Cattle	3A	3531	MT1	109.4
Cattle	3A	6882	MT1	106.5
Cattle	3A	7202	MT1	116.1
Cattle	3A	7224	MT1	115.0
Cattle	UNPHASED	1953	MT1	117.6
Cattle	UNPHASED	3518	MT1	121.3
Cattle	UNPHASED	8987	MT1	115.5
Cattle	UNPHASED	8990	MT1	117.9
Cattle	UNPHASED	9018	MT1	117.2
Cattle	2A	757	RA	112.7
Cattle	2A	8176	RA	105.8
Cattle	1A	5448	TI	106.8
Cattle	1B	7329	TI	109.4
Cattle	2B	4526	TI	106.5
Cattle	3A	5703	TI	110.4
Cattle	5	3146	TI	105.9

Table A56 Roestown 2: All estimated withers heights calculated for cattle after Fock and Matolcsi as outlined in von den Driesch and Boessneck (1974, 336).

Species	Phase	REC ID	Element	EWH (cm)
Sheep	4	5241	MT1	60
Sheep	5	4248	RA	49
Sheep	1A	7732	MC1	52
Sheep	1A	6092	FE	54
Sheep	1A	5443	MC1	55
Sheep	1A	7874	MC1	55
Sheep	1A	7875	MC1	55
Sheep	1A	6756	RA	57
Sheep	1A	5429	RA	58
Sheep	1B	1892	MT1	55
Sheep	1B	8066	RA	57
Sheep	1B	9620	MC1	60
Sheep	2A	2625	RA	51
Sheep	2A	2173	MC1	58
Sheep	2A	4134	MT1	58
Sheep	2A	3856	MT1	59
Sheep	2A	3995	MT1	61
Sheep	2B	985	RA	53
Sheep	2B	2915	MC1	55
Sheep	2B	4572	MT1	58
Sheep	3A	7222	RA	54
Sheep	UNPHASED	3476	MC1	57

Table A57 Roestown 2: All estimated withers heights calculated for sheep after Teichert as specified in von den Driesch and Boessneck were applied (1974, 339).
Sheep/goat specimens were assumed to be sheep for calculation of withers height.

Phase	Species	Element	CountOfElement
1A	OVA	AS	3
1A	OVA	HC	3
1A	OVA	HU	13
1A	OVA	LMT	5
1A	OVA	MN	3
1A	OVA	SC	4
1A	OVA	TI	12
1B	OVA	AS	2
1B	OVA	HU	7
1B	OVA	LMT	2
1B	OVA	MN	5
1B	OVA	MT1	1
1B	OVA	PE	2
1B	OVA	SC	7
1B	OVA	TI	15
2A	OVA	AS	3
2A	OVA	CR	2
2A	OVA	HC	9
2A	OVA	HU	15
2A	OVA	LMT	9
2A	OVA	MN	13
2A	OVA	MP1	1
2A	OVA	MT1	3
2A	OVA	PE	2
2A	OVA	SC	6
2A	OVA	TI	18
2B	OVA	AS	4
2B	OVA	HC	3
2B	OVA	HU	12
2B	OVA	LMT	7
2B	OVA	MN	1
2B	OVA	MT1	1
2B	OVA	PE	2
2B	OVA	SC	4
2B	OVA	TI	17
3A	OVA	AS	3
3A	OVA	HC	5
3A	OVA	HU	5
3A	OVA	MN	2
3A	OVA	PE	2
3A	OVA	SC	2
3A	OVA	TI	17
3B	OVA	MN	2
4	OVA	HC	2
4	OVA	HU	3
4	OVA	LMT	1
4	OVA	MN	3
4	OVA	MT1	1
4	OVA	TI	3
5	OVA	AS	1
5	OVA	HU	7
5	OVA	LMT	1
5	OVA	PE	1
5	OVA	SC	4
5	OVA	TI	12
F507	OVA	MN	1
Unphased	OVA	AS	1
Unphased	OVA	HU	2
Unphased	OVA	MN	2
Unphased	OVA	PE	1
Unphased	OVA	SC	1
Unphased	OVA	TI	8
Total specimens identified as sheep			**309**

Table A58 Roestown 2: Details of specimens positively identified as sheep based on morphological traits.

Phase	Species	Element	Ddm	DtM	Index	Confirmed Species
1A	O	MC1	15	10.9	72.7	Sheep
1A	O	MC1	14.5	9.3	64.1	Sheep
1A	O	MC1	13.4	10.2	76.1	Sheep
1A	O	MC1	13.8	11.4	82.6	Sheep
1B	O	MC1	13.3	9.4	70.7	Sheep
2A	O	MC1	13.7	9.8	71.5	Sheep
2A	O	MC1	13.7	9.5	69.3	Sheep
2A	O	MC1	14.1	10.2	72.3	Sheep
2B	O	MC1	13.3	9.9	74.4	Sheep
2B	O	MC1	12	10.8	90.0	Sheep
UNPHASED	O	MC1	14.4	10.4	72.2	Sheep

Table A59 Roestown 2: Index calculations for Ddm and Dtm of distal metacarpals of sheep/goat after Boessneck (1969, 354-355).

Species	Phase	REC ID	Element	EWH (cm)
Pig	2A	3901	RA	69.2

Table A60 Roestown 2: Estimated withers height calculated for pig after Teichert as quoted in von den Driesch and Boessneck (1974, 341).

Species	Group	Element	N.	Side
Dog	1	Cranium	1	L+R
Dog	1	Loose tooth	7	U
Dog	1a	Loose tooth	1	U
Dog	1	Mandible	1	L
Dog	1	Mandible	1	R
Dog	1	Axis	1	U
Dog	1	Scapula	1	L
Dog	1	Scapula	1	R
Dog	1	Humerus	1	L
Dog	1a	Humerus	1	R (d. only)
Dog	1b	Humerus	1	R (p. only)
Dog	1	Radius	1	L
Dog	1a	Radius	1	R
Dog	1	Ulna	1	L
Dog	1a	Ulna	1	R
Dog	1	Metacarpal 1	1	R
Dog	1a	Metacarpal 2	1	R
Dog	1	Metacarpal 4	1	R
Dog	1	Metacarpal 5	1	R
Dog	1	Metacarpal U	4	L
Dog	1a	Metacarpal U	1	U
Dog	1	Pelvis	1	L
Dog	1	Pelvis	1	R
Dog	1	Femur	1	L
Dog	1	Femur	1	R
Dog	1	Tibia	1	R
Dog	1	Calcaneum	1	L
Dog	1	Calcaneum	1	R
Dog	1	Astragalus	1	L
Dog	1	Astragalus	1	R
Dog	1	Scufocuboid	1	U
Dog	1	Metatarsal 2	1	L
Dog	1	Metatarsal 2	1	R
Dog	1	Metatarsal 3	1	L
Dog	1	Metatarsal 3	1	R
Dog	1	Metatarsal 4	1	L
Dog	1	Metatarsal 4	1	R
Dog	1	Metatarsal 5	1	L
Dog	1	Metatarsal 5	1	R
Dog	1	Phalanx 1	3	L
Dog	1	Phalanx 2	5	R
Dog	1a	Phalanx 3	5	U
Dog	1	Phalanx 2	1	L
Dog	1	Phalanx 3	3	R
Dog	1a	Phalanx 4	1	U
Dog	1	Phalanx 3	1	R
Cattle	1b	Loose tooth	3	U
Cattle	1b	Mandible	1	L
Cattle	1b	Loose mandibular tooth	1	U
Sheep/Goat	1b	Mandible	1	L

Table A61 Roestown 2: Countable elements present for articulated dog skeleton F418 and associated specimens for other species.

Group 1 = Elements recovered directly from excavation of articulated skeleton. Group 1a = elements recovered from area of skeleton before its direct excavation.

Group 1b = Elements recovered from area of skeleton but including other species.

Species	Group	Element	N.	Side
Dog	2	Cranium	1	L+R
Dog	2	Mandible	1	L
Dog	2	Mandible	1	R
Dog	2	Axis	1	-
Dog	2	Scapula	1	L
Dog	2	Scapula	1	R
Dog	2	Humerus	1	R
Dog	2a	Radius	1	L
Dog	2a	Radius	1	R
Dog	2	Ulna	1	L
Dog	2	Ulna	1	R
Dog	2	Metacarpal 2	1	L
Dog	2a	Metacarpal 2	1	R
Dog	2a	Metacarpal 3	1	L
Dog	2a	Metacarpal 3	1	R
Dog	2	Metacarpal 4	1	R
Dog	2	Metacarpal 5	1	L
Dog	2	Pelvis	1	L
Dog	2	Pelvis	1	R
Dog	2a	Femur	1	R
Dog	2	Tibia	1	L
Dog	2	Tibia	1	R
Dog	2	Calcaneum	1	L
Dog	2	Calcaneum	1	R
Dog	2	Astragalus	1	L
Dog	2	Metatarsal 2	1	L
Dog	2	Metatarsal 3	1	L
Dog	2	Metatarsal 4	1	L
Dog	2	Metatarsal 5	1	L
Dog	2	Phalanx 1	11	U
Dog	2	Phalanx 2	5	U
Sheep/Goat	2a	Cranium	1	L
Sheep/Goat	2a	Cranium	1	R
Sheep/Goat	2	Pelvis	1	R
Pig	2a	Cranium	1	R

Table A62 Roestown 2: Countable elements present for articulated dog skeleton F484 (Group 2 and 2a) & associated specimens for other species.

Group 2 = Elements recovered directly from excavation of articulated skeleton. Group 2a = bone located near dog skeleton.

Species	Element	N.	Side
Dog	Cranium	1	L
Dog	Cranium	1	R
Dog	Loose tooth	1	U
Dog	Loose tooth	1	U
Dog	Mandible	1	L
Dog	Mandible	1	R
Dog	Scapula	1	L
Dog	Scapula	1	R
Dog	Humeurs	1	L
Dog	Humeurs	1	R
Dog	Radius	1	R
Dog	Ulna	1	L
Dog	Ulna	1	R
Dog	Metacarpal 1	1	R
Dog	Metacarpal 2	1	R
Dog	Metacarpal 3	1	L
Dog	Metacarpal 3	1	R
Dog	Metacarpal 4	1	L
Dog	Metacarpal 4	1	R
Dog	Metacarpal 5	1	L
Dog	Metacarpal 5	1	R
Dog	Pelvis	1	R
Dog	Femur	1	L
Dog	Femur	1	R
Dog	Tibia	1	L
Dog	Scafocuboid	1	U
Dog	Metapodial U	1	U
Dog	Metapodial U	1	U
Dog	Metapodial U	1	U
Dog	Metapodial U	1	U
Dog	Metapodial U	1	U
Dog	Metapodial U	1	U
Dog	Metapodial U	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 1	1	U
Dog	Phalanx 2	1	U
Dog	Phalanx 2	1	U
Dog	Phalanx 2	1	U
Dog	Phalanx 3	1	U
Dog	Phalanx 3	1	U
Dog	Phalanx 3	1	U

Table A63 Roestown 2: Countable elements present for articulated dog skeleton F116.

Element	Ossification Zone	Age of fusion
Scapula	Bicipital tuberosity	6-7 months
Humerus	Proximal Epiphysis Distal Epiphysis	15 months 8-9 months
Radius	Proximal Epiphysis Distal Epiphysis	11-12 months 11-12 months
Metacarpus	Proximal Epiphysis Distal Epiphysis	Before birth 8 months
1st Phalanx	Proximal Epiphysis Distal Epiphysis	7 months Before birth
2nd Phalanx	Proximal Epiphysis Distal Epiphysis	7 months Before birth
3rd Phalanx	No true epiphysis	Partly ossified at birth
Femur	Proximal end Distal end	1.5 years 1.5 years
Tibia	Proximal Epiphysis Distal Epiphysis	1.5 years 13-16 months
Fibula	Proximal Epiphysis	15-18 months
Calcaneum	Tuber calcis	13-16 months
Metatarsal	Proximal Epiphysis Distal Epiphysis	Before birth 10 months

Table A64 Roestown 2: States of epiphyseal fusion observed for articulated dog skeleton F418 after Silver (1969, 285-286).

Element	Ossification Zone	Age of fusion
Scapula	Bicipital tuberosity	6-7 months
Humerus	Proximal Epiphysis Distal Epiphysis	15 months 8-9 months
Ulna	Olecranon	9-10 months
Metacarpus	Proximal Epiphysis Distal Epiphysis	Before birth 8 months
1st Phalanx	Proximal Epiphysis Distal Epiphysis	7 months Before birth
2nd Phalanx	Proximal Epiphysis Distal Epiphysis	7 months Before birth
Tibia	Proximal Epiphysis Distal Epiphysis	1.5 years 13-16 months
Fibula	Distal Epiphysis	15 months
Calcaneum	Tuber calcis	13-16 months
Metatarsal	Proximal Epiphysis Distal Epiphysis	Before birth 10 months

Table A65a Roestown 2: States of epiphyseal fusion observed for articulated dog skeleton F484 (group 2) after Silver (1969, 285-286).

Element	Ossification Zone	Age of fusion
Radius	Proximal Epiphysis Distal Epiphysis	11-12 months 11-12 months
Femur	Proximal Epiphysis Distal Epiphysis	1.5 years 1.5 years

Table A65b Roestown 2: States of epiphyseal fusion observed for F484 (group 2a) dog elements after Silver (1969, 285-286).

Group 2 = Elements recovered directly from excavation of articulated skeleton. Group 2a = bone located near dog skeleton.

Element	Ossification Zone	Age of fusion
Scapula	Bicipital tuberosity	6-7 months
Humerus	Proximal Epiphysis Distal Epiphysis	15 months 8-9 months
Radius	Proximal Epiphysis	11-12 month
Ulna	Olecranon	9-10 months
Metacarpus	Proximal Epiphysis Distal Epiphysis	Before birth 8 months
1st Phalanx	Proximal Epiphysis Distal Epiphysis	7 months Before birth
2nd Phalanx	Proximal Epiphysis Distal Epiphysis	7 months Before birth
3rd Phalanx	No true epiphysis	Partly ossified at birth
Femur	Proximal Epiphysis Distal Epiphysis	1.5 years 1.5 years
Tibia	Proximal Epiphysis	1.5 years

Table A66 Roestown 2: States of epiphyseal fusion observed for articulated dog skeleton F116 after Silver (1969, 285-286).

Phase	REC ID	Species	Elements	Gnawing	Description
1A	6248	Cattle	Scapula	C	Partially gnawed at edge of glenoid cavity.
1A	7716	Sheep/Goat	Scapula	C	2 toothmarks visible on lateral surface, below spine.
1B	2732	Sheep/Goat	Radius	C	Distal end may have been gnawed but no teeth marks evident.
1B	3026	Cattle	Femur	C	Ball of proximal.
1B	7549	Cattle	Metapodial	C	Toothmarks present on outer surface of condyle.
1B	8000	Sheep/Goat	Metapodial	C	Gnawed at proximal end in area of the one surviving condyle.
2A	859	Cattle	Metatarsal	C	Appears gnawed at proximal extremity although no definite teethmarks visible.
2A	2109	Sheep/Goat	Metacarpal	C	Surviving distal end looks as if gnawed
2A	2151	Cattle	Metacarpal	C	Gnawed at distal end.
2A	2612	Pig	Mandible	R	
2A	3987	Cattle	Femur	C	Ball of proximal only.
2A	4822	Cattle	Calcaneum	C	Possibly gnawed at proximal, not definitive evidence.
2A	5779	Cattle	Calcaneum	CR	While there are no teeth marks present, proximal extremity looks as if it may have been gnawed. Cortex of bone is worn.
2A	6486	Cattle	Humerus	C	Toothmarks present on trochlea.
2A	7407	Cattle	Mandible	C	Condyle & part of ramus. Surface of condyle may have been gnawed.
2A	8171	Cattle	Calcaneum	C	Possibly gnawed in area of proximal epiphysis.
2B	987	Sheep/Goat	Metacarpal	C	From shape of distal end, looks as if may have been gnawed although no toothmarks are visible.
2B	1590	Cattle	Calcaneum	R	Surface of proximal appears to have been gnawed although no definite marks visible.
2B	2214	Cattle	Metacarpal	C	Caudal surface
2B	2238	Cattle	Calcaneum	R	Proximal epiphysis appears partially gnawed.
2B	2408	Cattle	Calcaneum	C	
2B	2546	Pig	Phalanx 1	R	Gnawing evident on cranial surface & on distal condyles.
2B	2874	Cattle	Metatarsal	C	Gnawed on both cranial & caudal surfaces immediately

					above distal epiphysis.
2B	2971	Cattle	Calcaneum	C	Part of sustentaculum & rest of 'distal' heavily gnawed.
2B	2973	Cattle	Ulna	C	Proximal epiphysis heavily gnawed in parts.
2B	2989	Cattle	Metacarpal	C	Chopped at an angle through shaft. Appears to have been partially gnawed at distal end.
2B	3295	Cattle	Mandible	C	Condyle may have been gnawed.
2B	4184	Pig	Scapula	C	
2B	4602	Pig	Humerus	C	
2B	4607	Cattle	Calcaneum	C	Appears gnawed at sustentaculum.
3A	3533	Cattle	Metatarsal	C	Gnawed at distal extremity.
3A	3536	Cattle	Metacarpal	C	
3A	3582	Cattle	Phalanx 1	C	Gnawed at proximal end.
3A	5706	Cat	Tibia	CR	No butchery but have puncture mark caused by carnivore tooth on lateral side of element towards proximal end. Also have rodent scraping marks towards distal end on lateral side.
3A	6121	Cattle	Mandible	R	Condyle & part of ramus. Traces of rodent gnawing on medial side of angle of ramus.
3A	6128	Cattle	Tibia	C	Appears to be partially gnawed towards distal extremity.
3A	6162	Cattle	Calcaneum	C	
3A	6597	Sheep/Goat	Scapula	C	Toothmarks at glenoid cavity.
3B	9904	Horse	Humerus	C	3-4 possible toothmarks present on surface of proximal epiphysis.
3B	10375	Cattle	Femur	C	Ball of proximal is heavily gnawed.
4	5230	Horse	Phalanx 1	C	Dp = 30.6mm
4	5955	Cattle	Astragalus	C	Dl = 30.5 Dm not possible.
5	3206	Cattle	Calcaneum	C	May have been gnawed at sustentaculum.
5	3413	Cattle	Atlas	C	One feint cutmark visible. Teethmarks from gnawing also visible.
5	3450	Cattle	Calcaneum	C	Large part of surface of element has been heavily gnawed.
5	4242	Cattle	Scapula	C	
5	8662	Cattle	Calcaneum	C	Possibly gnawed at proximal as majority of proximal is gone. (B III).

UNPHASED	3474	Cattle	Metacarpal	C	Gnawed at proximal end.
UNPHASED	3476	Sheep/Goat	Metacarpal	C	Gnawed at proximal end. Specimen in 3 pieces. Ddm, BFdm & BFdl not possible due to wear.
UNPHASED	3522	Cattle	Phalanx 1	C	Part of distal epiphysis has been gnawed away.
UNPHASED	3526	Pig	Scapula	C	Appears gnawed in area of proximal fusion.
UNPHASED	8874	Cattle	Astragalus	C	May have been gnawed, 3 possible toothmarks present in area of heavily eroded distal end.
UNPHASED	9188	Cattle	Calcaneum	C	Possibly gnawed in area of sustentaculum.
UNPHASED	9437	Cattle	Calcaneum	C	Distal area may have been gnawed.
2A	N/C 029	B/E/C	-	C	Bovid/equid/cervid long bone shaft fragment. Gnawed on one surface.
2B	N/C 009	Sheep/Goat?	Metacarpal?	C	Probably fragment of metacarpal. Series of toothmarks suggest carnivorous gnawing.
2B	N/C 026	Cattle?	Radius?	C	Likely to be young cattle radius, cranial surface displays substantial gnawing.
2B	N/C 068	B/E/C		R	Bovid/cervid/equid rib fragment with several chopmarks visible. Also feint signs of rodent gnawing.
3A	N/C 090	Cattle	Mandible	C	Left mandible with coronoid process in tact. Majority of condyle is missing but displays traces of gnawing. Series of toothmarks are visible on lateral side of surviving ramus.

Table A67 Roestown 2: Details of gnawing observed for countable and non-countable specimens.
C = gnawed by carnivores, R = gnawed by rodents, CR = gnawed by carnivores & rodents.
N/C = non-countable.

Phase	REC I.D	Species	Element	Burning	Description
2A	2602	Sheep/Goat	Phalanx 1	Calcined	Proximal end of element is white with blue hue from burning, but morphology of specimen has not been distorted at all.
2A	5296	Cattle	Mandible	Burnt/ blackened	Condyle, burnt patch present on one of element, blackened area.
2A	9338	Cattle	Mandible	Singed	M1 & M2 are almost completely blackened – (collection of non-countable fragments similarly blackened). Non-countable Rec 115.
2A	9340	Cattle	LT	Singed	Maxillary M1/2 largely blackened. Non-countable Rec 115 also from this context.
2B	1019	Cattle	Metatarsal	Singed	A very small isolated patch of blackening on anterior surface of element. Specimen is broken immediately below this so may have been further traces of burning.
2B	4317	Sheep/Goat	Phalanx 2	Calcined	Most of element has a white hue.
4	5352	Cattle	Scafocuboid	Burnt/ blackened	Sporadic blackened patches on interior surface of specimen.
Unphased	8856	Sheep	Tibia	Singed	Partially blackened.
2A	N/C 043	Pig	Metapodial	Burnt/ blackened	Approximately half of a medial/lateral metapodial. This is heavily blackened over almost entire surface. None of the other material that this piece was bagged with show any traces of burning.
2A	N/C 052	-		Burnt/ blackened	Undiagnostic fragment, blackened from burning.
2A	N/C 079	Cattle	Metatarsal	Burnt/ blackened	Metatarsal shaft fragment, one area of surface is heavily blackened although other side of element not at all.
2A	N/C 115			Singed	43 fragments including vertebra, metpodial, 1 tooth and a majority of undiagnostic fragments all partially blackened in same manner as REC 9338 and 9340 from the same context.
2A	N/C 116	Cattle	LMT	Calcined	2 cusps of an M1/2, almost entirely white due to burning.
2A	N/C 117			Singed	9 fragments that are partially blackened due to burning.
2B	N/C 034			Burnt/ blackened	Very small unidentifiable fragment heavily blackened over majority of its surface due to burning.
4	N/C 126			Singed	Undiagnostic longbone fragment partially blackened on exterior.

Table A68 Roestown 2: Details of burning observed for countable and non-countable specimens.
N/C = non-countable

Phase	Rec I.D.	Species	Element	Description	Possible Diagnosis
1A	6136	Cattle	Mandible	Surface of condyle contains small shallow depression, evidence of existence of a sinus.	Infection
1A	7458	Cattle	Mandible	Area of dp4/P4 has ante-mortem tooth loss & alveolur bone resorption.	Possible infection
1B	119	Dog	Humerus	Extensive additional bone growth towards distal end of shaft, severely deformed.	Trauma & resulting infection
1B	149	Dog	Phalanx 1	Distal end displays Stage 3 exostosis and some traces of eburnation.	DJD
1B	150	Dog	Phalanx 1	Distal end displays Stage 3 exostosis.	DJD
1B	153	Dog	Phalanx 1	Proximal end displays Stage 2 exostosis, small trace of eburnation on proximal articulation.	DJD
1B	10372	Horse	Metacarpal	Proximal end displays Stage 3 exostosis, proximal of lateral mc fused to MC1.	DJD (Spavin)
1B	10373	Horse	Carpal 3	Similar pathology evidence to REC 10372 i.e. Stage 3 exostosis.	DJD (Spavin)
2A	4145	Cattle	Metatarsal	Proximal epiphysis displays mild traces of eburnation. Shape of shaft partially distorted.	DJD
2A	5526	Horse	Phalanx 1	Distal end displays excessive bone growth on one side. Not typical exostosis.	Trauma/Infection
2A	7054	Horse	Metatarsal	Stage 3 exostosis.	DJD (Spavin)
2A	7396	Cattle	Metacarpal	Posterior surface of shaft displays thumb-print like depression that may indicate existence of an overlying tumour. Anterior surface displays periostitis - remodelling of the bone with thin plaques of woven bone.	Infection & Periostitis
2A	7502	Horse	Metatarsal	Proximal displays Stage 2 exostosis.	DJD (Spavin)
2B	951	Sheep/Goat	Phalanx 2	Two complete PH2s fused together to form one unit.	Congenital
2B	1683	Cattle	Femur	Proximal displays exostosis & osteophytes, eburnation evident on ball of proximal.	DJD (Osteoarthritis)
2B	7593	Cattle	Metatarsal	Proximal articulation displays Stage 3 exostosis.	DJD
3A	5735	Cattle	Mandible	Small amount of pitting visible on surface of condyle. (Degenerative characteristic that occurs in relation to chewing cud).	DJD

3A	9969	Cattle	Phalanx 1	Distal end displays Stage 4 exostosis with eburnation & grooving visible on distal articulation, indicates osteoarthritis.	DJD (Osteoarthritis) & possible Infection
Unphased	1974	Pig (Female)	Mandible	Area of first & second molars is severely distorted although it retains an alveolus for one tooth. Alveolur bone recession evident.	Infection
1A	6727	Cattle	Mandible	Pitting visible on surface of condyle. (Degenerative characteristic that occurs due to chewing cud).	DJD
1B	9631	Cattle	Pelvis	Eburnation evident on surface of acetabulum closest to pubis	DJD
1B	10033	Cattle	Femur	Eburnation visible on surface of ball of proximal.	DJD
-	N/C 134	Cattle	Pelvis	Fragment of pubis, surviving edge of acetabulum is polished indicating eburnation.	DJD
-	N/C 135	Cattle	Metatarsal	Shaft fragment of MT1, posterior surface displays excessive bone growth indicating exostosis. This is likely result of a fracture to the bone which later healed. Therefore, bone growth caused by trauma or trauma & infection.	Trauma or Trauma & Infection
-	N/C 136	Bovid/Equid	Cervical Vertebra	Eburnation & pitting evident in body of specimen. Possibly additional bone growth.	DJD (possible osteoarthritis)

Table A69 Roestown 2: Details of palaeopathological evidence observed for countable and non-countable specimens. Stages of exostosis follow Bartosiewicz *et al.* (1997).

DJD = degenerative joint disease. N/C = Non-countable specimen.

Phase	REC I.D.	Species	Element	Dental Observations/Anomolies
2B	2356	Dog	Mandible	Alveolur bone recession of incisors, canine, P1 and M2 & 3.
1A	1310	Sheep/Goat	Mandible	Distal of P4 slightly impinged upon by mesial of M1.
1A	5464	Cattle	Mandible	No P2.
1A	7868	Pig (female)	Mandible	No P1.
1B	2770	Pig (male)	Mandible	No P1.
1B	3028	Pig (female)	Mandible	No P1.
1B	10376	Cattle	Mandible	Alveolur bone recession & rotation of either P3 or P4.
2A	2635	Cattle	LMT	M1/2. Lingual side of one cusp is out of correct alignment.
2A	2680	Sheep/Goat	Mandible	Ante-mortem tooth loss of P2 and P3.
2A	4043	Cattle	Mandible	Extra area of growth to occlusal surface of dP4 between cusp 1 & 2 on lingual side.
2A	5335	Cattle	Mandible	No P2.
2A	9557	Horse	LT	Maxillary P3/P4/M1 or M2. 2 bulbous pieces present on buccal side of tooth.
2B	480	Sheep/Goat	LMT	M1/2. 2nd cusp is partially worn, likely due to impinging of adjacent tooth.
2B	494	Cattle	LMT	M3. Wear of 3rd cusp appears irregular.
2B	495	Sheep/Goat	Madible	Second cusp of P4 is partially impinged upon by M1.
2B	496	Sheep/Goat	LT	Maxillary molar. One cusp is worn at its edge, likely due to impingement of adjacent tooth.
2B	2552	Cattle	LT	Maxillary molar. Malocclusion, unusual wear pattern evident for one cusp - worn so that occlusal surface is almost diagonal.
2B	4682	Pig	LMT	M3. Malocclusion, 1st cusp extends to noticeably higher level than 2nd or 3rd cusps.
2B	10259	Cattle	Mandible	M3 present is most worn specimen current author has witnessed. TWS way beyond Grant's stage m, therefore, an extremely old animal, well over 50 months. Evidence of resorption at root, slightly broken but no pathology.
3A	1814	Cattle	Mandible	No P2.
3A	7210	Cattle	Mandible	No P2.
3A	7236	Cattle	Mandible	No P2.
3A	8304	Cattle	LMT	P4. Wear pattern irregular as distal surface is worn down to much lower height than mesial end of tooth.
3B	9909	Cattle	LT	Maxillary molar. Malocclusion, wear pattern irregular as occlusal surface of one cusp is very worn towards one edge but not so worn at other.
5	1355	Cattle	LMT	M3 - Malocclusion, 1st cusp very worn but 2nd cusp much less so as it survives approx. 11.5mm higher than occlusal surface of 1st cusp. 3rd cusp only very slightly worn.
5	3251	Cattle	LT	Maxillary molar. Malocclusion, wear pattern irregular as occlusal surface of both cusps is at varying levels of wear.
5	3424	Pig	Mandible	M3, occlusal surface has polished appearance, may be due to taphonomic factors.
5	8656	Dog	Mandible	Ante-mortem toothloss of P1 and P3.

Table A70 Roestown 2: Details of dental observations/anomalies for countable specimens.
P1, P2, P3, P4 = Premolar 1, 2, 3, 4.
M1, M2, M3, = Molar 1, 2, 3. M1/2 = Molar 1 or 2.

Phase	REC I.D.	Species	Element	Other Observations
2A	8493	Horse	Metatarsal	Some irregular pitting at different areas along length of shaft. Taphonomic, not pathology.
3A	10275	Sheep	Horncore	Specimen from a 4-horn sheep. Stump of the smaller HC only is present (diminutive in comparison to a regular HC).

Table A71 Roestown 2: Details of other observations for countable specimens.

Element	Description
AN	antler
AS	astragalus
BA	baculum [ba]
C3	carpal/capit-trapez
CA	calcaneum
CR	cranium
FE	femur
FI	fibula [fi]
HC	horncore
HU	humerus
LMT	loose mandibular tooth
LT	loose tooth
LXT	loose maxillary tooth
MC1	metacarpal
MC2	second metacarpal
MC3	third metacarpal
MC4	fourth metacarpal
MC5	fifth metacarpal
MCU	metacarpal 'number' unknown
MN	mandible
MP1	metapodial
MP2	metapodial
MPU	metapodial 'number' unknown
MT1	metatarsal
MT2	second metatarsal
MT3	third metatarsal
MT4	fourth metatarsal
MT5	fifth metatarsal
MTU	metatarsal 'number' unknown
N/C	NON-COUNTABLE
PA	patella
PE	pelvis
PH1	phalanx 1
PH2	phalanx 2
PH3	phalanx 3
PHU	phalanx
RA	radius
SC	scapula
SCU	scafocuboid
TI	tibia
UL	ulna
VC1	atlas (VC1)
VC2	axis (VC2)

Table A72 Roestown 2: Codes used for skeletal elements in electronic database.

Appendix 2
Figures A1-A39

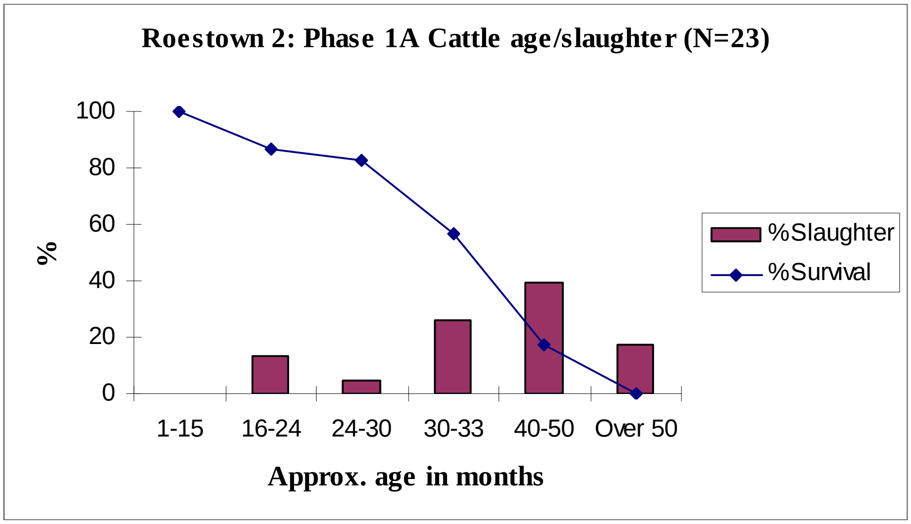

Figure A1 Roestown 2: Cattle age/slaughter pattern for Phase 1A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 104). Tooth wear stages after Grant (1982, 92).

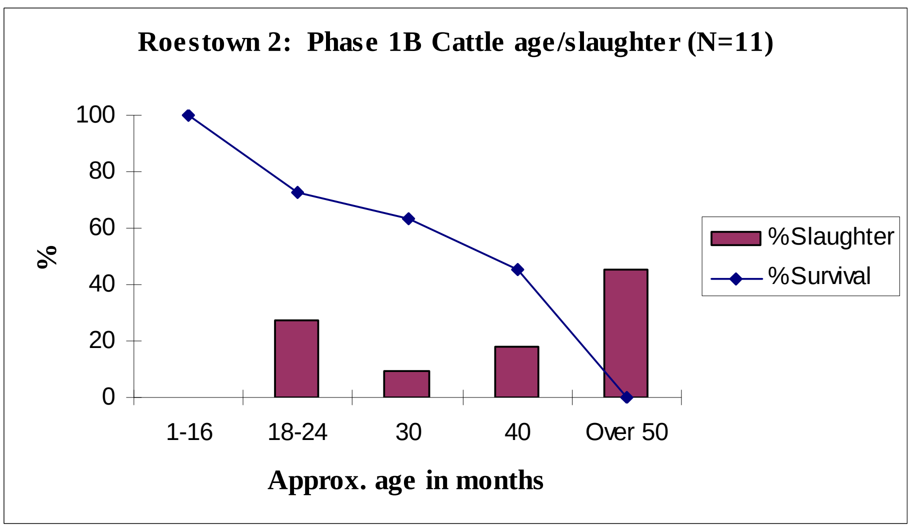

Figure A2 Roestown 2: Cattle age/slaughter pattern for Phase 1B based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 104). Tooth wear stages after Grant (1982, 92).

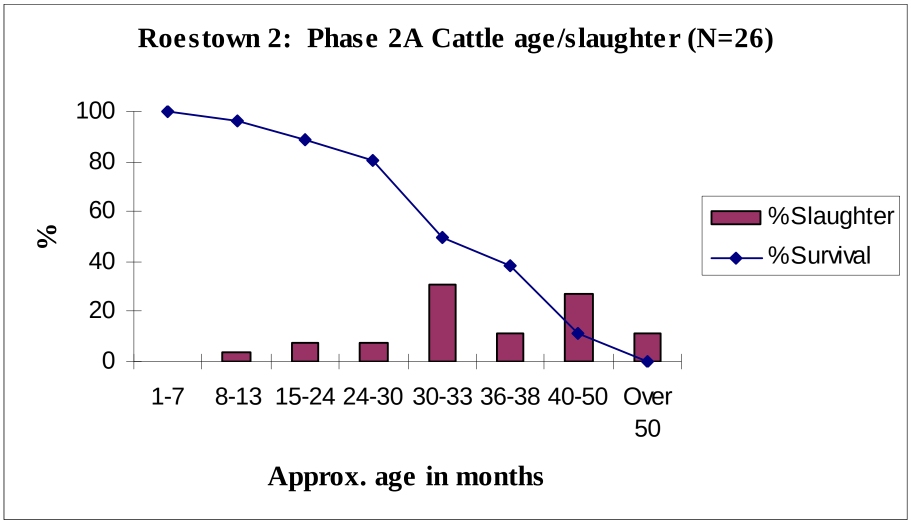

Figure A3 Roestown 2: Cattle age/slaughter pattern for Phase 2A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 104). Tooth wear stages after Grant (1982, 92).

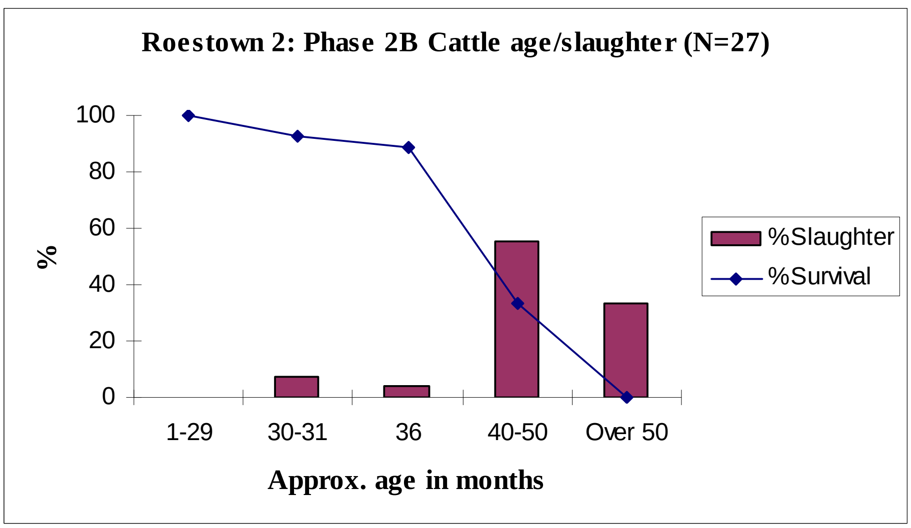

Figure A4 Roestown 2: Cattle age/slaughter pattern for Phase 2B based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 104). Tooth wear stages after Grant (1982, 92).

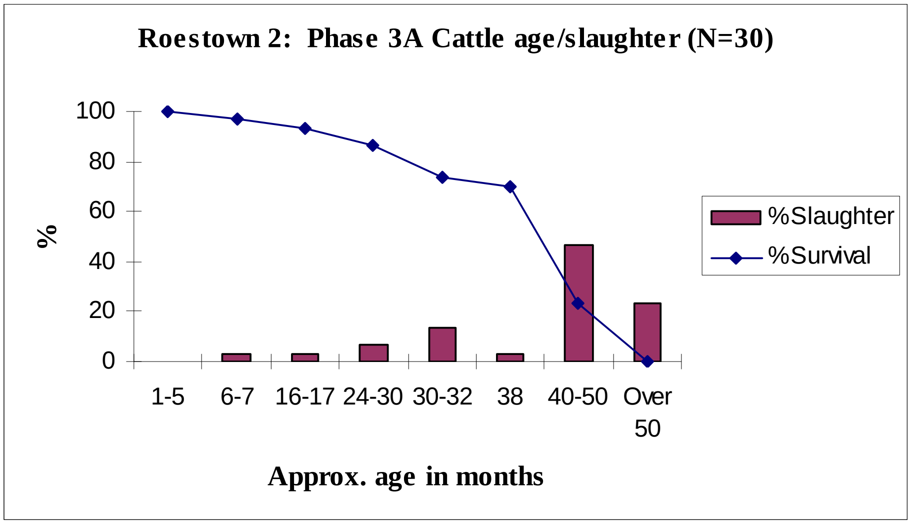

Figure A5 Roestown 2: Cattle age/slaughter pattern for Phase 3A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 104). Tooth wear stages after Grant (1982, 92).

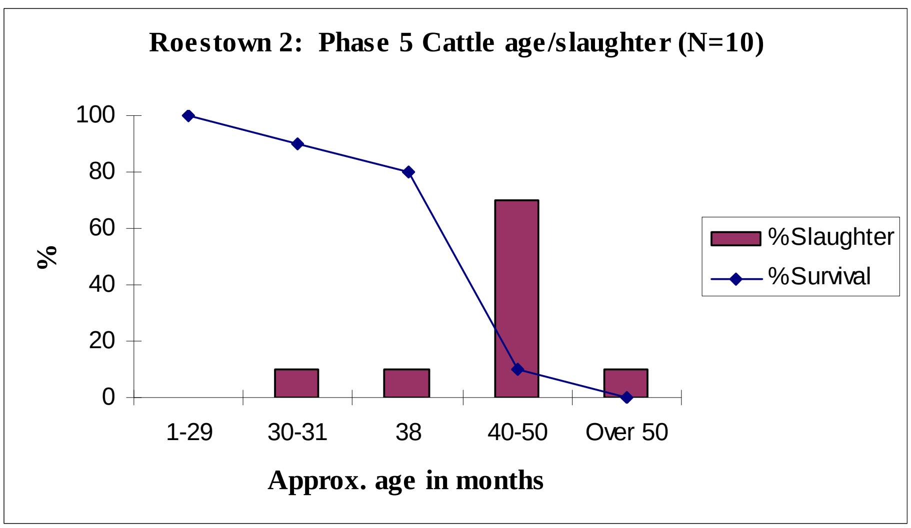

Figure A6 Roestown 2: Cattle age/slaughter pattern for Phase 5 based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 104). Tooth wear stages after Grant (1982, 92).

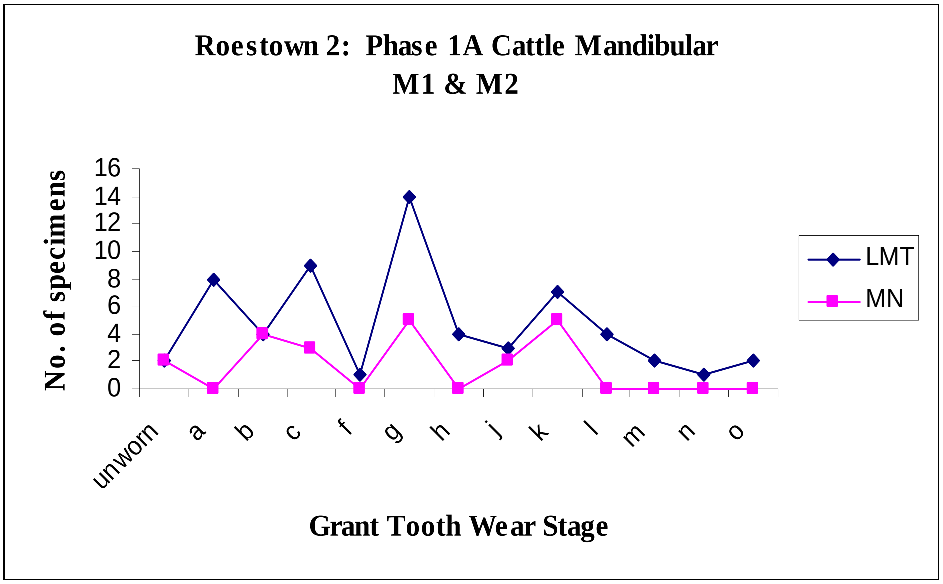

Figure A7 Roestown 2: Tooth wear stages for Phase 1A cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 61. No. of specimens in MN = 21.

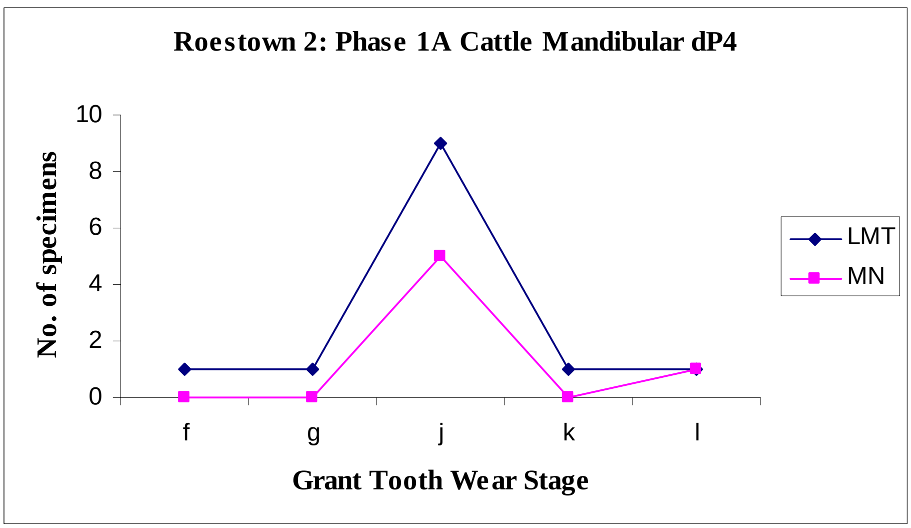

Figure A8 Roestown 2: Tooth wear stages for Phase 1A cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 13. No. of specimens in MN = 6.

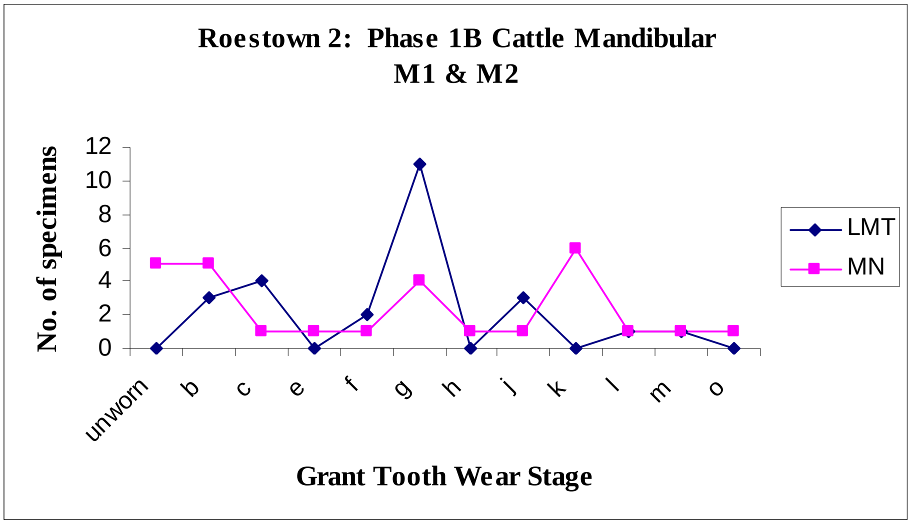

Figure A9 Roestown 2: Tooth wear stages for Phase 1B cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 25. No. of specimens in MN = 28.

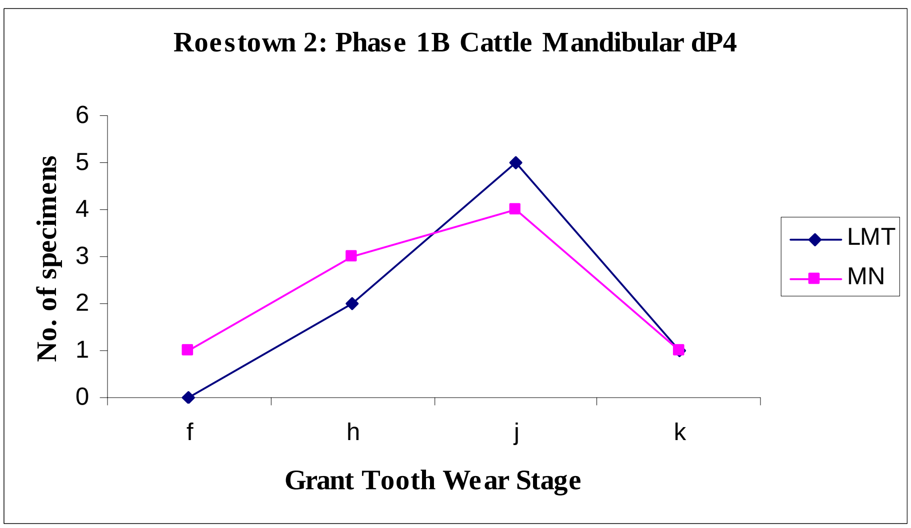

Figure A10 Roestown 2: Tooth wear stages for Phase 1B cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 8. No. of specimens in MN = 9.

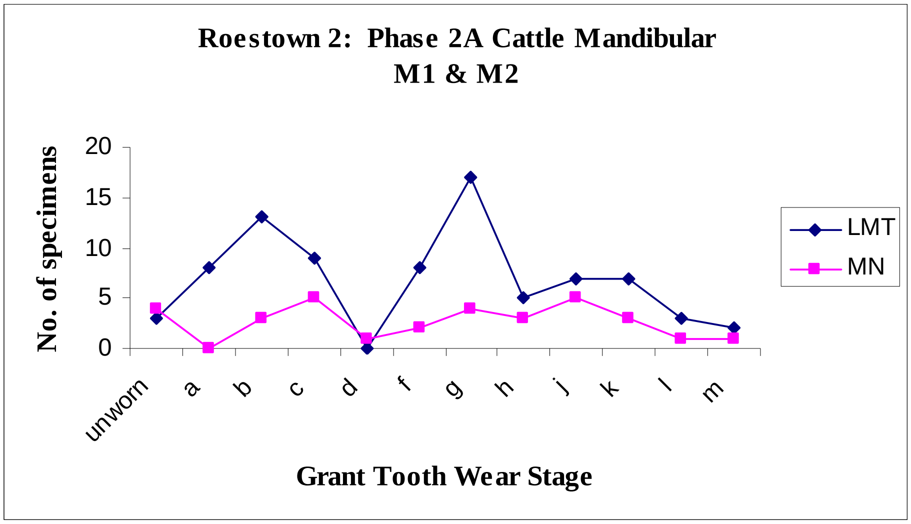

Figure A11 Roestown 2: Tooth wear stages for Phase 2A cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 82. No. of specimens in MN = 32.

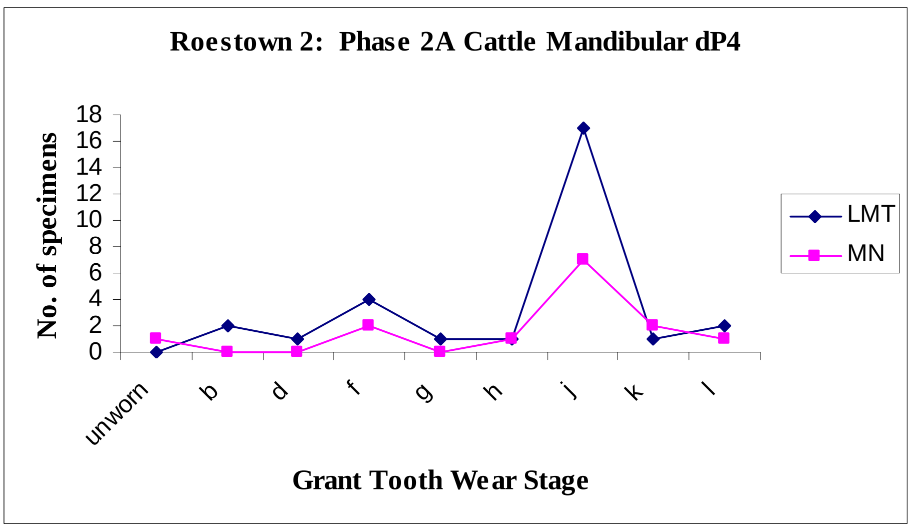

Figure A12 Roestown 2: Tooth wear stages for Phase 2A cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 29. No. of specimens in MN = 14.

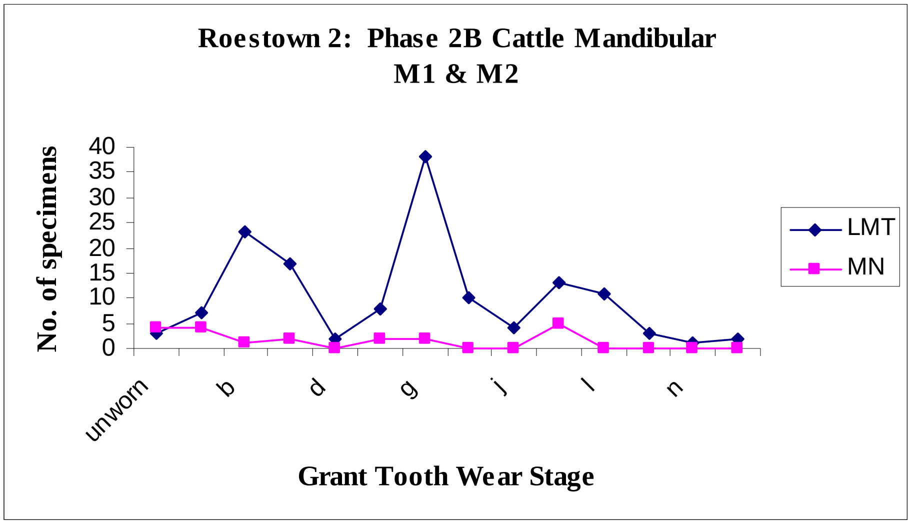

Figure A13 Roestown 2: Tooth wear stages for Phase 2B cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 142. No. of specimens in MN = 20.

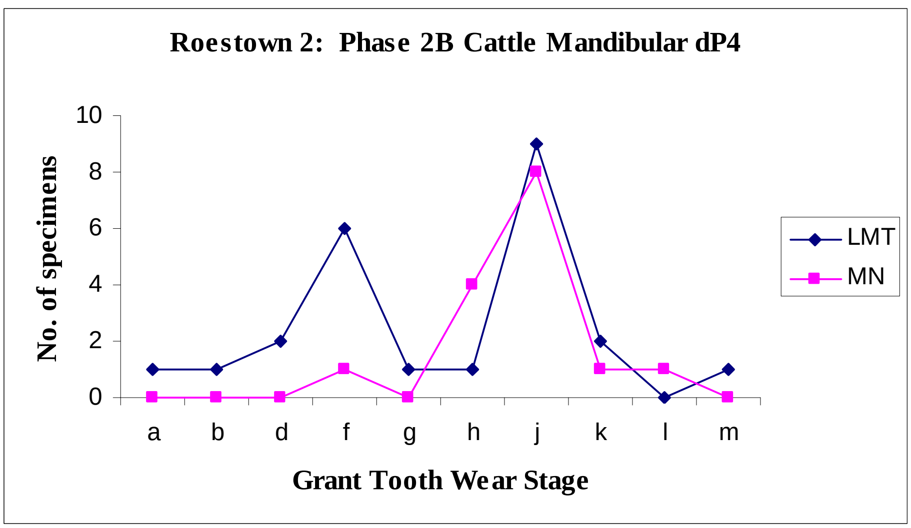

Figure A14 Roestown 2: Tooth wear stages for Phase 2B cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 24. No. of specimens in MN = 15.

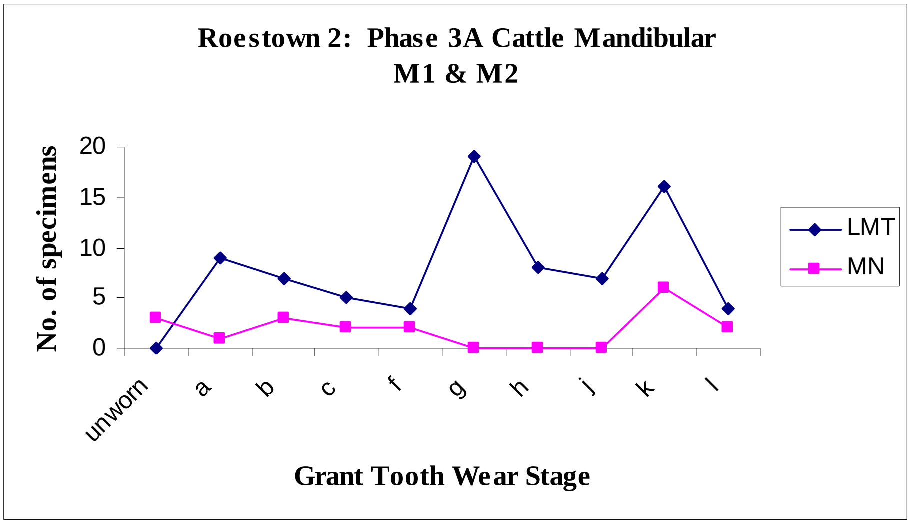

Figure A15 Roestown 2: Tooth wear stages for Phase 3A cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 79. No. of specimens in MN = 19.

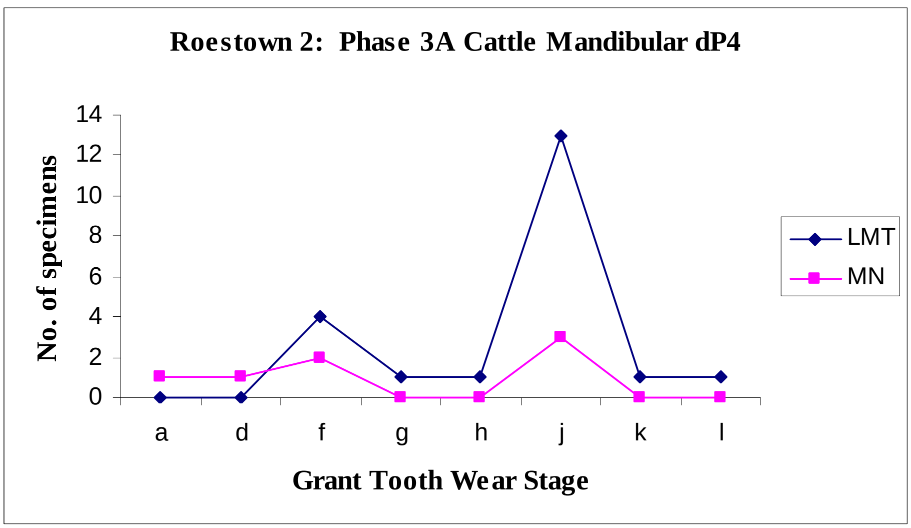

Figure A16 Roestown 2: Tooth wear stages for Phase 3A cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 21. No. of specimens in MN = 7.

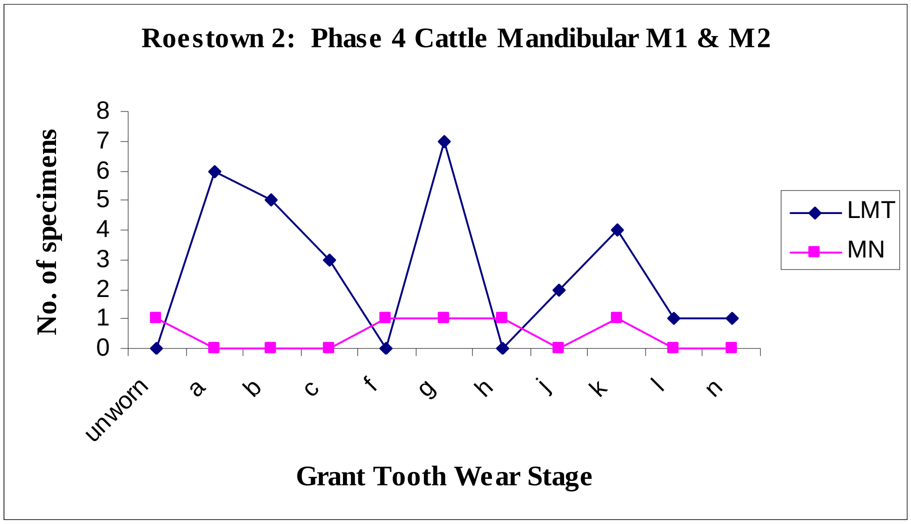

Figure A17 Roestown 2: Tooth wear stages for Phase 4 cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 29. No. of specimens in MN = 5.

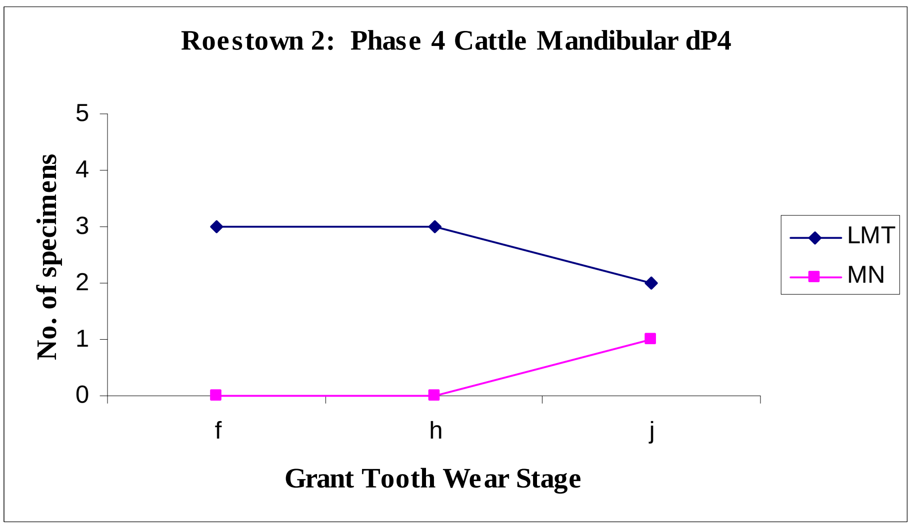

Figure A18 Roestown 2: Tooth wear stages for Phase 4 cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 8. No. of specimens in MN = 1.

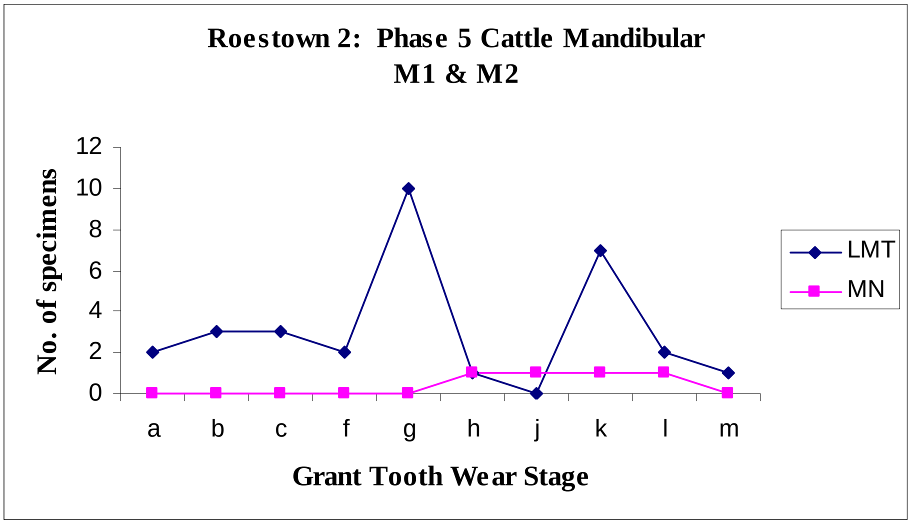

Figure A19 Roestown 2: Tooth wear stages for Phase 5 cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 31. No. of specimens in MN = 4.

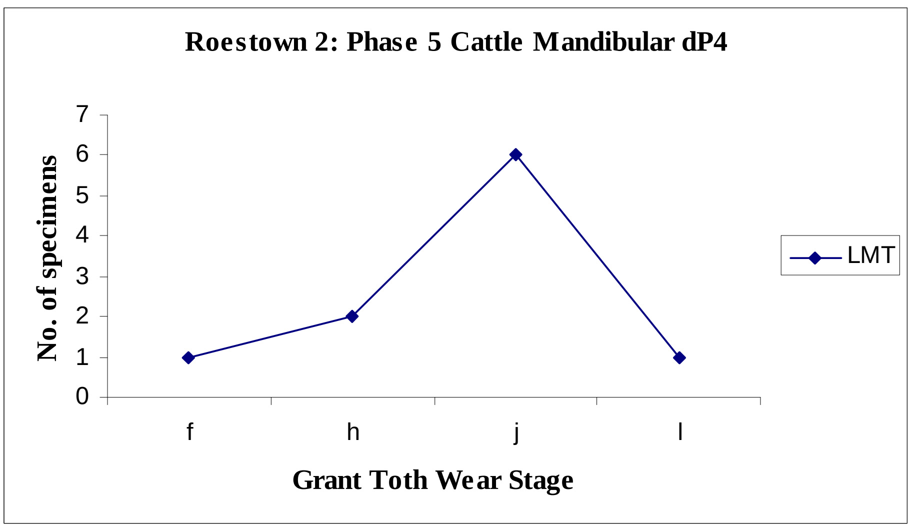

Figure A20 Roestown 2: Tooth wear stages for Phase 5 cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 10.

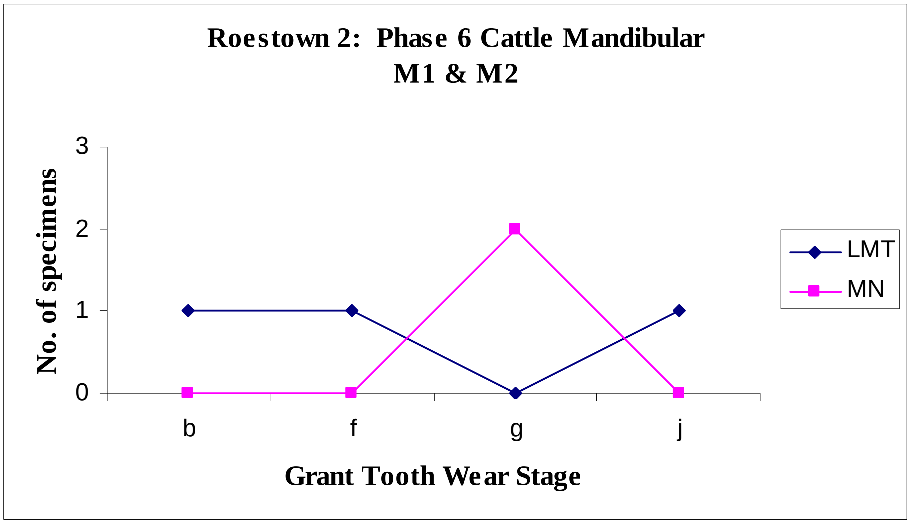

Figure A21 Roestown 2: Tooth wear stages for Phase 6 cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 3. No. of specimens in MN = 2.

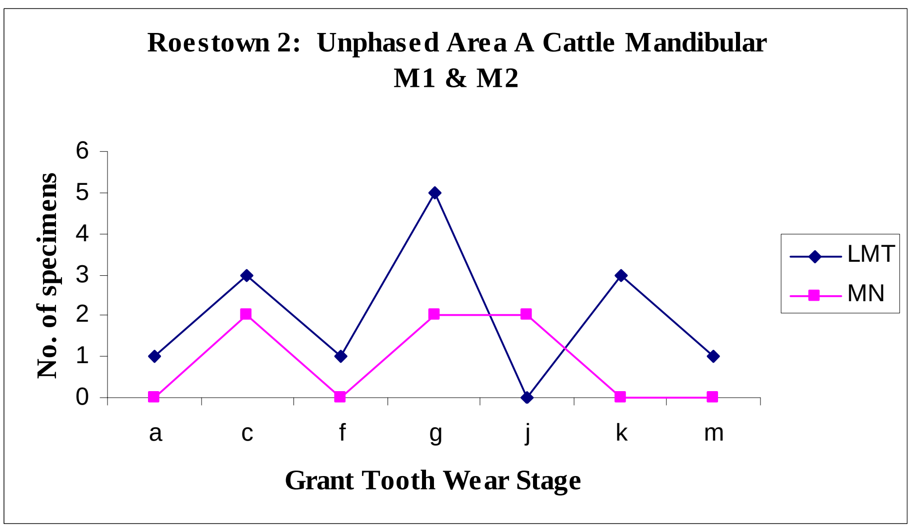

Figure A22 Roestown 2: Tooth wear stages for Unphased Area A cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 14. No. of specimens in MN = 6.

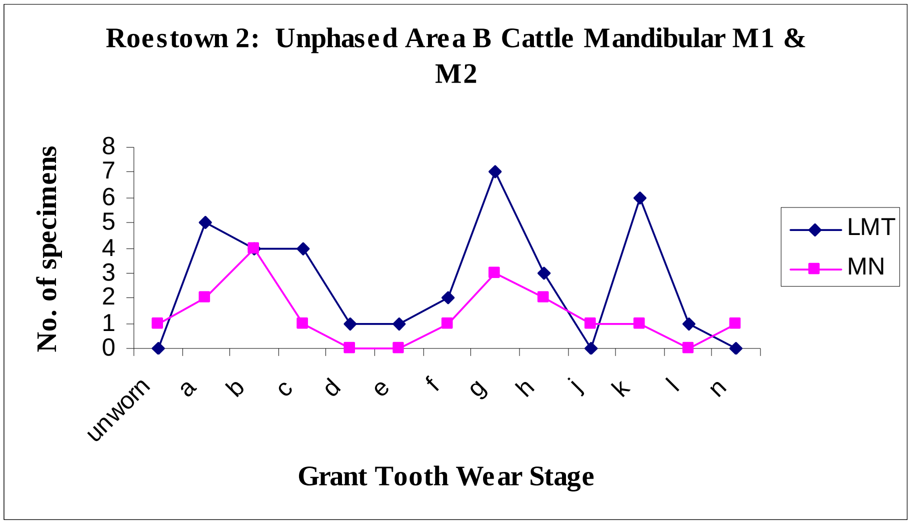

Figure A23 Roestown 2: Tooth wear stages for Unphased Area B cattle recorded for first and/or second molars following Grant (1982, 92).
No. of LMT = 34. No. of specimens in MN = 17.

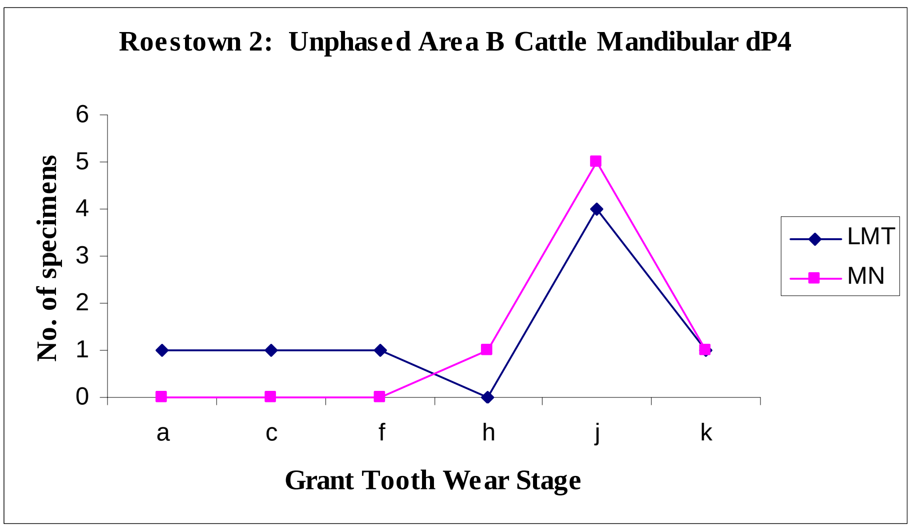

Figure A24 Roestown 2: Tooth wear stages for Unphased Area B cattle recorded for deciduous fourth premolars following Grant (1982, 92).
No. of LMT = 8. No. of specimens in MN = 7.

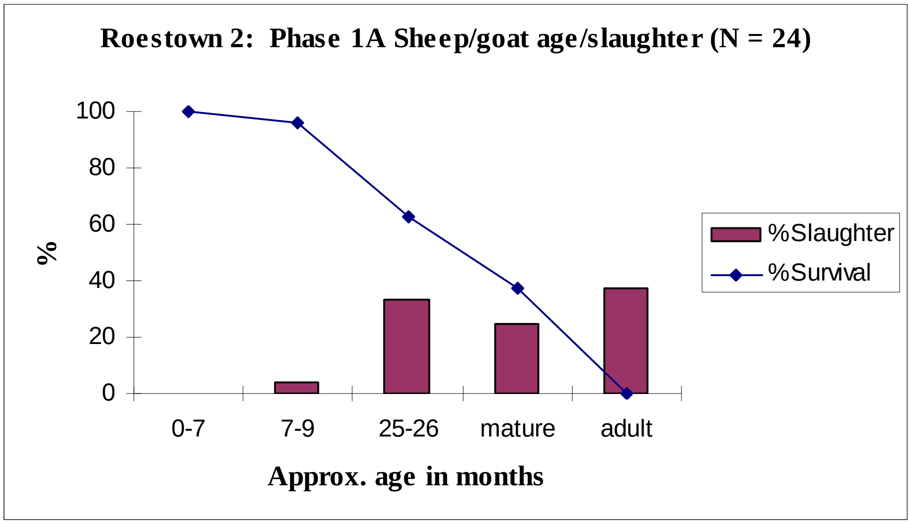

Figure A25 Roestown 2: Sheep/goat age/slaughter pattern for Phase 1A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 106). Tooth wear stages after Payne (1973 and 1987)

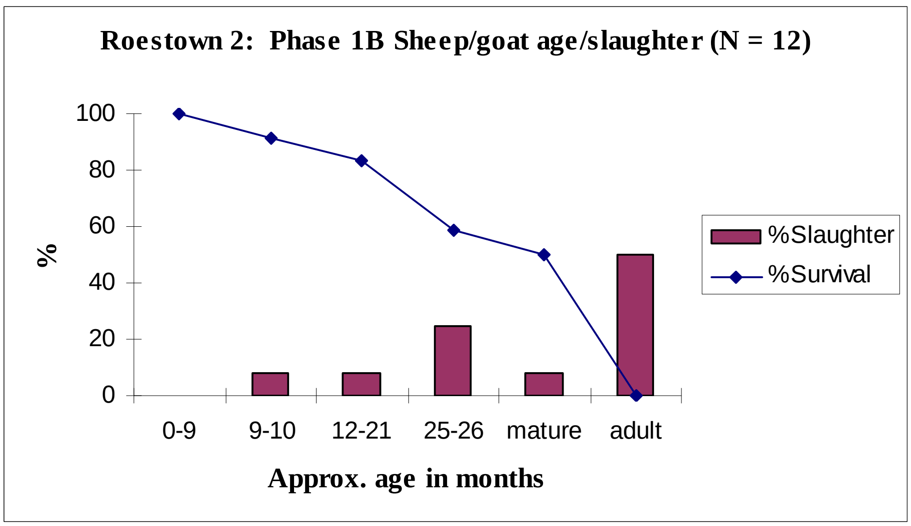

Figure A26 Roestown 2: Sheep/goat age/slaughter pattern for Phase 1B based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 106). Tooth wear stages after Payne (1973 and 1987)

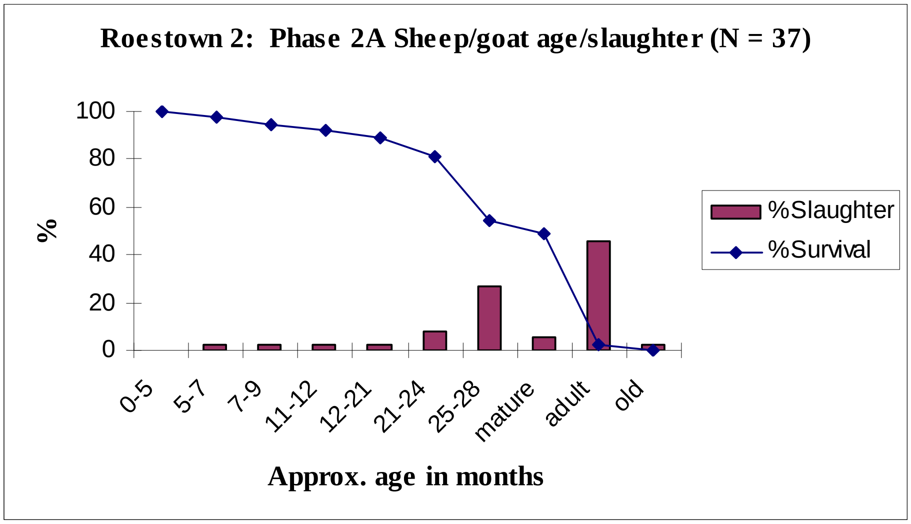

Figure A27 Roestown 2: Sheep/goat age/slaughter pattern for Phase 2A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 106).
Tooth wear stages after Payne (1973 and 1987)

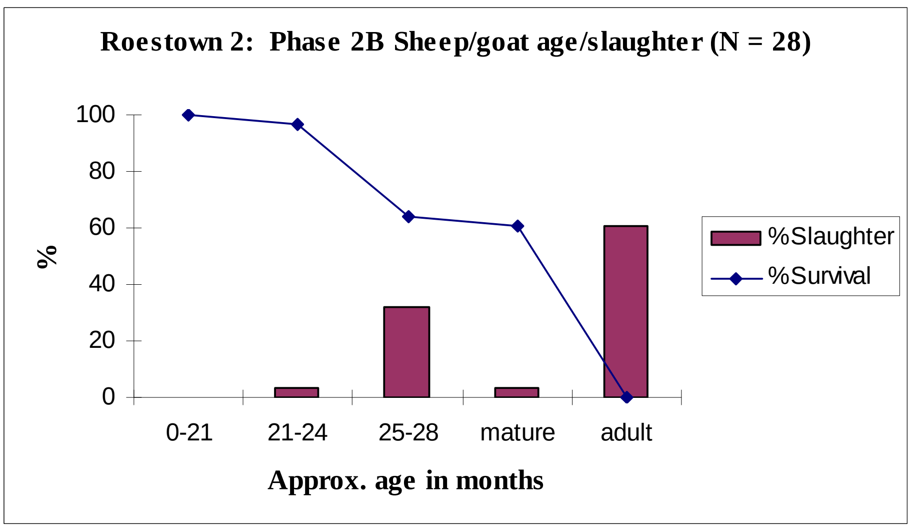

Figure A28 Roestown 2: Sheep/goat age/slaughter pattern for Phase 2B based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 106).
Tooth wear stages after Payne (1973 and 1987)

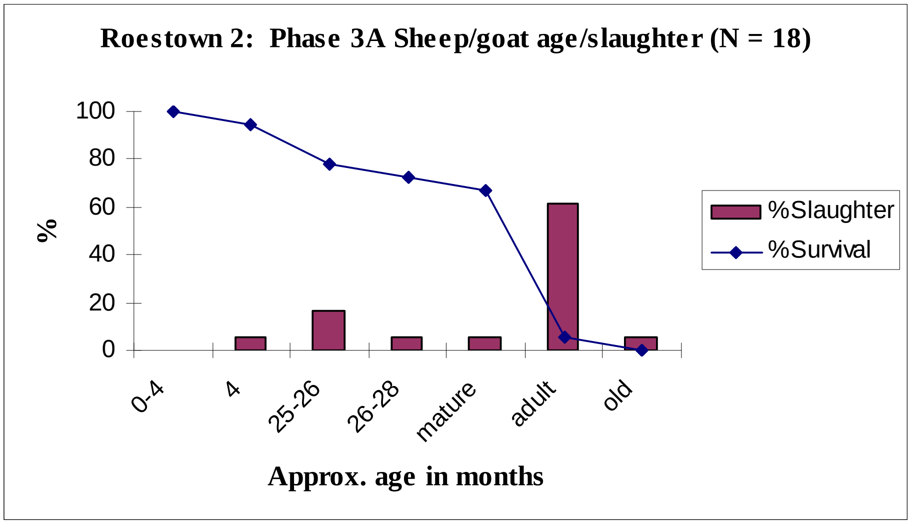

Figure A29 Roestown 2: Sheep/goat age/slaughter pattern for Phase 3A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 106).
Tooth wear stages after Payne (1973 and 1987)

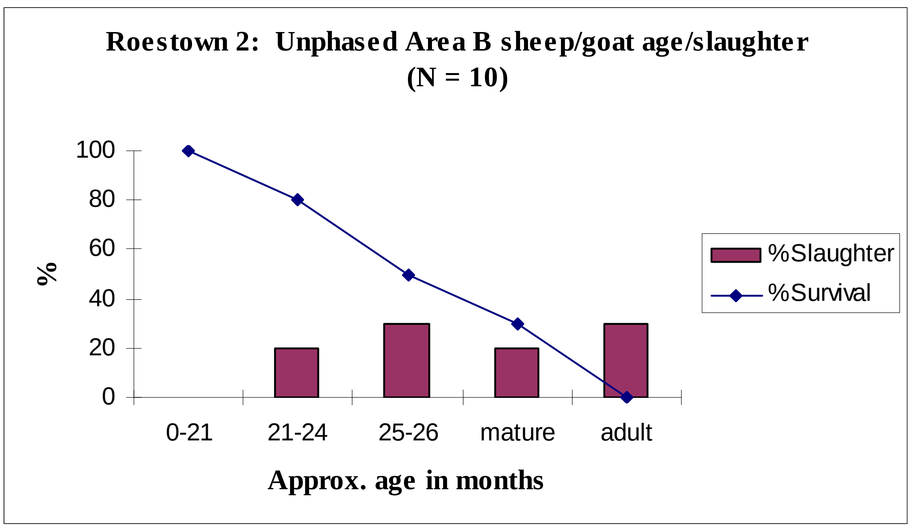

Figure A30 Roestown 2: Sheep/goat age/slaughter pattern for Unphased Area B based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 106).
Tooth wear stages after Payne (1973 and 1987)

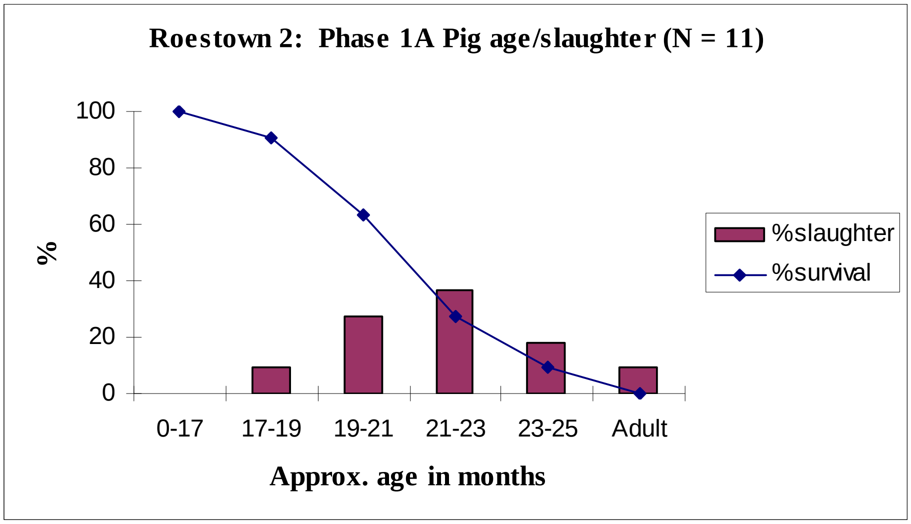

Figure A31 Roestown 2: Pig age/slaughter pattern for Phase 1A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 105). Tooth wear stages after Grant (1982, 94). (1 MN identified as male, 1 MN identified as female).

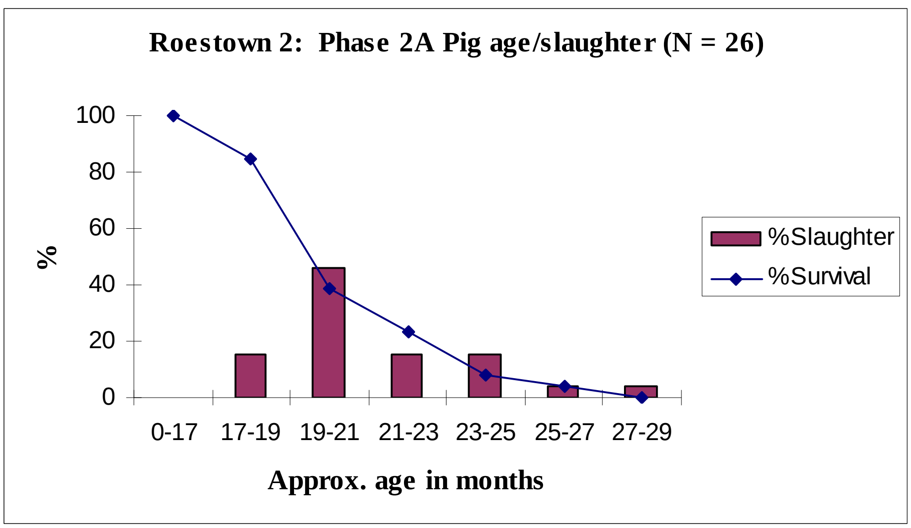

Figure A32 Roestown 2: Pig age/slaughter pattern for Phase 2A based on mandible wear stages assigned to loose mandibular M3s and mandibles following Higham (1967, 105). Tooth wear stages after Grant (1982, 94). (3 MN identified as male).

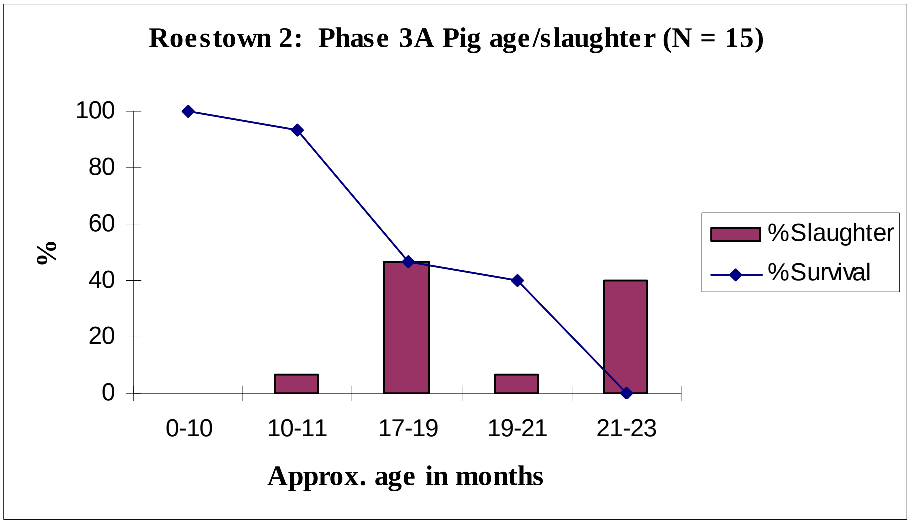

Figure A33 Roestown 2: Pig age/slaughter pattern for Phase 3A based on mandible wear stages assigned to M3s in mandibles following Higham (1967, 105).
Tooth wear stages after Grant (1982, 94). (3 MN identified as male).

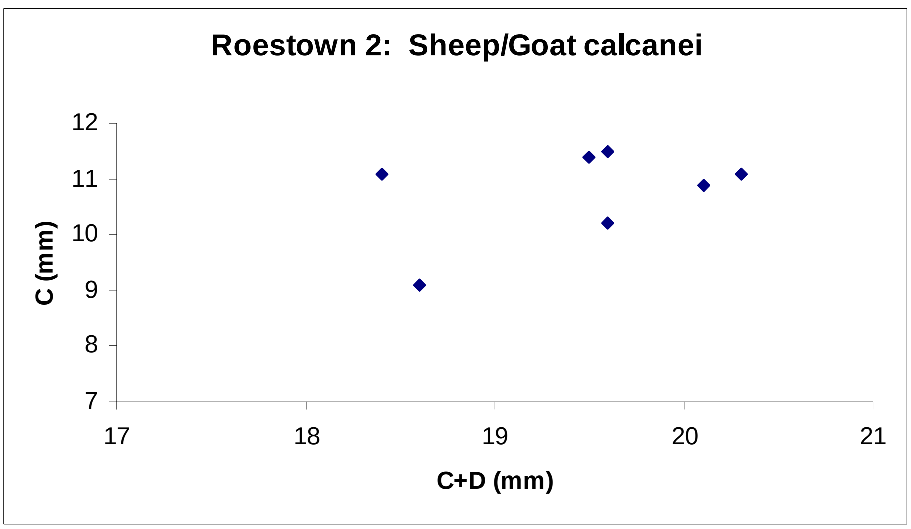

Figure A34 Roestown 2: Sheep/Goat calcanei C+D and C measurements following Boessneck (1969, 353).

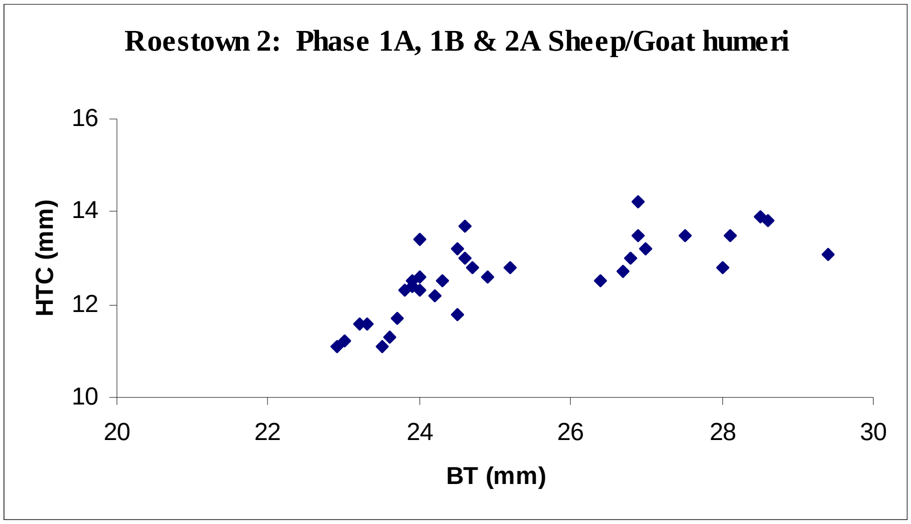

Figure A35 Roestown 2: Phase 1A, 1B & 2A sheep/goat humeri BT and HTC measurements following Payne and Bull (1988).

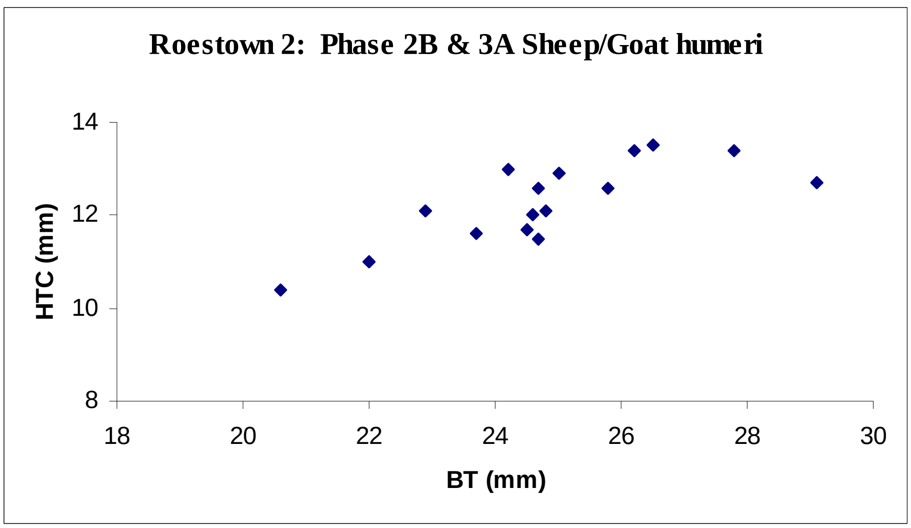

Figure A36 Roestown 2: Phase 2B & 3A sheep/goat humeri BT and HTC measurements following Payne and Bull (1988).

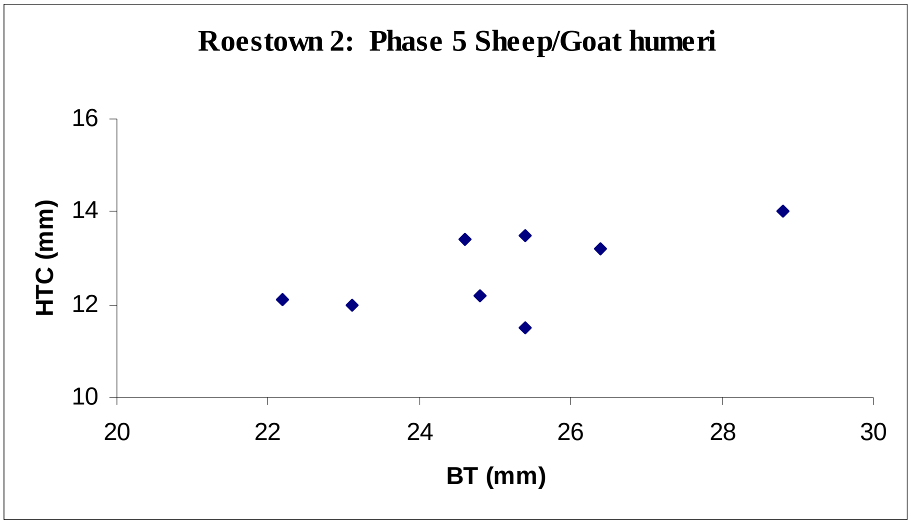

Figure A37 Roestown 2: Phase 5 sheep/goat humeri BT and HTC measurements following Payne and Bull (1988).

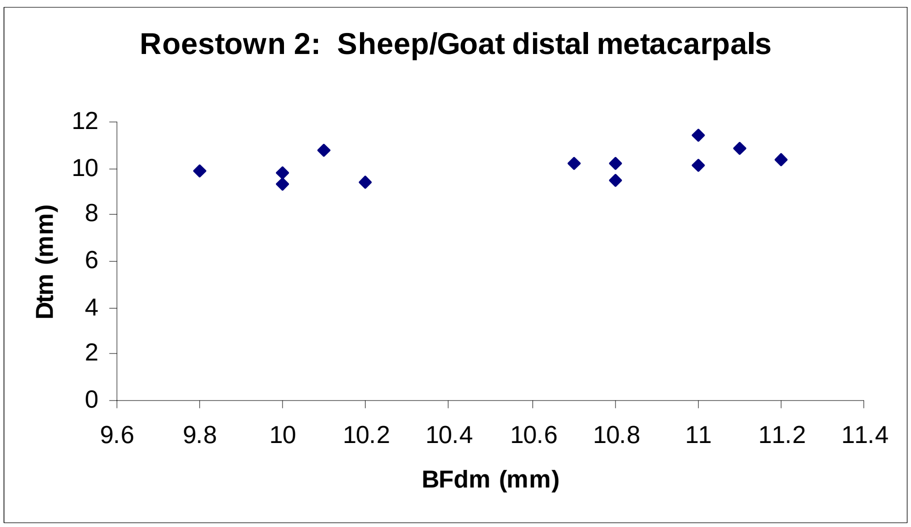

Figure A38 Roestown 2: Sheep/Goat distal metacarpal BFdm and Dtm measurements following Davis (1992) and Payne (1967) respectively.

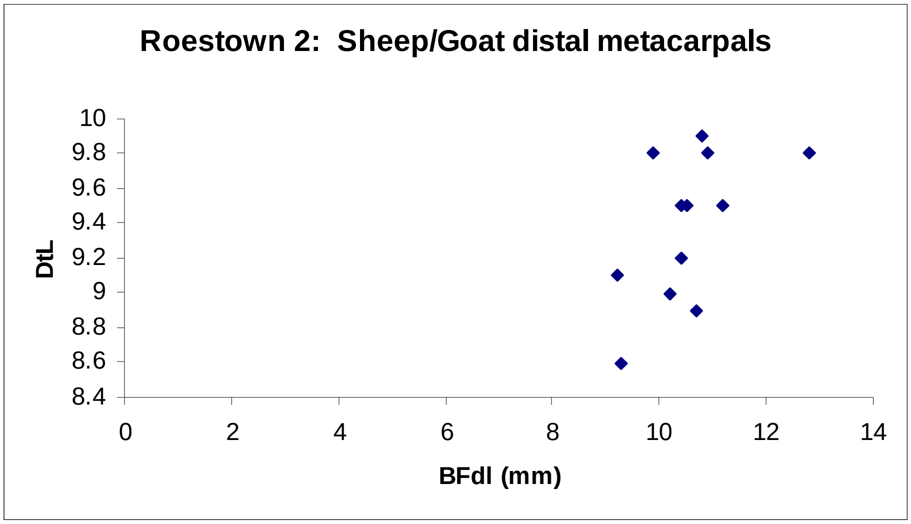

Figure A39 Roestown 2: Sheep/Goat distal metacarpal BFdl and DtL measurements following Davis (1992) and Payne (1967) respectively.

APPENDIX 7 *Osteological Report: Jennie Coughlan*

1. INTRODUCTION

This report describes the results of the analysis of the human skeletal remains excavated by ACS Ltd. at Roestown 2 (Licence number A008/002). Only two incomplete burials and a single disarticulated skull were identified during excavation.

2. OSTEOLOGICAL ANALYSIS

Burial 1

Burial 1 consisted of the incomplete and fragmentary skull of a child of 10-12 years. Ageing of this individual was based on dental development. There was an additional humeral fragment recovered from the vicinity of the burial but it could not be confirmed to be associated with the skull. Preservation of the skull was poor and it suffered both surface erosion and extensive fragmentation.

Despite the poor condition of the skull there was evidence for bilateral moderate cribra orbitalia, indicative of iron deficiency anaemia. Causes of iron deficiency are variable and include a diet lacking in iron rich foods and/or a diet rich in foods that inhibit the absorption of dietary iron.

There were a total of 22 permanent teeth recovered with this individual with 16 sockets surviving. No dental pathology was noted.

Burial 2

Burial 2, an adult, was again poorly preserved and survived as a small number of parietal fragments, a small mandibular fragment and fragments of the right scapula, right and left phalanges and a single incomplete cervical vertebra. Despite the poor preservation of the skull a single parietal fragment displayed slight porosity along the sagittal suture. This porosity is suggestive of porotic hyperostosis, a condition that, along with cribra orbitalia, is indicative of iron deficiency anaemia.

Disarticulated

There was a single disarticulated adult frontal bone recovered during excavations. The orbital region of this bone suggested that this individual was male. There was no evidence for pathology.

3. DISCUSSION

A minimum number of two individuals were presented for analysis following excavations at Roestown 2. Both were very incomplete and, as such, only a small level of information could be retrieved from the skeletons. The only pathologies noted were associated with iron deficiency anaemia and it is interesting that both individuals were affected.

SKELETAL CATALOGUE

<u>BURIAL 1</u>

SEX	undetermined	COMPLETENESS	very poor
AGE CLASS	child	PRESERVATION	poor
AGE RANGE	10-12 years		
STATURE	n/a		

BONES PRESENT: incomplete frontal, fragment of right temporal, incomplete maxilla, incomplete mandible; (incomplete humeral shaft)

NON-METRIC TRAITS: metopic suture

DENTITION

	----	----				----	----							----	----	
---	17	16	----	---	----	12	11		21	22	23	24	25	26	27	u
---	----	46	45	44	43	42	41		31	32	33	34	35	----	----	----

DENTAL PATHOLOGY: no dental pathology; slight attrition (Stage 1-2)

SKELETAL PATHOLOGY: bilateral moderate cribra orbitalia

<u>BURIAL 2</u>

SEX	/	COMPLETENESS	very poor
AGE CLASS	adult	PRESERVATION	moderate
AGE RANGE	/		
STATURE	/		

BONES PRESENT: incomplete parietals, fragment of left mandible, incomplete first right rib, incomplete right and left hands

NON-METRIC TRAITS: /

DENTITION: /

DENTAL PATHOLOGY: /

SKELETAL PATHOLOGY: slight porosity on single parietal fragment – probable porotic hyperostosis

ENVIRONMENTAL APPENDICES

APPENDIX 8:	*Wood Identification by Ellen O'Carroll*
APPENDIX 9:	*Insect report by Eileen O'Reilly*
APPENDIX 10:	*Charred plant, Charcoal, Cremated bone, Mollusc & Coprolite Analysis by Durham University*
APPENDIX 11:	*Pollen Analysis by Durham University*
APPENDIX 12:	*Bird Bone by Sheila Hamilton-Dyer*

APPENDIX 8 *Wood Identification Report: Ellen O'Carroll*

SPECIES IDENTIFICATION & ANALYSIS OF WOOD SAMPLES FROM ROESTOWN 2, CO. MEATH (A008/002)

ELLEN O'CARROLL

SEPTEMBER 2008

1. INTRODUCTION

Eight samples were submitted from excavations carried out at Roestown 2. Roestown 2 (A008/002, NGR 295792 253807, Roestown townland, Co. Meath) comprised of a series of successive early medieval enclosures with associated field systems beginning in the seventh century and continuing into the 11th century with limited occupation into the 13th century. There were also tentative indications of prehistoric settlement. A good level of preservation ensured animal bone was recovered in significant quantities and a wide range of artefacts was recovered, including objects of antler, bone, iron, bronze, silver, amber, glass, and wood, in addition to pottery sherds and stone objects. Most features suffered from multiple truncations by later features; the enclosing ditches showed evidence for substantial re-cutting and many of the smaller, associated enclosures also had numerous re-cuts.

Five of the eight samples contained wood and these were from the fill of the enclosure ditch **C405** (B3) and the fill of enclosure ditch **C450** (B4). The remains of a possible withy was also recognised and analysed within the framework of these studies.

2. METHODS

The wood was carefully examined for signs of toolmarks or surface treatment and was then identified to species under a microscope. The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). Thin slices were taken from the transversal, tangential and longitudinal sections of each piece of wood and sampled using a razor blade. These slices were then mounted on a slide and glycerine was painted onto the wood to aid identification and stop the wood section from drying out. Each slide was then examined under an E200 Nikon microscope at magnifications of 10x to 500x. By close examination of the microanatomical features of the samples the species were determined. The diagnostic features used for the identification of wood are micro-structural characteristics such as the vessels and their arrangement, the size and arrangement of rays, vessel pit arrangement and also the type of perforation plates.

All of the wood excavated on each site was sampled for identification and further analysis. The wood samples were firstly washed and recorded on wood working sheets and were then identified as to species. Where appropriate, the samples were measured and described in terms of their function and wood technology. This included point types, split types and individual toolmarks such as facets (individual tool marks) and tool signatures.

The annual tree rings were counted partially under a microscope and partially by eye therefore it is only an approximate age. Average growth rates were also established. A fast growth rate is around 4mm per year. As different factors (weather and soil conditions) determine growth rates of trees and growth rates vary across each sample average growth rates were calculated for each sample. The growth rates for some samples varied significantly therefore these samples were classified as slow to moderate, moderate to fast and so on.

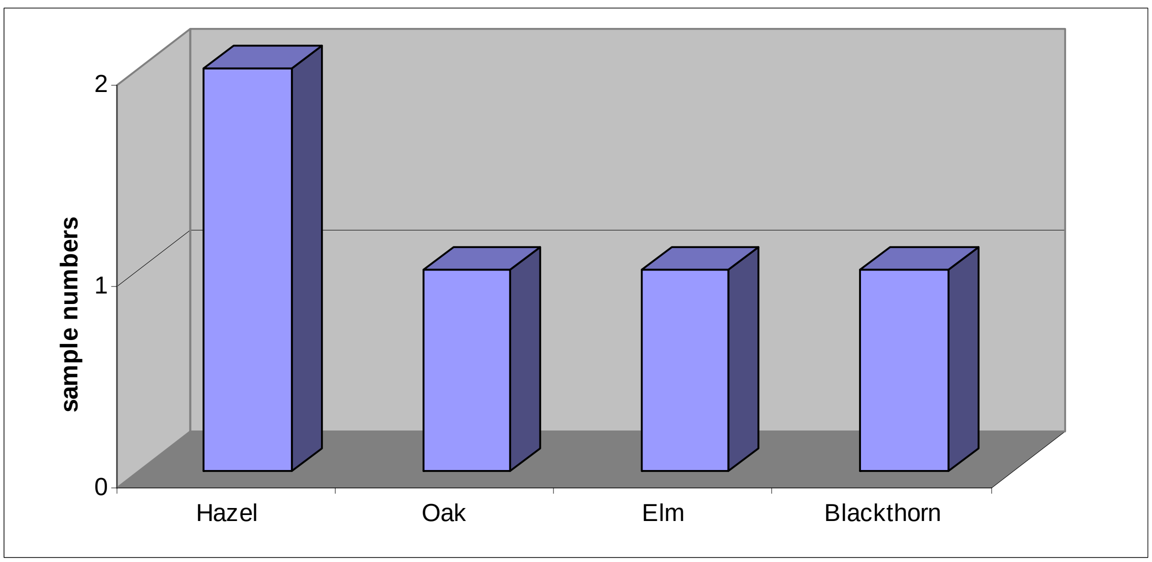

Figure 1: Wood taxa present in the assemblage

Four taxa which included hazel, oak, elm and blackthorn were identified from the ditch fills at Roestown 2. One of the samples resembled the remains of a withy and has been described as such. The remaining samples contained no woodworking evidence and are probably related to natural infill in the ditches. Dates for material from the fill of the ditch **C405** were returned for **Cal AD 790 – 900.**

3. RESULTS

Table 1: Results from identifications

Context number	Sample no.	Timber type	Species	Length (metres)	Diameter/ Width x Depth (m)	Wood quality	Age	Growth	Type of split and Wood working Evidence	Comment	Context type	Recommendations
457: Fill of Enclosure 1 F405	Sample #245	Brushwood	Hazel		0.11m	Moderate	5	Indt.	No		Fill of 405	Discard
460: Fill of Enclosure 1 F405	Sample # 203	Withy type wood	Hazel	Various	0.006m	Poor and very broken up	2, 3	Moderate	Could be split to manufature withy?	Has the appearance of a withy although it is now very broken up and degraded.	Fill of 405	Photograph wood remains collectively?
F484: Fill of Enclosure 1 F450	Sample #190	Peat and clay	No wood		N/A	N/A					Fill of Enclosure 1: F450	Discard
F484: Fill of Enclosure 1 F450	Sample #334	Peat and clay	No wood		N/A	N/A					Fill of Enclosure 1: F450	Discard
F484: Fill of Enclosure 1 F450	Sample #191	Peat and clay	No wood		N/A	N/A					Fill of Enclosure 1: F450	Discard
F484: Fill of Enclosure 1 F450		Lumps of wood	Oak	Various		Poor & very broken up	80+				Fill of Enclosure 1: F450	Bagged one sample for dendro if required
486: Fill of Enclosure 1 F450	Sample #244	Brushwood	Elm		0.15m	Good	6	Fast	No		Fill of Enclosure 1: F450	Discard
490: Fill of Enclosure 1 F405	Sample #201	Natural wood?	Blackthorn		0.15m	Moderate	13	Slow to moderate	No		Fill of Enclosure 1; F405	Discard

4. DISCUSSION

General

There were four taxa types present in the wood remains (Table 1). Hazel, oak elm and blackthorn were identified from the fill of the ditches **C450** and **C405.** Three samples contained no wood (190, 191, 334).

Unworked wood

The hazel sample 245 from **C405** was an unworked brushwood sample as was the elm brushwood (sample no. 244) from **C105**. The function of this brushwood is indeterminate but the wood may have fallen into the ditch during the lifetime of the site or after it went out of use. One piece of blackthorn wood was also identified from the ditch **C405**. This blackthorn piece resembled a natural wood piece which may have grown in the ditch at some period in the past.

Lumps of oak wood were also anslysed from **C405** and these wood pieces were in poor condition and soft to touch. They broke up when handled. One sample of the oak wood was bagged for possible dendrochronoligical dating as it contained over 80 annual tree rings.

The function of the analysed wood is unknown therefore the results above can only give some indication of surrounding trees in the area in the medieval period. The hazel and blackthorn are representative of dryland scrubland areas and hedgerow trees while the oak and elm are generally associated with primary woodland trees.

The possible withy

A series of broken and fragmented hazel wood identified from the fill of the ditch **C405** have been tentatively identified as the remains of a hazel withy. The wood measured 0.6cm in average diameter and there were 2 to 3 annual rings present on the hazel wood. The maximum length of the withy fragments was 4.1cm. The withy tie represents the remains of a plaited rope prepared from young pliable wooden shoots. The function of these withies is to tie one thing to another like to fasten boats together as seen at the Ferriby boats site in East Yorkshire (Wright 1990, 65). It was not possible to determine the function of the withy tie identified here but it was probably discarded in the ditch **C405**.

Hazel was very common up to the end of the 17th century and would have been used for the manufacture of many wooden structures such as wattle walls, posts, trackways and baskets. McCracken (1971, 19) points out that "it was once widespread to a degree that is hard to imagine today". With the introduction of brick, steel and slate the crafts associated with hazel became obsolete, and today the woods that supplied hazel have diminished rapidly. Hazel is normally only about 3-5m in height and is often found as an understory tree in deciduous woods dominated by oak. It also occurs as pure copses on shallow soils over limestone as in The Burren in Co. Clare and survives for 30 to 50 years. Its main advantage is seen in the production of long flexible straight rods through the process known as coppicing and these rods have been used as withies as well as many wattle structures. A hazel withy dated to the Iron Age from excavations at the site of Old Croghan Man in Co. Offaly were also analysed by the author (O Carroll, unpublished post excavation report).

The surrounding landscape at Roestown 2

The sample set analysed from Roestown 2 was very small therefore very little can be said about the surrounding landscape at Roestown 2 in the Early Medieval period. Hazel, oak, blackthorn and elm were present in the surrounding area at the time of use of the site. Hazel and blackthorn are scrub like taxa while oak and elm are more representative of primary woodlands trees.

5. Summary and Conclusions on Wood Assemblage

The wood analysed from Roestown 2 indicates that hazel, elm, oak and blackthorn were present in the surrounding landscape in the medieval period. The wood results indicate the site was located close to a scrubland, hedgerow environment as well as primary woodland trees. A series of fragmented hazel wood was identified from the ditch. This hazel wood is similar in nature and form to a withy tie. There was no individual toolmarks recorded on any of the wooden remains.

Plate 1: Remains of hazel withy tie

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APPENDIX 9 *Insect Report: Eileen Reilly*

Analysis of Insect Remains from Roestown 2, M3, Co. Meath

Eileen Reilly BA MSc Dip EIA MIAI

Environmental Archaeologist/Archaeoentomologist

For ACS Ltd.on behalf of Meath County Council

Abstract

This report presents the results of insect analysis of four samples from the Early Medieval enclosure site of Roestown 2 (M3), Co. Meath (Site Code A008/002 04-01), excavated by Rob O'Hara of Archaeological Consultancy Services Ltd.

The four samples came from three different phases of the enclosing ditch, dating from the mid-6th to mid-10th century AD. During the first phase of the ditch's construction, water beetles dominated, showing that the ditch cut the water table providing the unique preservation conditions that continued to prevail throughout the ditch's history.

'Disturbed ground/arable' indicators were also present, probably as a result of the construction of the ditch, bank and site rather than the presence of arable land in the surrounding landscape. Associated wetland plants began to colonise the ditch and increase in number over the three phases, with a slight hiatus in C479/80 (3rd phase).

From the earliest phase of ditch/bank construction numbers of species indicating animal dung, pasture, meadowland and general animal husbandry increased. This was also associated with a gradual increase in synanthropic beetles (i.e. those species associated with human habitation). Animal dung indicators combined with insects indicating 'meadowland' and 'wetland/marshes' found in these assemblages could be reflective of 'stable manure' i.e. animal dung and waste from animal enclosures.

Human excrement and urine was possibly one of the potential sources for the 'halotolerant' beetles seen in the second and third phases of the ditch. The picture of animal husbandry and pastoralism as the dominant farming activities around the site is also suggested by the lack of disturbed ground/arable indicators after the initial two phases of cutting of the enclosing ditch.

The curious 'burnt peat'-like material observed in samples in two of the deposits was difficult to confirm as peat. While some of the beetles found in these samples could be secondary indicators of peat, many of them occurred in the other contexts where this material was not observed. It may instead be burnt sod or other burnt organic matter. Examination of the plant remains and their preservation condition might help to ellucidate the origin of this material.

Keywords: *Roestown; insect analysis; BUGSCEP; animal dung; pastoralism; halotolerant*

Introduction

This report presents the results of insect analysis of four samples from the Early Medieval enclosure site of Roestown 2 (M3), Co. Meath (Site Code A008/002 04-01). Rob O'Hara of Archaeological Consultancy Services Ltd. directed the excavation. The samples were taken from the large enclosing ditch, which had a number of phases of cutting and re-cutting dating from the mid-6th century to the mid-10th century AD. During excavation, in one short section of the ditch, layers of organic deposits were encountered. The sampling strategy for these deposits involved analysis of their well-preserved bioarchaeological remains to get insights into how they were formed, local environmental conditions and, possibly, insights into prevailing conditions within the site itself and any activities carried out there. The four samples examined represent three dated phases of cutting and re-cutting of the ditch, covering a maximum time period of 530-980AD. Sampling from contexts such as these provide a rare opportunity to get a glimpse of local environments around and within Early Medieval settlement sites as few such sites have been examined for their bioarchaeological remains, especially in Ireland.

Methodology

The field archaeologists took the samples as bulk soil (approximately 10 litres) during excavation. 3 litre sub-samples were processed using the paraffin flotation method (Coope & Osborne 1968; improved upon by Kenward 1980 and Kenward *et al*. 1986) at the Botany Department, School of Natural Sciences, Trinity College, Dublin. Paraffin helps to concentrate the recovery of insect remains by adhering to the waxy cuticle of the insect exo-skeleton. This reduces the size of flots and aids the sorting process. The sub-samples produced sufficient insect remains for analysis so further sub-samples were not processed. The resultant flots were stored in 70% ethanol and scanned for insect remains using a low-powered binocular microscope. Insect fragments were extracted onto wet filter-paper and identified to genus or species level (if possible) using an established set of keys and the writer's own collection of comparative material. Results are laid out in Table 1 (pp.16-23) with nomenclature following Lucht (1987). This is the main European list of Coleoptera and is used in preference to the Irish or British list for palaeo/archaeoentomological analysis. This is mainly so that extirpated species (i.e. species no longer recorded from Ireland), which are often encountered in palaeoenvironmental/archaeological deposits, can be fitted into a taxonomic list easily. Species marked with an asterisk (*) had many immature and newly emerged beetles represented in their numbers. Those marked with a (§) are species not currently recorded in Ireland. The insects were then entered into BUGCEP, an ecological database package for analyzing insect remains from archaeological and palaeonvironmental contexts (Buckland & Buckland 2006). Insects are grouped into ecologically related habitat types and the results are graphed as a series of stacked histograms

(Figure 1, pp.24-25). This provides a clear picture of the full range of habitats represented as individual species are counted in all the habitat categories that they potentially came from (see Appendix). Index of diversity statistics were calculated for each sample also. This is a measure of the diversity of species represented within the insect assemblages and an indicator of the diversity of habitats from which the insects came (Fisher *et al*. 1943).

Analysis

Sample 186: C460 Fill of C405

Fill of earliest enclosing ditch (Cal AD 530-650)

- Number of individuals: 138
- Number of taxa (species): 52
- Index of diversity: 31

During excavation this deposit was described as 'plastic, dark brown peaty layer with high organic content'. Sample processing concurred with this description. This deposit produced a large numbers of insect remains, especially unidentifiable fly puparia and fly body parts. There were a high percentage of immature and newly emerged beetles, indicating an *in situ* breeding population. This would also suggest a stable environment for a prolonged period of time. There was a high number of species and a high index of diversity indicating a diverse range of habitat sources for the insect assemblage.

Aquatic beetles were the largest component in the assemblage with three species, *Octhebius minimus*, *Helophorus* spp and *Hydrobius fuscipes*, the dominant taxa (Fig.1 'Aquatics'). All are indicative of general watery environments, but *Helophorus grandis* and *H. fuscipes* are specifically indicative of standing water (Fig.1 'Indicators: Standing water') (Hansen 1987). A number of the beetles present were indicative of arable land, pasture and meadow that might have surrounded the site (Fig.1 'Pasture/Dung', 'Meadowland', 'Indicators: Dung', 'Disturbed/arable', 'Sandy/dry disturbed/arable'). Dung-feeding beetles like *Aphodius luridus*, *Cercyon depressus* and *Anotylus rugosus* were probably present due to animal dung. *Ceutorhynchus assimils*, *C. floralis*, *Phyllotreta* sp and *Chaetocnema hortensis* are found on a variety of ground herbs and weeds of arable/disturbed ground (Dieckman 1972; Koch 1992; Bullock 1993). Ground beetles like *Trechus quadristriatus* and *Bembidion lampros* are also indicative of disturbed ground with bare vegetation (Lindroth 1974; 1985) and may indicate the presence of ploughed ground in the immediate environs of the site. However, construction of the ditch and bank would have disturbed the ground, encouraged the growth of weeds and providing sutiable habitats for many of these species.

There are very few 'synanthropic' insects i.e. insects who are specifically associated with human habitation sites (see Kenward & Hall 1995; Reilly 2003). A small number of 'general synanthropes' do occur, mainly 'compost-type' beetles such as *Cryptophagus* spp, *Mycetaea subterranea* and a few carrion feeders like *Omosita* spp, and *Catops* spp. However, all are found in natural environments and in the context of this deposit are not necessarily indicative of on-site human activity.

Some general indicators of woodland were also present including *Phosphuga atrata*, *Phratora* sp, *Tachinus rufipennis* and *Agathidium rotundatum*. All are suggestive of wet leaf litter and woodland detritus. *Phratora* sp is found on willow and poplar (Bullock 1993). This might reflect trees in the surrounding landscape or the detritus of wood used on the site and dumped in the ditch.

'Wetland/marshes' and 'heathland/moorland' indicators also occur in the assemblage (Fig.1). Species such as the *Elaphrus ulignosus*, *Pterostichus minor*, *Microcara testacea*, *Telmatophilus typhae* are common in wet woodland, marshes and bogs (Lindroth 1974; Koch 1989; Duff 1993) but it is possible that the wet ditch provided sutiable habitats, especially if wetland plants like rushes and reeds became established in the base. The presence of low-lying wet areas in the vicinity of the site (Drumree to the southwest) may also be the source of some of these species (Brooks & Farrell 2005).

Overall, the assemblage appears to indicate an open body of water in the ditch bottom at this time, which probably gradually filled with plant detritus from plants growing in the ditch and on the bank. The bare recently disturbed ground, possibly in the aftermath of the construction of the ditch and bank, may have provided suitable habitats for many of the insects recovered in the assemblage. In addition, a number of beetles indicate the presence of pasture in the surrounding landscape with some wetland/carr woodland also suggested. Specific indicators of on-site activities (domestic rubbish, food processing) were not present in any significant numbers in this particular assemblage.

Sample 194: C490 fill of C404.

Fill of first re-cut of enclosng ditch (Cal AD 710-910, 920-960)

- Number of individuals: 168
- Number of taxa: 64
- Index of diversity: 38

During excavation this deposit was described as 'truncated deposit of brown, soft peaty material, quite silty'. Sample processing concurred but also observed evidence of 'burnt' peat-like material, which was brittle to the touch. Small fragments of burnt plant remains were observed under the microscope. This was the richest sample in terms of beetle remains. It had a high number of taxa and a relatively high index of diversity, again, indicating a very mixed range of habitat origins. This sample came from the first re-cut of the ditch and the most obvious difference between this deposit and the earlier deposit (C460) is the lower number of 'Aquatic' and 'Indicators: standing water' beetles (Fig.1). However, the deposit was still clearly very wet and organic and a larger proportion of the assemblage was represented by decaying wet plant matter, dung and generally foul habitat-indicators (Fig.1 'Wetlands/marshes', 'Dung/foul habitats', 'Pasture/dung', 'Carrion', 'Indicators:Dung'). As well as large numbers of generalist dung/foul indicators such as *Cercyon analis* and *Megasternum obscurum*, there were a larger number of dung beetles specifically indicating pasture and animal dung like *Aphodius depressus*, *A. sphacelatus*, *A. fimetarius* and other unidentified *Aphodius* beetles (Jessop 1986). This would appear to provide a clearer picture of surrounding pasture land and/or animals within the enclosure, which resulted in animal dung being incorporated into the ditch fill.

There was also a small rise in general synanthopic insects and others that may indicate the presence of domestic dumped waste, as well as naturally occurring decaying plant matter (Fig.1 'General synanthropic', 'Mould beetles'). These habitats are represented by species such as *Cryptophagus* spp, *Atomaria* spp, *Ephistemus globulus*, *Aglennus brunneus* and *Mycetaea subterranea.* These species could also potentially have become incorporated into material like 'stable manure' (i.e. a combination of animal dung, straw, meadow plants), which might have been cleared from animal pens/houses and dumped into the ditch (see Hall & Kenward 1998 for fuller discussion). A number of 'Meadowland' beetles are present in this deposit including *Chrysolina* sp, *Longitarsus* sp and various *Chaetocnema* spp.

A small background woodland element is still present in the assemblage including the ground beetle *Carabus granulatus*, found in deciduous woodland (Lindroth 1974), and *Atrecus affinis*, found in woodland litter (Alexander 2002). These 'background' elements may have been casualties from gathered wood/timber on site or nearby woodland. It is notable that unlike many contemporary or later medeival sites no structural wood pests (bark beetles/woodworm beetles) are found in these deposits.

The ‘burnt peat’ material noted in this deposit remains somewhat anomalous. While there are a number of ‘Moorland/heathland’ and ‘Wetland/marshes’ species present, which might be secondary indicators of peat, the type and number of species is not particularly significant. Species like *Plateumaris discolor/sericea* and *Altica* sp are indicative of sphagnum, reeds, cotton-grass, heather and other bogland plants (Bullock 1993). *Limnobaris dolorosa* is indicative of reeds and rushes (Bullock 1993) and all three species are unique to this deposit. However, *Notaris scirpi* and *N. acridulus* are also bogland indicators, being found on reeds, bull-rushes and other aquatic plants (Hyman 1992; Duff 1993), and they occur in this deposit and the subsequent two deposits, possibily indicating the presence of these plants within the ditch itself. The other possible explanation for their presence is they were incorporated into ‘stable manure’ i.e. they were in animal dung due to animals grazing on wet meadows or riverside locations. The ‘burning’ may simply be accidental burning of sod layers or dry manure, which was then subequently dumped into the ditch.

One further interesting species of note is *Cercyon depressus*, a halotolerant (i.e. salt-tolerant) beetle found regularly in urban medieval and post-medieval deposits in Dublin and elsewhere (Reilly 2003; Hall *et al*. 2005). It is found in decaying seaweed in the natural environemnt (Hyman 1994) but somehow conditions within human cesspits during this period appeared to mimic its habitat requirements, possibly as a result of salts in human urine. Salt-tolerant beetles, while common in coastal or salt marsh locations, are also found in salt mineral-rich ploughed soils or wheren salt mineral precipitation is prominent (Buckland & Buckland 2006).

Its presence is therefore not necessarily an indicator of seaweed within the deposit but possibly the use of this section of the ditch as a latrine or a deposition site for human excrement cleared from a latrine. Many of the ‘Dung/foul habitat’ beetles found in this deposit are commonly found in human cesspits in urban medieval sites also. In summary, this assemblage gives some interesting insights into the environment of the ditch itself - wet but not necessarily open water with associated growing wetland plants – and insights into on-site activity and the surrounding landscape mosaic. Pasture and animal husbandary is clearly indicated with plant-feeding and dung-feeding beetles indicative of these landscapes/activities dominating the assemblage. In addition, human waste is tentatively indicated by some key beetle species, suggesting the use of this part of the ditch as a general dump for household/latrine and animal pen waste.

Sample 187: C479/80 fill of C450

Fill of 2nd rec-cut of enclosing ditch (Cal AD 770-980)

- Number of inidividuals: 54
- Number of taxa: 30
- Index of diversity: 29

During excavation this deposit is described as 'thin layers of organic material seperated by thin bands of grey silt'. During processing this was the least 'organic' of the four samples with the smallest flot. This deposit produced the smallest assemblage of the four but with a similarly high number of taxa and a high index of diversity, suggesting a continued mixed range of origins for the assemblage.

The nature of the assemblage is similar to C490 above, with small numbers of aquatic and 'standing water' beetles but a continued high presence of 'pasture/dung', 'dung/foul' species (Fig.1). This would suggest that, although the organic portions of this deposit were separated by thin layers of silt, the use of this section of the ditch for general dung disposal continued. This deposit formed part of the fill of the second re-cut of the enclosing ditch so it is also possible that some re-deposition or incorporation of the pre-existing organic deposits occurred. Nevertheless, the ditch was clearly still wet at this point as, despite the presence of silt, the organic material survived in situ and no deterioration in preservation of the insect fragments was noted. 'Wetland/marshes' indicators formed the largest portion of the assemblage (Fig.1).

The deposit has notably fewer 'meadowland' and 'disturbed/arable' plant indicators and a smaller variety of 'general synanthropic' beetles. However, the high number of dung beetles would suggest that animal dung is still present within the deposit. Also, the 'halotolerant' element is still present with *Cercyon depressus* joined by the dung beetle *Aphodius niger* (Hyman 1992), not currently on the Irish list of beetles. Both of these species may be tentative indicators of the continued presence of human waste.

Overall, the deposit would appear to indicate a slower or more gradual build up of organic waste, perhaps separated by silt layers due to more intermittent use of this section of the ditch for disposal of waste. The surrounding environment is less visible within the assemblage, with meadowland and arable/disturbed ground indicators reduced or missing from the assemblage.

Sample 191: C484 fill of C450

Above basal silt of 2nd re-cut of enclosing ditch (Cal AD 770-980)

- Number of individuals: 101
- Number of taxa: 49
- Index of diversity: 38

During excavation this deposit was described as ‘thick green-brown fibrous organic layer’. Also observed during processing were lenses of possible ‘burnt peat’, as in 194 above. This sample produced abundant insect remains, particularly fly puparia and body parts (not identified). There were frequent beetle remains, with a high number of taxa and a high index of diversity, once again indicating a very mixed assemblage.

The dominant groups were ‘pasture/dung’ and ‘dung/foul habitat’ indicators (Fig.1). These groups include many of the species discussed already including *Aphodius* dung beetles and others possibly indicative of human waste. The higher number of water beetles and indicators of standing water than C479/80 would suggest that standing water in the ditch had increased, perhaps suggesting that the second re-cut of the ditch remained open for a long time. There was also an increase in the variety of ‘wetland/marshes’ plant-feeding beetles e.g. *Telmatophilus typhae*, *Microcara testacea*, *Kateretes pedicularis*, *Notaris scirpi* and *N. acridulus*, suggesting a gradual re-colonisation of the ditch with wetland plants such as reeds, rushes and mosses.

This assemblage bears some resemblance to Sample 186 but with a much smaller number of water beetles and a much greater number of dung and foul habitat indicators. It would appear to indicate a complex environment of open stagnating water, dumped household rubbish, dung and naturally occurring plants. The meadowland plant indicators could have been incorporated into the assemblage through ‘stable manure’ and there are almost no ‘disturbed ground/arable’ indicators. This would suggest that the ‘disturbed/arable’ and ‘sandy/dry disturbed/arable’ element in the assemblages of the earlier deposits were indicative of the disturbance caused by the construction of the site/ditch/bank rather than the presence of ploughed/arable ground in the surrounding landscape (Fig.1).

Discussion

General Summary

These four samples represent different phases in the history of the enclosing ditch at Roestown and although there are similarities between the assemblages there are some interesting differences. In particular, the number of water beetles indicating open water in the base of the ditch drops through time albeit with a slight recovery in the final deposit. Associated wetland plants begin to colonise the ditch and increase in number from the first cut of the ditch (AD530-650) to the first re-cut (AD710-910) perhaps reflecting a longer phase of opening. The third phase of the ditch, during the second re-cut (AD770-980), shows two different depositional patterns. A slower, gradual accumulation reflected in the assemblage in C479/480 and a more rapid accumulation, reflected in the assemblage in C484. This was perhaps due to the increased wetness of this section of the ditch and the re-establishment of a breeding, in situ wetland plant community with its associated insect fauna.

From the time the ditch is first cut, the number of species indicating animal dung, pasture, meadowland and general animal husbandry increases. This is also associated with a gradual increase in synanthropic beetles (i.e. those species associated with human habitation, human houses). However, the strong animal dung signature within the faunas would suggest that the habitation sources of rubbish were primarily animal pens as ‘meadowland’ and other background elements also found in these assemblages could be reflective of ‘stable manure’. Human excrement and urine is, however, one of the potential sources for the ‘halotolerant’ beetles seen in C490 and C479/80.

It is difficult from the beetles alone to confim if the curious ‘burnt peat’-like material observed in samples 191 and 194 is in fact peat. While some of the beetles found in these samples could be secondary indicators of peat, many of them occur in the other contexts where this material was not observed. It may instead be burnt sod or other burnt organic matter originating within one of the structures on the site. Examination of the plant remains and their preservation condition might help to ellucidate the origin of this material.

The insects from Roestown and their wider archaeological context

As noted in the introduction, few early medieval 'rural' or isolated settlement sites in Ireland have been examined directly for their bioarchaeological remains and fewer still using archaeoentomology. For two that have – Coolure Demesne crannog, Co. Westmeath (exploratory analysis) (Reilly & Johnston 2007, forthcoming) and Deer Park Farms, Co. Antrim (Kenward & Allison 1994) – the sampling strategy concentrated on samples from within the enclosed 'living space' of the sites, primarily because both had well preserved, extensive waterlogged deposits making this a viable option. This is also true of the early medieval crannog at Buiston, Ayrshire (Kenward *et al.* 2000). The exceptional preservation of organic remains at Deer Park Farms meant that the insect assemblages identified could more readily be compared with urban medieval sites of similar date and suggested long, continuous occupation over perhaps a millennium (Kenward & Allison 1994). This was particularly indicated by the high concentration of 'synathropic' insects – decomposing 'bedding/rooofing' material indicators, stored product pests, structural wood pests, human and animal parasites. Both Buiston and Coolure produced very different assemblages, devoid of much of this 'synanthropic' signature but containing some elements of the foul conditions suggestive of dumped human waste (Reilly & Johnston 2007, forthcoming). However, the sampling contexts of these sites provide few direct parallels for Roestown.

Few urban deposits from Irish sites of similar date are available for comparison although the earliest levels of Essex Street West are roughly contemporary with the second re-cut phase of Roestown (Reilly 2003). However, the samples from this phase are almost exclusively from within habitation structures, both animal and human. There are superficial similarities in terms of the high number of dung and foul habitat indicators but these deposits also contain higher numbers of synanthropic indicators such as human fleas and structural wood pests.

It would appear that perhaps the most useful parallels might be drawn from the type of feature sampled – a large enclosing ditch around a settlement site. Again, contemporary sites for which insect analysis has been carried out are few in number but there is a larger corpus of material that can be looked at if contemporanity is not the primary concern.

A small number of samples were examined for insect remains from the early medieval enclosure at Killickaweeny, M4, Co. Kildare (Carlin *et al*. 2007, 2008). This site is similar to Roestown in that it was primarily a 'dryland' site but part of the ditch and one large internal pit cut the water table and contained thin organic deposits. The dominant habitat type indicated by the insects from both the ditch and the pit was decaying vegetation and animal dung. It was not clear, due to the small assemblage, if the material was accumulating over a long period or was deliberately deposited

(Reilly 2007a, forthcoming). The other dominant habitat was water and it was clear that the ditch had permanent standing water in its base, which was probably stagnant but may have flowed at times of high water table. These are all features that Killickaweeny has in common with Roestown and would suggest superficially that ditches around such sites generally were dug deep enough in places to cut the water table, which gave rise to this limited organic preservation.

Dung and decaying vegetation taxa dominated the insect assemblages from the ditches of Bronze Age Haughey's Fort (Anderson 1989), Chancellorsland (Reilly 2007b, forthcoming) and the Iron Age enclosures of Tattershall Thorpe, Lincolnshire (Chowne *et al.* 1986) and Mingies Ditch, Oxfordshire (Allen & Robinson 1993). Where dung beetles dominate insect assemblages it is assumed that the surrounding landscape was predominately pastoral (Allen & Robinson 1993) and that their incorporation into ditch fills is due to the close proximity of grazing animals. However, where dung feeders occur in conjunction with 'synanthropic' and 'meadowland' taxa, it is thought more likely that they originate from a domestic source i.e. from within the enclosures or within structures (Hall & Kenward 1998). In the case, of Killickaweeny, no synanthropic species were found and, therefore, it is possible that dung accumulated in the ditch over a long period of time from surrounding pastureland and without the need for deliberate dumping. This is borne out by the plant remains, which indicates a variety of phosophorus-loving plants possibly growing around and within the ditch (Johnston 2007, forthcoming). In the case of Roestown dung taxa are found associated with a great variety of other habitat indicators including 'meadowland', 'disturbed ground' and 'synanthropic' beetles. This would suggest that the dung beetles are incorporated into more general deposits of waste from structures within the enclosure itself, rather than simply grazing animals that happen to be in the vicinity of the ditch. Nevertheless, the suggestion of animal husbandry and pastoralism as the dominant farming activities surrounding and within the site is also bourne out by the lack of disturbed ground/arable indicators after the initial two phases of cutting of the enclosing ditch. This would suggest that the bare ground being exploited by ground beetles such as *Trechus quadristriatus*, *Bembidion lampros* and weed plant beetles like *Phyllotreta* sp and *Ceutorhynchus assimilis* in the early deposits was as a direct result of the construction of the site and not arable land in the immediate vicinity of the ditch. The fact that this dominant pastoral picture does not change substantially from the mid-6th to the mid-10th century suggests relative stability in the local land use pattern.

This analysis would benefit from comparisons with other environmental analyses such as plant remains and zoological remains to test if the picture of the local environment of Roestown suggested by the insect remains is consistent in all bioarchaeological indicators.

Eileen Reilly, 2007

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Table 1. Species List (nomenclature after Lucht 1989; See appendix for 'EcoCodes' assigned to each insect)

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Species/Genus					
Carabidae					
Carabus granulatus L.	-	1	-	-	Damp meadowland, wet woodland
Elaphrus uliginosus F.	2	-	-	-	Wetlands, marshes
Trechus quadristriatus (Schrank)	3	1	-	-	Open ground with short vegetation
Bembidion lampros (Hbst.)	1	-	-	-	Disturbed ground, open dry ground
Pterostichus strenuus (Panz.)	-	1	-	1	Wet plant debris, woodlands
P. nigrita (Payk.)	1	-	-	-	Wetlands, marshes
P. minor (Gyll.)	1	2	2	2	Wetlands, marshes
P. niger (Schall.)	-	-	1	-	Wet woodlands
P. madidus (F.)	-	2	-	-	Disturbed ground, woodlands, omnivorous
Pterostichus sp.	1	-	-	-	Varied habitats
Agonum fuliginosum (Panz.)	-	-	1	-	Wetlands, marshes
Agonum sp.	-	2	-	1	Varied habitats
Dysticidae					
Hydroporus incognitus Sharp	-	-	-	2	Shaded peaty pools, prefers acid conditions
H. nigrita (F.)	-	-	-	1	In water, prefers acid conditions
H. longulus Muls.	4	-	-	-	In water, prefers acid conditions
Hydroporus spp.	2	2	-	-	aquatic habitats
Agabus bipustulatus L.	2	-	-	-	In water, all types
Agabus sp.	1	-	-	-	aquatic habitats

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Agabus/Illybius sp.	-	1	-	-	aquatic habitats
Gyrinidae					
Gyrinus sp.	-	1	-	-	In varied aquatic habitats
Hydraenidae					
*Hydraena britteni Joy/riparia Kug.	10	-	-	1	temporary/permanent water bodies, flowing, stagnant
Hydraena sp.	-	-	-	-	aquatic habitats
*Octhebius minimus (F.)	11	2	-	-	Mostly freshwater, canal, ditches, lakes
Octhebius sp.	-	1	2	1	aquatic habitats
Limnebius truncatellus (Thun.)	3	-	-	-	In water, assoc. with flowing water
L. nitidus (Marsham)	1	-	-	-	In mud beside water
Limnebius sp.	-	-	-	1	aquatic habitats
Hydrophilidae					
Helophorus grandis Ill.	1	-	-	-	Shallow streams, drainage ditches
H. brevipalpis Bedel	3	-	-	-	In many, varied aquatic habitats
H. minutus F.	4	-	-	-	In water, ponds, ditches
Helophorus spp.	10	4	6	4	aquatic habitats
Colostoma orbiculare (F.)	-	2	2	-	Marshes, wetlands
Cercyon depressus Steph.	-	3	2	-	Salty environments, under seaweed, decaying plant matter
C. impressus Sturm.	2	-	-	-	Dung, carrion, damp litter, grazed land
C. haemorrhoidalis (F.)	-	-	2	1	Cow dung, stable manure, grazed land
C. analis (Payk.)	-	9	1	2	Dung, rotting vegetation

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Megasternum obscurum (Marsham)	3	5	2	5	Rotting plant matter, dung, leaf litter
Cryptopleurum minutum (F.)	-	1	-	-	Dung, rotting vegetation, open grazed land
*Hydrobius fuscipes (L.)	8	2	2	2	Standing water, detritus beside water
Anacaena globulus (Payk.)	5	-	-	2	In running, standing water
Laccobius sp.	3	1	-	-	In water, moss beside water
Histeridae					
Onthophilus striatus (Mull.)	-	2	-	2	Dung, decaying vegetation
Silphidae					
Phosphuga atrata (L.)	1	-	-	-	Woodland debris, predatory on snails
Catopidae					
*Catops spp.	7	-	-	-	Decaying vegetation, fungi, carrion
Leiodidae					
Agathidium rotundatum (Gyll.)	1	-	-	-	In decaying tree fungi
Clambidae					
Clambus sp.	1	-	-	-	Slime moulds, decaying vegetation/wood
Ptilidae					
Ptenidium sp.	2	1	-	-	Decaying vegetation carrion

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Staphylinidae					
Micropeplus fulvus Er.	-	-	2	3	Decaying vegetation/compost, stable manure (Syn)
M. porcatus (F.)	-	9	2	1	Same as above
Phyllodrepa sp.	1	-	-	-	Wood debris, birds nests
Omalium rivulare (Payk.)	-	8	-	-	Decaying vegetation/compost, stable manure (Syn)
Omalium sp.	-	-	1	1	Decaying vegetation
Xylodromus sp.	-	1	-	-	Decaying vegetation/compost, dung (Syn)
Olophrum piceum (Gyll.)	-	-	3	2	Wetland, heathland, plant debris
Lesteva sp.	-	-	-	1	Wetlands, marshes, in moss
Carpelimus sp.	-	-	-	1	Wet vegetation, riverbanks
Anotylus rugosus (F.)	1	-	-	2	Dung, decaying vegetation, open grazed land
A. sculpturatus (Grav.)	-	2	-	-	Dung, carrion, open grazed land
A. tetracarinatus Block	-	3	-	1	Dung, carrion, open grazed land
Oxytelus sculptus Grav.	-	2	-	1	Decaying vegetation/compost, excrement
Anotylus/Oxytelus sp.	-	-	1	-	Foul environments generally
Platystethus arenarius (Geoff.)	-	4	-	2	Dung, carrion, muddy river banks
Platystethus sp.	1	-	-	-	Foul environments generally
Stenus spp. (3 spp.)	5	2	4	2	Aquatic environments generally
Rugilus rufipes (Germ.)	-	1	-	-	Wet decaying plant debris, stable manure
R. orbiculatus (Payk.)	-	1	-	-	Wet decaying plant debris, stable manure
Lathrobium sp.	1	-	-	-	Wet litter, moss, wetlands in general
Gyrohypnus liebei Scheer.	-	-	1	3	Wet decaying plant debris, stable manure, open grazed land
Gyrohypnus sp.	-	3	-	-	Wet decaying plant debris, stable manure, open grazed land
Xantholinus sp.	-	-	-	1	Decaying vegetation generally
Atrecus affinis (Payk.)	-	1	-	-	Beneath decaying bark, carnivorous

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Othius sp.	-	2	-	-	Woodland environments, humus layer
Staphylinus sp.	1	1	-	-	grassland, decaying vegetation, carrion, dung
Quedius sp.	1	-	-	1	Varied habitats
Quedius/Philonthus sp.	-	5	1	1	Varied habitats
Tachinus rufipes (L.)	-	-	-	1	Open grazed land, dung, decaying vegetation
§T. rufipennis (Gyll.)	2	1	-	-	Woodland, from carrion
Tachyporinae indet.	3	1	2	-	Foul environments generally
Cypha sp.?	-	1	-	-	Decaying vegetation wood
Drusilla canaliculata (F.)	-	-	1	-	Heaths, moorland, assoc. with ants
Aleochara sp.?	-	-	-	2	Carrion
Aleocharinae gen. et sp. indet.	3	10	2	5	Varied habitats
Pselaphidae					
Bythnius sp.	-	1	-	-	Moss, rotting wood
Cantharidae					
Rhagonycha sp.	1	-	-	-	herbs, trees, scrub, woodland
Elateridae					
Melanotus sp.	1	-	1	-	Rotting wood
Scirtidae					
Microcara testacea (L.)	3	1	-	4	On vegetation near water

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Brachypteridae					
Kateretes pedicularis (L.)	-	2	-	1	On rushes/reeds near water, damp woodlands
Brachypterus urticae (F.)	-	-	-	1	On nettles, open grazed land
Nitidulidae					
Meligethes sp.	1	-	-	-	On pollen of var. herbs/flowers, mainly meadowland
Omosita sp.	1	-	-	-	On carrion, fungi, woodlands, meadows
Cucujidae					
Monotoma spp.	-	-	-	2	On grass heaps, compost
Cryptophagidae					
Telmatophilus typhae (Fallen)	2	-	-	2	On bulrushes near water
Cryptophagus spp.	1	5	-	5	On fungi, decaying vegetation (Syn)
Atomaria spp.	-	13	-	2	On fungi, decaying vegetation (Syn)
Ephistemus globulus (Payk.)	-	3	-	-	On manure, compost heaps (Syn)
Colydiidae					
Aglenus brunneus (Gyll.)	-	1	-	-	Decaying vegetation, dung, compost (Syn)
Endomychidae					
Mycetaea subterranea (Marsham)	2	11	1	8	Litter refuse, compost (Syn)

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Scarabaeidae					
Aphodius fossor (L.)	-	-	2	-	dung (grazed land/woodland)
A. luridus (F.)	2	-	-	-	dung (grazed land/woodland)
A. depressus (Kug.)	-	2	-	-	dung, often horse (woodland)
A. sphacelatus (Panz.)	-	3	-	-	Dung (open grazed land)
A. foetidus (Hbst.)	-	-	-	3	Dung, dry ground (grazed)
A. fimentarius (L.)	-	2	-	-	Dung (open grazed land)
§A. niger (Panz.)	-	-	1	-	Dung, decaying vegetation, muddy ground
*Aphodius spp.	-	3	3	3	Dung generally
Chrysomelidae					
Plateumaris discolor (Panz.)/sericea (L.)	-	1	-	-	On cotton-grass, reeds, sphagnum
Chysolina sp.	-	1	1	1	Wide variety of ground herbs, open and wooded land
Phratora sp.	1	-	-	-	On poplar, willow, in wet places
Phyllotreta undulata Kuts.	-	2	-	-	Disturbed/arable land, various Cabbage family members
Phyllotreta sp.	5	-	-	2	Various herbs of disturbed ground
Longitarsus sp.	-	1	-	-	On various herbs of disturbed ground/arable land, woodland margins, meadowland
Altica sp.	-	1	-	-	On heather, hazel - wetlands, disturbed ground
Chaetocnema hortensis Geoff.	3	2	-	1	On various wild grasses/plantain, disturbed ground/arable
Chaetocnema sp.	-	3	-	-	Various wetland/disturbed ground herbs
Curculionidae					
Apion sp.	-	1	-	1	On various ground herbs

Sample No	186	194	187	191	Habitat
Context	460	490	479/480	484	
	1st phase of ditch	Re-cut of ditch	3rd phase of ditch	3rd phase of ditch	
	AD 530-650	AD 710-910	AD 770-980	AD 770-980	
Otiorhynchus sp.	-	1	-	-	Leaf miner of various shrubs, trees, herbs
Notaris scirpi (F.)	-	2	2	4	On bulrushes, reeds, in waterside locations
N. acridulus (L.)	-	1	-	2	On roots of aquatic plants (Glyeria spp., Polygonum amphibium)
Limnobaris dolorosa (Goeze)	-	2	-	-	On rushes, reeds, bog cotton, in swampy, wet places
Ceutorhynchus assimilis (Payk.)	1	-	-	-	On various Cabbage spp. in arable/disturbed ground
C. floralis (Payk.)	1	-	-	-	On various Cabbage spp. in arable/disturbed ground
Ceutorhynchus sp.	-	-	1	-	Primarily on Cabbage spp. and other ground herbs
Total individuals	**138**	**168**	**54**	**101**	
Total taxa (species)	**52**	**64**	**30**	**49**	
Index of Diversity (Fisher's α)	**31**	**38**	**29**	**38**	
Diptera					
Calliphora vicina (puparia)	-	2	-	-	

* taxa with a lot of fragments of immature or newly emerged individuals

§ taxa not currently on the Irish list of Coleoptera

APPENDIX 10: *Charred plant, charcoal, cremated bone, mollusc& coprolite analysis: Durham University*

Archaeological Services
University of Durham

Roestown 2, M3 Motorway Project, Co Meath, Ireland

plant macrofossil, charcoal, cremated bone, mollusc and coprolite analysis

on behalf of

Archaeological Consultancy Services Ltd

Report 2049

March 2009

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1. Summary

The project

1.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Roestown 2, Co Meath, Ireland. Two areas of activity were identified (Areas A and B), which included a series of successive early medieval enclosures. This report presents the results of plant macrofossil, charcoal, cremated bone and mollusc analysis of the fills of ditches, pits, hearths, gullies, postholes, kilns and a souterrain. A sample of coprolites from the site was also analysed.

Results

1.2 Oats and barley were the main crops used on the site, with wheat, rye, peas and wild foods also forming components of the diet. Flax may have been used to produce linen, and/or linseed oil for food, preservative or medicinal uses. The kilns were used for drying the cereal crops prior to storage or grinding.

1.3 Charcoal analysis suggests that open deciduous woodland, dominated by hazel and oak, was growing near the site during its occupation, and provided a source of fuel and building materials. Other species identified were alder, ash, Maloideae, cherries, willow/poplar, elder, holly, birch, elm, yew and heather. A diverse range of fuels were used in the cereal-drying kilns.

1.4 Burnt bone was recovered from 151 contexts. Most derived from ditches, but burnt bone was also recovered from linear features, gullies, pits, postholes, kilns, hearths, a souterrain, a spread, furrow, metalled surface, the fill of a burial, and an occupation fill. Sixty-seven of these contexts contained animal or possible animal bone; no human bone was identified. None of the bone in the remaining contexts could be identified, and it was not possible to determine if it was human or animal. The degree of oxidation varied, suggesting a range of burning conditions: although 60% contained fully oxidised bone, some contexts contained charred bone, and the remainder contained partially oxidised bone, or a mix of charred/ partially/ and fully oxidised bone. Identifiable animal bone included pig, sheep-goat, cattle, horse, dog, bird and small mammal.

1.5 Small quantities of poorly preserved remains of terrestrial snails and marine shellfish were recovered from 20 contexts at this site – all bar one of the deposits being ditch fills. All of the land snails recovered were of ecologically catholic taxa and of no value for habitat reconstruction. Marine shell was present in 10 deposits (all ditch fills) but only in trace amounts. All of the remains were of edible shellfish, including periwinkle, whelk, cockle and ?oyster, but the remains were too few to be of interpretative value beyond indicating importation of these food resources from the coast (approximately 35 kilometres away).

1.6 Two fragments of possible coprolite were recovered from the lower topsoil, but the material proved not to be faecal in nature. It was perhaps simply mineral concretion but its curious surface appearance suggested that it may perhaps be very degraded pot (?prehistoric).

2. Project background

Location and background

2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Roestown 2, Co Meath, Ireland (NGR 295792 253807). A series of successive early medieval enclosures with associated field systems beginning in the 7th century and continuing into the 11th century with limited occupation into the 13th century was revealed. The principal enclosure was re-cut on at least two successive occasions between the 8th and 10th centuries AD, with the character of the enclosure changing noticeably on each occasion. Evidence for metalworking of both ferrous and non-ferrous metals was uncovered across the enclosure. Drying kilns and numerous gullies were located in the interior, and a dry-stone souterrain was situated at the centre of the site. This report presents the results of plant macrofossil, charcoal, cremated bone and mollusc analysis of the fills of ditches, pits, hearths, gullies, postholes, kilns and the souterrain. A sample of coprolites from the site was also analysed.

Objective

2.2 The objective was to analyse the plant macrofossils, charcoal, cremated bone and molluscs from the site, in order to provide information about the diet, land use and local environment.

Dates

2.3 Samples from batch 7 were received by Archaeological Services Durham University in April 2008. Analysis and report preparation was conducted between April 2008 – March 2009.

Personnel

2.4 Sample processing was undertaken by Archaeological Consultancy Services Ltd. The residues were sorted by Dr Charlotte Henderson and Mr Bryan Atkinson. Plant macrofossil analysis was carried out by Dr Helen Ranner and charcoal analysis was by Mr Lorne Elliott. Cremated bone analysis was by Dr Anwen Caffell, with faunal identifications by Ms Louisa Gidney. The mollusc and coprolite samples were analysed by Mr John Carrott (Palaeoecological Research Services). Report preparation was by Dr Charlotte O'Brien.

Archive

2.5 The licence number is A008/002. The charcoal, flots, bone, mollusc and possible coprolite samples are currently held at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Plant macrofossil analysis

Methods

3.1 The residues were examined for plant remains, shells, bones, pottery sherds and metalworking debris. The dry flots were scanned at up to x60 magnification using a Leica MZ7.5 stereomicroscope for charred and waterlogged plant remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant taxonomic nomenclature follows Stace (1997). Contexts (256), (542), (545), (546), (696), (777), (830), (931), (1089), (1308) contained substantial quantities of charred plant remains, and therefore the flots were sub-sampled using a riffle box. 50% of contexts (542), (545) and (1089), 25% of contexts (256), (546), (931) and (1308), 12.5% of context (696), and 6.25% of context (777) and (830), were analysed. The results were multiplied up to give an estimate of the full contents of the flots, with the entire flot scanned in each case to ensure that all taxa present were recorded.

Results

3.2 Charcoal flecks and small fragments of bone were frequently recorded in the residues. Clinker, hammerscale, unworked flint and molluscs were also occasionally present. Context (800) contained a pre-Quaternary fossil, which will have derived from the Carboniferous limestone bedrock of the area. Low numbers of insect remains, vegetative material and uncharred seeds were recorded in some of the flots, but most of these appeared to modern intrusive material. Uncharred plant remains which are likely to have been preserved through waterlogging were present in ditch fill (484), and are discussed further below. Charred heather twigs and tubers/rhizomes were occasionally recorded in the flots. The results of the plant macrofossil analyses are presented in Appendix 1.1-1.14.

Enclosure 1

3.3 Charred plant macrofossils were present in 9 of the Enclosure 1 ditch fills, and were particularly abundant in the fills of ditch re-cuts F770 and F1319. They were dominated by oats and barley grains, with lower numbers of wheat grains. Weed seeds and chaff were also present in low numbers. A single charred flax seed was recorded in fill (566), and charred hazel nutshell fragments were present in fills (566) and (643). Uncharred hazel nutshell fragments and sloe fruitstones occurred in fill (484).

Enclosure 2

3.4 Charred plant macrofossils were present in low numbers in 6 of the Enclosure 2 ditch fills. These included oats and barley grains, and hazel nutshell fragments.

Enclosure 3

3.5 Charred plant macrofossils were present in low numbers in 10 of the Enclosure 3 ditch fills. These comprised grains of oats, barley and wheat, hazel nutshell fragments, grass seeds and sclerotia (resting bodies) of the soil fungus *Cenococcum geophilum*.

Enclosure 5

3.6 Charred plant remains in ditch fill (287) comprised 3 oat grains, 1 barley grain, 3 indeterminate cereal grains and a hawthorn fruitstone.

Enclosure 7

3.7 Fill (137) comprised 1 charred barley grain and 1 indeterminate cereal grain.

Enclosure 10

3.8 Charred plant macrofossils were relatively abundant in ditch fill (952). They were dominated by oat grains, with lower numbers of barley and wheat grains.

Enclosure 11

3.9 Charred plant macrofossils were abundant in ditch fill (931). They comprised roughly equal numbers of oats and barley grains, with a few weed seeds also present.

Enclosure 14

3.10 The charred plant macrofossil assemblage in ditch fill (987) was dominated by wheat grains. Lower numbers of oat grains and a pea, were also recorded. Fill (747) comprised an oat grain and an indeterminate cereal grain.

Enclosure 16

3.11 A charred oat grain and indeterminate cereal grain were present in fill (996).

Enclosure 4, 8, 9, 12, 15

3.12 Charred plant remains were absent from Enclosure 4, 8, 9, 12 and 15 ditch fills.

Hearths and firespots

3.13 Charred plant macrofossils were abundant in the hearth and firespot fills (contexts 256, 1078, 1089, 1308 and 1309). They all comprised similar assemblages, which were dominated by oat grains, with barley grains also common. Weed seeds and oat chaff fragments were present in low numbers. In addition, a wheat grain, a rye grain and 2 fragments of rye chaff were present in context (1089), fill of hearth F1077.

Kilns

3.14 The fills of kiln F698, F776 and F832 comprised abundant charred remains. These were dominated by oat grains, with barley grains common, and weed seeds and chaff also present. The largest assemblage was in fill (777) of kiln F776 (Figure 3.1). Charred plant remains were present in very low numbers in the fills of kiln F677, and included a few oat grains, barley grains and a hazel nutshell fragment.

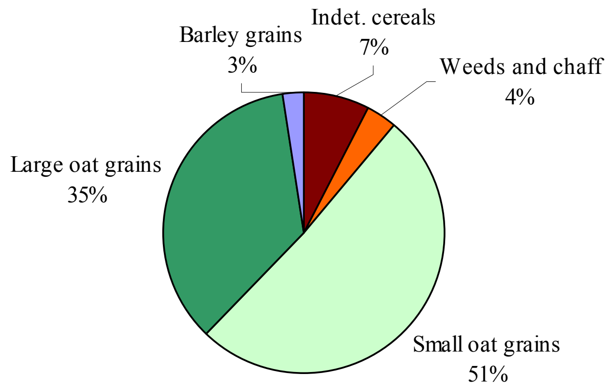

Figure 3.1: the proportions of charred remains in context (777), fill of kiln F776

Gullies and linear features

3.15 Seven linear features contained charred plant macrofossils. These were present in low numbers and included oat grains, barley grains, wheat grains, weed seeds, soil fungus sclerotia, a hawthorn fruitstone and occasional fragments of chaff.

Pits

3.16 Five pit fills contained charred plant macrofossils. They were few in number in most, but a slightly higher number of remains was recorded in fill (1285). The assemblage in this context comprised oats grains, barley grains, weed seeds and a single wheat grain.

Souterrain

3.17 Charred plant remains were absent from most of the fills associated with the souterrain, except for context (506), which comprised 2 small oat grains and 7 indeterminate cereal grains.

Other contexts

3.18 Two oat grains, a wheat grain and 2 indeterminate cereal grains were present in occupation deposit (119). Charred plant macrofossils were absent from grave fill (165), and colluvial spread (1515).

Discussion

Diet

3.19 Cereals used during the early medieval occupation of the site were oats, barley, wheat and rye. Table 3.1 lists the frequency of the charred remains and shows that oats and barley were the most important crops on the site, with wheat recorded in a significantly lower number of contexts (Table 3.1), and generally with low numbers of remains present. Rye was recorded in a single context (Hearth fill 1089), and therefore is likely to have been a minor crop, or was possibly only growing as a weed amongst the other cereals. In many of the contexts, cereal grains were recorded in low numbers, and therefore it is difficult to establish if there were changes in the crop husbandry regime over the duration of the occupation of the site. From the data available, there appears to have been little change, with oats and barley predominant in all phases (Table 3.1), although there is limited evidence that wheat may have increased in use in Phase 3.

3.20 The oat grains were divided into 2 size categories: large grains which were retained on the 2mm sieve; and small, slender grains which passed through this sieve. All of these may be from *Avena sativa* (cultivated oats), as the spikelets of this species usually have two fertile florets, the first producing larger grains than the second (Jacomet 2006). In addition, the identification of floret bases of *Avena sativa/strigosa* in 6 contexts confirms the presence of cultivated oats at the site. However, the abundance of the small, slender grains, coupled with the identification of *Avena fatua* (wild oats) floret bases in kiln fill (830), suggests that at least a proportion of these grains are from wild species of oats, and some may be from other wild grasses.

Table 3.1: the number of contexts in which charred plant macrofossils are recorded within each phase

Area A							
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 6	Unphased	Total no. of contexts
Oats	3	3	3	3	2	1	15
Barley	1	3	1	3	0	1	9
Wheat	0	0	4	0	0	0	4
Rye	0	0	0	0	0	0	0
Hazel nutshells	0	1	2	0	0	0	3
Hawthorn fruitstones	1	0	0	0	1	0	2
Peas	0	0	0	0	0	0	0
Flax	0	0	0	0	0	0	0
Area B							
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 6	Unphased	Total no. of contexts
Oats	4	7	1	0	0	18	30
Barley	4	3	1	0	0	19	27
Wheat	1	2	0	0	0	8	11
Rye	0	0	0	0	0	1	1
Hazel nutshells	0	2	0	0	0	1	3
Hawthorn fruitstones	0	0	0	0	0	0	0
Peas	0	1	0	0	0	0	1
Flax	0	1	0	0	0	0	1

3.21 The cereal grains on the site were generally in a poor condition, and surface damage of the barley grains often prevented their identification to species. A few of the better preserved barley grains were recorded as hulled, but it was not possible to determine whether 6-row or 2-row barley was used at the site. The few fragments of barley chaff were also too damaged to allow detailed identifications.

3.22 Wheat species cannot be reliably identified from their grains, as wheat grain morphology is very variable. However, it is likely that bread wheat was used at Roestown 2, as the diagnostic chaff of bread wheat was recorded in 3 contexts.

3.23 A single charred pea was recorded in context (987)(a Phase 2 ditch fill of Enclosure 14), suggesting that legumes may have formed a part of the diet. In addition, the presence of charred hazel nutshell fragments and hawthorn fruitstones indicates that wild foods were also gathered.

3.24 A predominance of oats and barley is typical of cereal assemblages from early medieval sites, and studies indicate that the main crops grown in Ireland at that time were 6-row hulled barley, oats and rye (Monk 1986; McClatchie 2007). Barley and oats were also the main crops identified from other early medieval sites along the M3 corridor, such as Baronstown 1 (Archaeological Services 2009a), Collierstown 1 (Archaeological Services 2009b), Clowanstown 3 (Archaeological Services 2008a), Garretstown 2 (Archaeological Services 2008b) and Castletown Tara 3 (Archaeological Services 2009c), and from early medieval sites recently studied in Co. Laois, including Killeany 1 (Archaeological Services 2008c) and Derrinsallagh 3 (Archaeological Services 2008d). By contrast, bread wheat and legumes were more widely cultivated in the post-Norman period (Monk 1986). The presence of bread wheat may reflect a high status for the site, as it is at the top of the list of relative prestige of cereals outlined in the 8th century law text Bretha Déin Chécht (Binchy 1966). However, the low status crops of hulled barley and oats were more frequently used at the site.

Flax

3.25 There was evidence for textile production at Roestown 2 in the form of spindle whorls, copper alloy or iron needles and a bone needle holder (O'Hara 2007). A charred flax seed was recorded in ditch fill (566) of Enclosure 1, which may indicate that flax was used for linen production at the site. Flax may also have been used to produce linseed oil for food, preservative or medicinal uses, and in addition to producing clothing, the fibres may have been extracted to produce ropes or sacking. The by-products of oil and fibre production could also have been used as fodder or fuel (Bond & Hunter 1987). The flax seed may have become charred during drying prior to processing or storage. Flax has occasionally been recorded from prehistoric sites in Ireland, but it occurs more commonly on sites from the early historic period onwards (Monk 1986). Seeds and capsules have been recorded from medieval contexts from Fishamble Street, Dublin City (Geraghty 1996), and seeds have been recorded from other sites along the route of the M3, for example at the early medieval sites at Castlefarm 1 and Collierstown 1 (Archaeological Services 2009db), the post-medieval site at Rath Hill 1 (Archaeological Services 2008e) and at the Iron Age/early medieval site at Lismullin 1 (Archaeological Services 2008f).

Cereal-drying kilns

3.26 Charred oats and barley grains were abundant in kilns F698, F776 and F832 suggesting that they were cereal-drying kilns, used to dry the crops prior to storage or grinding. Chaff fragments and weed seeds were present in low numbers relative to the cereal grains, which may indicate that the crops had been processed prior to drying. However, it is also possible that unprocessed crops were dried, as the surface damage of the grains indicates they were exposed to high temperatures, and weeds and chaff would burn away before the cereal grains (Boardman & Jones 1990). The mixture of crop types in the fills is likely to reflect several firings of the kilns, with insufficient clearing out after each use, although the cultivation of maslin crops cannot be ruled out. These deliberately mixed crops were sown in order to reduce the risk of total crop failure (Jones & Halstead 1995).

3.27 Kiln F677 may also have been a cereal-drying kiln, although only very low numbers of charred cereal grains were recorded in the fills. This may indicate that the kiln had been cleared out prior to its collapse.

Other features

3.28 Charred plant remains were recorded in many of the other features on the site, and were present in large numbers in ditches F770, F1319, F901 and F936, and pit F1287. These probably reflect the use of the ditches and pits for the disposal of domestic waste, including caches of grain accidentally burnt during the drying process. The use of these features as rubbish dumps is corroborated by the abundance of animal bone and waste from metalworking processes (section 5 this report; O'Hara 2007). Charred grain was also abundant in the hearth and firespot fills, reflecting the domestic nature of these features.

The plant macrofossil analysis provides little information as to whether the souterrain was used as a refuge or for storage. The few charred cereal grains present may represent some domestic waste.

Palaeoenvironment

3.29 Most of the charred weed seeds recorded on the site are likely to have grown with the crops, particularly the arable weeds, fat-hen and black bindweed. Some of the other taxa, e.g. hemp-nettle, nipplewort, knotgrass, redshank, docks and ribwort plantain, may also have occupied nearby areas of waste ground or open pasture. Redshank and fat-hen grow in nutrient-rich conditions (Preston *et al*. 2002), which indicates that the soils were either naturally nutrient-rich or were manured. Sheep's sorrel and heath-grass may have grown on nearby acid heath, and sedges and pale persicaria would have favoured areas of damp ground. Charred sclerotia (resting bodies) of *Cenococcum geophilum* were occasionally recorded. This soil fungus is an ectomycorrhizal species which has mutualistic associations with some tree roots, particularly members of the Fagaceae, Pinaceae and Betulaceae (Hudson 1986). Its presence may reflect burning of nearby woodland soils, perhaps during clearance activities, or the use of turves for fuel. The occasional presence of charred heather twigs and tubers/rhizomes may also derive from turf burning.

3.30 Previous insect analysis has indicated that waterlogged conditions existed in some of the ditches (O'Hara 2007). The presence of pollen in ditch fills (484) and (490), re-cuts of Enclosure 1, also suggests anaerobic preservation of these fills (Archaeological Services 2008g). These conditions allowed the preservation of uncharred remains of hazel nutshells and blackthorn (sloe) fruitstones in ditch fill (484), indicating that these shrubs or small trees were growing in or beside ditch F450 as it infilled. The plant macrofossils and molluscs (section 5), suggest that the other ditch fills analysed for this report were not deposited under waterlogged conditions.

4. Charcoal analysis

Methods

4.1 Charcoal was collected from the residues and flots and added to pre-sorted material. Following Boardman (1995), identifications were made on fragments >4mm. At least 100 fragments were identified per context, where available. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Hather (2000) and Schweingruber (1978), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. A single entity of charcoal from a short-lived tree species was provided for radiocarbon dating from contexts (549), (655) and (1312). In addition, charred barley grains were provided from contexts (548), (697) and (777).

Results

4.2 The results of the charcoal analyses are presented in Appendix 2.1-2.9. The frequencies of the different charcoal species within the features are presented in Figure 4.1.

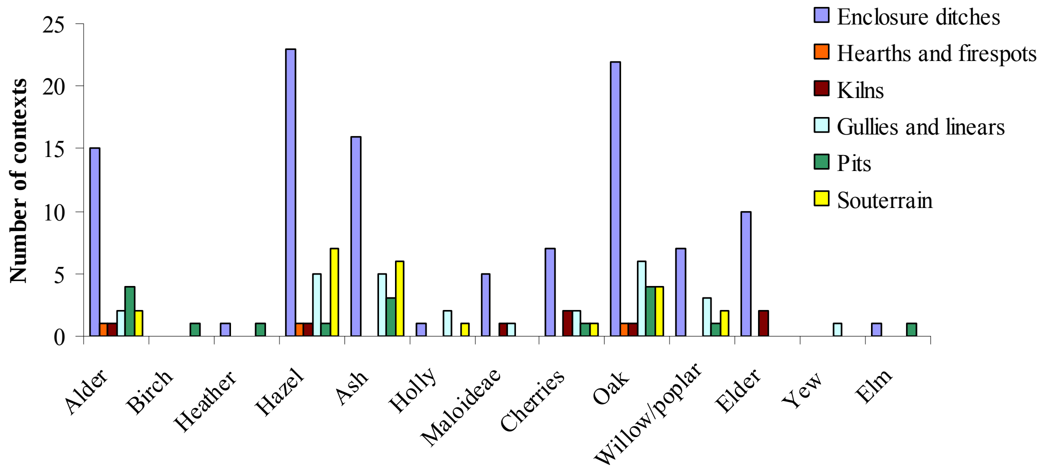

Figure 4.1: The frequency of charcoal species within the enclosure ditches, hearths/firespots, kilns, gullies/linears, pits and souterrain

Enclosure ditches

4.3 Charcoal was recorded in many of the enclosure ditch fills. Hazel and oak were the most frequently recorded species, with alder, ash and elder, also common. Heather (*Calluna vulgaris*), holly, Maloideae (hawthorn, whitebeam, apple group), cherries (Blackthorn, wild cherry, bird cherry etc), willow/poplar and elm were also occasionally recorded. Charcoal was generally present in low quantities in the ditch fills, but a larger amount was recorded in context (144), fill of ditch F239 from Enclosure 3, the assemblage of which was dominated by oak and hazel.

Hearths and firespots

4.4 A small quantity of alder charcoal was present in context (256), and a single fragment of oak and hazel charcoal were recorded in contexts (1089) and (1308), respectively. Identifiable charcoal was absent from contexts (1078) and (1309).

Kilns

4.5 Small quantities of charcoal were present in the kiln fills, which included alder, hazel, Maloideae, cherries and elder. Identifiable charcoal was absent from context (696).

Gullies and linear features

4.6 Most of the gully and linear fills comprised small quantities of charcoal. Species represented were alder, hazel, ash, holly, Maloideae, cherries, oak and willow/poplar. In addition, linear (1279) included 3 small fragments of yew charcoal.

Pits

4.7 Several pit fills comprised small quantities of charcoal. Alder, birch, heather, hazel, ash, cherries, oak, willow/poplar and elm, were recorded.

Souterrain

4.8 All of the souterrain fills comprised low to moderate quantities of charcoal, with hazel, ash and oak, being most frequently recorded. Alder, holly, cherries and willow/poplar were present at lower frequencies.

Occupation deposit

4.9 A few fragments of charcoal were identified from the occupation deposit (119). These were alder, hazel, ash, oak and elder.

Discussion

Early medieval landscape

4.10 All of the charcoal species are native to Ireland and were probably available in the local landscape. Oak and hazel were abundant, with oak probably forming high-canopy woodland with ash and elm, while hazel would have grown in the understorey vegetation, by the woodland margins or in scrub, with the other small trees and shrubs such as cherries and Maloideae. Holly was also occasionally recorded, which is a common understorey shrub of oak woodland (Preston *et al*. 2002). Alder would have favoured wetland habitats, for example in carr or along riverbanks. Willow and poplar charcoal cannot be differentiated with certainty (Hather 2000), and therefore the fragments of Salicaceae charcoal may derive from willows growing in similar wetland areas to the alders, or poplar trees which would have thrived on moist soils in mixed, deciduous woodland (Preston *et al*. 2002). A small amount of birch was recorded, the different species of which cannot be differentiated on the basis of charcoal morphology (Hather 2000). The species native to Ireland are downy birch (*Betula pubescens*) and silver birch (*Betula pendula*). Downy birch favours acidic, wet soils, and could have grown in riverside vegetation with alder and willow, while silver birch grows on light, well-drained soils (Preston *et al*. 2002). Elder was relatively frequently recorded on the site. This synanthropic shrub or small tree, thrives on the nitrogen-rich soils associated with human habitation (Gale & Cutler 2000), and is an aggressive pioneer, able to quickly colonise derelict ground (White *et al.* 2005). Yew was recorded in a single context (Linear fill 1279), which is an evergreen tree of generally well-drained soils (Preston et al. 2002). It grows in mixed deciduous woods on limestone (*ibid*.). Heather also favours well-drained soils, and may have grown in open woodland, or on areas of nearby heath.

4.11 The frequencies of charcoal species in the different phases of occupation of Area A and Area B are presented in Figures 4.2 and 4.3, respectively. In general, the charcoal assemblages from the different phases show a similar pattern, with oak and hazel predominant throughout the occupation of the site. Elder and ash were frequently recorded in phases 3 and 4 in Area A, and in the earlier phases in Area B. Both are colonizers of open, waste ground (Preston *et al.* 2002) which suggests that areas of the local woodland had been cleared. Pollen analysis of Phase 2 and 3 ditch fills in Enclosure 1 reflected an open landscape strongly influence by human activity, with alder growing in wetland areas, and hazel forming scrub. Regional woodland comprised oak, and to a lesser extent elm and birch (Archaeological Services 2008g).

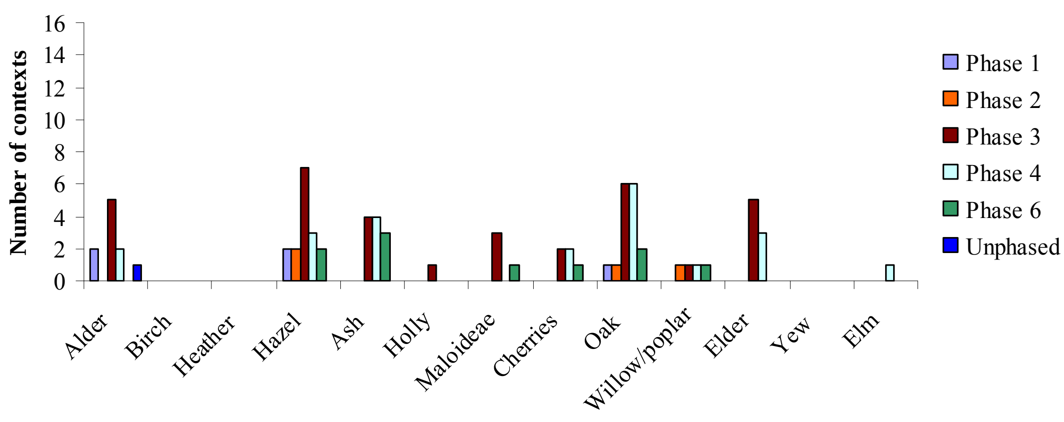

Figure 4.2: The frequency of charcoal species in Area A by phase

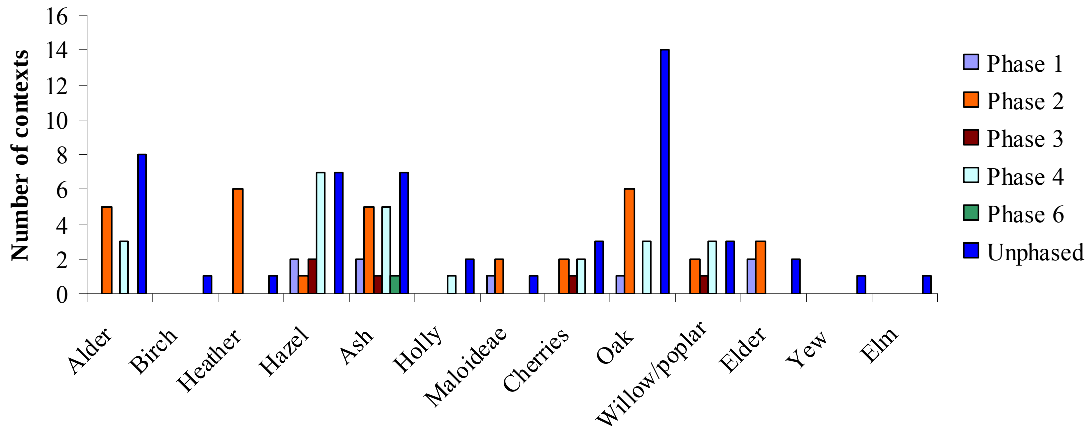

Figure 4.3: The frequency of charcoal species in Area B by phase

Uses of the wood

4.12 The presence of charred grain, animal bone and industrial residues suggests that many of the features on the site were used for the disposal of waste from domestic and industrial activities (section 3 and 5; O'Hara 2007). Therefore, many of the charcoal assemblages reflect the wood species used for fuel on the site. Many of the charcoal fragments were too small to differentiate if they were from roundwood (branchwood) or timber (stemwood), but in general, roundwood was more often identified, suggesting that twigs, branches and young stems were gathered, in preference to felling mature trees to provide fuel. Alder, hazel, Maloideae, cherries, oak and elder were recorded in the kiln fills, which suggests that a diverse range of species were used as fuel for cereal-drying. In addition, some of the fragments may derive from timber and brushwood structures within the kiln, on which the grain was placed to allow efficient drying. Alder, hazel and oak were recorded in the hearth fills, however only small quantities of charcoal were recovered from these features, and it is likely that an equally diverse range of fuels was used.

4.13 The charcoal assemblages are also likely to include burnt building materials. Ash and oak were important structural timbers (O'Donnell 2007; Stuijts 2007), while hazel was traditionally used for wattling, due to the flexibility of the young stems (Orme & Coles 1985). A yew stave was among the wooden artefacts identified at Roestown 2 (O'Hara 2007), which illustrates the uses of this dense, tough, elastic wood. Yew also makes good firewood (O'Donnell 2007).

4.14 Heather charcoal was present in 2 contexts, and may represent the burnt remains of ropes, brooms, bedding, thatch or baskets (Gale & Cutler 2000). Heather may also have been used for kindling.

4.15 The fills from the souterrain were dominated by hazel, ash and oak roundwood charcoal, with some fragments measuring between 2-3cm diameter. This charcoal may represent domestic fuel waste, or may be the remains of burnt wattle structures.

5. Cremated bone analysis

Methods

5.1 Burnt bone was recovered from 151 contexts, which had a total weight of 1261.9g. Each context was passed through a nest of sieves, with mesh sizes of 10mm, 5mm, and 2mm (McKinley 2004). Each fraction was weighed and the largest fragment of bone was measured.

Results and interpretation

5.2 Summary data for each context is presented in Appendix 3.1, and the fraction weights per context are given in Appendix 3.2.

5.3 The weight of burnt bone per context ranged from <0.1g to 99.5g (Appendix 3.1). The latter was context (649), from ditch (649). The second heaviest context was (115), from ditch (168), and the third was context (1285), the fill of pit (1287). However, in general the weight of bone in each context was small, averaging 8.4g per context, and with 94 contexts (62.3%) weighing <5.0g.

5.4 Almost two-thirds of the burnt bone (818.8g) came from ditches (Table 5.1), and just over half of this material came from five ditches: (168), (649), (164), (113) and (102). Pits yielded 152.0g of burnt bone, most of which came from pits (1287) and (1294). Kilns contained 91.0g of burnt bone, 87.3g of which came from cereal drying kiln (677). A moderate amount of burnt bone (70.6g) was also found in linear features, but no individual feature contained a particularly large quantity of bone (the largest was context (1276) from linear (574), at 18.2g). Burnt bone was also found in smaller quantities in gullies, postholes, hearths, deposits, topsoil, the souterrain, a spread, furrow, metalled surface, the fill of a burial, and an occupation fill (Table 5.1).

Table 5.1: Cremated bone from different context types

Context Type	Number of contexts	Weight of burnt bone	
		g	%
Ditches	87	818.8	64.9
Linear features	18	70.6	5.6
Gullies	2	4.9	0.4
Pits	10	152.0	12.0
Postholes	3	15.2	1.2
Kilns	8	91.0	7.2
Hearths	3	9.3	0.7
Souterrain	5	8.6	0.7
Deposits	2	5.7	0.5
Topsoil	3	52.1	4.1
Other	10	33.7	2.7
Total	**151**	**1261.9**	**100.0**

5.5 Over half the contexts (57.6%) were only slightly fragmented, with most of the material in the largest sieved fraction, and most of the remainder were moderately fragmented (Appendix 3.2). In general, the lightest contexts were more severely fragmented, and the heavier contexts were less so. The maximum fragment size ranged from 3.4mm to 64.5mm, the latter occurring in context (108) from ditch (113). Large fragments (>50mm) were also present in seven other contexts, mainly from ditches, but also context (655) from kiln (677), and context (400) (topsoil). Although some of the lightest contexts contained small maximum fragments, many contexts had maximum fragments of moderate size, and the mean was 27.6mm.

5.6 The colour of the bone fragments varied between contexts, and often a range of colours was present within the same context suggesting diverse burning conditions (Appendix 3.1). Dark brown and black colouration occurs when the bone is charred at low temperatures (below *c.* 300ºC) or when there is a severe oxygen restriction (McKinley 2004). Dark grey and grey colours occur when bone is partially oxidised, indicating temperatures of between *c.* 300-600ºC and/or a restricted oxygen supply (*ibid*.). A buff or white colour occurs when bone is completely oxidised, after exposure to temperatures greater than *c.* 600ºC with a plentiful supply of oxygen (*ibid*.). Ninety contexts (59.6%) contained bone that was largely white or pale grey in colour, indicating full oxidation. A small number of contexts contained charred bone that was mainly black and brown. The remainder all contained partially oxidised bone, or a mixture of charred, partially oxidised and fully oxidised bone.

5.7 All fragments were examined with a view to identification. Forty-one contexts contained definite fragments of animal bone, and a further 26 contexts contained fragments of possible animal bone (Appendix 3.1). These included the fills of several ditches (including the 5 which yielded the greatest quantity of burnt bone), 3 pits (including the two heaviest), 2 cereal-drying kilns, several linear features, the backfill deposits and floor levels of the souterrain, a hearth/ firespot, posthole, deposit, occupation fill, and topsoil. Unfortunately, none of the remaining contexts contained any identifiable bone, and it was not possible to determine whether the bone was human or animal.

5.8 Eighty-three contexts contained small fragments of unburnt bone (Appendix 3.3), 57 of which included fragments of animal or possible animal bone. Bone in the remaining contexts could not be identified to species. The identifiable animal bone is listed in Appendix 3.4 and included pig, sheep-goat, cattle, horse, dog, bird and small mammal.

5.9 Context (144), from ditch (113), contained a small broken piece of burnt bone (12.0 x 10.4 x 7.8mm) weighing 0.8g. On the flat unbroken surface it had a small central hole, surrounded by a circular groove *c.* 3mm in diameter. Two further arced grooves could have been part of additional larger concentric circles surrounding the central hole. These grooves extended to the broken edges of the bone fragment. A fragment of clay pipe was present in context (963), from ditch (945). It is recommended that an artefact specialist examines both objects.

6. Mollusc analysis

Methods

6.1 The sediment samples from the site were processed to 500 microns by the excavator. Shell remains recovered from 20 deposits (24 samples) were submitted for analysis of the assemblages present. The submitted material was examined for mollusc remains and these were identified as closely as possible with reference to published works (main sources Cameron 2003, Cameron & Redfern 1976, Ellis 1969, Hayward & Ryland 1995; Kerney 1999, Kerney & Cameron 1979). The quantities of identifiable remains were very small so that where minimum numbers of individuals could be readily determined counts were recorded (based on numbers of shell apices for snails and of sided-valves for bivalves) for any identifiable remains. Nomenclature for terrestrial forms follows Kerney (1999), marine taxa follow Hayward & Ryland (1995).

Results

6.2 Small quantities of poorly preserved remains of terrestrial snails and marine shellfish were recovered from 20 contexts at this site – all bar one of the deposits (Context 507, deposit sealing floor of souterrain) being ditch fills. Details of the submitted remains are presented in Appendix 4.1 by context and sample number.

Discussion

6.3 Almost all of the land snails recovered were of the catholic taxa *Cepaea*/*Arianta* sp. and of no value for ecological reconstruction – the exception being a single apex fragment of *Vitrea crystallina*/*V. contracta* from Context (507) (also widespread and found in a wide variety of terrestrial habitats).

6.4 Marine shell was present in 10 deposits (all ditch fills) but only in trace amounts. All of the remains were of edible shellfish, including periwinkle, whelk, cockle and ?oyster, but the remains were too few to be of interpretative value beyond indicating importation of these food resources from the coast (approximately 35 kilometres away).

7. Coprolite analysis

Methods

7.1 Two fragments of possible coprolite recovered from the lower topsoil were submitted for assessment. A small subsample from each of the possible coprolite fragments was examined using the 'squash' technique of Dainton (1992). This was undertaken to assess the content of eggs of intestinal parasitic nematodes but routinely reveals other microfossils, such as pollen and diatoms, and, if present, these are also noted. The assessment slides were scanned at 150x magnification with 600x used where necessary.

Results

7.2 Archaeological information, provided by the excavator, is given in square brackets.

Context 120 [lower topsoil]

Sample 4 (two possible coprolite fragments; total weight 18g)

The fragments had a somewhat porous surface appearance and did indeed resemble faecal concretion. However, both of the 'squash' subsamples were wholly inorganic and no eggs of intestinal parasites or other identifiable microfossil remains were seen.

Discussion

7.3 On examination, the submitted material proved not to be faecal in nature. It was perhaps simply mineral concretion, but its curious surface appearance (with numerous small 'pores') suggested that it may *perhaps* be very degraded pot (?prehistoric), with the temper inclusions leached from the matrix leaving the somewhat porous structure. No further study of the submitted material is required.

8. Sources

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Appendix 1.1: Plant macrofossil data from Enclosure 1 ditch fills – phased contexts

Area		B	B	B	B	B	B	B	B	B
Phase		1a	2a	2b	2b	2c	2c	3a	3	3
Context		427	535	643	800	566	858	570	448	484
Sample		236	259	232	227	228	231	107, 209	131, 146	243
Feature		F405	F404	F642	F642	F1104	F1104	F571	F450	F450
Residue matrix (relative abundance)										
Bone (burnt)		-	-	1	1	1	1	1	1	-
Bone (unburnt)		-	-	2	3	-	3	-	-	-
Charcoal		-	-	1	1	-	-	-	1	-
Clinker		-	-	-	-	-	1	-	-	-
Pre-Quaternary fossil		-	-	-	1	-	-	-	-	-
Tooth		-	-	-	-	-	-	1	-	-
Flot matrix (relative abundance)										
Bone (burnt)		-	-	-	-	1	-	-	-	-
Bone (small mammal)		-	-	1	-	-	-	-	-	-
Bone (unburnt)		-	-	1	-	2	-	-	-	-
Charcoal		-	-	3	1	4	2	3	1	-
Clinker		-	-	2	-	-	-	-	-	-
Heather twigs (charred)		-	-	2	-	-	-	-	-	-
Modern roots		-	-	-	-	2	-	1	-	-
Semi-vitrified fuel waste		-	-	2	-	1	-	-	-	-
Tubers / rhizomes (charred)		-	-	1	-	-	-	-	-	-
Uncharred seeds		-	-	1	-	1	-	-	-	-
Charred remains (total number)										
(c) *Avena* spp (Oat species)	large grain	-	-	16	6	2	-	3	-	-
(c) *Avena* spp (Oat species)	small grain	-	-	6	4	1	-	-	-	-
(c) Cerealia indeterminate	grain	-	-	19	4	9	-	1	-	-
(c) Cerealia indeterminate	culm nodes	-	-	-	-	1	-	-	-	-
(c) Cerealia indeterminate (Relative abundance)	grain fragment	-	-	2	-	2	-	-	-	-
(c) *Hordeum* spp (Barley species)	grain	-	-	6	3	2	-	-	-	-
(c) *Hordeum* spp (Hulled Barley)	grain	-	-	1	-	-	-	-	1	-
(c) *Linum usitatissimum* (Flax)	seed	-	-	-	-	1	-	-	-	-
(c) *Triticum* spp (Wheat species)	grain	-	-	-	-	1	-	-	-	-
(h) *Rumex acetosella* (Sheep's Sorrel)	nutlet	-	-	1	-	-	-	-	-	-
(t) *Corylus avellana* (Hazelnut)	nutshell fragment	-	-	5	-	2	-	-	-	-
(x) *Cenococcum geophilum* (Soil Fungus)	sclerotia	-	-	1	-	-	-	-	-	-
(x) *Rumex* spp (Dock)	nutlet	-	-	2	-	-	-	-	-	-
Indeterminate	pod fragment	-	-	1	-	-	-	-	-	-
Uncharred remains (relative abundance)										
(t) *Corylus avellana* (Hazelnut)	nutshell fragment	-	-	-	-	-	-	-	-	4
(t) *Prunus spinosa* (Sloe)	fruitstone	-	-	-	-	-	-	-	-	4

[c-cultivated plant; h-heath; t-tree; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.2: Plant macrofossil data from Enclosure 1 ditch fills – unphased contexts

Area		B	B	B	B	B	B	B
Phase		3a	3b	3b	3b	3c	3c	3c
Context		549	548	1299	1312	542	545	546
Sample		318	305	310	309	306, 307	307	304
Feature		F550	F1319	F1319	F1319	F770	F770	F770
Residue matrix (relative abundance)								
Bone (burnt)		-	-	-	-	1	1	1
Bone (unburnt)		-	1	-	-	-	1	-
Hammerscale		-	-	-	-	1	-	-
Flot matrix (relative abundance)								
Charcoal		3	1	2	3	3	2	2
Clinker		-	-	-	-	-	2	1
Earthworm cocoons		-	-	-	-	1	-	-
Semi-vitrified fuel waste		-	2	-	-	2	-	2
Charred remains (total number)								
(a) *Chenopodium album* (Fat-hen)	seed	-	64	-	-	2	-	-
(a) *Fallopia convulvulus* (Black Bindweed)	nutlet	-	4	-	-	2	-	-
(c) *Avena* spp (Oat species)	large grain	-	112	-	-	52	82	184
(c) *Avena* spp (Oat species)	small grain	-	140	-	-	36	66	188
(c) *Avena strigosa / sativa* (Cultivated Oats)	floret base	-	-	-	-	-	-	8
(c) Cerealia indeterminate	grain	-	196	-	-	38	102	276
(c) Cerealia indeterminate	rachis segment	-	8	-	-	-	-	-
(c) Cerealia indeterminate (Relative abundance)	grain fragment	-	1	-	-	4	4	4
(c) *Hordeum* spp (Barley species)	grain	-	276	-	-	54	36	116
(c) *Hordeum* spp (Barley species)	rachis segment	-	32	-	-	2	-	-
(c) *Hordeum* spp (Barley species)	rachis internode	-	-	-	-	-	-	8
(c) *Hordeum* spp (Hulled Barley)	grain	-	32	-	-	8	10	24
(c) *Triticum* aestivum (Bread Wheat)	rachis node	-	4	-	-	-	2	8
(c) *Triticum* spp (Wheat species)	grain	-	36	-	-	14	34	44
(r) *Lapsana communis* (Nipplewort)	achene	-	-	-	-	2	-	4
(r) *Persicaria maculosa* (Redshank)	nutlet	-	4	-	-	-	-	-
(x) Brassica spp (Cabbages)	seed	-	1	-	-	-	-	-
(x) *Cenococcum geophilum* (Soil Fungus)	sclerotia	-	-	-	-	2	-	-
(x) *Chenopodium* spp (Goosefoot)	seed	-	4	-	-	-	2	-
(x) Lamiaceae undiff. (Mint family)	nutlet	-	-	-	-	1	-	-
(x) *Rumex* spp (Dock)	nutlet	-	4	-	-	2	2	-

[a-arable weed; c-cultivated plant; r-ruderal; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.3: Plant macrofossil data from Enclosure 2 ditch fills

Area		A	A	A	A	A	A	A	A	A
Phase		1a	1a	1a	1a	1b	2	2	2	2
Context		131	140	221	275	252	109	220	269	284
Sample		83	91	84	92	67	66	82	43	89
Feature		F282	F285	F282	F276	F250	F102	F102	F102	F102
Residue matrix (relative abundance)										
Bone (burnt)		-	2	2	1	1	1	2	1	-
Bone (unburnt)		-	3	-	-	-	3	-	-	-
Burnt / cracked stones		2	-	2	-	-	-	2	2	-
Charcoal		-	-	-	-	-	1	-	2	-
Clinker		-	-	-	-	-	1	-	-	-
Hammerscale		-	-	-	-	-	-	-	1	1
Tooth		-	-	2	-	-	1	-	-	-
Flot matrix (relative abundance)										
Bone (burnt)		-	-	-	-	-	-	1	-	-
Bone (calcined)		-	-	-	-	-	-	1	1	-
Bone (small mammal)		-	-	-	-	-	-	1	-	-
Charcoal		-	2	1	1	1	2	2	1	2
Clinker		-	-	-	1	-	1	-	2	-
Diplopoda millepede		-	-	-	-	-	-	-	1	-
Insect		-	-	-	-	-	-	1	-	-
Modern roots		-	2	2	1	2	2	2	2	2
Semi-vitrified fuel waste		-	-	-	-	-	1	1	-	-
Charred remains (total number)										
(c) *Avena* spp (Oat species)	large grain	-	-	-	-	-	2	3	-	10
(c) *Avena* spp (Oat species)	small grain	-	2	-	1	-	2	3	-	6
(c) Cerealia indeterminate	grain	-	-	1	-	-	7	6	-	4
(c) Cerealia indeterminate (Relative abundance)	grain fragment	-	-	-	-	-	-	-	-	2
(c) *Hordeum* spp (Barley species)	grain	-	-	-	-	-	1	2	-	-
(t) *Corylus avellana* (Hazelnut)	nutshell fragment	-	-	-	-	-	-	2	-	-

[c-cultivated plant; t-tree]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.4: Plant macrofossil data from Enclosure 3 ditch fills

Area		A	A	A	A	A	A	A	A	A	A	A	A	A
Phase		3a	3b	3b	3b	3b	3b	4a	4a	4a	4a	4a	4a	4a
Context		108	107	110	144	145	151	106	111	112	150	160	161	162
Sample		50, 237	58	47	49	88	48	44	46, 54	43, 57	45	75	60	59
Feature		F113	F239	F239	F239	F239	F239	F114	F114	F114	F114	F164	F164	F164
Residue matrix (relative abundance)														
Bone (burnt)		1	3	1	1	1	1	1	1	1	-	1	2	2
Bone (unburnt)		3	-	2	3	3	2	-	-	-	3	2	-	-
Burnt / cracked stones		2	-	1	2	1	1	1	1	1	1	2	2	2
Charcoal		1	-	1	1	2	1	1	-	-	1	1	-	1
Flint - unworked (*total number*)		-	-	1	-	-	-	-	-	-	3	-	-	-
Hammerscale		-	-	-	-	-	-	-	-	-	1	-	-	-
Tooth		1	-	-	-	-	-	-	-	2	1	-	-	2
Flot matrix (relative abundance)														
Bone (calcined)		-	-	-	1	-	-	-	-	-	-	-	-	-
Bone (small mammal)		-	1	-	-	-	-	-	-	1	-	-	-	-
Bone (unburnt)		-	1	-	1	1	-	-	-	1	-	-	1	1
Charcoal		2	2	2	4	3	3	2	1	2	-	2	2	2
Clinker		1	1	-	2	-	-	1	-	-	-	-	-	-
Hammerscale		-	-	-	1	-	-	-	-	-	-	-	-	-
Heather twigs (charred)		-	-	-	1	-	-	-	-	-	-	-	-	-
Modern roots		1	2	2	2	1	2	2	2	2	2	-	2	2
Semi-vitrified fuel waste		-	1	-	1	-	1	-	-	1	-	-	1	-
Tubers / rhizomes (charred)		-	-	-	1	-	-	-	-	-	-	-	-	-
Uncharred seeds		-	-	-	-	-	-	-	1	-	-	1	-	-
Vegetative material (uncharred)		2	1	-	1	1	-	-	1	-	-	-	-	-
Charred remains (total number)														
(c) *Avena* spp (Oat species)	large grain	-	-	-	2	-	-	-	-	-	-	-	1	-
(c) *Avena* spp (Oat species)	small grain	-	-	-	-	1	-	-	-	3	-	-	4	5
(c) Cerealia indeterminate	grain	1	5	1	13	4	-	4	-	1	4	-	2	3
(c) *Hordeum* spp (Barley species)	grain	-	-	-	1	-	-	1	-	1	-	-	-	2
(c) *Triticum* spp (Wheat species)	grain	-	1	-	5	2	-	-	-	-	-	-	-	-
(t) *Corylus avellana* (Hazelnut)	nutshell fragment	-	-	-	3	1	-	-	-	-	-	-	-	-
(x) *Cenococcum geophilum* (Soil Fungus)	sclerotia	-	-	-	3	-	-	-	-	-	-	-	-	-
(x) Poaceae undiff. <2mm (Grass family)	caryopsis	-	-	1	-	-	-	-	-	-	-	-	-	-

[c-cultivated plant; t-tree; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.5: Plant macrofossil data from Enclosure 4, 5, 7, 8 and 9 ditch fills

Area		A	A	A	A	A	A	A	A	A	A	A
Phase		6a	6a	6a	1a	1a	2	3a	3a	4a	4a	4b
Context		135	136	158	224	287	137	227	229	186	197	194
Sample		76	77	116	61	107	32	87	85	115	53	51
Feature		F134	F134	F134	F225	F288	F172	F230	F230	F187	F196	F195
Enclosure		4	4	4	5	5	7	8	8	9	9	9
Residue matrix (relative abundance)												
Bone (burnt)		-	-	-	1	3	-	-	-	-	-	-
Bone (calcined)		-	1	-	-	-	-	1	-	1	1	-
Bone (unburnt)		1	1	1	-	-	-	1	-	1	1	1
Burnt / cracked stones		-	2	1	1	-	-	1	-	-	1	-
Charcoal		-	1	-	1	1	-	-	-	-	-	-
Flint - unworked (*total number*)		1	-	-	-	-	-	-	-	-	-	-
Molluscs		2	-	-	-	-	-	-	-	-	-	-
Tooth		-	-	1	-	-	-	-	-	-	1	-
Flot matrix (relative abundance)												
Charcoal		-	-	1	-	2	2	-	-	-	-	-
Clinker		-	-	-	-	-	1	-	-	-	-	-
Modern roots		2	2	1	-	2	2	-	-	-	-	-
Vegetative material (uncharred)		-	1	-	-	-	-	-	-	-	-	-
Charred remains (total number)												
(c) *Avena* spp (Oat species)	large grain	-	-	-	-	3	-	-	-	-	-	-
(c) Cerealia indeterminate	grain	-	-	-	-	3	1	-	-	-	-	-
(c) Cerealia indeterminate (Relative abundance)	grain fragment	-	-	-	-	1	-	-	-	-	-	-
(c) *Hordeum* spp (Barley species)	grain	-	-	-	-	1	1	-	-	-	-	-
(t) *Crataegus monogyna* (Hawthorn)	fruitstone frag.	-	-	-	-	1	-	-	-	-	-	-

[c-cultivated plant; t-tree]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.6: Plant macrofossil data from Enclosure 10, 11, 12, 14, 15 and 16 ditch fills

Area		B	B	B	B	B	B	B	B	B	B	B
Phase		1c	1a	1b	1c	2a	2a	2a	2d	2d	2d	2d
Context		952	1023	931	963	744	747	987	648	652	713	996
Sample		298	294	217, 250	735	247	257	256	270	269	271	199
Feature		F936	F1025	F901	F945	F745	F748	F900	F649	F653	F684	F959
Enclosure		10	11	11	12	14	14	14	15	15	15	16
Residue matrix (relative abundance)												
Bone (burnt)		-	-	-	1	-	-	1	-	-	-	-
Bone (calcined)		-	1	1	-	1	1	1	-	-	-	-
Bone (unburnt)		-	1	-	-	2	2	1	2	1	-	1
Burnt / cracked stones		-	-	-	-	-	1	-	-	-	-	1
Charcoal		-	1	2	-	1	1	1	1	-	-	1
Tooth		-	1	-	-	1	-	-	-	-	-	-
Flot matrix (relative abundance)												
Bone (unburnt)		-	-	-	-	-	-	1	-	-	-	-
Charcoal		1	-	2	-	-	2	2	-	-	2	1
Clinker		-	-	1	-	-	-	-	-	-	-	-
Modern roots		1	-	1	-	-	-	-	-	-	-	-
Semi-vitrified fuel waste		1	-	-	-	-	-	-	-	-	-	-
Charred remains (total number)												
(c) *Avena* spp (Oat species)	large grain	36	-	136	-	-	-	8	-	-	-	-
(c) *Avena* spp (Oat species)	small grain	93	-	80	-	-	1	13	-	-	-	1
(c) Cerealia indeterminate	grain	10	-	184	-	-	1	14	-	-	-	-
(c) Cerealia indeterminate (Relative abundance)	grain fragment	4	-	1	-	-	-	4	-	-	-	1
(c) *Hordeum* spp (Barley species)	grain	4	-	132	-	-	-	-	-	-	-	-
(c) *Hordeum* spp (Hulled Barley)	grain	5	-	-	-	-	-	-	-	-	-	-
(c) *Pisum sativum* (Pea)	fruit	-	-	-	-	-	-	1	-	-	-	-
(c) *Triticum* spp (Wheat species)	grain	2	-	-	-	-	-	28	-	-	-	-
(r) *Persicaria maculosa* (Redshank)	nutlet	-	-	1	-	-	-	-	-	-	-	-
(x) *Rumex* spp (Dock)	nutlet	-	-	1	-	-	-	-	-	-	-	-

[c-cultivated plant; r-ruderal; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.7: Plant macrofossil data from hearths and firespots

Area		A?	B	B	B	B
Context		256	1078	1089	1308	1309
Sample		70	255	265	284	285
Feature		Firespot	Firespot or hearth F1076	Firespot or hearth F1077	Hearth F1311	Hearth F1311
Residue matrix (relative abundance)						
Bone (calcined)		-	1	1	-	-
Charcoal		1	-	1	1	-
Hammerscale		1	-	-	-	-
Flot matrix (relative abundance)						
Bone (burnt)		-	-	1	-	-
Charcoal		2	2	3	2	1
Clinker		-	-	2	1	-
Heather twigs (charred)		-	-	1	-	-
Insect		-	-	1	-	-
Modern roots		2	-	-	-	-
Semi-vitrified fuel waste		1	2	-	1	-
Tubers / rhizomes (charred)		-	-	-	1	-
Uncharred seeds		-	-	1	-	1
Charred remains (total number)						
(a) *Fallopia convulvulus* (Black Bindweed)	nutlet	4	5	6	-	-
(c) *Avena* spp (Oat species)	floret base	-	1	-	-	-
(c) *Avena* spp (Oat species)	large grain	82	22	18	452	768
(c) *Avena* spp (Oat species)	small grain	154	251	50	744	1248
(c) *Avena strigosa / sativa* (Cultivated Oats)	floret base	2	-	-	4	24
(c) Cerealia indeterminate	grain	6	34	90	68	16
(c) Cerealia indeterminate (Relative abundance)	grain fragment	3	4	4	4	4
(c) *Hordeum* spp (Barley species)	grain	22	-	78	84	176
(c) *Hordeum* spp (Hulled Barley)	grain	12	67	18	4	24
(c) *Secale cereale* (Rye)	grain	-	-	1	-	-
(c) *Secale cereale* (Rye)	rachis segment.	-	-	2	-	-
(c) *Triticum* spp (Wheat species)	grain	-	-	1	-	-
(r) *Persicaria maculosa* (Redshank)	nutlet	-	3	16	4	-
(w) *Carex* spp (Sedges)	trigonous nutlet	-	-	2	-	-
(w) Cyperaceae undiff. (Sedge family)	nutlet	2	-	-	-	-
(x) *Chenopodium* spp (Goosefoot)	seed	-	-	2	4	-
(x) *Prunella vulgaris* (Selfheal)	achene	-	1	-	-	-
(x) *Rumx* spp (Dock)	nutlet	2	2	-	4	-
Indeterminate	seed	-	-	4	-	-

[a-arable weed; c-cultivated plant; r-ruderal; w-wetland; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.8: Plant macrofossil data from kilns

Context		655	656	670	674	696	697	777	830
Sample		149, 172, 173, 220	155, 171	174	260	160	149	200	197
Feature		Kiln F677	Kiln F677	Kiln F677	Kiln F677	Kiln F698	Kiln F698	Kiln F776	Kiln F832
Residue matrix (relative abundance)									
Bone (burnt)		3	1	-	-	2	1	1	-
Bone (unburnt)		3	3	-	-	1	1	2	1
Charcoal		2	1	-	-	2	3	3	1
Flint - unworked (*total number*)		1	1	-	-	-	-	-	-
Hammerscale		1	1	-	-	1	-	1	-
Flot matrix (relative abundance)									
Bone (burnt)		-	1	-	-	-	-	-	-
Bone (unburnt)		-	1	-	-	1	-	-	-
Burnt clay		-	-	-	-	2	-	-	-
Charcoal		2	1	2	3	2	2	2	2
Clinker		-	-	-	-	2	2	3	2
Heather twigs (charred)		-	-	-	-	2	-	-	2
Modern roots		-	-	-	-	1	-	1	1
Semi-vitrified fuel waste		-	-	-	-	1	-	1	1
Tubers / rhizomes (charred)		-	-	-	-	1	-	1	-
Uncharred seeds		-	-	-	-	1	-	-	-
Charred remains (total number)									
(a) *Fallopia convulvulus* Black Bindweed	nutlet	-	-	-	-	16	-	32	16
(c) *Avena fatua* (Wld Oat)	floret base	-	-	-	-	-	-	-	1
(c) *Avena* spp (Oat species)	large grain	-	5	-	-	200	14	1520	960
(c) *Avena* spp (Oat species)	small grain	-	2	-	-	536	15	2192	1280
(c) *Avena strigosa / sativa* (Cultivated Oats)	floret base	-	-	-	-	-	-	64	96
(c) Cerealia indeterminate	grain	2	1	-	-	96	12	320	544
(c) Cerealia indeterminate	culm nodes	-	-	-	-	-	-	16	-
(c) Cerealia indeterminate (Rel abund)	fragment	-	-	-	-	4	3	4	4
(c) Cerealia indeterminate (Relative abundance)	twisted awn fragment	-	-	-	-	-	-	-	3
(c) *Hordeum* spp (Barley species)	grain	-	-	1	1	8	4	112	624
(c) *Hordeum* spp (Barley species)	rachis segment	-	-	-	-	64	-	-	-
(c) *Hordeum* spp (Hulled Barley)	grain	-	-	-	-	24	-	16	192
(r) *Galeopsis* spp (Hemp-nettle)	nutlet	-	-	-	-	-	-	-	1
(r) *Persicaria maculosa* (Redshank)	nutlet	-	-	-	-	8	-	48	-
(r) *Plantago lanceolata* (Ribwort Plantain)	seed	-	-	-	-	-	-	1	-
(r) *Polygonum aviculare* Knotgrass	nutlet	-	-	-	-	-	-	1	-
(t) *Corylus avellana* (Hazelnut)	fragment	1	-	-	-	-	-	-	-
(x) *Chenopodium* spp (Goosefoot)	seed	-	-	-	-	8	-	-	16
(x) *Rumx* spp (Dock)	nutlet	-	-	-	-	8	-	-	-
Indeterminate	seed	-	-	-	-	-	2	-	-

[a-arable weed; c-cultivated plant; r-ruderal; t-tree; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.9: Plant macrofossil data from linears - Area A

Phase		?	6b	6b	?	?	?	6b
Context		125	126	138	176	177	273	279
Sample		36	33	90	34	35	81	94
Feature		Linear F202	Linear F219	Linear F283	Linear F203	Linear F204	Linear F274	Linear F280
Residue matrix (relative abundance)								
Bone (burnt)		1	1	1	1	-	1	2
Bone (calcined)		-	1	1	-	-	-	-
Bone (unburnt)		-	1	2	-	-	-	-
Charcoal		-	1	-	-	-	1	1
Tooth		1	-	-	-	-	-	-
Flot matrix (relative abundance)								
Bone (unburnt)		-	1	-	-	-	-	1
Charcoal		1	1	2	-	1	-	1
Clinker		1	-	-	-	-	-	-
Modern roots		2	2	2	2	3	-	1
Vegetative material (uncharred)		1	-	-	-	-	-	-
Charred remains (total number)								
(c) *Avena* spp (Oat species)	large grain	-	-	-	-	-	-	2
(c) *Avena* spp (Oat species)	small grain	-	-	-	-	-	-	2
(c) Cerealia indeterminate	grain	-	1	-	2	-	-	2
(t) *Crataegus monogyna* (Hawthorn)	fruitstone fragment	-	-	-	-	-	-	1
(x) *Cenococcum geophilum* (Soil Fungus)	sclerotia	-	1	-	-	-	-	-

[c-cultivated plant; t-tree; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.10: Plant macrofossil data from linears and gullies - Area B

Phase		1a	1a	1a	6	?	?	?	?	?	?	?	?
Context		590	824	1111	598	619	620	689	818	826	1276	1279	1281
Sample		205	219	239	296	152	169	154	275	274	283	297	287
Feature		Gully F591	Gully F825	Gully F1112	Drain F557	Drain F622	Drain F622	Linear F607	Linear F819	Linear F827	Linear F574	Linear F1279	Linear F1282
Residue matrix (relative abundance)													
Bone (burnt)		1	-	1	-	-	-	-	-	1	1	-	2
Bone (calcined)		-	-	1	-	-	-	-	-	1	-	-	2
Bone (unburnt)		-	1	1	-	-	-	-	3	3	-	-	1
Burnt / cracked stones		-	1	2	-	-	-	-	-	-	-	-	2
Charcoal		-	-	1	-	-	-	-	-	1	2	-	1
Flint - unworked (*total number*)		-	1	-	-	-	-	-	-	1	-	-	-
Tooth		-	-	-	-	-	-	-	-	-	-	-	1
Flot matrix (relative abundance)													
Charcoal		-	2	2	-	3	-	2	-	2	3	3	3
Earthworm cocoons		-	-	-	-	-	-	-	-	-	1	-	-
Insect		-	-	-	-	-	-	-	-	-	1	-	1
Modern roots		-	1	-	-	-	-	-	-	-	1	-	-
Charred remains (total number)													
(c) *Avena* spp (Oat species)	large grain	-	6	-	-	-	-	-	-	-	10	-	7
(c) *Avena* spp (Oat species)	small grain	-	1	1	-	-	-	-	-	-	11	-	5
(c) Cerealia indeterminate	grain	-	6	1	-	-	-	-	-	-	9	-	4
(c) Cerealia indeterminate	culm nodes	-	-	-	-	-	-	-	-	-	2	-	-
(c) Cerealia indeterminate (Relative abundance)	grain fragment	-	-	-	-	-	-	-	-	-	3	-	-
(c) *Hordeum* spp (Barley species)	grain	-	3	1	-	-	-	-	-	-	13	-	6
(c) *Hordeum* spp (Barley species)	rachis segment	-	-	-	-	-	-	-	-	-	3	-	-
(c) *Hordeum* spp (Hulled Barley)	grain	-	-	-	-	-	-	-	-	-	1	-	-
(c) *Triticum* spp (Wheat species)	grain	-	-	-	-	-	-	-	-	-	1	-	-
(h) *Danthonia decumbens* (Heath-grass)	caryopsis	-	-	-	-	-	-	-	-	-	1	-	-
(h) *Rumex acetosella* (Sheep's Sorrel)	nutlet	-	-	-	-	-	-	-	-	-	2	-	-
(r) *Persicaria maculosa* (Redshank)	nutlet	-	-	-	-	-	-	-	-	-	1	-	-
(x) *Chenopodium* spp (Goosefoot)	seed	-	-	-	-	-	-	-	-	-	2	-	-
(x) *Rumex* spp (Dock)	nutlet	-	-	-	-	-	-	-	-	-	3	-	-
Indeterminate	pod fragment	-	-	-	-	-	-	-	-	-	1	-	-

[c-cultivated plant; h-heath; r-ruderal; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.11: Plant macrofossil data from pits - Area A

Phase		6a	6a?	6a?	6a?
Context		175	209	210	211
Sample		15	62	63	64
Feature		Pit F178	Pit F212	Pit F212	Pit F212
Residue matrix (relative abundance)					
Bone (burnt)		1	1	1	1
Burnt / cracked stones		-	-	-	1
Charcoal		-	-	-	1
Flot matrix (relative abundance)					
Charcoal		1	1	2	-
Modern roots		-	2	2	-
Charred remains (total number)					
(c) *Avena* spp (Oat species)	large grain	-	-	1	-
(c) Cerealia indeterminate	grain	-	1	-	-

[c-cultivated plant]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.12: Plant macrofossil data from pits - Area B

Phase		?	4	4	4	4	4	?	?	?	?
Context		365	421	422	508	521	522	610	1285	1295	1296
Sample		326	166	165	130	182	180	163	288	300, 336	299
Feature		Pit F364	Pit F411	Pit F411	Pit F509	Pit F519	Pit F523	Pit F611	Pit F1287	Pit F1294	Pit F1294
Residue matrix (relative abundance)											
Bone (burnt)		2	-	-	1	3	1	-	-	-	1
Bone (calcined)		-	-	-	-	-	-	-	2	-	1
Bone (unburnt)		-	-	-	-	-	-	-	3	-	2
Burnt / cracked stones		-	-	-	-	1	-	-	1	-	-
Charcoal		1	-	-	-	-	1	-	2	-	1
Tooth		-	-	-	-	-	-	-	1	-	1
Flot matrix (relative abundance)											
Bone (burnt)		-	-	-	-	-	-	-	1	-	-
Bone (small mammal)		-	-	-	-	-	-	-	1	-	-
Bone (unburnt)		1	-	-	-	-	-	-	-	-	-
Charcoal		3	-	2	-	-	-	3	2	3	-
Heather twigs (charred)		-	-	-	-	-	-	-	1	-	-
Modern roots		1	-	-	-	-	-	-	-	-	-
Semi-vitrified fuel waste		1	-	-	-	-	-	-	2	-	-
Uncharred seeds		1	-	-	-	-	-	-	-	-	-
Charred remains (total number)											
(a) *Fallopia convulvulus* (Black Bindweed)	nutlet	-	-	-	-	-	-	-	1	-	-
(c) *Avena* spp (Oat species)	large grain	1	-	-	-	-	-	-	4	-	5
(c) *Avena* spp (Oat species)	small grain	-	-	-	-	-	-	-	28	-	5
(c) Cerealia indeterminate	grain	-	-	-	-	-	-	-	12	-	6
(c) Cerealia indeterminate (Relative abundance)	grain fragment	-	-	-	-	-	-	-	2	-	2
(c) *Hordeum* spp (Barley species)	grain	-	-	-	-	-	-	-	13	-	3
(c) *Hordeum* spp (Hulled Barley)	grain	-	-	-	-	-	-	-	2	-	-
(c) *Triticum* spp (Wheat species)	grain	-	-	-	-	-	-	-	1	-	1
(x) *Cenococcum geophilum* (Soil Fungus)	sclerotia	-	-	-	-	-	-	-	1	-	-
(x) *Chenopodium* spp (Goosefoot)	seed	-	-	-	-	-	-	-	-	-	1
(x) *Rumex* spp (Dock)	nutlet	-	-	-	-	-	-	-	-	-	1
Indeterminate	seed	-	-	-	-	-	-	-	-	-	1

[a-arable weed; c-cultivated plant; x-wide niche]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.13: Plant macrofossil data from the souterrain

Phase		2a	4	4	4	4	4	4
Context		507	500	506	512	513	514	518
Sample		-	132	103	179	177	178	183
Residue matrix (relative abundance)								
Bone (burnt)		1	-	-	-	-	-	-
Burnt / cracked stones		2	-	-	-	-	-	1
Charcoal		1	-	-	-	-	-	-
Flot matrix (relative abundance)								
Charcoal		2	3	3	3	3	3	2
Insect		1	-	-	-	-	-	-
Modern roots		2	-	-	-	-	-	-
Vegetative material (uncharred)		2	-	-	-	-	-	-
Charred remains (total number)								
(c) *Avena* spp (Oat species)	small grain	2	-	-	-	-	-	-
(c) Cerealia indeterminate	grain	7	-	-	-	-	-	-
(c) Cerealia indeterminate (Relative abundance)	grain fragment	2	-	-	-	-	-	-

[c-cultivated plant]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1.14: Plant macrofossil data from other features

Area		A	A	B
Phase		3?	?	?
Context		119	165	1515
Sample		69	10	330
Feature		Occupation deposit	Grave	Colluvial spread
Residue matrix (relative abundance)				
Bone (burnt)		3	1	-
Bone (unburnt)		-	-	1
Charcoal		1	-	1
Flot matrix (relative abundance)				
Charcoal		2	1	-
Modern roots		3	2	-
Tubers / rhizomes (charred)		1	-	-
Uncharred seeds		1	-	-
Vegetative material (uncharred)		1	-	-
Charred remains (total number)				
(c) *Avena* spp (Oat species)	small grain	2	-	-
(c) Cerealia indeterminate	grain	2	-	-
(c) *Triticum* spp (Wheat species)	grain	1	-	-

[c-cultivated plant]. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 2.1: Charcoal data from Enclosure 1 ditch fills

Area	B	B	B	B	B	B	B	B	B	B	B	B
Phase	1a	2a	2b	2b	2c	2c	3a	3	?	?	?	?
Context	427	535	643	800	566	858	570	448	545	549	1299	1312
Sample	236	259	232	227	228	231	107, 209	131, 146	307	318	310	309
Feature	F405	F404	F642	F642	F1104	F1104	F571	F450	F770	F550	F1319	F1319
Charcoal (g/number of fragments)												
Total charcoal (g)	1.882	0.862	2.397	0.126	11.737	0.182	7.782	3.132	0.159	2.256	1.347	5.173
Percentage of sample analysed	100	100	100	100	100	100	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	1.882	0.862	2.397	0.126	11.737	0.182	7.782	3.132	0.159	1.824	1.347	5.173
Number of analysed charcoal fragments >4mm	1	6	32	4	91	5	8	9	6	24	8	23
Alnus glutinosa (Alder)	-	0.397 (5F)	0.034 (2F)	-	1.626 (6F)	-	-	-	-	0.116 (4F)	-	4.134 (22F)
Calluna vulgaris (Heather)	-	-	-	-	0.105 (1F)	-	-	-	-	-	-	-
Corylus / Alnus (Hazel / Alder)	-	-	-	-	-	-	-	0.027 (1F)	-	-	-	-
Corylus avellana (Hazel)	1.882 (1F)	-	0.179 (8F)	0.047 (1F)	1.177 (19F)	0.071 (2F)	7.642 (7F)	0.108 (2F)	0.054 (2F)	0.446 (3F)	-	-
Fraxinus excelsior (Ash)	-	-	0.008 (1F)	0.009 (1F)	0.349 (4F)	0.092 (2F)	0.140 (1F)	-	0.048 (3F)	-	0.892 (5F)	-
Maloideae (Hawthorn, whitebeams, apple group)	-	-	0.062 (1F)	-	0.024 (1F)	-	-	-	-	-	-	-
Prunus spp (Cherries)	-	-	0.066 (3F)	-	0.054 (1F)	-	-	2.979 (5F)	-	-	-	-
Quercus sp (Oak)	-	0.465 (1F)	0.251 (7F)	0.070 (2F)	1.715 (15F)	-	-	-	0.057 (1F)	1.262 (17F)	0.455 (3F)	-
Salicaceae (Willow or poplar)	-	-	0.011 (1F)	-	0.083 (2F)	-	-	0.018 (1F)	-	-	-	1.039 (1F)
Sambucus nigra (Elder)	-	-	1.712 (6F)	-	5.939 (33F)	0.019 (1F)	-	-	-	-	-	-
Bark	-	-	0.039 (2F)	-	-	-	-	-	-	-	-	-
Unidentified >4mm fraction	-	-	0.035 (1F)	-	0.665 (9F)	-	-	-	-	-	-	-
Unidentified <4mm fraction	-	-	-	-	-	-	-	-	-	0.432	-	-

F = number of charcoal fragments.

Appendix 2.2: Charcoal data from Enclosure 2 ditch fills

Area	A	A	A	A
Phase	1a	1b	2	2
Context	131	252	109	220
Sample	83	67	66	82
Feature	F282	F250	F102	F102
Charcoal (g/number of fragments)				
Total charcoal (g)	0.031	0.059	0.026	0.037
Percentage of sample analysed	100	100	100	100
Total charcoal analysed >4mm (g)	0.031	0.059	0.026	0.037
Number of analysed charcoal fragments >4mm	2	1	1	1
Alnus glutinosa (Alder)	-	0.059 (1F)	-	-
Corylus avellana (Hazel)	0.015 (1F)	-	0.026 (1F)	-
Quercus sp (Oak)	0.016 (1F)	-	-	-
Salicaceae (Willow or poplar)	-	-	-	0.037 (1F)

F = number of charcoal fragments.

Appendix 2.3: Charcoal data from Enclosure 3 ditch fills

Area	A	A	A	A	A	A	A	A	A	A	A	A
Phase	3a	3b	3b	3b	3b	3b	4a	4a	4a	4a	4a	4a
Context	108	107	110	144	145	151	106	111	112	150	160	161
Sample	50, 237	58	47	49	88	48	44	46, 54	43, 57	45	75	60
Feature	F113	F239	F239	F239	F239	F239	F114	F114	F114	F114	F164	F164
Charcoal (g/number of fragments)												
Total charcoal (g)	6.371	1.929	0.809	49.757	15.123	3.076	2.581	5.701	0.069	0.095	1.338	0.11
Percentage of sample analysed	100	100	100	71	100	100	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	6.371	1.929	0.809	34.67	13.818	2.205	1.902	5.701	0.069	0.095	1.338	0.11
Number of analysed charcoal fragments >4mm	44	8	3	107	128	20	24	24	3	3	21	5
Alnus glutinosa (Alder)	0.831 (17F)	-	-	0.511 (8F)	1.549 (12F)	0.085 (2F)	0.165 (2F)	2.259 (6F)	-	-	-	-
Corylus avellana (Hazel)	0.152 (2F)	1.576 (4F)	0.777 (2F)	3.181 (20F)	0.338 (5F)	0.369 (4F)	0.430 (12F)	0.217 (1F)	-	-	0.429 (9F)	-
Fraxinus excelsior (Ash)	0.205 (1F)	-	-	0.571 (9F)	1.545 (26F)	-	-	1.941 (16F)	0.029 (1F)	0.046 (1F)	0.101 (3F)	-
Ilex aquifolium (Holly)	-	-	-	0.115 (2F)	-	-	-	-	-	-	-	-
Maloideae (Hawthorn, whitebeams, apple group)	0.025 (1F)	0.046 (1F)	-	-	0.185 (1F)	-	-	-	-	-	-	-
Prunus spp (Cherries)	0.487 (3F)	-	-	-	0.113 (1F)	-	0.578 (3F)	-	-	0.019 (1F)	-	-
Quercus sp (Oak)	4.536 (17F)	0.178 (2F)	-	27.665 (56F)	10.024 (82F)	1.751 (14F)	0.685 (6F)	1.284 (1F)	0.014 (1F)	0.030 (1F)	0.544 (6F)	0.055 (3F)
Salicaceae (Willow or poplar)	-	-	-	2.155 (6F)	-	-	-	-	0.026 (1F)	-	-	-
Sambucus nigra (Elder)	0.069 (2F)	0.129 (1F)	-	0.039 (2F)	0.064 (1F)	-	0.044 (1F)	-	-	-	0.099 (1F)	0.055 (2F)
Ulmus sp (Elm)	-	-	-	-	-	-	-	-	-	-	0.128 (1F)	-
Bark	-	-	-	0.380 (3F)	-	-	-	-	-	-	0.037 (1F)	-
Unidentified >4mm fraction	0.066 (1F)	-	0.032 (1F)	0.053 (1F)	-	-	-	-	-	-	-	-
Unidentified <4mm fraction	-	-	-	1.121	1.305	0.871	0.679	-	-	-	-	-

F = number of charcoal fragments.

Appendix 2.4: Charcoal data from Enclosure 4, 5, 7 and 9 ditch fills

Phase	A/6a	A/1a	A/1a	A/2	A/4a
Context	136	224	287	137	186
Sample	77	61	107	32	115
Feature	F134	F225	F288	F172	F187
Enclosure	4	5	5	7	9
Charcoal (g/number of fragments)					
Total charcoal (g)	0.02	0.065	0.325	1.494	0.031
Percentage of sample analysed	100	100	100	100	100
Total charcoal analysed >4mm (g)	0.02	0.065	0.325	1.494	0.031
Number of analysed charcoal fragments >4mm	1	2	6	11	1
Alnus glutinosa (Alder)	-	-	0.325 (6F)	-	-
Corylus avellana (Hazel)	-	0.065 (2F)	-	0.021 (1F)	-
Quercus sp (Oak)	0.020 (1F)	-	-	1.447 (9F)	-
Diffuse porous	-	-	-	-	0.031 (1F)
Ring porous	-	-	-	0.026 (1F)	-

Appendix 2.5: Charcoal data from Enclosure 11, 14, 15 and 16 ditch fills

Phase	B/1a	B/1b	B/2a	B/2a	B/2d	B/2d	B/2d
Context	1023	931	747	987	648	713	996
Sample	294	217, 250	257	256	270	271	199
Feature	F1025	F901	F748	F900	F649	F684	F959
Enclosure	11	11	14	14	15	15	16
Charcoal (g/number of fragments)							
Total charcoal (g)	0.077	0.054	0.128	0.024	0.148	0.113	0.068
Percentage of sample analysed	100	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	0.077	0.054	0.128	0.024	0.148	0.113	0.068
Number of analysed charcoal fragments >4mm	1	2	5	1	5	2	1
Alnus glutinosa (Alder)	-	-	-	-	0.022 (1F)	0.037 (1F)	-
Corylus avellana (Hazel)	-	-	0.128 (5F)	-	-	-	-
Fraxinus excelsior (Ash)	0.077 (1F)	0.054 (2F)	-	-	-	-	-
Quercus sp (Oak)	-	-	-	-	0.045 (2F)	-	-
Ring porous	-	-	-	-	-	0.076 (1F)	-
Bark	-	-	-	0.024 (1F)	-	-	-
Unidentified >4mm fraction	-	-	-	-	0.081 (2F)	-	0.068 (1F)

F = number of charcoal fragments.

Appendix 2.6: Charcoal data from hearths, firespots and kilns

Area	A?	B	B	B	B	B	B	B	B	B
Context	256	1089	1308	655	656	670	674	697	777	830
Sample	70	265	284	149, 172, 173, 220	155, 171	174	260	159	200	197
Feature	Firespot	Hearth F1077	Hearth F1311	Kiln F677	Kiln F677	Kiln F677	Kiln F677	Kiln F698	Kiln F776	Kiln F832
Charcoal (g/number of fragments)										
Total charcoal (g)	2.438	0.108	0.028	0.266	0.044	0.023	4.764	0.322	0.036	0.153
Percentage of sample analysed	100	100	100	10	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	2.438	0.108	0.028	0.266	0.044	0.023	4.764	0.322	0.036	0.153
Number of analysed charcoal fragments >4mm	52	1	1	4	1	1	11	4	1	4
Alnus glutinosa (Alder)	2.438 (52F)	-	-	-	-	-	0.606 (1F)	-	-	-
Corylus / Alnus (Hazel / Alder)	-	-	-	-	-	-	-	0.145 (1F)	-	-
Corylus avellana (Hazel)	-	-	0.028 (1F)	-	-	-	-	-	0.036 (1F)	-
Maloideae (Hawthorn, whitebeams, apple group)	-	-	-	0.191 (2F)	-	-	-	-	-	-
Prunus spp (Cherries)	-	-	-	0.043 (1F)	-	0.023 (1F)	-	-	-	-
Quercus sp (Oak)	-	0.108 (1F)	-	-	-	-	1.305 (4F)	-	-	-
Sambucus nigra (Elder)	-	-	-	-	0.044 (1F)	-	2.853 (6F)	-	-	-
Diffuse porous		-	-	0.032 (1F)	-	-	-	-	-	-
Unidentified >4mm fraction		-	-	-	-	-	-	0.177 (3F)	-	0.153 (4F)

F = number of charcoal fragments.

Appendix 2.7: Charcoal data from linears and gullies

Area	A	A	A	B	B	B	B	B	B	B	B	B
Phase	6b	6b	6b	1a	1a	6	?	?	?	?	?	?
Context	126	138	279	824	1111	598	619	620	689	1276	1279	1281
Sample	33	90	94	219	239	296	152	169	154	283	297	287
Feature	Linear F219	Linear F283	Linear F280	Curvilinear gully F825	Gully F1112	Drain F557	Drain F622	Drain F622	Linear F607	Linear F574	Linear F1279	Linear F1282
Charcoal (g/number of fragments)												
Total charcoal (g)	0.043	0.329	0.102	0.061	0.44	1.345	6.249	1.617	2.806	4.228	8.466	2.195
Percentage of sample analysed	100	100	100	100	100	100	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	0.043	0.329	0.102	0.061	0.44	1.345	6.249	1.22	2.806	4.228	6.759	2.195
Number of analysed charcoal fragments >4mm	2	8	5	2	5	2	4	13	10	59	43	29
Alnus glutinosa (Alder)	-	-	-	-	-	-	-	1.220 (13F)	-	0.056 (2F)	-	-
Corylus / Alnus (Hazel / Alder)	-	-	-	0.047 (1F)	-	-	-	-	-	-	-	-
Corylus avellana (Hazel)	0.025 (1F)	0.069 (2F)	-	-	0.032 (1F)	-	-	-	0.046 (1F)	-	0.023 (1F)	0.123 (2F)
Fraxinus excelsior (Ash)	0.018 (1F)	-	0.075 (4F)	-	-	1.345 (2F)	-	-	-	0.321 (8F)	0.033 (1F)	0.299 (3F)
Ilex aquifolium (Holly)	-	-	-	-	-	-	-	-	-	0.048 (1F)	1.715 (9F)	-
Maloideae (Hawthorn, whitebeams, apple group)	-	0.062 (2F)	-	-	0.057 (1F)	-	-	-	-	-	-	-
Prunus spp (Cherries)		0.020 (1F)	-	-	-	-	-	-	-	-	-	0.510 (9F)
Quercus sp (Oak)	-	0.178 (3F)	-	-	0.313 (2F)	-	6.249 (4F)	-	2.208 (4F)	3.677 (44F)	4.909 (29F)	0.716 (10F)
Salicaceae (Willow or poplar)	-	-	0.027 (1F)	-	-	-	-	-	0.552 (5F)	-	-	0.381 (3F)
Sambucus nigra (Elder)		-	-	0.014 (1F)	0.038 (1F)	-	-	-	-	-	-	-
Taxas baccata (Yew)	-	-	-	-	-	-	-	-	-	-	0.079 (3F)	-
Ring porous	-	-	-	-	-	-	-	-	-	-	-	0.166 (2F)
Bark	-	-	-	-	-	-	-	-	-	0.031 (1F)	-	-
Unidentified >4mm fraction	-	-	-	-	-	-	-	-	-	0.095 (3F)	-	-
Unidentified <4mm fraction	-	-	-	-	-	-	-	0.397	-	-	1.707	-

F = number of charcoal fragments.

Appendix 2.8: Charcoal data from pits

Area	A	B	B	B	B	B	B	B	B
Phase	6a	?	4	4	4	?	?	?	?
Context	175	365	421	422	522	610	1285	1295	1296
Sample	15	326	166	165	180	163	288	300, 336	299
Feature	Pit F178	Pit F364	Pit F411	Pit F411	Pit F523	Pit F611	Pit F1287	Pit F1294	Pit F1294
Charcoal (g/number of fragments)									
Total charcoal (g)	0.099	0.759	0.572	4.798	0.072	0.688	3.679	2.601	3.466
Percentage of sample analysed	100	100	100	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	0.099	0.759	0.572	1.403	0.072	0.688	3.679	2.601	2.379
Number of analysed charcoal fragments >4mm	3	20	6	30	2	12	78	22	36
Alnus glutinosa (Alder)	-	0.214 (5F)	-	1.403 (30F)	-	0.688 (12F)	0.238 (5F)	-	-
Betula spp (Birch)	-	-	-	-	-	-	0.277 (1F)	-	-
Calluna vulgaris (Heather)	-	-	-	-	-	-	0.904 (18F)	-	-
Corylus avellana (Hazel)	-	-	0.572 (6F)	-	-	-	-	-	-
Fraxinus excelsior (Ash)	0.099 (3F)	-	-	-	-	-	0.053 (2F)	1.043 (11F)	-
Prunus spp (Cherries)	-	-	-	-	0.026 (1F)	-	-	-	-
Quercus sp (Oak)	-	0.024 (1F)	-	-	-	-	2.207 (52F)	1.558 (11F)	2.247 (34F)
Salicaceae (Willow or poplar)	-	-	-	-	0.046 (1F)	-	-	-	-
Ulmus sp (Elm)	-	-	-	-	-	-	-	-	0.132 (2F)
Bark	-	0.414 (11F)	-	-	-	-	-	-	-
Unidentified >4mm fraction	-	0.107 (3F)	-	-	-	-	-	-	-
Unidentified <4mm fraction	-	-	-	3.395	-	-	-	-	1.087

F = number of charcoal fragments.

Appendix 2.9: Charcoal data from the souterrain and occupation deposit

Area	B	B	B	B	B	B	B	A
Phase	4	4	2a	4	4	4	4	3?
Context	500	506	507	512	513	514	518	119
Sample	132	103	1	179	177	178	183	69
Feature	Souterrain	Souterrain	Souterrain	Souterrain	Souterrain	Souterrain	Souterrain	Occupation deposit
Charcoal (g/number of fragments)								
Total charcoal (g)	2.118	4.303	2.286	11.16	10.298	15.987	1.735	0.349
Percentage of sample analysed	100	100	100	100	100	100	100	100
Total charcoal analysed >4mm (g)	2.118	4.303	2.286	10.741	10.298	15.531	1.735	0.349
Number of analysed charcoal fragments >4mm	22	35	10	52	56	58	14	8
Alnus glutinosa (Alder)	-	0.161 (1F)	-	0.666 (8F)	-	-	-	0.089 (1F)
Corylus avellana (Hazel)	0.557 (10F)	4.142 (34F)	0.314 (3F)	0.888 (4F)	1.961 (21F)	3.676 (21F)	0.450 (2F)	0.031 (1F)
Fraxinus excelsior (Ash)	1.068 (9F)	-	1.853 (6F)	0.574 (5F)	7.802 (31F)	2.806 (6F)	1.285 (12F)	0.129 (4F)
Ilex aquifolium (Holly)	-	-	-	-	0.159 (1F)	-	-	-
Prunus spp (Cherries)	0.154 (1F)	-	-	-	-	-	-	-
Quercus sp (Oak)	0.339 (2F)	-	0.119 (1F)	7.968 (32F)	-	8.254 (29F)	-	0.069 (1F)
Salicaceae (Willow or poplar)	-	-	-	-	0.376 (3F)	0.795 (2F)	-	-
Sambucus nigra (Elder)	-	-	-	-	-	-	-	0.031 (1F)
Bark	-	-	-	0.645 (3F)	-	-	-	-
Unidentified <4mm fraction	-	-	-	0.419	-	0.456	-	-

F = number of charcoal fragments.

Appendix 3.1: Summary of cremated bone remains

Context	Context Detail	Bone Colour	Species	Weight (g)
41	?	Brown & dark grey to pale grey, white	Unknown	5.3
101	Fill of (102)	Buff/ white, some mid/ dark grey, black	Animal	32.3
106	Fill of ditch (114)	Buff/ white	Unknown	3.8
107	Fill of ditch (113)	Buff/ white, some mid/ dark grey	Animal?	24.3
108	Fill of ditch (113)	Black & brown, some white	Animal	10.5
109	Fill of (102)	Pale grey, white, some black & brown	Animal?	19.5
110	Fill of ditch (114)	White, some mid/ dark grey	Animal?	11.7
111	Fill of ditch (114)	White, pale grey, some dark grey/ black	Animal?	5.5
112	Fill of ditch (114)	Buff/ white	Unknown	8.2
115	Fill of ditch (168)	White, pale grey, some mid/ dark grey	Animal	96.4
118	Fill of ditch (168)	White, some mid/ dark grey, black	Animal	20.0
119	Occupation fill	White, pale grey	Animal?	2.2
120	Lower topsoil	White, pale grey	Unknown	15.1
126	Fill of linear (219)	White, pale grey, some black	Animal?	4.5
130	Fill of ditch (113)	White, pale grey	Animal	4.7
131	Fill of (282)	White, pale grey, some mid/ dark grey	Animal	13.6
135	Fill of ditch (134)	White	Unknown	0.5
136	Fill of ditch (134)	White	Unknown	2.0
137	Fill of ditch (172)	White	Animal	2.7
138	Fill of linear (283)	Black, grey, white	Unknown	0.7
140	Fill of ditch (285)	White	Unknown	2.1
144	Fill of ditch (113)	White, pale grey, mid & dark grey	Animal	15.4
145	Fill of ditch (113)	Brown & black, dark grey, pale grey, white	Animal	6.2
150	Fill of ditch (114)	White, some mid & dark grey	Unknown	4.8
151	Fill of ditch (113)	White, pale grey, pink	Animal	13.6
152	Fill of ditch (113)	White	Unknown	1.0
158	Fill of ditch (134)	White	Unknown	<0.1
160	Fill of ditch (164)	White, pale grey	Animal	30.8
161	Fill of ditch (164)	Brown & black, pale grey, white	Animal	27.1
162	Fill of ditch (164)	White, pale grey	Animal	24.2
163	?	White, pale grey	Animal	4.5
165	Fill of Burial 1	White	Unknown	<0.1
167	?	White	Animal?	0.4
175	Fill of 13th century pit (178) in Enclosure	White, some dark grey, black & brown	Animal?	15.8
186	Fill of ditch (187)	White, some dark grey & black	Animal?	3.6
191	Fill of linear (238)	White	Unknown	4.1
192	Fill of ditch (230)	White	Unknown	1.8
194	Fill of ditch (195)	White	Unknown	0.1
205	Fill of linear (205)	White, pale grey	Unknown	0.6
209	Fill of pit (212)	White, pale grey, some dark grey	Unknown	2.9
210	Fill of pit (212)	White	Unknown	0.4
211	Fill of pit (212)	White	Unknown	0.1

Appendix 3.1: continued

Context	Context Detail	Bone Colour	Species	Weight (g)
220	Fill of (102)	Black & brown, some white	Unknown	8.4
221	Fill of ditch (282)	White, pale grey	Unknown	1.7
223	Metalled surface	White, some dark grey & black	Unknown	5.6
224	Fill of ditch (225)	White, pale grey	Animal?	2.6
227	Fill of ditch (230)	Black, some white	Animal	17.7
227/228	Fill of ditch (230)?	White	Unknown	0.8
229	Fill of ditch (230)	White, pale grey, some dark grey	Animal	1.6
233	Fill of linear (234)	White, pale grey	Unknown	2.4
252	Fill of ditch (250)	White, black	Unknown	1.9
253	?	White, pale grey	Unknown	7.9
255	Deposit	White	Animal?	3.2
256	Firespot/ hearth	White, pale grey, some mid & dark grey, black	Animal?	8.8
261	Fill of ditch (272)	Dark, mid & pale grey, some white	Animal	14.6
269	Fill of ditch (102)	White, pale grey	Animal?	6.4
273	Fill of linear (274)	White, pale grey, some mid & dark grey	Animal?	4.7
275	Fill of ditch (276)	White	Unknown	0.1
279	Fill of ditch (280)	White, pale grey	Unknown	5.9
287	Fill of ditch (288)	Black, white, pale grey	Animal?	6.6
365	Fill of pit (364)	White	Unknown	0.1
400	Topsoil	White, pale grey	Animal	34.9
401	Lower topsoil	White	Unknown	2.1
413	Fill of ditch (405)	White	Animal	6.9
414	Fill of ditch (405)	White	Unknown	5.4
418	Fill of ditch (404)	White, pale grey	Animal	1.6
420	Fill of ditch (404)	White	Unknown	4.7
424	Fill of ditch (405)	White, pale grey	Unknown	1.0
431	Fill of ditch (404)	White	Animal	15.7
436	Fill of ditch (450)	White, mid grey to black	Unknown	5.9
437	Fill of ditch (450)	White	Unknown	0.4
439	Fill of ditch (450)	White, part black	Unknown	0.6
442	Fill of ditch (450)	White	Unknown	3.2
447	Fill of ditch (450)	White, pale grey, black	Animal?	11.8
448	Fill of ditch (450)	White, pale grey	Animal?	1.6
455	Fill of ditch (450)	White	Unknown	0.6
472	Fill of ditch (405)	White, pale grey	Animal?	2.0
476	Fill of ditch (450)	White	Unknown	0.6
482	Fill of ditch (450)	White, pale & mid grey	Unknown	6.7
483	Fill of ditch (450)	White	Unknown	1.4
484	Fill of ditch (450)	Pale , mid & dark grey	Unknown	0.5
490	Fill of ditch (404)	White	Unknown	2.5

Appendix 3.1: continued

Context	Context Detail	Bone Colour	Species	Weight (g)
500	Backfill deposits + floor levels in souterrain, chamber 1, passage 1	White	Animal	1.0
506	Fill of souterrain, chamber 1	White, pale grey	Unknown	1.9
507	Deposit sealing floor of souterrain	White	Unknown	0.4
512	Backfill deposits + floor levels in souterrain	White, some mid grey	Animal	5.2
518	Backfill deposits + floor levels in souterrain	White	Unknown	<0.1
542	Fill of ditch (770)	White	Unknown	<0.1
549	Lowest fill of ditch (550)	Buff/ white	Unknown	10.5
566	Fill of ditch	Black & brown, dark to pale grey, white	Animal	53.8
570	Curvilinear ditch (571)	Black & brown, dark to pale grey, white	Animal?	19.4
580	Fill of linear (581)	White, pale grey	Animal?	1.0
590	Fill of gully (591)	White, dark grey	Unknown	1.9
605	?	White	Animal	1.0
608	Fill of linear (607)	White, pale grey	Unknown	8.6
619	Fill of pit (611)	White, pale grey	Unknown	4.7
620	Fill of ditch (622)	Black, brown, white	Animal?	12.7
624	Fill of ditch (660)	White, pale grey	Unknown	5.0
634	Fill of posthole (638)	White, pale grey	Animal	7.4
635	Fill of posthole (638)	Dark, mid & pale grey, some white	Animal	7.7
636	Fill of posthole (637)	White	Unknown	0.1
639	Stone deposit	White, pale grey	Unknown	2.5
643	Fill of ditch (642)	White, pale grey, mid & dark grey	Animal	25.6
647	Fill of ditch (649)	White	Unknown	1.1
648	Fill of ditch (649)	White	Unknown	<0.1
649	Fill of ditch (649)	Brown, black, dark to pale grey, white	Animal	99.5
654	Cereal drying kiln (677)	Brown, dark grey, pale grey, white	Animal	12.6
655	Cereal drying kiln (677)	Brown & black, some white	Animal	52.0
656	Cereal drying kiln (677)	Black, mid & pale grey, some white	Animal	20.8
663	Fill of furrow (664)	White	Unknown	3.5
670	Cereal drying kiln (677)	Dark, mid & pale grey	Animal?	1.9
674	Fill of ditch (675)	White	Unknown	1.9
676	Fill of ditch (672)	White	Unknown	3.5
689	Fill of linear feature	Black, dark to pale grey, white	Animal?	2.0
696	Fill of cereal drying kiln (698)	White, pale grey	Animal	0.5

Appendix 3.1: continued

Context	Context Detail	Bone Colour	Species	Weight (g)
697	Fill of cereal drying kiln (698)	White	Unknown	0.1
736	Fill of ditch (735)	White	Unknown	1.8
747	Fill of ditch (748)	Black, some white	Unknown	0.5
777	Cereal drying kiln (776)	White, pale grey	Unknown	0.3
782	Fill of pit (778)	White	Unknown	2.3
800	Fill of ditch (642)	White, pale grey, black	Unknown	1.1
818	Fill of linear (819)	White, pale grey	Unknown	2.6
820	Fill of ditch (821)	White	Unknown	2.9
824	Curvilinear (825)	White	Animal?	0.3
826	Fill of linear (827)	Grey, pale grey, white	Unknown	0.2
830	Fill of kiln (832)	White	Unknown	2.8
858	Fill of ditch (1104)	White, pale to mid grey, black	Animal	4.1
907	Fill of linear (904)	White, pale grey	Unknown	4.1
931	Fill of ditch (901)	White	Unknown	<0.1
963	Fill of ditch (945)	White, pale grey	Animal	11.3
987	Fill of ditch (900)	Black, grey, white	Unknown	0.6
1078	Fill of hearth (1076)	White	Unknown	<0.1
1089	Fill of hearth (1077)	White	Unknown	0.4
1111	Fill of gully (1112)	White	Unknown	3.0
1184	Fill of ditch (735)	White, grey	Unknown	0.2
1201	Fill of ditch (1065)	White	Animal	9.3
1208	Fill of ditch (550)	White, some brown & black	Unknown	13.8
1254	Fill of linear (1255)	White	Animal?	1.1
1266	Fill of linear (660)	White	Unknown	0.7
1269	Fill of ditch (1267)	White	Unknown	0.8
1270	Fill of ditch (1267)	White, pale grey	Unknown	2.8
1273	Fill of linear (1271)	Mid to pale blue-grey, white	Unknown	2.1
1276	Fill of linear (574)	Dark to pale grey, white	Animal	18.2
1281	Fill of linear (1282)	Grey, pale grey, white	Animal	12.7
1285	Fill of pit (1287)	Brown & black, dark to pale grey, white	Animal	76.1
1291	Fill of ditch (1290)	White, black	Animal	4.7
1295	Fill of pit (1294)	White, pale to dark grey, some black & brown	Animal	14.9
1296	Fill of pit (1294)	White, pale & mid grey	Animal	34.7
1334	Fill of ditch (1336)	White	Unknown	2.7
1362	Fill of ditch (1361)	White	Unknown	1.0
1482	Localised spread	White, pale grey	Unknown	3.2

Appendix 3.2: Burnt bone fraction weights and fragment size

Context	Total Weight	Fraction Weights						Max. Frag Size
		>10mm		5-10mm		2-5mm		
	g	g	%	g	%	g	%	mm
41	5.3	5.0	94.3	0.3	5.7	0.0	0.0	37.7
101	32.3	19.2	59.4	12.0	37.2	1.1	3.4	40.0
106	3.8	3.7	97.4	0.0	0.0	0.1	2.6	30.8
107	24.3	18.7	77.0	5.1	21.0	0.5	2.1	51.0
108	10.5	8.5	81.0	1.9	18.1	0.1	1.0	64.5
109	19.5	11.2	57.4	6.0	30.8	2.3	11.8	36.6
110	11.7	7.6	65.0	3.5	29.9	0.6	5.1	34.1
111	5.5	2.5	45.5	2.7	49.1	0.3	5.5	26.2
112	8.2	7.8	95.1	0.3	3.7	0.1	1.2	39.0
115	96.4	25.8	26.8	59.1	61.3	11.5	11.9	43.4
118	20.0	10.5	52.5	9.1	45.5	0.4	2.0	36.9
119	2.2	0.0	0.0	0.9	40.9	1.3	59.1	14.7
120	15.1	10.1	66.9	5.0	33.1	0.0	0.0	41.8
126	4.5	3.9	86.7	0.4	8.9	0.2	4.4	36.0
130	4.7	1.7	36.2	2.8	59.6	0.2	4.3	30.6
131	13.6	6.8	50.0	6.6	48.5	0.2	1.5	30.1
135	0.5	0.0	0.0	0.5	100.0	0.0	0.0	12.2
136	2.0	0.0	0.0	1.9	95.0	0.1	5.0	27.1
137	2.7	1.9	70.4	0.6	22.2	0.2	7.4	21.0
138	0.7	0.0	0.0	0.4	57.1	0.3	42.9	12.7
140	2.1	0.0	0.0	1.6	76.2	0.5	23.8	16.9
144	15.4	8.8	57.1	5.8	37.7	0.8	5.2	32.2
145	6.2	4.3	69.4	1.4	22.6	0.5	8.1	31.6
150	4.8	2.6	54.2	2.0	41.7	0.2	4.2	24.5
151	13.6	6.8	50.0	6.5	47.8	0.3	2.2	29.1
152	1.0	1.0	100.0	0.0	0.0	0.0	0.0	22.3
158	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	5.0
160	30.8	17.4	56.5	12.9	41.9	0.5	1.6	32.3
161	27.1	20.7	76.4	6.0	22.1	0.4	1.5	61.6
162	24.2	20.7	85.5	3.2	13.2	0.3	1.2	45.2
163	4.5	0.9	20.0	3.6	80.0	0.0	0.0	22.6
165	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	4.8
167	0.4	0.0	0.0	0.2	50.0	0.2	50.0	18.3
175	15.8	11.4	72.2	4.0	25.3	0.4	2.5	44.3
186	3.6	2.9	80.6	0.5	13.9	0.2	5.6	43.1
191	4.1	2.1	51.2	2.0	48.8	0.0	0.0	32.4
192	1.8	1.8	100.0	0.0	0.0	0.0	0.0	30.7
194	0.1	0.0	0.0	0.0	0.0	0.1	100.0	7.2
205	0.6	0.0	0.0	0.6	100.0	0.0	0.0	16.5
209	2.9	2.6	89.7	0.0	0.0	0.3	10.3	49.2
210	0.4	0.0	0.0	0.0	0.0	0.4	100.0	10.7
211	0.1	0.0	0.0	0.0	0.0	0.1	100.0	7.0
220	8.4	3.6	42.9	4.5	53.6	0.3	3.6	27.7
221	1.7	0.0	0.0	1.4	82.4	0.3	17.6	18.7

Appendix 3.2: continued

Context	Total Weight	Fraction Weights						Max. Frag Size
		>10mm		5-10mm		2-5mm		
	g	g	mm	g	%	g	%	mm
223	5.6	5.3	94.6	0.3	5.4	0.0	0.0	38.0
224	2.6	0.0	0.0	2.5	96.2	0.1	3.8	27.2
227	17.7	16.5	93.2	1.1	6.2	<0.1	0.6	47.3
227/228	0.8	0.0	0.0	0.8	100.0	0.0	0.0	18.3
229	1.6	0.6	37.5	0.6	37.5	0.4	25.0	20.4
233	2.4	2.0	83.3	0.2	8.3	0.2	8.3	35.0
252	1.9	0.0	0.0	1.8	94.7	<0.1	5.3	18.5
253	7.9	6.9	87.3	1.0	12.7	0.0	0.0	38.8
255	3.2	2.6	81.3	0.6	18.8	0.0	0.0	20.8
256	8.8	2.2	25.0	6.5	73.9	0.1	1.1	23.1
261	14.6	10.5	71.9	3.7	25.3	0.4	2.7	34.6
269	6.4	4.3	67.2	0.9	14.1	1.2	18.8	45.8
273	4.7	3.8	80.9	0.7	14.9	0.2	4.3	22.0
275	0.1	0.0	0.0	0.0	0.0	0.1	100.0	6.7
279	5.9	3.9	66.1	1.8	30.5	0.2	3.4	43.9
287	6.6	4.4	66.7	1.3	19.7	0.9	13.6	40.9
365	0.1	0.0	0.0	0.0	0.0	0.1	100.0	10.8
400	34.9	18.5	53.0	16.1	46.1	0.3	0.9	53.6
401	2.1	0.0	0.0	1.9	90.5	0.2	9.5	18.5
413	6.9	5.4	78.3	1.4	20.3	0.1	1.4	31.9
414	5.4	5.4	100.0	0.0	0.0	0.0	0.0	46.0
418	1.6	0.0	0.0	1.6	100.0	0.0	0.0	16.1
420	4.7	4.7	100.0	0.0	0.0	0.0	0.0	41.3
424	1.0	0.0	0.0	1.0	100.0	0.0	0.0	15.5
431	15.7	15.6	99.4	0.0	0.0	<0.1	0.6	56.7
436	5.9	5.8	98.3	0.0	0.0	<0.1	1.7	57.5
437	0.4	0.0	0.0	0.4	100.0	0.0	0.0	18.0
439	0.6	0.0	0.0	0.6	100.0	0.0	0.0	12.7
442	3.2	3.2	100.0	0.0	0.0	0.0	0.0	34.9
447	11.8	8.5	72.0	3.3	28.0	0.0	0.0	36.6
448	1.6	0.5	31.3	1.0	62.5	0.1	6.3	18.6
455	0.6	0.0	0.0	0.6	100.0	0.0	0.0	18.8
472	2.0	1.2	60.0	0.8	40.0	0.0	0.0	36.0
476	0.6	0.0	0.0	0.6	100.0	0.0	0.0	14.0
482	6.7	4.2	62.7	2.5	37.3	0.0	0.0	30.2
483	1.4	0.0	0.0	1.3	92.9	0.1	7.1	18.3
484	0.5	0.0	0.0	0.5	100.0	0.0	0.0	18.5
490	2.5	2.5	100.0	0.0	0.0	0.0	0.0	23.0
500	1.0	0.0	0.0	1.0	100.0	0.0	0.0	16.6
506	1.9	1.9	100.0	0.0	0.0	0.0	0.0	28.3
507	0.4	0.0	0.0	0.3	75.0	0.1	25.0	10.8
512	5.2	1.6	30.8	3.6	69.2	0.0	0.0	22.5
518	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	5.8
542	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	6.6

Appendix 3.2: continued

Context	Total Weight	Fraction Weights						Max. Frag Size
		>10mm		5-10mm		2-5mm		
	g	g	mm	g	%	g	%	mm
549	10.5	9.6	91.4	0.9	8.6	0.0	0.0	34.0
566	53.8	42.6	79.2	11.1	20.6	0.1	0.2	40.8
570	19.4	18.2	93.8	0.8	4.1	0.4	2.1	36.9
580	1.0	1.0	100.0	0.0	0.0	0.0	0.0	25.4
590	1.9	1.8	94.7	0.0	0.0	<0.1	5.3	22.9
605	1.0	0.0	0.0	1.0	100.0	0.0	0.0	21.5
608	8.6	4.2	48.8	4.1	47.7	0.3	3.5	37.4
619	4.7	4.6	97.9	0.0	0.0	0.1	2.1	26.2
620	12.7	11.3	89.0	1.4	11.0	0.0	0.0	33.5
624	5.0	5.0	100.0	0.0	0.0	0.0	0.0	37.4
634	7.4	5.0	67.6	2.3	31.1	<0.1	1.4	38.0
635	7.7	5.3	68.8	2.3	29.9	<0.1	1.3	27.7
636	0.1	0.0	0.0	0.1	100.0	0.0	0.0	10.9
639	2.5	1.6	64.4	0.9	35.6	0.0	0.0	28.4
643	25.6	19.6	76.6	5.1	19.9	0.9	3.5	39.4
647	1.1	0.0	0.0	1.1	100.0	0.0	0.0	18.6
648	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	5.3
649	99.5	81.6	82.0	17.5	17.6	0.4	0.4	55.0
654	12.6	11.6	92.1	1.0	7.9	0.0	0.0	35.2
655	52.0	42.5	81.7	6.7	12.9	2.8	5.4	50.4
656	20.8	14.3	68.8	4.5	21.6	2.0	9.6	34.1
663	3.5	3.5	100.0	0.0	0.0	0.0	0.0	32.8
670	1.9	0.0	0.0	1.5	78.9	0.4	21.1	17.0
674	1.9	1.4	73.7	0.3	15.8	0.2	10.5	24.0
676	3.5	2.8	80.0	0.7	20.0	0.0	0.0	35.0
689	2.0	1.4	70.0	0.6	30.0	0.0	0.0	22.3
696	0.5	0.0	0.0	0.2	40.0	0.3	60.0	11.3
697	0.1	0.0	0.0	0.0	0.0	0.1	100.0	7.7
736	1.8	1.8	100.0	0.0	0.0	0.0	0.0	38.1
747	0.5	0.0	0.0	0.4	80.0	<0.1	20.0	13.2
777	0.3	0.0	0.0	0.0	0.0	0.3	100.0	9.0
782	2.3	1.8	78.3	0.5	21.7	0.0	0.0	17.0
800	1.1	0.0	0.0	1.0	90.9	0.1	9.1	21.8
818	2.6	2.6	100.0	0.0	0.0	0.0	0.0	33.7
820	2.9	2.9	100.0	0.0	0.0	0.0	0.0	23.2
824	0.3	0.0	0.0	0.3	100.0	0.0	0.0	10.2
826	0.2	0.0	0.0	0.0	0.0	0.2	100.0	7.3
830	2.8	1.7	60.7	0.7	25.0	0.4	14.3	20.2
858	4.1	1.9	46.3	2.0	48.8	0.2	4.9	22.0
907	4.1	3.8	92.7	0.3	7.3	0.0	0.0	28.2
931	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	3.4
963	11.3	4.7	41.6	4.8	42.5	1.8	15.9	42.5
987	0.6	0.0	0.0	0.5	83.3	0.1	16.7	10.9
1078	<0.1	0.0	0.0	0.0	0.0	<0.1	100.0	8.0

Appendix 3.2: continued

Context	Total Weight	Fraction Weights						Max. Frag Size
		>10mm		5-10mm		2-5mm		
	g	g	mm	g	%	g	%	mm
1089	0.4	0.0	0.0	0.2	50.0	0.2	50.0	10.9
1111	3.0	3.0	100.0	0.0	0.0	0.0	0.0	33.5
1184	0.2	0.0	0.0	0.2	100.0	0.0	0.0	9.7
1201	9.3	9.3	100.0	0.0	0.0	0.0	0.0	31.1
1208	13.8	13.1	94.9	0.7	5.1	0.0	0.0	43.3
1254	1.1	0.7	63.6	0.4	36.4	0.0	0.0	27.4
1266	0.7	0.6	85.7	0.0	0.0	<0.1	14.3	23.1
1269	0.8	0.8	100.0	0.0	0.0	0.0	0.0	23.6
1270	2.8	2.7	96.4	0.0	0.0	<0.1	3.6	28.2
1273	2.1	0.0	0.0	2.0	95.2	0.1	4.8	18.7
1276	18.2	17.5	96.2	0.4	2.2	0.3	1.6	46.4
1281	12.7	7.0	55.1	5.1	40.2	0.6	4.7	20.6
1285	76.1	29.9	39.3	37.9	49.8	8.3	10.9	43.2
1291	4.7	4.6	97.9	0.0	0.0	<0.1	2.1	30.5
1295	14.9	8.3	55.7	6.2	41.6	0.4	2.7	45.3
1296	34.7	16.3	47.0	17.6	50.7	0.8	2.3	40.0
1334	2.7	1.2	44.4	1.5	55.6	0.0	0.0	22.4
1362	1.0	1.0	100.0	0.0	0.0	0.0	0.0	32.4
1482	3.2	0.0	0.0	3.0	93.8	0.2	6.3	26.2

Appendix 3.3: Contexts containing unburnt bone

Context	Species	Context	Species
106	Animal	365	Animal?
107	Animal	400	Unknown
108	Animal	448	Unknown
109	Animal	507	Animal
110	Animal?	508	Animal?
111	Animal	518	Animal
112	Animal	521	Animal
119	Animal	522	Unknown
125	Animal	545	Unknown
126	Unknown	546	Unknown
131	Animal	548	Unknown
135	Animal	570	Animal
136	Animal	590	Animal?
137	Animal	643	Animal
138	Unknown	648	Animal
140	Animal	652	Unknown
144	Animal	655	Animal
145	Animal	656	Animal
150	Animal	696	Unknown
151	Animal	697	Animal?
158	Animal	713	Unknown
160	Animal	744	Animal
161	Animal	747	Animal
162	Animal	777	Animal
165	Unknown	800	Animal
175	Unknown	818	Unknown
176	Unknown	824	Unknown
186	Unknown	826	Animal
194	Animal	858	Animal
197	Animal	931	Unknown
209	Animal	987	Unknown
210	Unknown	996	Unknown
211	Animal	1023	Animal?
220	Animal?	1097	Unknown
221	Animal	1111	Animal?
223	Unknown	1201	Animal
229	Animal	1276	Animal?
252	Animal	1281	Animal
273	Animal	1285	Animal
275	Unknown	1296	Unknown
279	Animal	1515	Unknown
287	Animal		

Appendix 3.4: Identifiable animal bone

Context	Species	Description
101	Pig	Tooth (burnt)
106	Pig	Maxilla (unburnt)
108	Pig	Mandible (unburnt); tooth (unburnt); metapodial (unburnt)
	Sheep / goat - size	Rib (unburnt)
109	Cattle	Tooth (unburnt)
	Sheep / goat	Tooth (unburnt)
111	Sheep / goat	Jaw (unburnt)
112	Bird	Phalanx (unburnt)
	Cattle	Tooth (unburnt)
115	Cattle-size	Tooth root (burnt); 2nd phalanx (burnt)
	Sheep / goat	1st phalanx (burnt); ulna (burnt); intermediate carpal (burnt
118	Cattle	1st phalanx (burnt)
119	Cattle-size	Thoracic vertebra (unburnt)
	Horse	3rd phalanx (unburnt)
125	Cattle	Tooth (unburnt)
128	Pig	1st and 2nd phalanges (unburnt)
	Small mammal	Tooth (unburnt)
131	Cattle	Tooth (unburnt)
	Pig	Pubis (unburnt)
	Sheep / goat	Metatarsal (unburnt)
140	Sheep / goat	Mandible (unburnt)
144	Dog	Tooth (unburnt)
	Pig	Occipital (unburnt)
	Sheep / goat	Metapodial (unburnt)
	Sheep / goat-size	Femur (burnt)
145	Cattle	Tarsal juvenile (burnt)
150	Sheep / goat	Tooth (unburnt)
151	Sheep / goat	Scapula (burnt)
158	Sheep / goat	Tooth (unburnt)
161	Cattle-size	Thoracic vertebra (burnt)
	Sheep / goat	Tooth (unburnt)
162	Cattle	Tooth (unburnt) x 2; metapodial (unburnt); radius (burnt)
	Pig	1st phalanx (burnt)
	Sheep / goat	Calcaneum (burnt)
173	Pig	Occipital (unburnt)
	Sheep / goat	Radial carpal (unburnt)
194	Sheep / goat	Radius (unburnt); metacarpal (unburnt)
197	Sheep / goat	Tooth (unburnt)
211	Pig	Sacrum (unburnt)
	Cattle	Tooth – deciduous incisor (unburnt)
227	Pig	Ischium (burnt)
229	Pig	Tooth (unburnt)
	Sheep / goat	Scapula (unburnt)
232	Cattle	Astragalus (burnt)
	Domestic fowl-size	Ulna (burnt)
252	Sheep / goat	Tooth (unburnt)
256	Pig	1st or 2nd phalanx (burnt)
261	Cattle	1st phalanx (burnt)
279	Cattle	Sesamoid (unburnt)
287	Sheep / goat	Astragalus (unburnt)

Appendix 3.4: continued

Context	Species	Description
400	Sheep / goat	Thoracic vertebra (burnt)
431	Cattle	Ulna (burnt)
500	Cattle	Sesamoid (burnt)
507	Small mammal	Abundant (unburnt)
518	Small mammal	Abundant (unburnt)
521	Bird	Phalanx (unburnt)
	Sheep / goat	Calcaneum (unburnt)
	Small mammal	Abundant (unburnt)
566	Pig	1st phalanx (burnt)
	Sheep / goat	Mandible (burnt)
570	Cat / dog-size	Astragalus (unburnt)
	Cattle	Metatarsal (unburnt)
	Pig	Tooth (unburnt)
	Sheep / goat	Tooth (unburnt)
620	Sheep / goat	Occipital (burnt)
634	Pig	2nd phalanx (burnt)
649	Cattle	Humerus (burnt)
654	Sheep / goat	Vertebra (burnt)
655	Cattle	Mandible (burnt)
656	Cattle-size	Occipital (unburnt)
	Pig	Mandible (unburnt)
696	Pig	Tooth (burnt)
744	Small mammal	Tooth (unburnt)
747	Pig	Humerus (unburnt)
826	Sheep / goat	Radius (unburnt)
1201	Cat / dog-size	Rib (unburnt)
	Pig	Metatarsal (burnt)
1276	Cattle-size	Vertebra (burnt)
1281	Pig	1st phalanx (burnt)
1285	Sheep / goat	Calcaneum (burnt)
	Small mammal	Abundant (unburnt)
1291	Sheep / goat-size	Vertebra (burnt)
1295	Possibly pig	Femoral head (burnt); lacrimal (burnt)
1296	Pig	2nd phalanx (burnt)
	Sheep / goat	2nd phalanx (burnt)

Appendix 4.1: Roestown 2, County Meath, Republic of Ireland: Details of submitted mollusc remains. Key: m = many (> 50 fragments); vm = very many (> 200 fragments); an asterisk (*) denotes that the weight includes that of some adhering sediment.

Context	Context description	Sample	Approximate no. fragments /flakes	Maximum fragment size /mm	Weight /g	Identified remains and notes
108	Fill of ditch C113	2	m	25	4	1 *Cepaea*/*Arianta* sp. (10 larger shell fragments); 1 periwinkle (*Littorina littorea* (L.)) fragment
111	Fill of ditch C114	17	m	20	2*	1 *Cepaea*/*Arianta* sp.
135	Fill of ditch C134	76	51	10	<1	1 land snail apex
135	Fill of ditch C134	80	2	23	7*	2 *Cepaea*/*Arianta* sp.
136	Fill of ditch C134	23	30	23	8*	3 *Cepaea*/*Arianta* sp.; 1 *Cepaea ?nemoralis* (L.)
158	Fill of ditch C134	24	5	23	7*	5 *Cepaea*/*Arianta* sp.
160	Fill of ditch C164	30	vm	55	24*	soft and disintegrating marine shell in sediment – probably oyster (*Ostrea edulis* L.)
161	Fill of ditch C164	109	1	26	6	small whelk – probably juvenile common whelk (*Buccinum undatum* L.).
162	Fill of ditch C164	28	25	30	4*	marine shell in sediment – probably oyster (*Ostrea edulis* L.)
162	Fill of ditch C164	111	2	17	4	both fragments (including 1 apex) representing 1 periwinkle (*Littorina littorea* (L.))
162	Fill of ditch C164	112	1	20	2	1 fragment of ?common whelk (cf. *Buccinum undatum* L.)
186	Fill of ditch C187	29	vm	42	10	flakes of very soft and disintegrating marine shell – probably oyster (*Ostrea edulis* L.)
229	Fill of ditch C230	105	1	24	2	1 *Cepaea ?nemoralis* (L.) – looks modern
412	Fill of ditch C405	195	1	25	3	1 common cockle (*Cerastoderma edule* (L.)) valve fragment
412	Fill of ditch C405	249	15	15	1	1 *Cepaea*/*Arianta* sp.
415	Fill of ditch C404	144	8	21	1	1 *Cepaea*/*Arianta* sp.
425	Fill of ditch C405	233	vm	16	1	1 land snail apex
440	Fill of ditch C450	196	vm	39	9	very soft and disintegrating marine shell – probably oyster (*Ostrea edulis* L.)
469	Fill of ditch C404	248	vm	45	14	3 larger fragments and very many mm-flakes probably all from 1 indeterminate side oyster (*Ostrea edulis* L.) valve
491	Fill of ditch C404	252	vm	24	11	8 *Cepaea*/*Arianta* sp.
507	Deposit in souterrain	?	2	4	<1	1 *Vitrea crystallina* (Müller)/*V. contracta* (Westerlund) apex fragment; 1 unidentified land snail apex fragment
535	Fill of ditch C404	258	vm	17	3*	6 larger fragments including 1 apex of *Cepaea*/*Arianta* sp.
598	Fill of ditch C557	295	2	22	3*	2 *Cepaea ?nemoralis* (L.) – look modern
771	Fill of ditch C770	316	1	23	2*	1 *Cepaea*/*Arianta* sp.

APPENDIX 11: *Pollen analysis: Durham University*

Roestown 2, M3 Motorway Project, Co Meath, Ireland

pollen analysis

on behalf of

Archaeological Consultancy Services Ltd

Report 2003

August 2008

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1. Summary

The project

1.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Roestown 2, Co Meath, Ireland. This report presents the results of pollen analysis of two samples taken from the site.

Results

1.2 Contexts (484) and (490) contained a relatively diverse range of pollen, principally derived from herbaceous taxa, with grasses and cereal -type pollen well represented, and also some arboreal taxa, including alder, birch and hazel.

2. Project background

Location and background

2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Roestown 2, Co Meath, Ireland. This site consists of a series of successive early medieval enclosures with associated field systems. There were also tentative indications of prehistoric settlement. This report presents the results of pollen analysis of two samples from: context (484), enclosure ditch - Phase 3; and context (490), enclosure ditch - Phase 2A.

Objective

2.2 The objective was to provide information about the land use, agricultural activities and palaeoenvironment at the site.

Dates

2.3 Samples were received by Archaeological Services Durham University in February 2008. Analysis and report preparation were conducted in July 2008.

Personnel

2.4 Sample preparation was carried out by Mr Bryan Atkinson. Dr Mairead Rutherford carried out the pollen analysis and compiled the report.

Archive

2.5 The licence number is A008/002 (E3055). The samples are currently at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Method

3.1 Pollen was extracted from one ml of each sediment sample. A single *Lycopodium* spore tablet from batch 307862 was added to each sample before processing (the average number of spores per tablet from this batch is 13,500). The samples were pre-treated with 10% hydrochloric acid to remove any carbonates before undergoing sodium hydroxide digestion. The residue was then sieved through a 125 µm sieve and over a 10 µm mesh. After being washed in distilled water, the samples were heated in an acetylation mixture of acetic anhydride and sulphuric acid. The samples were washed again before the pollen was separated from the mineral matrix using a heavy liquid technique, with sodium polytungstate at a density of 1.95 g/l. The extracted pollen was then dehydrated using industrial methalated spirits followed by tertiary butyl alcohol.

3.2 The pollen was mounted in silicone fluid and examined at ×500 magnification. Identification of pollen and spores was undertaken by comparison with modern reference material, using Moore *et al* (1991) as a guide. Plant taxonomic nomenclature follows Stace (1997). A minimum number of 500 pollen grains were counted for both samples.

4. Results

4.1 Contexts (484) and (490) contained a relatively diverse range of pollen, principally derived from herbaceous taxa, with grasses and cereal -type pollen well represented. Relatively small amounts of tree pollen are present in both samples. Context (490) yields abundant fungal spores associated with human habitation. Microscopic charcoal is present in both samples. The results of the pollen analysis are presented in Table 1.

5. Discussion

5.1 Context (484) contains abundant grass and cereal pollen. Within this open grassland environment, meadow flowers such as daisies, thistles and dandelions grew. Weeds associated with cultivated land are present (e.g. plantains and dock). The disturbed ground indicator, *Artemisia,* is also recorded. Tree pollen is represented mainly by alder, which probably grew in wetter areas. Regional tree pollen includes oak and, to a lesser extent, elm and birch. Evidence for some hazel scrub is also present.

5.2 Context (490) is dominated by *Artemisia* spp. A range of herb taxa include plantains, daisies, dandelions and grasses. Arboreal pollen is present as for context (484). The microfossil assemblage from context (490) is also of interest, because of the abundance of fungal spores recorded. Type 7A (*Chaetomium* sp.) is most common, which are cellulose-decomposing fungi occurring on e.g. plant remains, fibres and dung. Apart from occurrence in natural habitats, *Chaetomium* spores appear to be linked to archaeological sites (Van Geel 2006), for example in settlements where dung, damp straw, clothing and leather may have been available as substrates.

5.3 The pollen and spore assemblages from both samples suggest a landscape strongly influenced by human activity, including cereal cultivation. The low number of arboreal pollen grains relative to herbaceous grains reflects a landscape that has been widely cleared of woodland, a practice that was undertaken intensively from the later Iron Age in Ireland (Mitchell & Ryan 1997). The microscopic charcoal is likely to represent a residual background level associated with habitation, although some may derive from 'slash and burn' clearance of nearby scrub or heathland.

6. Sources

Mitchell & Ryan 1997 *Reading the Irish Landscape*, Dublin

Moore, P D, Webb, J A, & Collinson, M E, 1991 *Pollen analysis,* 2nd edition Oxford

Stace, C, 1997 *New Flora of the British Isles*, 2nd Edition, Cambridge

Van Geel, B 2006 Fossil ascomycetes in Quaternary deposits *Nova Hedwigia* **82** (3-4), 313-329

Table 1: Data from pollen assessment [frequency: p – present]

Phase	3	2A
Context	484	490
Sample	189	193
Volume processed (ml)	1	1
Charcoal	p	p
Lycopodium spores	46	32
Pollen/spores (absolute counts): Arboreal taxa		
Alnus (Alder)	17	5
Betula (Birch)	3	2
Ulmus (Elm)	1	2
Quercus (Oak)	5	1
Corylus (Hazel)	13	11
Salix (Willow)	-	3
Sambucus (Elder)	2	7
Herbaceous taxa		
Apiaceae (Carrot family)	-	2
Artemisia (Mugwort)	21	297
Asteraceae (Daisy family) *Cirsium* (Thistles)	1	1
Asteraceae (Daisy family) Lactuceae	2	4
Serratula-type (Daisy family)	-	1
Taraxacum-type (Dandelions)	15	8
Brassicaceae (Cabbage family)	5	50
Calluna vulgaris (Heather)	1	7
Cereal -type	112	29
Chenopodiaceae (Goosefoot family)	1	8
Caryophyllaceae (Pinks family)	1	2
Plantago lanceolata -type (Ribwort Plantain - type)	9	2
Plantago major-media (Greater Plantain)	1	1
Poaceae (Grass)	288	55
Cyperaceae (Sedges)	2	4
Rumex (Dock)	10	-
Rumex obtusifolius (Broad-leafed dock)	3	1
Rosaceae (Rose family)	1	3
Potentilla-type (Rose family)	1	1
Sanguisorba-type (Rose family)	1	-
Ranunculaceae (Buttercup family)	10	-
Scrophularia -type (Figwort -type)	3	3
Chelidonium-type (Poppy family)	-	1
Polygonum (Bistort)	-	1
Viola type (Violet family)	1	-
Pteridophyte spores		
Filicales	-	1
Polypodium	1	
Fungal spores		
Type 44	p	p
Type 7a	-	a
Type 113	-	p
Total number of pollen grains	530	512

Table 2: Data from preliniary pollen assessment [frequency: p – present]

Phase	1A	3	3	2A
Context	460	479/480	484	490
Sample	192	188	189	193
Volume processed (ml)	1	1	1	1
Charcoal	o	o	o	o
Lycopodium spores	1	6	11	7
Pollen/spores (absolute counts) Arboreal taxa				
Alnus (Alder)	-	-	4	3
Betula (Birch)	-	-	3	-
Corylus (Hazel)	-	-	1	-
Herbaceous taxa				
Asteraceae (Daisy family) *Cirsium* (Thistles)	-	-	-	1
Asteraceae (Daisy family) Lactuceae	-	-	2	-
Brassicaceae (Cabbage family)	-	-	5	3
Calluna vulgaris (Heather)	-	-	-	2
Cereal -type	-	-	54	2
Chenopodiaceae/Amaranthaceae (Goosefoot/Pigweed families)	-	-	-	1
Plantago lanceolata -type (Ribwort Plantain -type)	-	-	1	-
cf. Poaceae (Grass)	-	1	13	2
Poaceae (Grass)	-	-	45	5
Rosaceae (Rose family)	-	-	-	2
Ranunculaceae (Buttercup family)	-	-	2	-
Scrophularia -type (Figwort -type)	-	-	6	36
Indeterminate	-	-	7	14
Total number of pollen grains	0	1	143	71
Total concentration of pollen grains (grains/ml) (> 100,000 for full analysis recommendation)	0	2250	175500	136929
Arboreal and herbaceous grains: exotic pollen (>5 for full analysis recommendation)	0.0	0.2	13.0	10.1

NOTE: The above table is taken from Durham University ASU Report 1919. It was an assessment of pollen potential for full analysis, on which Table 1 is based and is included here for comparative purposes [ROH].

APPENDIX 12 *Bird Bone: Sheila Hamilton Dyer*

M3 Clonee-North of Kells Motorway Scheme: Roestown 2

Bird Bones

S. Hamilton-Dyer

30 January 2009

Introduction

Bird bones were separated out during analysis of the mammal bones and submitted for analysis. A few bones of the domestic mammals were included; these bones were recorded but are not discussed below. The records were made available for inclusion in the mammal report. The bones were identified to taxon using the reference collections of the author. Recently broken bones were counted as single specimens. Measurements were taken of the major elements and follow von den Driesch (1976). The archive includes further details not presented in the text.

Results

In total 195 bones were recorded from 36 contexts. Most of the bird bones are from ditch fills and contexts associated with the souterrain. A summary of the distribution of the taxa in each context is given in Table 1. The bird bones represent at least 11 taxa.

Almost 30% of the bones are of domestic fowl, *Gallus gallus*. These are mainly of single bones spread throughout the assemblage. The fills of ditch 239, however, contained 18 bones from at least three birds and fill 108 of ditch 113 contained 24. Most of these last are from one individual, found as an articulated skeleton. The 15 indeterminate elements from this fill, primarily vertebrae and phalanges, are probably also from this bird. One of the tarsometatarsi was submitted for C14 dating, the other has a scar from a recently broken off spur (the spur itself was not recovered) indicating that this was a cock bird. The length of this bone is 75.3mm. Other measurements of this bird, and of other bones, are given in the archive data table. This and the other fowl were small birds by recent standards, about bantam size, but typical of the period. A few bones from fill 108 are from other individuals, including an immature bird and one wing bone with knife cuts. The bones from 144 of 239 also include a cut wing bone and two with gnaw marks, probably from cat. The bones also include an un-spurred tarsometatarsus, indicating a probable female. The single bone from 455 is definitely from a hen as it contains the medullary bone laid down for eggshell production.

The next most frequent taxa are the small passerines and corncrake, *Crex crex*. Some of the passerine bones are from ditch contexts, including 12 bones from one blackbird/thrush in ditch 230, but most of them and all of the corncrake bones are from the souterrain. One of the passerine bones is of a sparrow sized bird and another is comparable with a bird of lark size. All of the others are similar to blackbird and other members of the thrush family. The high numbers in context 512 are probably from one individual and some of the indeterminate bones may be from this bird too. Other ribs and toes may be of corncrake; at least two individuals are represented by the 19 identified bones. Another five bones are present in the other fills of passage 3. The seven corncrake bones from the cubbyhole in the passage are probably from another individual.

Two bones of quail, also a summer visitor like the corncrake, were also recovered from the passage and five bones of waders are also present. Two of these bones match lapwing, *Vanellus vanellus*, while the other three match plover, probably the golden plover, *Pluvialis apricaria*. These two waders often flock together on farmland in winter.

A goose bone is also present in fill 512 and there are five single bones in other contexts. None could be identified to species but are of greylag/domestic or similar size. Just one bone of duck was found, from ditch 770, again it could not be precisely identified but is of mallard size.

There are two bones each of buzzard, *Buteo buteo*, and raven, *Corvus corax*, from four different ditch and pit contexts but there are no other raptors or corvids.

This is quite a large assemblage of bird bones, although very small in comparison with mammals. Several taxa are represented including domestic fowl, wild game and wild birds that were probably not eaten. Finds of small passerines can be incidental finds of natural mortalities. In the souterrain, however, they are associated with corncrake, quail and waders, all of which are likely to have been consumed.

While fowl were held in some esteem (Kelly 1998), at early sites bones of wild birds are usually common and fowl rare, whereas later urban and Anglo-Norman ones are dominated by domestic poultry and have few wild species other than those killed as pests (Hamilton-Dyer 2007a). The exceptional site at Lagore had an unusually large bird assemblage (Stelfox 1938), although very small in comparison with the many tons of mammal bones. Domestic fowl were present but the assemblage is dominated by geese and ducks at over four times the number of fowl bones. Only one corncrake was recovered, but this may not be a true picture of the species representation as sieving did not take place and there are no bones at all of other small birds such as quail, waders and small passerines. Until recently there have been relatively few sites in the area with more than a handful of bird bones, and that have been sieved. This present assemblage has an interesting mix with both domestic fowl and corncrake common.

The bird assemblage at Knowth is dominated by fowl but geese and ducks combined are almost equal and there is just one bone of corncrake (Hamilton-Dyer 2007b). Several (sieved) early medieval sites with high numbers of corncrake bones have recently been reported from this area, e.g. Lismullin (Hamilton-Dyer in prep) and Raystown (Murray in prep) but these have few domestic fowl. The environment of this site includes arable, meadow and a mill stream, offering a wide variety of habitats for birds, excepting those that need substantial woodland. The relatively low numbers of geese and especially duck perhaps indicate minimal waterfowling; instead corncrake and other birds would have been netted in the fields. This assemblage, and others recently excavated in Co. Meath are providing valuable data from a variety of settlements that has been very sparse until now.

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Phase	Feature	Context	Goose	Duck	Fowl	Quail	Corncrake	Wader	Buzzard	Raven	Passerine	Indet.	Totals
A 1A	Ditch 282	**221**	-	-	-	-	-	-	-	-	1	-	**1**
A 1A	Ditch 288	**316**	-	-	1	-	-	-	-	-	-	-	**1**
A 1B	Ditch 250	**252**	-	-	-	-	-	-	-	1	-	-	**1**
A 3	Occup deposit	**119**	-	-	1	-	-	-	-	-	-	-	**1**
A 3A	Ditch 113	**108**	-	-	24	-	-	-	-	-	-	15	**39**
A 3A	Ditch 230	**229**	-	-	-	-	-	-	-	-	12	2	**14**
A 3B	Ditch 239	**107**	-	-	5	-	-	-	-	-	2	-	**7**
A 3B	Ditch 239	**144**	-	-	12	-	-	-	1	-	-	2	**15**
A 3B	Ditch 239	**151**	-	-	1	-	-	-	-	-	-	-	**1**
A 4A	Ditch 114	**153**	-	-	-	-	-	-	-	-	1	-	**1**
A 4A	Ditch 164	**160**	-	-	1	-	-	-	-	-	-	-	**1**
A 4A	Ditch 164	**162**	-	-	1	-	-	-	-	-	-	-	**1**
A 4A	Ditch 164	**163**	-	-	1	-	-	-	-	-	-	-	**1**
A 6B	Ditch 168	**118**	-	-	1	-	-	-	-	-	-	-	**1**
B 1A	Ditch 405	**412**	1	-	-	-	-	-	-	-	-	-	**1**
B 2A	Ditch 404	**419**	1	-	-	-	-	-	-	-	-	-	**1**
B 2A	Ditch 404	**535**	-	-	-	-	-	-	-	1	-	-	**1**
B 2A	Ditch 764	**763**	1	-	-	-	-	-	-	-	-	-	**1**
B 2A	Souterrain 1	**507**	-	-	-	-	-	-	-	-	4	-	**4**
B 2A	Souterrain cubby	**524**	-	-	-	-	7	-	-	-	1	2	**10**
B 2B	Ditch 642	**643**	1	-	1	-	-	-	-	-	-	-	**2**
B 3	Ditch 450	**455**	-	-	1	-	-	-	-	-	-	-	**1**
B 4	Pit 411	**422**	1	-	1	-	-	-	-	-	-	-	**2**
B 4	Pit 509	**508**	-	-	1	-	-	-	-	-	-	-	**1**
B 4	Souterrain 3	**512**	1	-	-	1	19	5	-	-	16	25	**67**
B 4	Souterrain 3	**514**	-	-	-	1	1	-	-	-	3	2	**7**
B 4	souterrain 3	**517**	-	-	-	-	3	-	-	-	-	-	**3**
B 4	Souterrain 3	**518**	-	-	-	-	1	-	-	-	-	-	**1**
?	Ditch 1282	**1306**	-	-	1	-	-	-	-	-	-	-	**1**
?	Ditch 660	**624**	-	-	1	-	-	-	-	-	-	-	**1**
?	Ditch 770	**1321**	-	1	-	-	-	-	-	-	-	-	**1**
?	Gully 1123	**1122**	-	-	1	-	-	-	-	-	-	-	**1**
?	Kiln 677	**672**	-	-	1	-	-	-	-	-	-	-	**1**
?	Pit 1294	**1296**	-	-	-	-	-	-	1	-	-	-	**1**
?	Posthole 1389	**1388**	-	-	1	-	-	-	-	-	-	-	**1**
_	Topsoil	**400**	-	-	1	-	-	-	-	-	-	-	**1**
		Total	**6**	**1**	**58**	**2**	**31**	**5**	**2**	**2**	**40**	48	**195**
		%	***3.1***	***0.5***	***29.7***	***1.0***	***15.9***	***2.6***	***1.0***	***1.0***	***20.5***	***24.6***	
	% probable domestic poultry			***33.3%***		***% excluding articulated bird skeleton***		***25.7%***					
	% wild			***42.0%***				***46.8%***					

Appendix 1: Roestown 2 Data Table

Context	Sample	Nisp	Species	Element	Side	Code	%	Size	Frag	Notes	Butchery	Gl	Bp	Sd	Bd
107		1	Pig	Fib	R	Dm	15	2		Fused					
108		1	Cow	Sfrag				2		Looks like fish but is sphenoid/palatine junction					
116		1	Dog	Mc4	R	W9	95	3		Large, distal still unfused					
512		1	Pig	Fib		M	20	2							
514		1	Cat	Fib		W0	90	3		Immature unfused					
643		1	Pig	Fib	L	Dm	15	2		Distal unfused					
145	Ss	1	S/g	Tib	R	Pm	50	2		Pu neo lamb					
145	Ss	1	S/g	Oc	R	Pm	30	2		Ilium neo lamb					
145	Ss	1	S/g	Fem	R	Dm	30	2		Du neo lamb					
145	Ss	1	Mam	Rib		Pm	75	2		Prob neo lamb					
107		1	Fowl	Fem	L	Pm	50	2							
107		1	Fowl	Fem	R	W	98	3				66.7		6	13.1
107		1	Fowl	Hum	R	Dm0	75	3						6.8	14.2
107		1	Fowl	Rad	R	W0	98	3				53.8			
107		1	Fowl	Tib	R	W	98	4			Kr*dj	110		6.3	10.9
107		1	Passer	Fem	L	Pm	70	2		Blackbird/thrush size					
107		1	Passer	Tib	L	W	98	3		Blackbird/thrush size					
108	Abg	5	Bir	Phf		W	98	2		Cf fowl					
108	Abg	5	Bir	Rib		W	80	2		Cf fowl					
108	Abg	5	Bir	Vx		W	95	2		Cf fowl					
108	Abg	1	Fowl	Cmc	R	W	98	2		Pair		38.8			
108	Abg	1	Fowl	Cmc	L	W	98	2		Pair		38.3			
108	Abg	1	Fowl	Cor	R	W	98	3				53.8			
108	Abg	1	Fowl	Cor	L	W0	80	3		Pair					
108		1	Fowl	Fem	R	Pm	60	3						7.2	
108	Abg	1	Fowl	Fem	L	W0	98	3		Pair		77.9		7.3	
108	Abg	1	Fowl	Fem	R	W0	80	3		Pair				7.4	
108	Abg	1	Fowl	Fib		M	50	2							
108	Abg	1	Fowl	Hum	R	W	98	3		Cat gnawed		72	19.7	7.1	15.2
108	Abg	1	Fowl	Hum	L	W0	80	3		Pair			19.7		15.2
108	Abg	1	Fowl	Oc		M0	50	2							
108	Abg	1	Fowl	Rad	L	W	98	3		Pair		62.1			
108	Abg	1	Fowl	Rad	R	W0	80	3		Pair					
108	Abg	2	Fowl	Sca		W0	95	3	Y	Pair					
108	Abg	1	Fowl	Synsac		M0	30	2							
108		1	Fowl	Tib	L	W	98	4				110		6.2	10.7
108	Abg	1	Fowl	Tib	L	W0	80	3		Pair				6.5	10.4
108	Abg	1	Fowl	Tib	R	W0	80	3		Pair				6.6	10.5
108		1	Fowl	Tmt	R	Pm	20	2	Y	Immature					
108	Abg	1	Fowl	Tmt	R	W	98	3		Sex m? Broken off spur scar		75.3		6.4	
108	Abg	1	Fowl	Tmt	L	W?				Taken for c14 dating					
108		1	Fowl	Uln	L	W0	98	3	Y		Kr*m	59.7			
108	Abg	1	Fowl	Uln	L	W	98	3				69.4			
118		1	Fowl	Rad	R	Pm	60	2							
119		1	Fowl	Tib	L	W	90	3		Immature					
144	Ss	1	Bir	Phf		W	98	1		Prob fowl					
144	Ss	1	Bir	Vc		W	95	2		Prob fowl					
144		1	Buzzard	Tmt	L	Pm	75	3							
144		1	Fowl	Cmc	L	W9	95	2				32.2			
144	Ss	1	Fowl	Cor	R	W9	90	2							
144		1	Fowl	Cor	R	W	98	2				46.4			
144	Ss	1	Fowl	Fem	L	W9	90	3		Cat gnawed					
144	Ss	1	Fowl	Fem	R	Pm	75	3							
144	Ss	1	Fowl	Hum	L	Dm0	75	3		Cat gnawed				5.3	12.1
144		1	Fowl	Hum	L	Dm0	30	2			K?De				15
144		1	Fowl	Oc	R	M	30	2							
144	Ss	1	Fowl	Sca	R	Pm	75	2							
144	Ss	1	Fowl	Ste		Nm	20	2							
144		1	Fowl	Synsac		W9	90	3		Path twisted					
144		1	Fowl	Tmt	L	W9	95	3		Sex f					
151		1	Fowl	Fem	L	Dm0	30	2						7.2	15.3
153		1	Passer	Hum	R	W9	90	2		Blackbird/thrush size					
160		1	Fowl	Tib	R	Dm0	75	3						5.1	9.3
162		1	Fowl	Uln	L	Dm0	20	2							
163		1	Fowl	Cor	L	W	75	3				55.5			
221		1	Passer	Uln	R	W	98	2		Blackbird/thrush size		35.3			
229		1	Biro	Ph1f		W	98	1		Eg passer					
229		1	Biro	Rib		W	90	1		Eg passer					
229		1	Passer	Cor	L	W	95	2		Blackbird/thrush size					
229		1	Passer	Fem	L	Pm	20	2		Blackbird/thrush size					
229		2	Passer	Hum		W	98	2		Pair, blackbird/thrush size		27.2	8.1	3	6.2
229		1	Passer	Rad		W	98	2		Blackbird/thrush size		29.1			

Context	Sample	Nisp	Species	Element	Side	Code	%	Size	Frag	Notes	Butchery	Gl	Bp	Sd	Bd
229		2	Passer	Sca		Pm	75	2		Blackbird/thrush size					
229		1	Passer	Ste		Nm	50	2		Blackbird/thrush size					
229		1	Passer	Tib	R	W	98	3		Blackbird/thrush size		47.6			
229		1	Passer	Tib	L	W0	95	3		Blackbird/thrush size					
229		1	Passer	Tmt	R	W	98	2		Blackbird/thrush size		32.8			
229		1	Passer	Uln	L	W	98	2		Blackbird/thrush size		32.8			
252		1	Raven	Tmt	R	Dm0	75	3							
316		1	Fowl	Cor	R	Pm	50	2							
400		1	Fowl	Sca	R	Pm	50	2							
412		1	Goose	Sca	R	Pm	30	2							
419		1	Goose	Hum	R	Dm0	30	3						12.4	25
422		1	Fowl	Cor	R	W	95	3			Kmt	48.2			
422		1	Goose	Uln	L	Dm0	20	2	Y						
455		1	Fowl	Fem	R	Dm0	60	3		Sex f medullary				6.6	14.2
507		1	Passer	Cor	R	W	98	2		Blackbird/thrush size					
507		1	Passer	Furc		Am	20	2		Blackbird/thrush size					
507		1	Passer	Ste		Nm	20	1		Blackbird/thrush size					
507		1	Passer	Uln	L	Pm	75	2		Blackbird/thrush size					
508		1	Fowl	Hum	L	Dm0	50	2						6.4	13.9
512		1	Biro	Ph3w		W	98	1		Eg passer					
512		1	Biro	Phf		W	98	1		Eg passer					
512		22	Biro	Rib		W	90	2		Eg passer					
512		1	Biro	Vc		W	95	1		Eg passer					
512		2	Crex	Cmc		W	98	2		Pair		29.6			
512		1	Crex	Cmc	R	W	98	2				26.8			
512		2	Crex	Cor		W	98	2		Pair		24.5			
512		1	Crex	Hum	R	W	98	2				45.6	9.5	3.1	6.4
512		1	Crex	Hum	R	W	98	2		Broken just below prox		47	9.6	3.2	6.6
512		1	Crex	Hum	L	Dm0	20	1							6.5
512		1	Crex	Rad	R	W	98	2				37.2			
512		1	Crex	Rad	R	Dm0	50	2							
512		1	Crex	Rad	L	W	98	2				39.8			
512		2	Crex	Sca		W	98	2		Pair both broken just below prox					
512		1	Crex	Ste		W	75	2							
512		1	Crex	Tmt	L	Dm0	50	2							
512		1	Crex	Uln	L	W	98	2				42.6			
512		1	Crex	Uln	R	W	98	2				39.7			
512		2	Crex	Uln	R	Dm0	50	2							
512		1	Goose	Fem	L	M	75	3							
512		1	Passer	Cmc	R	W	98	2		Blackbird/thrush					
512		1	Passer	Cor	L	W	98	2		Blackbird/thrush					
512		1	Passer	Fem	R	Dm0	50	2		Large thrush eg fieldfare					
512		1	Passer	Furc		W	98	2		Blackbird/thrush					
512		2	Passer	Hum		W	98	2		Pair, blackbird/thrush		30.3			
512		1	Passer	Jaw		W	98	2		Blackbird/thrush					
512		1	Passer	Max		W	98	2		Blackbird/thrush					
512		1	Passer	Rad	L	W	98	2		Blackbird/thrush					
512		1	Passer	Ste		W	98	2		Blackbird/thrush					
512		1	Passer	Tib	L	Dm0	75	2		Blackbird/thrush					
512		1	Passer	Tib	R	Pm	50	2		Large thrush eg fieldfare					
512		1	Passer	Tmt	L	Dm0	75	2		Blackbird/thrush					
512		1	Passer	Uln	R	Pm	50	2		Blackbird/thrush					
512		2	Passer	Uln		W	98	2		Pair, blackbird/thrush					
512		1	Quail	Cor	R	W	98	2				23.4			
512		2	Wader	Hum		Pm	75	2		Pair, cat gnawed, cf plover					
512		1	Wader	Rad	L	Dm0	50	3		Cf lapwing					
512		1	Wader	Ste		N	15	2		Cf plover					
512		1	Wader	Uln	L	Dm0	30	2		Cf lapwing					
514		1	Bir	Tib	L	Dm0	30	2		Fledgling					
514		1	Biro	Hum	L	Dm0	50	2		Small bird					
514		1	Crex	Tmt	R	W	98	2				42.8		3.3	
514		1	Passer	Hum	R	W	98	2		Sparrow size					
514		1	Passer	Tib	R	W0	98	2		Sparrow size					
514		1	Passer	Tib	R	Dm0	60	2		Blackbird/thrush size					
514		1	Quail	Hum	R	Dm0	75	2							
517		1	Crex	Fem	L	Dm0	60	2							
517		1	Crex	Fem	R	Pm	75	2							
517		1	Crex	Tmt	R	Dm0	20	1							
518		1	Crex	Tib	R	Dm0	30	2							
524		2	Biro	Frag				2		Eg passer					
524		1	Crex	Cmc	R	W90	90	2							
524		1	Crex	Cor	R	W9	95	2							

Context	Sample	Nisp	Species	Element	Side	Code	%	Size	Frag	Notes	Butchery	Gl	Bp	Sd	Bd
524		1	Crex	Cor	L	Pm	50	2							
524		1	Crex	Hum	R	W	98	2				45.3	8.3	3	5.7
524		1	Crex	Hum	L	Dm0	50	2						2.9	5.6
524		1	Crex	Rad	R	Pm	75	2							
524		1	Crex	Uln	R	Pm	75	2							
524		1	Passer	Tmt	R	W	98	2		Eg lark size		26.3			
535		1	Raven	Hum	R	W	98	3				90.6	24.9	8.7	20
624		1	Fowl	Tib	L	Dm0	20	2							12.4
643		1	Fowl	Cmc	R	W9	90	2				40.8			
643		1	Goose	Cor	R	Dm0	50	2	Y						
672		1	Fowl	Rad	R	W	98	3				63.6			
763		1	Goose	Cor	R	W	95	3	Y						
1122		1	Fowl	Tib	L	Pm	75	3							
1296		1	Buzzard	Uln	R	Dm0	75	3							
1306		1	Fowl	Uln	L	W	98	3				75.6	9	4.5	
1321		1	Ana p/d	Cor	R	M	50	2							
1388		1	Fowl	Hum	L	Dm0	50	2							16

Appendix 2: Metric data for bird bone assemblage from Roestown 2.

ARTEFACTUAL APPENDICES

APPENDIX 13: *Wooden objects by Lorna O'Donnell*

APPENDIX 14: *Lithics report by Farina Sternke*

APPENDIX 15: *Worked Bone by Ian Riddler & Nicola Trzaska-Nartowski*

APPENDIX 16a: *Worked Stone by Anne Carey*

APPENDIX 16b: *Worked Stone by Jon Stirland*

APPENDIX 16c: *Spindle Whorls by Richard O'Brien*

APPENDIX 17: *Glass beads by Cecily Cropper*

APPENDIX 18: *E-ware pottery by Ian Doyle*

APPENDIX 19: *Medieval Pottery by Niamh Doyle*

APPENDIX 20: *Slag Report by Angela Wallace*

APPENDIX 21: *Coin Report by John Stafford Langan*

APPENDIX 13 *Wooden objects: Lorna O'Donnell*

Analysis of the wood

Roestown 2

Co. Meath

Licence No. A008/002

By
Lorna O' Donnell
Margaret Gowen and Co. Ltd.
Job No. 06289-R2

For
Archaeological Consultancy Services Ltd.

5th February 2007

Illustrations

1 Introduction

1.1 Two staves were submitted for analysis from Roestown 2, excavated by Archaeological Consultancy Services Ltd. Both staves were found in an organic deposit at the base of an enclosing ditch, and date to the Early Medieval period.

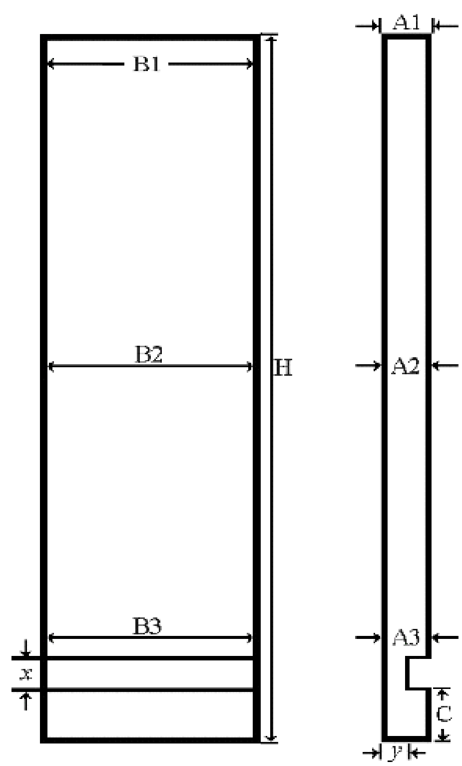
2 Methods

2.1 Each wood piece was identified by a first selection under a binocular microscope at a magnification of 10x-40x. This was used to discern features such as ring growth or insect channels. Samples one cell thick was taken with a razor blade from the transverse, radial and tangential planes of the wood. Analysis of thin sections was completed under a transmitted light microscope, at magnifications of 100x, 200x and 400x. The anatomical structure of the wood samples was compared to a reference collection supplied by the National Botanic Gardens and keys (Schweingruber 1978; Hather 2000).

3 Results

3.1 Two staves were examined from this site (A008/002:484:1 and A008/002:484:3). Find one was made from yew (*Taxus baccata*), while Find 3 was made from oak (*Quercus* sp.). The staves were measured using Comeys (2002) methodology developed to consistently record material from stave built vessels. The critical dimensions of each stave (Fig. 1) were measured, and recorded in Table 1. The height of the stave, and three measurements of both width and depth are taken, to account for variation in taper through the length of the stave. The disc locating groove, chime and base are also recorded.

Figure 3-3
Dimensions of a stave



Labels indicate the points from which the measurements used in this thesis have been taken.

Fig. 1 - Critical dimensions of a stave. After Comey (2002) 110

A008/002:484:1 is an obliquely converted tangential yew stave. The height of the stave is 302.7mm. Find no. 1 has two disc locating grooves, suggesting the presence of a base and lid disc. The narrower part of the stave was considered to be the top of the artifact, while the wider part was considered to be the base. The depth of the piece (A1-A3), ranges from 13.21 to 12.86 mm, getting slightly narrower at the base. The width of piece (B1-B3) ranges from 29.41mm to 53.44 mm, getting significantly wider at the base. The disc locating groove in the top is Type A (triangular shaped) while at the base is Type D (rectangular shaped) (Comey 2003-2004, 43). A008/002: 484:3 is a tangentially split oak stave. The height of this piece is 606mm. The depth of the piece (A1-A3) ranges from 14.8 to 7.45mm. The width of the piece (B1-B3) ranges from 62.52mm to 55.04mm. The disc locating groove is Type D (Comey 2003-2004, 43). The shape of the stave suggests it represents an open conical vessel (Comey 2002, 109).

3.2 The craft of coopering was well established from the early Christian period (Hurley and Mc Cutcheon 1997). It soon was used in industrial proportions with the manufacture of casks for wet and dry drink and provisions (Hurley and Mc Cutcheon 1997, 557). Stave built casks were used for home storage, domestic chores and the commercial storage and transportation of goods. The casks were frequently re-used as water-butts and cisterns (Hurley 2003, 351). In the Waterford excavations, staves date mainly from the twelfth and mid twelfth century onwards. Yew (*Taxus baccata*) was the preferred timber for the staves from smaller vessels, although some oak was used. The hoops were generally split yew branches. The staves from larger tubs and casks were all carved from oak. Hazel and willow were used as withies to bind the staves (Hurley and Mc Cutcheon 1997, 554). Comey also notes that yew was generally used as components of stave built vessels during the Medieval period (2002). By the eleventh century, yew became the favoured wood species for stave built vessels, including the hoops and bases (Comey 2002). It is unclear why yew would have superseded oak, hazel and ash as components of stave built vessels, given that they were obviously readily available and used in other structures of the time period (O'Sullivan 1998). Comey postulates that it could be related to cultural selection and status, yew is often associated with royalty and used as a metaphor for wholesomeness (2003-4 52-53). However, yew is a very useful timber, it has great elasticity and strength. While oak does not have the same elasticity as yew, it is still extremely strong and durable, and this is probably why the two taxa were generally favoured for use as staves.

4 Summary

4.1 Two staves were submitted for identification from an Early Medieval ditch fill. Find no. 1 was identified as yew, while Find no. 3 was identified as oak. The staves represent two different vessels. Find no. 1 was 302. 7mm long, and had two disc locating grooves, at the base and top of the stave, indicating the stave was lidded. Find no. 3 was almost twice as long as Find no. 1 (606mm), and represented an open conical vessel. The staves compare well with other staves from the Early Medieval and Medieval period in Ireland, including a variety of yew staves excavated at the medieval site of Castlefarm 1 (O'Donnell forthcoming). Both of the staves should be photographed and illustrated.

Acknowledgements

Many thanks to Martin Comey for the use of his unpublished PhD thesis

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Table 1 - Dimensions of the Roestown 2 staves

Fill 484	Find 1	Find 1	Find 2
Identification	*Taxus baccata* L. (yew)		*Quercus* sp. L. Liebl (oak)
Conversion	Oblique tangential		Tangential
	All dimensions in mm		
A1	13.21		14.8
A2	14.65		14.75
A3	12.86		7.45
H	302.7	(for top-more narrow portion)	606
X	4.82	3.92	10.53
C	21.1	32.02	36.81
Y	10.3	9.8	6.55
B1	29.41		62.52
B2	42.93		60.42
B3	53.44		55.04

APPENDIX 14 *Lithics Report by Farina Sternke*

Lithics Finds Report for E3055 Roestown 2, Co. Meath M3 Road Scheme

Farina Sternke MA, PhD

List of Tables

List of Figures

Introduction

One-hundred-and-forty lithic finds from the archaeological investigations of a highly disturbed prehistoric site at Roestown 2, Co. Meath were presented for analysis (Table 1). The finds were recovered from secondary contexts and are associated with the remains of successive early medieval enclosures in two areas (A and B) with associated field systems.

Methodology

All lithic artefacts are examined visually and catalogued using Microsoft Excel. The following details are recorded for each artefact which measures at least 2 cm in length or width: context information, raw material type, artefact type, the presence of cortex, artefact condition, length, with and thickness measurements, fragmentation and the type of retouch (where applicable). The technological criteria recorded are based on the terminology and technology presented in Inizan *et al.* 1999. The general typological and morphological classifications are based on Woodman *et al.* 2006. Struck lithics smaller than 2 cm are classed as debitage and not analysed further. The same is done with natural chunks.

Quantification

The lithics are 137 flaked pieces of flint, one flaked piece of chert, one worked and another unworked quartz crystal (Table 1). One-hundred-and-nineteen artefacts are larger than 2 cm in length and width and were therefore recorded in detail.

Provenance

Over 50 percent of the lithic artefacts were recovered from the topsoil (n=74). The remainder was excavated from a series of ditch and pit fills, deposits, occupation layers and the fill of a corn-drying kiln (Table 2).

<u>Condition:</u>

The lithics survive in variable condition (Table 3). The majority of lithics are patinated and seventy-four artefacts are incomplete. The lustre observed on two artefacts (A008/002:100:32, A008/002:107:1 and A008/002:473:5) is a direct result of their exposure to heat, i.e. they did not directly come into contact with fire, but where perhaps strewn around a hearth. One third of the flaked artefact component made of flint bears the remnants of cortex. Some lithics are heavily plough or machine damaged.

Find No.	Context	Material	Type	Cortex	Condition	Length (mm)	Width (mm)	Thickn. (mm)	Complete	Retouch
A008/002:100:7	100	Flint	Flake	Yes	Heavily Patinated	36	20	13	No	No
A008/002:100:8	100	Flint	Retouched Artefact	Yes	Patinated	22	26	8	Yes	distal right direct and right edge direct semiabrupt
A008/002:100:9	100	Flint	Core	Yes	Patinated	25	23	6	Yes	No
A008/002:100:10	100	Flint	Flake	No	Patinated	16	24	7	No	No
A008/002:100:14	100	Flint	Flake	No	Burnt	21	19	6	Yes	No
A008/002:100:15	100	Flint	Debitage							
A008/002:100:16	100	Flint	Debitage							
A008/002:100:20	100	Flint	Flake	Yes	Rolled	49	35	15	No	No
A008/002:100:22	100	Flint	Blade	No	Heavily Patinated	58	20	8	No	No
A008/002:100:23	100	Flint	Flake	No	Heavily Patinated	36	26	10	No	No
A008/002:100:24	100	Flint	Flake	No	Patinated	21	21	3	No	No
A008/002:100:26	100	Flint	Flake	No	Patinated	18	24	10	No	No
A008/002:100:27	100	Flint	Debitage							
A008/002:100:30	100	Flint	Debitage							
A008/002:100:32	100	Flint	Flake	Yes	Lustred	28	21	5	Yes	No
A008/002:100:33+34	100	Flint	Flake	No	Heavily Patinated	37	19	8	No	No
A008/002:100:35	100	Flint	Flake	No	Patinated	17	22	10	No	No
A008/002:100:38	100	Flint	Flake	Yes	Patinated	22	22	7	No	No
A008/002:100:40	100	Flint	Retouched Artefact	Yes	Heavily Patinated	29	31	7	Yes	distal right direct abrupt, right edge direct semiabrupt
A008/002:100:42	100	Flint	Flake	Yes	Patinated	27	24	6	Yes	No
A008/002:100:43	100	Flint	Flake	No	Heavily Patinated	22	15	5	No	No
A008/002:100:44	100	Flint	Debitage							
A008/002:100:76	100	Flint	Debitage							
A008/002:100:84	100	Flint	Flake	No	Heavily Patinated	32	25	8	No	No
A008/002:100:89	100	Flint	Flake	No	Heavily Patinated	29	17	4	Yes	No
A008/002:100:90	100	Flint	Flake	No	Heavily Patinated	30	22	4	No	No
A008/002:100:93	100	Flint	Retouched Artefact	Yes	Patinated	41	30	13	No	left edge direct semiabrupt
A008/002:100:94	100	Flint	Flake	Yes	Patinated	29	20	7	Yes	No

Find No.	Context	Material	Type	Cortex	Condition	Length (mm)	Width (mm)	Thickn. (mm)	Complete	Retouch
A008/002:100:95	100	Flint	Debitage							
A008/002:100:96	100	Flint	Split Pebble	Yes	Burnt	35	23	9	No	No
A008/002:100:97	100	Flint	Flake	No	Patinated	38	26	8	Yes	No
A008/002:100:98	100	Flint	Flake	No	Patinated	21	16	3	No	No
A008/002:100:99	100	Flint	Blade	No	Patinated	53	22	12	No	No
A008/002:100:100	100	Flint	Debitage							
A008/002:100:102	100	Flint	Retouched Artefact	Yes	Heavily Patinated	59	33	9	No	left edge and distal direct semiabrupt
A008/002:104:1	104	Flint	Debitage							
A008/002:106:1	106	Flint	Blade	No	Patinated	17	21	8	No	No
A008/002:107:1	107	Flint	Retouched Artefact	No	Lustred	35	15	6	Yes	distal and proximal direct abrupt
A008/002:116:1	116	Flint	Retouched Artefact	Yes	Patinated	22	17	8	No	distal direct abrupt
A008/002:118:1	118	Flint	Chunk	No	Heavily Patinated	24	15	14	Yes	No
A008/002:119:5	119	Flint	Flake	No	Patinated	28	29	7	No	No
A008/002:120:1	120	Flint	Blade	No	Heavily Patinated	33	13	6	Yes	No
A008/002:125:1	125	Flint	Debitage							
A008/002:125:2	125	Flint	Flake	No	Heavily Patinated	36	21	11	No	No
A008/002:135:4	135	Flint	Retouched Artefact	No	Patinated	30	24	6	No	proximal direct semiabrupt, right edge inverse low angle
A008/002:137:1	137	Flint	Debitage							
A008/002:140:1	140	Flint	Blade	No	Patinated	24	9	4	Yes	No
A008/002:145:1	145	Flint	Blade	No	Patinated	60	29	10	No	No
A008/002:150:1	150	Flint	Flake	Yes	Burnt	31	20	7	No	No
A008/002:153:1	153	Flint	Retouched Artefact	No	Patinated	35	34	12	No	distal direct abrupt, left edge direct semiabrupt
A008/002:175:3	175	Flint	Retouched Artefact	No	Patinated	26	29	11	No	distal right edge direct semiabrupt
A008/002:181:2	181	Flint	Debitage							
A008/002:186:1	186	Flint	Flake	No	Burnt	23	24	8	No	No
A008/002:186:2	186	Flint	Debitage							
A008/002:197:1	197	Flint	Debitage							
A008/002:400:9	400	Flint	Retouched Artefact	No	Patinated	35	20	7	No	right edge direct semiabrupt

Find No.	Context	Material	Type	Cortex	Condition	Length (mm)	Width (mm)	Thickn. (mm)	Complete	Retouch
A008/002:400:11	400	Flint	Blade	No	Heavily Patinated	32	14	6	No	No
A008/002:400:13	400	Flint	Flake	No	Patinated	15	23	5	No	No
A008/002:400:16	400	Flint	Core	Yes	Patinated	43	29	15	Yes	No
A008/002:400:20	400	Flint	Flake	No	Patinated	35	24	4	No	No
A008/002:400:24	400	Flint	Debitage							
A008/002:400:25	400	Flint	Blade	Yes	Patinated	40	13	5	No	No
A008/002:400:26	400	Flint	Flake	Yes	Patinated	27	29	8	Yes	No
A008/002:400:31	400	Flint	Retouched Artefact	Yes	Burnt	14	22	12	No	distal, right and left edge abrupt
A008/002:400:32	400	Flint	Debitage							
A008/002:400:35	400	Flint	Retouched Artefact	No	Slightly Patinated	26	23	5	Yes	bifacial
A008/002:400:37	400	Flint	Flake	Yes	Heavily Patinated	24	28	10	No	No
A008/002:400:38	400	Flint	Debitage							
A008/002:400:42	400	Flint	Blade	No	Patinated	25	12	6	Yes	No
A008/002:400:43	400	Flint	Flake	Yes	Burnt	28	15	5	No	No
A008/002:400:45	400	Flint	Debitage							
A008/002:400:46	400	Flint	Flake	Yes	Patinated	32	16	8	No	No
A008/002:400:47	400	Flint	Flake	No	Heavily Patinated	21	20	6	Yes	No
A008/002:400:50	400	Flint	Retouched Artefact	No	Patinated	57	35	18	No	distal direct abrupt, left edge direct semiabrupt
A008/002:400:53	400	Flint	Retouched Artefact	No	Patinated	30	15	4	Yes	proximal inverse semiabrupt, left edge inverse low angle
A008/002:400:54	400	Flint	Debitage							
A008/002:400:55	400	Flint	Retouched Artefact	No	Patinated	43	23	6	No	left edge direct semiabrupt
A008/002:400:61	400	Flint	Blade	No	Patinated	23	5	6	Yes	No
A008/002:400:66	400	Flint	Flake	Yes	Patinated	26	20	6	No	No
A008/002:400:67	400	Flint	Flake	No	Heavily Patinated	33	31	10	No	No
A008/002:400:68	400	Flint	Retouched Artefact	Yes	Patinated	32	16	7	No	left edge direct semiabrupt
A008/002:400:74	400	Flint	Retouched Artefact	No	Patinated	42	27	9	Yes	bifacial
A008/002:400:81	400	Flint	Blade	No	Patinated	29	12	5	No	No
A008/002:400:82	400	Flint	Blade	No	Heavily Patinated	46	13	5	Yes	No

Find No.	Context	Material	Type	Cortex	Condition	Length (mm)	Width (mm)	Thickn. (mm)	Complete	Retouch
A008/002:400:85	400	Flint	Flake	No	Patinated	25	16	5	Yes	No
A008/002:400:86	400	Flint	Retouched Artefact	No	Patinated	28	8	3	Yes	proximal left edge direct semiabrupt
A008/002:400:87	400	Flint	Blade	No	Patinated	39	20	5	No	No
A008/002:400:88	400	Flint	Debitage							
A008/002:400:91	400	Flint	Blade	Yes	Patinated	30	17	4	No	No
A008/002:400:94	400	Flint	Flake	Yes	Patinated	26	18	6	Yes	No
A008/002:400:95	400	Flint	Retouched Artefact	No	Heavily Rolled and Patinated	33	20	8	No	right edge direct semiabrupt
A008/002:400:96	400	Flint	Blade	Yes	Slightly Patinated	51	24	11	Yes	No
A008/002:400:97	400	Flint	Retouched Artefact	Yes	Patinated	27	16	8	Yes	distal direct abrupt
A008/002:400:98	400	Flint	Core	Yes	Patinated	29	25	37	Yes	No
A008/002:401:3	401	Flint	Retouched Artefact	No	Rolled	24	27	5	No	bifacial
A008/002:401:5	401	Flint	Flake	Yes	Patinated	19	21	10	Yes	No
A008/002:401:6	401	Flint	Flake	No	Heavily Patinated	21	17	2	No	No
A008/002:401:8	401	Flint	Core	No	Patinated	18	18	8	Yes	No
A008/002:401:9	401	Flint	Flake	No	Patinated	57	31	6	No	No
A008/002:401:12	401	Chert	Retouched Artefact	No	Reasonably Fresh	43	30	6	Yes	bifacial
A008/002:414:1	414	Flint	Blade	Yes	Patinated	20	15	5	No	No
A008/002:422:3	422	Flint	Flake	Yes	Patinated	36	29	13	Yes	No
A008/002:429:4	429	Flint	Flake	Yes	Patinated	39	21	7	Yes	No
A008/002:438:4	438	Flint	Flake	No	Heavily Patinated	34	22	7	No	No
A008/002:453:2	453	Flint	Flake	No	Patinated	28	22	3	No	No
A008/002:473:5	473	Flint	Flake	No	Lustred	17	33	7	No	No
A008/002:473:6	473	Flint	Retouched Artefact	No	Patinated	20	22	3	No	proximal inverse abrupt
A008/002:492:2	492	Flint	Flake	No	Heavily Patinated	29	15	4	No	No
A008/002:513:1	513	Flint	Blade	No	Patinated	21	10	5	No	No
A008/002:566:13	566	Flint	Flake	No	Burnt	27	14	5	No	No
A008/002:566:16	566	Flint	Flake	Yes	Heavily Patinated	32	18	4	Yes	No
A008/002:566:17	566	Flint	Flake	Yes	Burnt	38	45	11	No	No

Find No.	Context	Material	Type	Cortex	Condition	Length (mm)	Width (mm)	Thickn. (mm)	Complete	Retouch
A008/002:598:7	598	Flint	Flake	No	Patinated	31	20	5	Yes	No
A008/002:619:1	619	Flint	Debitage							
A008/002:623:1	623	Flint	Retouched Artefact	No	Patinated	33	25	6	No	right edge direct semiabrupt
A008/002:654:2	654	Flint	Flake	Yes	Patinated	31	14	4	Yes	No
A008/002:657:1	657	Flint	Flake	Yes	Patinated	37	32	10	Yes	No
A008/002:658:1	658	Flint	Flake	No	Patinated	26	16	5	Yes	No
A008/002:747:1	747	Quartz Crystal	Core?	No	Reasonably Fresh	24	29	22	No	No
A008/002:782:1	782	Quartz Crystal	Crystal	No	Burnt	24	19	13	No	No
A008/002:782:2	782	Flint	Flake	No	Slightly Patinated	34	26	5	No	No
A008/002:893:1	893	Flint	Retouched Artefact	No	Patinated	30	38	5	No	proximal inverse abrupt, distal direct abrupt
A008/002:906:1	906	Flint	Retouched Artefact	No	Patinated	26	17	4	No	bifacial
A008/002:906:2	906	Flint	Blade	No	Heavily Patinated	35	11	3	Yes	No
A008/002:907:1	907	Flint	Blade	Yes	Patinated	38	14	5	No	No
A008/002:968:1	968	Flint	Blade	No	Rolled	27	17	5	No	No
A008/002:993:4	993	Flint	Retouched Artefact	No	Patinated	40	16	6	No	right edge direct low angle, distal direct abrupt, left edge direct semiabrupt
A008/002:993:5	993	Flint	Flake	Yes	Heavily Patinated	39	20	5	No	No
A008/002:998:1	998	Flint	Flake	No	Heavily Patinated	22	19	5	No	No
A008/002:1035:1	1035	Flint	Retouched Artefact	No	Patinated	65	35	10	Yes	distal right and left inverse low angle
A008/002:1059:1	1059	Flint	Retouched Artefact	Yes	Patinated	41	52	9	Yes	distal direct abrupt
A008/002:1064:1	1064	Flint	Flake	No	Patinated	32	11	4	No	No
A008/002:1218:1	1218	Flint	Blade	Yes	Patinated	25	12	3	No	No
A008/002:1218:2	1218	Flint	Retouched Artefact	Yes	Patinated	37	25	9	No	proximal and right edge direct semiabrupt
A008/002:1240:1	1240	Flint	Retouched Artefact	Yes	Burnt	31	28	9	Yes	left edge inverse semiabrupt
A008/002:1240:2	1240	Flint	Core	Yes	Patinated	25	21	13	Yes	No
A008/002:1240:3	1240	Flint	Blade	Yes	Patinated	45	21	5	Yes	No
A008/002:1240:4	1240	Flint	Retouched Artefact	No	Patinated	41	25	7	No	left edge direct abrupt and semiabrupt
A008/002:1273:1	1273	Flint	Flake	No	Burnt	36	27	9	No	No
A008/002:1291:3	1291	Flint	Retouched Artefact	No	Slightly Patinated	52	31	12	Yes	left edge direct semiabrupt

Table 1 Composition of the Lithic Assemblage from Roestown 2 (E3055)

Find Number	Context	Description	Type
A008/002:100:7	100	Topsoil.	Flake
A008/002:100:8	100	Topsoil.	Retouched Artefact
A008/002:100:9	100	Topsoil.	Core
A008/002:100:10	100	Topsoil.	Flake
A008/002:100:14	100	Topsoil.	Flake
A008/002:100:15	100	Topsoil.	Debitage
A008/002:100:16	100	Topsoil.	Debitage
A008/002:100:20	100	Topsoil.	Flake
A008/002:100:22	100	Topsoil.	Blade
A008/002:100:23	100	Topsoil.	Flake
A008/002:100:24	100	Topsoil.	Flake
A008/002:100:26	100	Topsoil.	Flake
A008/002:100:27	100	Topsoil.	Debitage
A008/002:100:30	100	Topsoil.	Debitage
A008/002:100:32	100	Topsoil.	Flake
A008/002:100:33+34	100	Topsoil.	Flake
A008/002:100:35	100	Topsoil.	Flake
A008/002:100:38	100	Topsoil.	Flake
A008/002:100:40	100	Topsoil.	Retouched Artefact
A008/002:100:42	100	Topsoil.	Flake
A008/002:100:43	100	Topsoil.	Flake
A008/002:100:44	100	Topsoil.	Debitage
A008/002:100:76	100	Topsoil.	Debitage
A008/002:100:84	100	Topsoil.	Flake
A008/002:100:89	100	Topsoil.	Flake
A008/002:100:90	100	Topsoil.	Flake
A008/002:100:93	100	Topsoil.	Retouched Artefact
A008/002:100:94	100	Topsoil.	Flake
A008/002:100:95	100	Topsoil.	Debitage
A008/002:100:96	100	Topsoil.	Split Pebble
A008/002:100:97	100	Topsoil.	Flake
A008/002:100:98	100	Topsoil.	Flake
A008/002:100:99	100	Topsoil.	Blade
A008/002:100:100	100	Topsoil.	Debitage
A008/002:100:102	100	Topsoil.	Retouched Artefact
A008/002:104:1	104	Fill of ditch C141, Area A	Debitage
A008/002:106:1	106	Fill of ditch C114, Area A, Encl A4	Blade
A008/002:107:1	107	Fill of ditch C113, Area A, Encl A3	Retouched Artefact
A008/002:116:1	116	Fill of ditch C132, Area A, Phase 1	Retouched Artefact
A008/002:118:1	118	Fill of ditch C168, Area A	Chunk
A008/002:119:5	119	Occupation debris below C100	Flake
A008/002:120:1	120	Lower topsoil, below C100	Blade
A008/002:125:1	125	Fill of linear ditch C202, Area A	Debitage
A008/002:125:2	125	Fill of linear ditch C202, Area A	Flake
A008/002:135:4	135	Fill of ditch C172, Area A, Phase 1	Retouched Artefact

Find Number	Context	Description	Type
A008/002:137:1	137	Fill of ditch C172, Area A, Phase 1	Debitage
A008/002:140:1	140	Fill of C285, Area A, Encl A1	Blade
A008/002:145:1	145	Fill of ditch C113, Phase 3, Encl A3	Blade
A008/002:150:1	150	Fill of ditch C114, Phase 3, Encl A4	Flake
A008/002:153:1	153	Fill of ditch C114, Phase 3, Encl A4	Retouched Artefact
A008/002:175:3	175	Fill of pit C178, Area A, Phase 5	Retouched Artefact
A008/002:181:2	181	Fill of ditch C114, Phase 3, Encl A4	Debitage
A008/002:186:1	186	Fill of ditch C187, Area A	Flake
A008/002:186:2	186	Fill of ditch C187, Area A	Debitage
A008/002:197:1	197	Fill of ditch C196, Area A	Debitage
A008/002:400:9	400	Topsoil, Area B	Retouched Artefact
A008/002:400:11	400	Topsoil, Area B	Blade
A008/002:400:13	400	Topsoil, Area B	Flake
A008/002:400:16	400	Topsoil, Area B	Core
A008/002:400:20	400	Topsoil, Area B	Flake
A008/002:400:24	400	Topsoil, Area B	Debitage
A008/002:400:25	400	Topsoil, Area B	Blade
A008/002:400:26	400	Topsoil, Area B	Flake
A008/002:400:31	400	Topsoil, Area B	Retouched Artefact
A008/002:400:32	400	Topsoil, Area B	Debitage
A008/002:400:35	400	Topsoil, Area B	Retouched Artefact
A008/002:400:37	400	Topsoil, Area B	Flake
A008/002:400:38	400	Topsoil, Area B	Debitage
A008/002:400:42	400	Topsoil, Area B	Blade
A008/002:400:43	400	Topsoil, Area B	Flake
A008/002:400:45	400	Topsoil, Area B	Debitage
A008/002:400:46	400	Topsoil, Area B	Flake
A008/002:400:47	400	Topsoil, Area B	Flake
A008/002:400:50	400	Topsoil, Area B	Retouched Artefact
A008/002:400:53	400	Topsoil, Area B	Retouched Artefact
A008/002:400:54	400	Topsoil, Area B	Debitage
A008/002:400:55	400	Topsoil, Area B	Retouched Artefact
A008/002:400:61	400	Topsoil, Area B	Blade
A008/002:400:66	400	Topsoil, Area B	Flake
A008/002:400:67	400	Topsoil, Area B	Flake
A008/002:400:68	400	Topsoil, Area B	Retouched Artefact
A008/002:400:74	400	Topsoil, Area B	Retouched Artefact
A008/002:400:81	400	Topsoil, Area B	Blade
A008/002:400:82	400	Topsoil, Area B	Blade
A008/002:400:85	400	Topsoil, Area B	Flake
A008/002:400:86	400	Topsoil, Area B	Retouched Artefact
A008/002:400:87	400	Topsoil, Area B	Blade
A008/002:400:88	400	Topsoil, Area B	Debitage
A008/002:400:91	400	Topsoil, Area B	Blade
A008/002:400:94	400	Topsoil, Area B	Flake

Find Number	Context	Description	Type
A008/002:400:95	400	Topsoil, Area B	Retouched Artefact
A008/002:400:96	400	Topsoil, Area B	Blade
A008/002:400:97	400	Topsoil, Area B	Retouched Artefact
A008/002:400:98	400	Topsoil, Area B	Core
A008/002:401:3	401	Deposit between C400 & upper ditch fills	Retouched Artefact
A008/002:401:5	401	Deposit between C400 & upper ditch fills	Flake
A008/002:401:6	401	Deposit between C400 & upper ditch fills	Flake
A008/002:401:8	401	Deposit between C400 & upper ditch fills	Core
A008/002:401:9	401	Deposit between C400 & upper ditch fills	Flake
A008/002:401:12	401	Deposit between C400 & upper ditch fills	Retouched Artefact
A008/002:414:1	414	Fill of ditch C405 in Area B, Phase 1	Blade
A008/002:422:3	422	Fill of pit C411, Area B, Phase 4	Flake
A008/002:429:4	429	Fill of ditch C405, Area B, Phase 1	Flake
A008/002:438:4	438	Fill of ditch C450, Area B, Phase 3	Flake
A008/002:453:2	453	Fill of ditch C450, Area B, Phase 3	Flake
A008/002:473:5	473	Fill of ditch C450, Area B, Phase 3	Flake
A008/002:473:6	473	Fill of ditch C450, Area B, Phase 3	Retouched Artefact
A008/002:492:2	492	Stone surface/possible pathway, Area B	Flake
A008/002:513:1	513	Deposit in souterrain, passage 3, Area B	Blade
A008/002:566:13	566	Fill of ditch C1104, Area B, Phase 2	Flake
A008/002:566:16	566	Fill of ditch C1104, Area B, Phase 2	Flake
A008/002:566:17	566	Fill of ditch C1104, Area B, Phase 2	Flake
A008/002:598:7	598	Fill of ditch C557, Area B, Phase 6	Flake
A008/002:619:1	619	Fill of ditch C622	Debitage
A008/002:623:1	623	Fill of linear C626	Retouched Artefact
A008/002:654:2	654	Fill of cereal drying kiln C677	Flake
A008/002:657:1	657	Fill of furrow	Flake
A008/002:658:1	658	Fill of furrow	Flake
A008/002:747:1	747	Fill of ditch C748, Area B, Phase 2	Core?
A008/002:782:1	782	Fill of pit C778	Crystal
A008/002:782:2	782	Fill of pit C778	Flake
A008/002:893:1	893	Fill of linear C894	Retouched Artefact
A008/002:906:1	906	Fill of linear C903	Retouched Artefact
A008/002:906:2	906	Fill of linear C903	Blade
A008/002:907:1	907	Fill of linear C904	Blade
A008/002:968:1	968	Fill of ditch C933, Area B, Phase 2	Blade
A008/002:993:4	993	Occupation deposit, Area B, Phase 1	Retouched Artefact
A008/002:993:5	993	Occupation deposit, Area B, Phase 1	Flake
A008/002:998:1	998	Fill of ditch C1034	Flake
A008/002:1035:1	1035	Fill of ditch C905	Retouched Artefact
A008/002:1059:1	1059	Fill of ditch C900, Area B, Phase 2	Retouched Artefact
A008/002:1064:1	1064	Fill of ditch C1065, Area B, Phase 1	Flake
A008/002:1218:1	1218	Fill of linear C902, Area B, Phase 2	Blade
A008/002:1218:2	1218	Fill of linear C902, Area B, Phase 2	Retouched Artefact
A008/002:1240:1	1240	Fill of ditch C1239	Retouched Artefact

Find Number	Context	Description	Type
A008/002:1240:2	1240	Fill of ditch C1239	Core
A008/002:1240:3	1240	Fill of ditch C1239	Blade
A008/002:1240:4	1240	Fill of ditch C1239	Retouched Artefact
A008/002:1273:1	1273	Fill of linear C1271	Flake
A008/002:1291:3	1291	Fill of ditch C1290, Area B, Phase 1	Retouched Artefact

Table 2 Context Information for the Assemblage from Roestown 2 (E3055)

CONDITION	AMOUNT
Reasonably Fresh	2
Slightly Patinated	4
Patinated	70
Heavily Patinated	25
Rolled	3
Heavily Rolled/Patinated	1
Lustred	3
Burnt	11
Total	**119**

Table 3 Assemblage Condition from Roestown 2 (E3055)

Technology/Morphology:

The worked artefacts represent six types of flaking products, 33 retouched artefacts and an unmodified quartz crystal (Table 4).

CORES

All but one (A008/002:747:1) of the six cores and the split pebble (A008/002:100:96) are made of flint. The possible core A008/002:747:1 is made of quartz crystal. It shows the attempt to knap or split the crystal, it may also have been mounted between something. With the exception of one core (A008/002:400:98), the remaining five cores are bipolar types, including one scalar example (A008/002:400:16). Core A008/002:400:98 is a multiplatform core, but mostly one single platform was used. It was abandoned without bipolar use.

It has to be noted that the bipolar cores are less patinated, as are their respective flakes and blades. The cores were produced on split beach flint pebbles or larger flakes thereof. The majority of the bipolar cores were reduced while resting on an anvil which suggests the existence of a certain amount of skill and a clear reduction strategy, as opposed to a simple smash-and-see approach (O'Hare 2005).

TYPE	AMOUNT
Core	6
Blade	22
Flake	55
Debitage	21
Retouched Artefact	33
Split Pebble	1
Chunk	1
Crystal	1
Total	**140**

Table 4 Assemblage Composition from Roestown 2 (E3055)

The cores rarely exceed 40 mm in length (Fig. 1), the majority measuring between 20-30 mm which is a clear reflection of the size of the locally available raw material and the reduction technique used. Core A008/002:401:8 is an exceptionally small core.

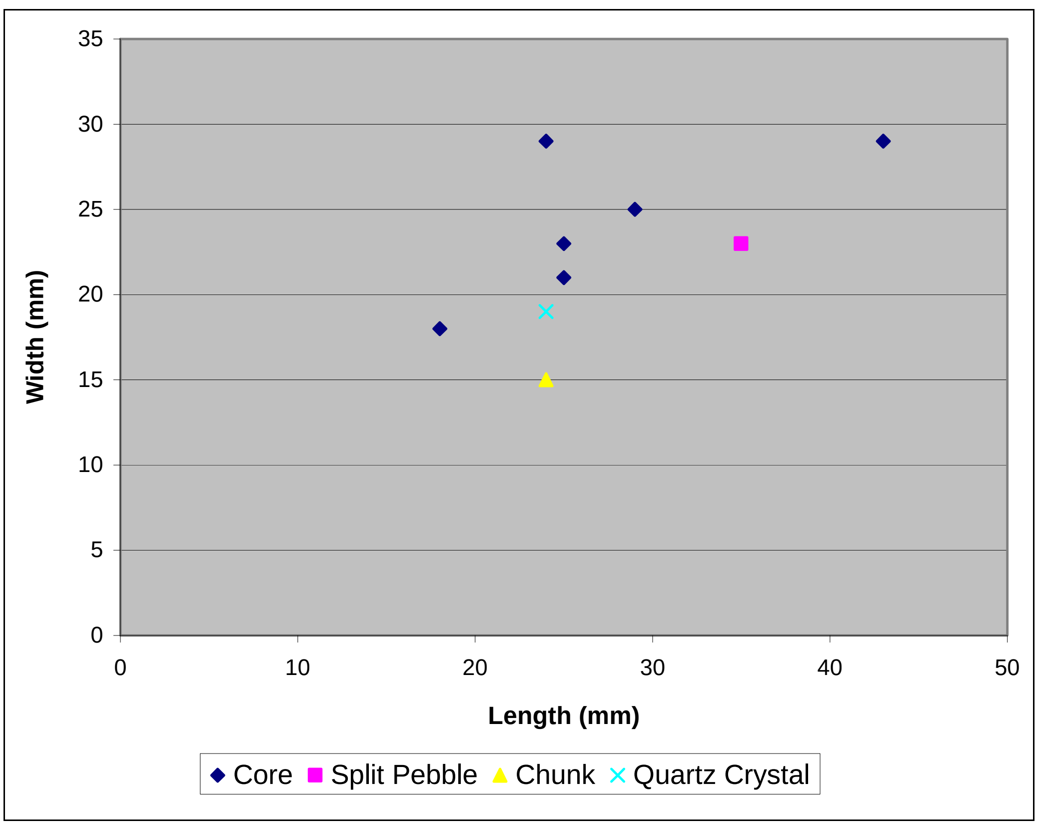

Figure 1 Dimensions (mm) of the Cores and Chunks from Roestown 2 (E3055)

BLADES

Eleven of the twenty-two flint blades were recovered from the topsoil. At least two blades (A008/002:140:1 and A008/002:400:61) bear the distinctive characteristics of the use of a bipolar technology for their production. The remaining blades appear to have been produced using a direct single platform technology with a medium soft or soft stone.

Four blades show use-wear on their right and/or left edges (A008/002:100:22, A008/002:400:81, A008/002:400:82 and A008/002:907:1). Use-wear was not detected on any of the bipolar blades, which indicates that these were not intentionally produced, but rather have to be regarded as by-products.

Generally, the blades rarely exceed 50 mm in length (Fig. 2), the majority measuring between 20-40 mm. One of the three larger blades (A008/002:100:22) is heavily patinated and was produced on a carefully prepared and well-maintained single platform conical blade core. Together with three further smaller, heavily patinated blades (A008/002:400:11, A008/002:400:87 and A008/002:906:2), eight flakes and what appears to be a microlith (A008/002:400:86), they represent an earlier phase on the site, i.e. a residual Early Mesolithic occupation, which is represented by blades, flakes and retouched blades and is only prevalent in the topsoil (Areas A and B) and a number of ditch fills (Area B) and an occupation layer which may be re-deposited.

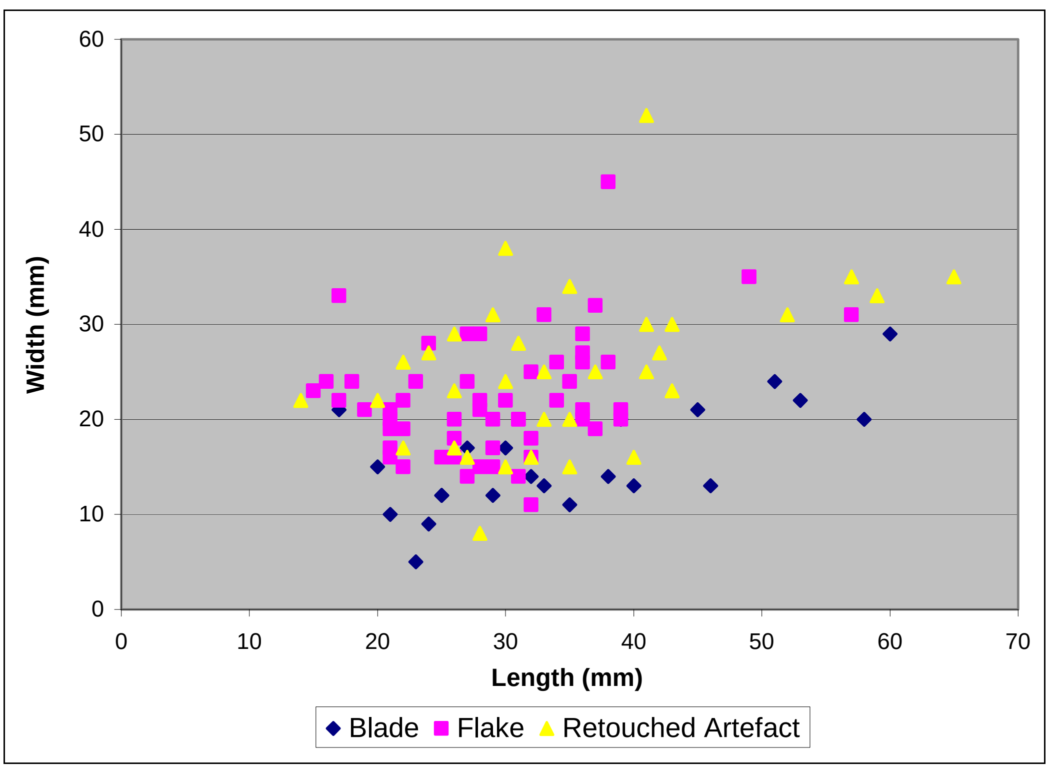

Figure 2 Dimensions (mm) of the Blades, Flakes and Retouched Artefacts from Roestown 2

FLAKES

The 55 flakes are all made of flint. None refits and it appears that most of them were brought to the site, rather than produced *in situ*. Split pebble flake A008/002:100:14 is of interest, as an attempt appears to have been made to use it as a bipolar core.

The flakes were predominantly produced on single platform cores. At least three flakes (A008/002:150:1, A008/002:400:66 and A008/002:566:13) appear to have produced using a bipolar method.

The flakes rarely exceed 40 mm in length (Fig. 2), the majority measuring between 20-35 mm long.

Five flakes (A008/002:100:32, A008/002:400:20, A008/002:400:26, A008/002:429:4 and A008/002:782:2) show use wear and/or polish on their right and/or left edges.

The few core rejuvenation flakes (e.g. A008/002:422:3, A008/002:429:4, A008/002:438:4, A008/002:566:16 and A008/002:993:5) attest to the presence of an expert knapper on the site. The majority of these flakes (A008/002:429:4, A008/002:438:4, A008/002:492:2, A008/002:566:16 and A008/002:993:5) are heavily patinated and were produced using a soft hammer. Together with three other flakes (A008/002:100:90, A008/002:998:1and A008/002:1064:1) they represent an Early Mesolithic occupation of the site.

Flake A008/002:1273:1 is quite large and was produced using a hard hammer. Its very large platform and morphology would seem to indicate that it was produced in the Late Mesolithic period (see also the retouched artefacts).

DEBITAGE

The presence of 21 pieces of debitage suggests that knapping took place at the site. Two heavily patinated pieces of debitage (A008/002:400:32 and A008/002:400:54) appear to be the distal ends of Early Mesolithic blades.

Retouched Artefacts:

Circa 24 percent of the flaked assemblage (including the debitage, 28 percent excluding the debitage) is retouched. This can be regarded as unusually high for a predominantly Early Neolithic settlement (see Woodman 1994). The 33 retouched artefacts can be divided into seven main groups: one microlith, eleven scrapers, six arrowheads/arrowhead attempts, one invasively retouched form, one possible plano-convex knife, one distally trimmed flake and twelve miscellaneous retouched artefacts.

MICROLITH

The microlith (A008/002:400:86) is a heavily patinated, partially backed bladelet that shows use-wear on its right edge.

SCRAPERS

The eleven scrapers can generally be divided into four categories:

- three hollow scrapers (A008/002:473:6, A008/002:893:1 and A008/002:1059:1)
- four concave scrapers (A008/002:153:1, A008/002:623:1, A008/002:1240:1 and A008/002:1240:4)
- three convex end scrapers (A008/002:116:1, A008/002:400:31 and A008/002:400:50)
- one side scraper (A008/002:100:93)

Two of the hollow scrapers are missing one of their ‘arms’. Scraper A008/002:400:50 is a large classic convex end scraper which shows extensive plough damage. Scrapers A008/002:116:1 and A008/002:400:31 are very small convex end scrapers. The former was produced on a split pebble half.

ARROWHEADS

The arrowheads can be divided into a broken leaf/lozenge shaped fragments (A008/002:906:1), two hollow-based arrowhead (A008/002:400:35 and A008/002:401:12) and abandoned arrowhead production attempts/roughouts (A008/002:135:4, A008/002:400:74 and A008/002:401:3). The latter appear to have been produced by beginner and novice knappers and are either too small and/or too thick and were therefore abandoned.

INVASIVELY RETOUCHED FORM

The invasively retouched form (A008/002:1291:3) is retouched on its left edge. It also has a natural hollow on its distal end and appears to have been used as a hollow scraper.

PLANO-CONVEX KNIFE

Artefact A008/002:400:9 is a plough-damaged fragment of a possible plano-convex knife.

DISTALLY TRIMMED FLAKE

Retouched artefact A008/002:1035:1 is a large distally trimmed flake that is generally associated with Late Mesolithic assemblages.

MISCELLANEOUS RETOUCHED ARTEFACTS

The twelve miscellaneous artefacts contain artefacts which were most likely used as some forms of scrapers (e.g. A008/002:100:8, A008/002:100:40, A008/002:100:102, A008/002:107:1, A008/002:400:53, A008/002:400:95, A008/002:400:97 and A008/002:1218:2) and as a blade knife (A008/002:400:68). Many of these would have been which were produced by beginner knappers and were clearly meant to be scrapers.

The miscellaneous retouched artefacts A008/002:100:8, A008/002:100:40, A008/002:107:1 and A008/002:175:3 appear to be re-used Neolithic flakes and blades. They may have been re-used in the Late Neolithic period or Bronze Age. A further indication of a possible use of the site during the Late Neolithic/Early Bronze Age are four miscellaneous retouched artefacts which were produced on bipolar flakes (A008/002:400:53, A008/002:400:55, A008/002:400:97 and A008/002:1218:2).

As can be expected, the size of the retouched artefacts generally corresponds to the measured blade and flake sizes in the assemblage.

<u>Dating:</u>

Given the location of the site on a hill and in the vicinity of a fresh water source, it is not surprising that the assemblage has to be regarded typologically and technologically as a palimpsest including Early Mesolithic, Late Mesolithic, Neolithic and possible also Bronze Age diagnostic elements.

It can be divided into four groups: (1) artefacts clearly associated with the Early Mesolithic such as the microlith and a number of blades and flakes, which represent a residual component really only present in the topsoil; (2) a flake and another large distally trimmed flake date to the Late Mesolithic; (3) the majority of artefacts are associated with an Early Neolithic occupation of the site and its environs and include the leaf/lozenge shaped arrowheads, the invasively retouched form, the majority of the miscellaneous retouched artefacts as well as the platform cores; (3) artefacts dated to the Late Neolithic/Early Bronze Age such as the hollow-based arrowheads, the plano-convex knife, the hollow and concave scrapers, micro disc scrapers, retouched bipolar blades and flakes and the scalar and bipolar cores (O’Hare 2005, Woodman *et al.* 2006).

It is highly likely that the Early Neolithic artefacts may have been associated with an occupation of a Neolithic house at the site, the remains of which were highly disturbed by later activities (see *Comparative Material*).

The recycling and re-use of earlier prehistoric artefacts such as Early Neolithic blades and flakes in the Late Neolithic and/or Early Bronze Age is a common phenomenon in Irish later prehistory (O'Hare 2005).

Conservation

Lithics do not require specific conversation, but should be stored in a dry, stable environment. Preferably, each lithic should be bagged separately and contact with other lithics should be avoided, so as to prevent damage and breakage, in particular edge damage which could later be misinterpreted as retouch. Larger and heavier items are best kept in individual boxes to avoid crushing of smaller assemblage pieces.

Comparative Material

Palimpsest assemblages are comparatively rare in Ireland. However, two similar assemblages were recovered during the excavation of a Neolithic house sites at Gortore, Co. Cork (Sternke 2007a) and Johnstown 1, Co. Meath (Sternke 2007b). These assemblages also included leaf-shaped arrowhead fragments and roughouts, hollow scrapers and residual Early Mesolithic components as well as a few Bronze Age lithics. The Gortore assemblage also included Later Mesolithic artefacts.

A further similar assemblage was also recovered during excavations of a rectangular Neolithic house and a circular Bronze Age enclosure at Haggardstown (06E0485), Co. Louth (Sternke 2007c). This assemblage also included leaf-shaped arrowhead fragments and roughouts, invasively retouched forms, a large number of scrapers (mainly convex end scrapers and micro disc scrapers) and a large Bronze Age bipolar lithic component.

In general, the Early Mesolithic blades and the microlith are comparable to those excavated at Mount Sandel, Co. Derry (Woodman 1985), while one flake and the distally trimmed flake compare to material excavated at Ferriter's Cove, Co. Kerry (Woodman *et al.* 1999).

Discussi*on*

Flint is available in larger and smaller nodules along the Meath and Louth coasts or in the glacial tills. The use of a limited single platform and bipolar technology on small to medium sized pebbles is in parts the result of this availability. The majority of these flint nodules are rather small pebbles with an average dimension of 4-6 cm and often only permit the use of a bipolar or scalar technology to efficiently reduce the nodule achieving a maximum outcome, i.e. the largest possible amount of suitable and usable blanks. The result is the regionally dominant split pebble scalar (Later Neolithic) and bipolar (Late Neolithic/Bronze Age) character of the eastern lithic assemblages. Given the technological composition of the Neolithic and Bronze Age component of the Roestown 2 assemblage, i.e. predominantly production debris and retouched tools, it is safe to assume that at least some tools were produced at the site. This is certainly the case for the Early Mesolithic and Neolithic artefacts, while the Late Mesolithic distally trimmed flake would have been imported to the site in the form of a blank or finished product. The chert and quartz crystal used in the Neolithic is most likely to be of local origin.

Summary

The 140 lithic finds from the archaeological excavation of a multi-period site at Roestown 2 (E3055), Co. Meath are 137 flaked pieces of flint, one flaked piece of chert, one worked and another unworked quartz crystal. The flaked assemblage contains six cores, 22 blades, 55 flakes, 33 retouched artefacts, one chunk, one split pebble, one unworked quartz crystal and 21 pieces of debitage.

The assemblage is dominated by a typological and technological component characteristic of the Early and Later Neolithic periods. This includes the flakes produced on single platform cores, leaf/lozenge shaped arrowheads and invasively retouched forms (first half of the Neolithic) and hollow-based arrowheads, the plano-convex knife, scalar cores, hollow scrapers and concave scrapers (second half of the Neolithic). It can also be expected that some of the bipolar flakes and blades also belong to the Neolithic phase or to the Early Bronze Age.

In addition, a residual Early Mesolithic element in the assemblage comprising of a small number of blades and flakes as well as a microlith was recovered from the topsoil. A single flake and a distally trimmed flake represent a sporadic use of the site at some point in the Late Mesolithic period.

The small residual Early Mesolithic component indicates that blade production may have taken place at or more likely near the site during that period. The presence of a small amount of cores and debitage suggests that a limited lithic production took place at the site during the Neolithic period and the Bronze Age. Together with the discarded retouched tools, the recovered cores, flakes, blades, debitage and retouched artefacts represent waste from a limited lithic production and the immediate use of lithic tools at the site, possibly in predominantly domestic activities.

This site makes an important contribution to the evidence for prehistoric settlement and land use in Co. Meath despite the fact that the lithics derive from a secondary context.

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APPENDIX 15 *Worked Bone by Ian Riddler & Nicola Trzaska-Nartowski*

04_01 Roestown 2 (A008/002)
Worked Antler and Bone Objects and Waste

Ian Riddler and Nicola Trzaska-Nartowski
March 2009

The assemblage includes 47 objects and three fragments of waste, all of early medieval date. The proximity of the site to Lagore Crannog, just 2 km away, inevitably means that comparisons have been drawn, in the first instance, from that site. That is not always an easy thing to do, however, because Hencken was very selective in his publication of bone and antler material from the site, publishing some objects in very sparse detail, and ignoring others entirely. Re-evaluations of the material culture of Lagore have drawn attention to the deficiencies in its published record (Comber 2004). Thus it has been possible to relate some elements of the assemblage, and particularly the combs, motif pieces and spearheads, directly with published and unpublished material from Lagore, whilst other components have not been compared in such detail. The pins, awls and needles, in particular, have only been assessed against published material. At the same time, they have also been viewed against the other recently excavated sites of the area, notably Baronstown 1 and Castlefarm 1.

Combs

Fragments of five combs came from separate contexts. They span the period from the eighth century to the late tenth or early eleventh century and include a rare example of Scandinavian origin, the only comb of its specific type yet to have been found in Ireland. The earliest combs are represented by three fragments of double-sided composites (*100:29*, *131:1* and *227:1-3*). Two of these fragments are end segments, both with straight backs and with little space between the teeth and the end of the comb. In one case (*131:1*) the area beyond the connecting plates (which were not recovered) is filled with several irregular rows of single ring-and-dot motifs. The extension of the end segment some distance beyond the connecting plates is a feature of Dunlevy's class D combs (Dunlevy 1988, 358-61). The decoration of end segments with ring-and-dot motifs is a common feature of double-sided composite combs and occurs on some of the earliest examples of class B, but not usually as rows of patterning. A row of motifs can be seen on a comb from Dowdstown 2, as well as on double-sided composites from Carraig Aille, Dublin, Feltrim and Lagore, but the closest parallel occurs on a comb from Raheennamadra (Ó Ríordáin 1949, fig 13.14I; Hartnett and Eogan 1964, fig 13.457; Simpson 1999, pl III; Hencken 1950, fig 98.242; Stenberger 1966, fig 3.29). A second end segment (*100:29*) is undecorated and has a straight back with rounded ends. Its proportions again place it into Dunlevy's class D and suggest that it is of eighth to ninth century date. The earlier class B combs from Lagore are considerably broader than this comb and lie within a range of 43 – 52 mm in width. Class D combs, in contrast, are rarely wider than 45 mm and have straight or profiled back edges. A fragment (*227:1-3*) includes a part of the central area of the comb, as well as a separate end segment. The connecting plates are trapezoidal in section and are decorated with paired diagonal lines forming a continuous chevron pattern. Saw marks are long and prominent on all four edges. Two or more of these three characteristics can be seen on a number of double-sided composite combs of ninth to tenth century date. Chevron patterning is very common at this time and occurs alongside prominent saw marks on a ninth century comb from Dublin High Street (Riddler and Trzaska-Nartowski forthcoming). Similar dating evidence is provided by a comb from Buckquoy, Orkney, where the pattern occurs alongside prominent saw marks; the comb was asssigned to the ninth to tenth century (Ritchie 1976-7, 196 and fig 7.55). It can also be seen on connecting plates of trapezoidal section on a comb from Killickaweeney, where there are no saw marks, however (Riddler and Trzaska-Nartowski 2008, 48, fig 3.10 and appendix 12). A comb from Knowth has connecting plates of the same section and prominent saw marks, but no decoration (Riddler, Trzaska-Nartowski and Barton forthcoming).

Two single-sided composite combs belong to the tenth century to early eleventh century and add an extra dimension to the material culture of the settlement. A fragment of a small comb (*422:1-2*) includes elaborate decoration in the form of paired crossing diagonal lines and ring-and-dot motifs, as well as hatched areas and decoration along the tops of the tooth segments. The connecting plates have a flat baseline and sinuous back that tapers towards one end before rising again. This is a characteristic of Scandinavian combs of tenth century date, as is the elaborate decoration and the use of rivets made of copper alloy, rather than iron. Comparable combs have come from Birka and Haithabu, in particular (Tempel 1970, 41 and abb 4.6; Ulbricht 1978, taf 32.7). The form belongs to Ambrosiani's class B, although the decoration is not matched at Birka and is closer to that seen on combs from Haithabu (Ambrosiani 1981, 62 and taf 29; Tempel 1969, taf 22.58). The use of copper alloy rivets is a defining characteristic of this comb type (Ambrosiani 1981, 72). The decoration of the tooth segments with ring-and-dot motifs is another unusual feature. It occurs also on a single tooth segment from Thetford, which is possibly of this type (Rogerson and Dallas 1984, fig 187.18). Combs of Scandinavian origin do not occur at Lagore, although there is one example of an Irish copy of an earlier Scandinavian comb type, produced in the late ninth to early tenth century (Hencken 1950, fig 98.1044). A much larger single-sided composite comb (*1321:1-25*) has connecting plates of broad, D-shaped section that curve along their baseline and taper towards each end. The comb is decorated on both sides at the centre, with bands of vertical and diagonal lines set in two registers and bounded by vertical incised lines. Similar combs occur across most of the northern world in the later tenth to early eleventh century (Tempel 1969, 92-9). The presence of prominent saw marks recalls the earlier series of double-sided composite combs and suggests that the comb is of local origin, produced in Ireland in a common design of the period. It can be compared with several combs from Dublin, as well as an incomplete comb from Lincoln and an example from York (Riddler and Trzaska-Nartowski forthcoming; White 1981, fig 6; MacGregor 1982, fig 49.528). The comb has been well used and there are wear patterns on the teeth, occurring on one side in particular, suggesting that it was usually held in the same position in the hand, and combed from preference on one side. One end of the comb has been deliberately rounded and it appears that it had fractured in use. It was trimmed and repaired, and continued in use in its shortened form until it was eventually discarded.

Antler and Bone Waste

A single fragment of antler waste (*100:86*) has been trimmed to a rectangular shape and sawn across its upper and lower edges. It represents an unfinished tooth segment from a comb, its size and thickness suggesting that it was intended for use on a single-sided composite of tenth or eleventh century date, rather than an earlier double-sided comb. A few fragments of comb manufacturing waste came from nearby Lagore and a larger sample was recovered from Castlefarm 1 (Comber 2008, 93). Even a single piece like this provides evidence for comb making on or near the excavated area of the settlement and recalls the situation in contemporary England, under which comb making took place on a small scale within most settlements (Riddler 1996). The development of urban centres with specialist areas for comb making is a later phenomenon of the eleventh to twelfth centuries.

A fragment of an ovicaprid tibia (*400:77*) includes the distal end of the bone and part of the midshaft, which has been facetted by knife. The function of this bone is unclear. It could be an offcut, with the interest of the bone worker centred on the remainder of the bone; or it could represent an early stage in object manufacture. The three bone spearheads from the site have all been produced from ovicaprid tibiae but this offcut is too short for that purpose.

Pins, Awls and Needles

The assemblage of antler and bone is dominated by pins, awls and needles, as is usually the case. It includes four pins, four awls and six needles, as well as twelve fragments of shafts that are not identifiable to type. In addition, there is also a fragment of bone pin manufacturing waste. The four pins all vary markedly in their types. The earliest type is represented by two fragments (*119:1* and *119:2*) almost certainly from the same pin. The pin is fairly short but the head is now missing. The defining characteristic of the object is its swollen shaft, set above a taper to a sharp point. This is a feature of pins known from contemporary deposits in Ireland, England and Scotland (Stevenson 1955; MacGregor 1985, 119-21; Foster 1990, 150-1; Riddler, Trzsaska-Nartowski and Hatton forthcoming). Both Foster and MacGregor have noted that short pins (less than 70 mm in length) with hipped or swollen shafts do not appear before the seventh century (MacGregor 1985, 121; Foster 1990, 151). More recent work indicates that they continue to the mid eighth century, but no later (Riddler, Trzaska-Nartowski and Hatton forthcoming). A sample of alder (*Alnus glutinosa*) from F119 was radiocarbon dated to AD 680–890 (Beta 229293), confirming this dating. A second pin (*175:1*) is less than 70 mm in length and has a simple, globular head, but it lacks any swelling of the shaft and this is important in terms of its dating. Instead, it has a circular shaft through most of its length, which becomes square in section over its lower part. A similar change in section of a shaft can be seen on a bone or antler pin from Castle Acre, Norfolk (Margeson 1982, fig 47.45). It was found alongside a series of short pins with hipped shafts, forming a medieval group that can be readily distinguished from the earlier forms noted above, belonging instead to the late eleventh to mid twelfth century (Margeson 1982, 248-9). A simple bone or antler pin from Waterford has a globular head, as with this example, and came from a context of early twelfth century date (Hurley 1997, 672 and fig 175.42). A twelfth century date can be applied also to a stick pin (*414:3*) made from a pig fibula, which has no discernible head. It is a very simple form that can be seen at Dublin and Waterford in twelfth century contexts (Walsh 1997, fig 68.16; Hurley 1997, fig 17.5.35 and 38).

The only pin to include decoration (*639:1*) is made of antler and has a lightly spatulate head, with a small panel of incised patterning on one side. The form represents a transition between earlier pins, mostly made of bone, which have large spatulate heads, and the later series of stick pins, where the size of the head is considerably reduced. The earlier group belong to the late tenth to eleventh century (Schwarz-Mackensen 1976, 44) and the transitional form is of eleventh to twelfth century date. Comparable examples of pins of this type are known from Dublin in particular where most, unfortunately, are unpublished. A fragment of bone waste (*432:1*) provides evidence of on-site pin making in the tenth to eleventh century. The fragment has fractured at either end and represents an early stage in shaping cattle sized bone to produce large pins with long shafts of circular section. Comparable pins have spatulate heads, some of which were decorated (MacGregor 1985, 120 and fig 64.36 and 38).

The four awls are made from pig fibulae with the head cut from the distal end of the bone in each case. The heads are either unmodified or lightly trimmed, so that they vary noticeably in their widths. Two of them fall within the size range established for Castlefarm 1, whilst one example (*108:3*) is somewhat shorter in length. Seen against the Castlefarm 1 sample, it appears that the significant characteristic of bone awls was their length, which is fairly consistent, whilst the width of the head varies considerably (Figure 001). Interestingly, with bone needles the situation is reversed, with a variation in lengths but only a small range of head widths. Objects of this type were regarded by Hencken (1938, 38) as pins but they are identical in bone type and form to awls of later prehistoric date, and that appears to be a better interpretation of their function (Sellwood 1984, 387-9; Seager Smith 2000, 224 and fig 89.1-2). They do not include any wear marks indicative of a function as pins and the only wear traces to be seen are confined to the tip of the shaft, again suggesting that they were implements rather than dress accessories.

They form a long-lasting type of implement, extending back into later prehistory and continuing in use into the twelfth to thirteenth century.

The six needles include four complete examples and one that is unfinished. In addition, there are also twelve fragments of needles or pins, most of which probably stem from needles. All twelve are made from pig fibulae. The bone needles form a fairly homogeneous group. They have all been produced from pig fibulae. The unfinished example has a perforated head but the shaft has not been completed. It confirms the working process seen also at Castlefarm 1, whereby the head was prepared and perforated first, before the shaft was trimmed to shape. The head of this needle has not been modified and, as a result it is a little wider than the remainder, all of which have been trimmed to widths of 8.5 to 11.5 mm. The same range of head widths can be seen also at Baronstown 1 and Castlefarm 1 (Figure 001). The modified heads have oval perforations, invariably cut by knife rather than being drilled, and straight shafts tapering usually to sharp points. Hencken inevitably described these objects also as pins, and he was following the general interpretation of the time (Hencken 1938, 38). Leeds had earlier argued that slightly modified, perforated pig fibulae from Sutton Courtenay were dress pins, ‘a cord or thong with one end knotted being passed through the perforation and, after the pin itself had been thrust through the two folds of material which it was desired to fasten together, twisted round the pointed end of the pin in a single or double hitch’ (Leeds 1923, 183). Ironically, his view of their use was based on his own studies of Irish copper alloy brooches and pins. In recent years, they have been regarded as textile implements, used with loose mesh woollen fabrics. Although their head forms vary, a common factor is the presence of a flat or near-flat apex and this allowed them to be pressed into fabric. Andersson has noted that most examples of the object type are made from pig fibulae, generally with a flat or rounded heads, with the majority between 70 and 100 mm in length (Andersson 2003, 145-7 and fig 74). At Baronstown 1, Castlefarm 1 and Roestown 2 every single example has been made from a pig fibula, with the head invariably cut from the distal end of the bone. Every awl has also been made in the same way, whilst pins were made of both bone and antler, and from cattle bone as well as pig fibulae.

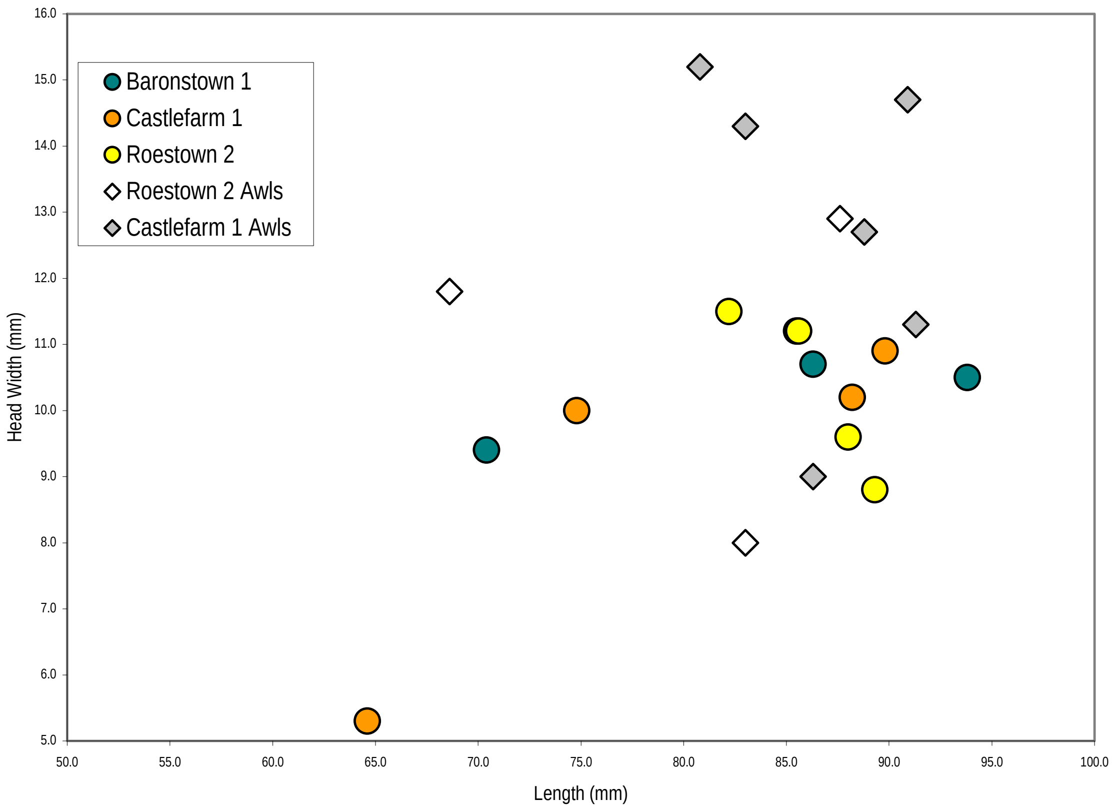

Figure 001 Bone Needle and Awl Sizes from Roestown 2, Baronstown 1 and Castlefarm 1

Spearheads

Three bone spearheads (*100:28, 161:3* and *491:4*) have all been made from ovicaprid tibiae, almost certainly stemming from sheep. One spearhead (*100:28*) has been cut from the upper part of the midshaft, where it is triangular in shape, with the butt end shaped and perforated in the customary fashion. A second spearhead (*161:3*) is unfinished. It has been roughly sliced across the lower part of the midshaft but has not otherwise been worked. The third spearhead (*491:4*) is a conventional form of the period, with the butt end cut from just above the distal end of the bone and the blade sliced across the midshaft. It can be compared with spearheads from Cahercommaun, Carraig Aille, Clonfad, Feltrim Hill, Knowth and Raheennamadra (Hencken 1938, fig 38.674; Ó Ríordáin 1949, fig 14.32H, 208I, 211I, 221I and 278; Hartnett and Eogan 1964, fig 13.459 and 462; Stenberger 1966, fig 3.9, 10, 41 and 42). Hencken mentioned the presence of ten spearheads from Lagore and illustrated one of them (Hencken 1950, 194 and fig 106.673). All of them have been made from ovicaprid bones, with at least five cut from the lower part of the tibia midshaft, one of the most common bones to be used for this object type. The two stratified examples from Lagore came from deposits attributed by Hencken to his Period II (Hencken 1950, 194). This period was assigned to *c* AD 850 – 934 by Hencken and more cautiously to the ninth to eleventh centuries by O'Meadhra (1987, 63-4). A recent example from Clonfad came from a context of eighth to ninth century date (Paul Stevens, *pers comm*) and it is likely that they extend in date from the eighth to the tenth century, given that there are also unpublished examples from Dublin. One of the spearheads (*491:4*) came from the fill of ditch F404, whilst the other was recovered from the topsoil.

Hencken regarded them as spearheads but was not aware of Crowfoot's suggestion that they may have been used as pin-beaters (Hencken 1950, 194; Crowfoot 1945). Crowfoot's suggestion was only a tentative one and was not helped by the occurrence of large groups of these items in several prehistoric graves. At least nine examples were found in a Bronze Age burial at Snailwell and sixteen came from an Iron Age burial at Grimthorpe (Lethbridge 1949; Longworth 1984, 158 and pl 46.104; Stead 1968, 170 and fig 16). All of the Irish examples have been hollowed at the butt end and almost all of them also include lateral perforations. This strongly suggests that they were intended to be hafted. Elsewhere, some of these perforations have been found to contain bone or iron pins (Cunnington 1923, 86-7; Sellwood 1984, 385; Hallén 1994, 205). Hafted implements are much more likely to have served as spearheads than pin-beaters. Moreover, recent work by Olsen on the wear patterns visible on a large assemblage from Fiskerton in Lincolnshire also confirmed that they were spearheads, and this interpretation has been adopted for contemporary implements from England and the Continent (Olsen 2003; Hallén 1994, 206-7; Riddler 2007, 315-6; Westphalen 1999, 8).

Antler and Bone Stamps

A complete bone stamp (*161:7*) tapers to an indented oval terminal at one end and has three short teeth cut at the other end. They are curved in section, indicating that they were intended to be scored along the surface of an object, decorating it with three parallel combed lines. Briscoe has argued that these objects should be referred to as 'dies' rather than stamps and although that is strictly correct, there is room for confusion with other objects also referred to as dies; the term stamp is preferred here, as it has been elsewhere (Briscoe 1981, 2; MacGregor 1985, 194; Hallén 1994, 216). The presence of designs at both ends of the stamp places it within Knaut's group 2; stamps of group 1 have only one working face (Knaut 1987, 467-70 and abb 6). The majority of stamps belong to Knaut's group 1, and group 2 stamps are quite rare. Knaut illustrated ten examples from Holland and northern Germany, to which there can be added stamps from *Hamwic* and Ipswich (Riddler, Trzaska-Nartowski and Hatton forthcoming). The presence of rilled lines forming teeth at one end of the stamp is a feature seen elsewhere on antler stamps from the Broch of Burrian, Canterbury, *Hamwic*, Ipswich, Norwich and *Sandtun* (MacGregor 1974, 78 and fig 10.144; 1985, 194; Riddler 1986, 19 and fig 2; 2001, 245; Ayers 1994, 29 and fig 17.4). They come from contexts of eighth to tenth century date and although they vary in their precise shapes and sizes, the intention was the same in each case: to score a surface with comb-like parallel lines. The opposite end has a simple, oval indentation, one of the most common stamped patterns. A second implement (*160:1*) is an antler tine end that has been neatly facetted to a pentagonal section and hollowed throughout. The narrow end has two diagonal lines incised into it and because the centre is hollow, the resultant pattern has a domed centre with four lines radiating from it. Simpler cross patterns are known from Bac Mhic Connain and *Hamwic* and a stamp from Frisia includes diagonal lines with dots in the interstices (Hallén 1994, 216 and fig 16.4; Knaut 1987, abb 5.3). Stamps from *Hamwic* and Zülpich are closer in design with raised centres and radiating lines, albeit with more lines than can be seen here (Knaut 1987, abb 5.18).

The early Anglo-Saxon series of stamps has always been related to ceramics and they are widely regarded as pot stamps (Riddler 1986; MacGregor 1985, 194; Myres 1970; Träger 1985). This works reasonably well for the fifth and sixth centuries but is noticeably imprecise thereafter. At *Hamwic*, for example, the nine stamps discovered to date do not correlate well at all with the stamped ceramics from the site (Riddler 1986; 1988; 1993, 115; Timby 1988, figs 17-18). Whilst Myres attempted to explain the stamps from Scotland as having 'strayed in ancient times from their natural context' (Myres 1970, 350) it is much more likely that they were used to stamp other materials, most likely leather. The Scottish examples from the Bac Mhic Connain, the Broch of Birsay, the Broch of Burrian and Dun an Fheurain all come from aceramic sites, as does the Irish corpus, which is limited to the two examples from Roestown 2, as well as a stamp from Clonfad 3 (Hallén 1994, 216 and fig 16.4; Stevenson 1951-2; MacGregor 1974, 78 and fig 10.144; 1985, 194 and fig 104; Ritchie 1970-1, 105 and fig 4.34; Myres 1970). A stamped leather sheath from a late seventh century context at *Hamwic* provides important early evidence for the early stages at which vegetable tanning, which provided more supple leather capable of being stamped, was coming into use (Cameron 2005, 61 and fig 32). Thereafter, stamped leather becomes commonplace in England and Ireland, although antler and bone stamps are not seen after the tenth century, and may have been superceded by stamps made of other materials.

Antler Handle

A near complete antler handle (*235:3*-6) has been sawn from a section of antler tine and hollowed throughout. The outer surface has been smoothed and facetted by knife and the presence of iron staining at one end suggests that it had been used. This particular type of handle, which is perforated throughout its length, appears to come into widespread use during the tenth to eleventh centuries, continuing into the medieval period (Nicholson 1998, 485; MacGregor, Mainman and Rogers 1999, 1971; Riddler, Trzaska-Nartowski and Hatton forthcoming). It conforms with Becker's type C from Berlin-Spandau that she defined as large, undecorated handles that can be distinguished from smaller examples, which were often decorated (Becker 1989, 125 and taf 36). They form simple, functional handles that may have been used with larger implements than the smaller, finer handles.

Motif Pieces

One of the most spectacular components of the assemblage of antler and bone objects lies with the presence of no less than eight motif pieces. They have been incised into what at first appears to be a wide variety of animal bones, including several sections of innominate bone, a horse metatarsal, a horse radius, a fragment of cattle sized long bone and a horse scapula. Taking a minimal view, however, all of the bone could conceivably stem from the skeleton of a single horse and it is very interesting to see a pronounced preference for horse bone as the raw material. The homogeneity in species is echoed also in the motif pieces designs themselves, which are centred on interlace panels of three main types, with individual variants of these forms. A number of the pieces include complete carved panels as well as lightly incised patterns that form outlines for the same design, and are often placed in close proximity to the carved motifs. The scientific dating obtained from several of the contexts from which these pieces emerged has been compared with the generally less reliable stylistic dating of the motif pieces themselves, and there is a broad agreement. All of the motif pieces can be placed stylistically within the period of the eighth to early ninth century, which makes them contemporary with the Lagore motif pieces, and the scientific dating is mostly in agreement with this suggestion. The only disparity lies with two motif pieces (414:1 and 414:4) recovered from separate fills of the enclosure ditch F405. A radiocarbon sample from a different fill of the ditch provides a date of AD 530–650 (Beta 220115), which seems to be a little too early for the patterns seen on the motif pieces.

The innominate bone (*535:1*) has a complete interlace panel on one side, which has been skilfully finished in a sharply incised style that can be described as linear, following the definition of O’Meadhra (1987, 130). The panel looks like the finished end product of a process and can be regarded as a prototype rather than a trial. The interlace pattern is sinuous and leaf-like, and is cut as a single line throughout. This is unusual for a motif piece, where the majority of interlace is deeply incised with the use of paired lines, rather than single incised patterns. It is almost a negative version of a customary pattern. There is a very lightly incised trial of a similar interlace pattern on the other side of the bone. Its closest parallels have both been inscribed on stone and consist of a slate from the River Bann and a stone motif piece from Gransha, County Down (O’Meadhra 1979, figs 40, 80a and pl 30). The Gransha motif pieces have been dated to the ninth to tenth centuries (O’Meadhra 1987, 59). Interlace of this type does not occur in earlier seventh century Insular manuscripts but becomes common from the period of the Book of Lindisfarne onwards, through the first half of the eighth century (Alexander 1978, figs 35, 41 and 51). The motif piece came from a fill of the first recut of the enclosure ditch F404. A radiocarbon date of AD 710–910; AD 920–960 (Beta 220114) was obtained from another of the fills of this phase. The motif piece itself can be dated to the eighth to early ninth century, on stylistic grounds.

A fragment of cattle sized innominate bone (*401:21*) is decorated on one side with three motifs of the same type. Two of these are complete, whilst a small fragment of the third motif has been set perpendicular to the others, and has largely been lost. All three motifs are two strand interlace designs with winged terminals, a motif seen also on the horse metatarsal motif piece (*432:3*). The two complete panels are both incomplete and unfinished at their ends. The design itself is a common one, particularly on motif pieces of eighth to ninth century date. This motif piece came from the topsoil like layer that concealed the cut for enclosure 1.

The lower part of a horse metatarsal (*432:3*) includes several carved panels, as well as incised designs. Three completed panels include chip-carved interlace decoration and there are also five areas of incised patterning. Two of the complete panels represent a readily recognisable pattern, that of the butterfly knot, a discrete and normally square interlace pattern which is normally constructed from eight points (Trzaska-Nartowski forthcoming). One of the patterns is somewhat squat and irregular, whilst the other is more uniform. The squat pattern also has an incised constructional outline for this design set beside the panel. This consists of a C shape, to which an X has been added. It represents half of the pattern that would be needed to construct this design. The third motif is a band of two strand interlace with winged ends. There are also two trial areas for this design, which consist essentially of bands of crossing diagonals lines, forming hatched patterns. In addition, there are two basic triquetra trials and an outline for a butterfly knot where the central area has been carved with two preliminary strokes, and then abandoned. Both motifs are characterised by their flexibility and they can be accommodated easily into irregular spaces. Neither can be dated with any precision, although the motif piece can be set on typological grounds into the eighth to ninth century. The motif of the interlace panel with winged ends recurs on the motif piece from Illaunloughan Island alongside triquetra motifs, and in a more elaborate form on a motif piece from Lagore, where most of the motifs are accompanied by incised trials, set beside them in each case. The Lagore motif piece has been dated on stylistic grounds to the eighth to early ninth century (White Marshall and Walsh 2005, figs 13 and 96; Hencken 1950, fig 95.324; Youngs 1989, 176). A radiocarbon date of AD 710 – 910 was recorded from context 418, one of the fills of the second phase of ditch F404 (Beta 220114); context 432 represented another of those fills. The motif piece would fit well into the earlier part of that date.

A fragment of cattle sized long bone (*401:19*) includes a deeply carved triquetra motif, bounded by a single framing line. Nearby are four deep rhomboidal depressions, cut with a blade but lacking any outlines, so that the form of the motif is indistinct, an unusual situation for a motif piece. The triangular triquetra utilised three initial point marks and has been skilfully cut in chip-carved technique with the aid of a sharp knife. The simple triquetra design, which cannot be closely dated, although it is worth noting that they can be seen in mid to late seventh century manuscript illumination, notably with Durham

Cathedral Library MS A.II.10 (Alexander 1978, fig 10); but they continue in use for a long period thereafter.

Four small fragments of bone (*685:1-3*), stemming from a cattle sized scapula, or possibly from an innominate bone, include three carved motifs. Two of the fragments fit together and include a butterfly interlace motif and a narrow interlace panel with winged terminals, motifs common to the other pieces within the assemblage. The butterfly interlace panel overlies in part an earlier incised interlace design. A fourth fragment includes another butterfly interlace panel. The style of these panels differs slightly – though not markedly – from that seen on the horse metatarsal motif piece (*432:3*). The motifs are larger and more curvilinear. They are likely to be of a similar, eighth to early ninth century date. The fragments came from the fill of the rectangular enclosure 15, on the southern side of enclosure 1.

In contrast to the series of motif pieces outlined above, the proximal end of a horse radius (*1291:1*) is covered in designs. The bone may originally have been broken to extract marrow and is similar in this respect to several unpublished examples from Dublin excavations, fractured about the same point and subsequently adapted as surfaces for carved and incised motifs. The motifs are all confined within the available space, confirming that they were added after the bone had been fractured. The anterior face forms the main surface with nine complete panels of designs, as well as several that are incomplete and four incised patterns. They include five triquetras, a rectangular panel of interlace with blunt ends, two interlace panels with winged terminals and a butterfly interlace panel. The interlace panel with blunt ends, formed from two opposed strands, is the only pattern not seen elsewhere in the Roestown 2 assemblage. Each of the motifs is placed at a different angle and they fill almost all of the space available. All of them are chip-carved. There are also two panels of unfinished chip-carved interlace patterns and two areas with very vague incised outlines, which have been abandoned. Of the numerous lightly inscribed lines, several represent initial elliptical outlines for triquetras. The medial face of the bone has two complete chip-carved panels of interlace, one with a winged terminals at both ends and the other with a similar terminal at one end and an angled terminal at the other, where the interlace has been fitted awkwardly into an irregular shape. A lightly inscribed circle is just visible above the stub of the ulna, with nicked knife marks indicating its centre. A narrow band formed of two lines bisects the circle and a few curved lines of interminate nature are also visible. This face also contains two rectangular interlace panels with winged terminals and a butterfly interlace panel; all are finished, chip-carved designs. They are set into a smoothed area of the bone, which has become polished from wear and handling and also includes a scorch mark, suggesting that it acted, in effect, as a resting place for a hot implement on the bone. Triquetras, butterfly interlace panels and two strand panels with blunt ends all appear on a motif piece from Lagore that utilises the distal end of a cattle radius (Hencken 1950, fig 95.324). Both the range of designs and their execution link this piece closely with the others from Roestown, and suggests that they are all broadly contemporary. This piece came from the fill of ditch 1290.

Another fragment of innominate bone (*412:1*) has two distinctly different sides. One includes at least three lightly incised, small triquetra patterns, as well as several curved lines and a sub-rectangular empty frame. Whilst some of the patterns are complete, others are little more than scratches into the bone. One triquetra has an indented area and this indicates the beginning of the process whereby they were transformed from incised patterns to carved designs. The other side of the bone has three complete, carved motifs. Two are complex butterfly interlace panels, set perpendicular to each other and rhomboidal in shape with three interlaced strands. The third pattern is an asymmetrical interlaced loop, a rare occurrence of this pattern within the Roestown 2 assemblage. The pattern can also be seen on a motif piece described below, as well as the cattle radius motif piece from Lagore (Hencken 1950, fig 95.324). Three asymmetric loops are joined in a continuous single strand pattern. The edge of the bone also includes further incised patterns, including small triquetras and curved loops resembling butterfly patterns. The piece came from one of the fills of the enclosure ditch F405. Another of the fills of the ditch provided a radiocarbon date of AD 530–650 (Beta 220115) but this particular motif piece is closely related to the remainder of the assemblage, as well as to a Lagore motif piece dated stylistically to the eighth to early ninth century; and that would be the preferred date for the piece.

The same disparity of dating occurs with the eighth of the motif pieces (*414:4*), which was recovered from another fill of the enclosure ditch F405. It consists of part of a horse scapula, including the glenoidal end and a section of the blade. The lower face includes a complete panel carved with a complex interlace design that has winged terminals, a variation on the pattern seen elsewhere in the remainder of the assemblage. Immediately beside it is a hatched grid that represents an early stage in its design, effectively the point at which it was sketched in linear form and turned from a rectangular pattern to one based on diamond shapes. These shapes formed the basis of the completed panel. A second motif of an asymmetrical looped interlace is unfinished and an incised section of the pattern forms part of the design, enclosed within a rectangular panel. Mistakes have been made in the placing of the loops and the panel was abandoned. Both sides of the bone are covered in lightly incised curved lines, densely applied to the flatter areas of the bone. The one complete panel and its unfinished neighbour have both been carved in the same style as the remainder of the assemblage.

Motif pieces are an Insular and more particularly an Irish phenomenon, seldom occurring outside of Ireland (O'Meadhra 1987, 78-9). They have often been related to metalwork, which they resemble closely. Comparisons can also be made with other media, although not all motifs are paralleled in all materials. Organic materials like textiles and leather were also richly decorated and may have required preparatory studies of motifs. There is a close relationship between the Roestown 2 motif pieces and those from nearby Lagore, particularly in terms of the cattle radius mentioned several times above, but also with other bone examples (Hencken 1950, fig 95.324; Youngs 1989, 176; O'Meadhra 1979, nº 119). The animal panels of that motif piece do not occur at Roestown 2 but it is the smaller details, in particular, that link them. Of particular note is the rear face of the motif piece, where the only designs are outlines of small-scale triquetras, precisely like those on the Roestown 2 examples. A largely overlooked cattle sized scapula motif piece from Lagore (O'Meadhra 1979, nº 121) bears a quadrilobate knot, as well as a basic incised outline for an interlace panel with winged terminals. It also has two opposed arcs with associated lines, as seen at Roestown 2 (*414:04*). A fragment of a smaller scapula from Lagore (O'Meadhra 1979, nº 122) includes a complete butterfly interlace panel, a common motif at Roestown 2. A further motif piece from Lagore (O'Meadhra 1979, nº 123) forms a close parallel for the horse radius piece from Roestown 2 (*1291:1*). Both are covered in a similar range of motifs, included simple and double line carved triquetras, butterfly interlace panels and rectangular interlace with blunt ends. Small incised triquetras occur on both pieces, as well as compass drawn circles. The latter are quite rare within the corpus of motifs, usually occurring elsewhere as an element of marigold patterns, and they are seen more often on stone than bone. Even the range of bones links the two sites, particularly when viewed against later assemblages. The obvious difference is that Roestown 2 is dominated by horse bones and includes innominate bone, a horse metatarsal, a horse radius, a fragment of cattle sized long bone and a horse scapula. At Lagore the range extends to two cattle radii, as well as cattle and sheep-sized scapulae. There is a common interest in the radius and the scapula, whilst the large assemblage of motif pieces from Dublin is dominated by rib bones and cattle sized long bones, with little use of scapulae or innominate bones.

Miscellaneous Bone Fragment

A fragment of a cattle sized radius midshaft (*131:4*) is smoothed and heavily polished on one side, much in the manner of a bone skate. Too little of the object remains to be certain about this identification, but the radius was one of the more common bones used for bone skates. Five of the twenty-two skates from Ipswich were shaped from cattle or horse radii and they were often used elsewhere, usually in smaller numbers than the metapodial bones, but occasionally as the dominant bone type (Riddler, Trzaska-Nartowski and Hatton forthcoming; Becker 1990, 20 and 22-3). The equatible Irish climate would not have allowed for too much skating on ice, but bone skates have been found in Dublin and would be expected elsewhere in early medieval Ireland (National Museum 1973, 39).

Catalogue

Combs

A008/002:100:29

A fragmentary antler end segment from a double-sided composite comb, fractured across a rivet hole. It has a straight back edge and rounded corners, and the teeth are graduated in a straight line on one side, and in an irregular curve on the other. One set of teeth survives and they show traces of considerable wear on both sides. The connecting plates extended almost to the last tooth on each side.

Length:	16.0 mm
Width:	42.2 mm
Thickness:	3.3 mm
Weight:	2.2g

A008/002:131:1

A fragment of an antler end segment from a double-sided composite comb, fractured across a rivet hole. None of the teeth now survive. They were graduated in a curve on each side towards the straight back edge of the segment and there are slight traces of wear on a few of the stubs. Between the ends of the connecting plates and the back edge there are three rows of single ring-and-dot motifs on one side and two rows on the other.

Length:	18.5 mm
Width:	24.4 mm
Thickness:	2.2 mm
Weight:	1.2g

A008/002:422:1-2

A fragment of a small single-sided composite comb with decorated connecting plates of narrow D-shaped section. The fragment includes three tooth segments, fastened to parts of two connecting plates by four copper alloy rivets, with traces of two further rivet holes. One of the connecting plates is heavily abraded and its outer surface has disappeared. The other has a flat baseline and a lightly curved back which tapers towards one end before widening again. It is decorated at the centre by paired crossing diagonal lines with small, single ring-and-dot motifs inbetween them. The upper part of each connecting plate has a framing line with closely spaced diagonal hatching above it, and the tops of the tooth segments include double ring-and-dot motifs in a continuous pattern. No teeth survive; there are traces of some wear on the remaining stubs, but there are no saw marks from the cutting of the teeth.

Length:	82.0 mm
Width:	11.9 mm
Thickness:	10.3 mm
Weight:	7.7g

A008/002:227:1-3

A fragment of a double-sided composite comb of antler, now in two parts, and including two tooth segments, fastened to sections of two connecting plates by an iron rivet, as well as a separate end segment. No teeth survive. The connecting plates are trapezoidal in section and are decorated with paired diagonal lines forming continuous chevron patterns. Saw marks from the cutting of the teeth are long and prominent on all four edges. The surviving part of the end segment has a straight back edge and is undecorated.

Length:	46.0 mm
Width:	21.7 mm
Thickness:	9.2 mm
Weight:	3.4g

A008/002:1321:1

A fragment of a single-sided composite comb with broad connecting plates of D-shaped section. The comb includes parts of two antler connecting plates, fastened to an end segment and eight tooth segments by seven iron rivets. The connecting plates have a lightly curved baseline and curved back and taper to either end. They are decorated at the centre with bands of diagonal and vertical saw incised lines in two registers, separated by a blank space and bounded by broad bands of vertical lines. Saw marks from the cutting of the teeth are prominent on both sides. The comb teeth taper evenly to blunt ends with traces of lateral wear on both sides.

Length:	172.5 mm
Width:	42.2 mm
Thickness:	14.0 mm
Weight:	30.1g

Antler and Bone Waste

A008/002:400:77

The distal end of an ovicaprid tibia, including the articular surface and part of the midshaft. The end of the midshaft has been roughly facetted by knife, so that it is lightly tapered on three of its sides; the bone is otherwise unworked.

Length:	102.5 mm
Width:	22.9 mm
Thickness:	18.3 mm
Weight:	22.5g

A008/002:100:86

An incomplete antler tooth segment blank, fractured across part of its surface. It has been sawn across the upper and lower edges and trimmed by knife along its length and across its broad surfaces, removing almost all of the upper surface tissue.

Length:	24.3 mm
Width:	55.2 mm
Thickness:	5.3 mm
Weight:	6.3g

Pins

A008/002:119:1

A fragmentary shaft from a bone pin, produced from a pig fibula. The shaft is circular in section and widens to a swollen middle area before tapering to a sharp point. Highly polished.

Length:	41.6 mm
Width:	5.0 mm
Thickness:	4.4 mm
Weight:	0.7g

A008/002:119:2

A small fragment of a bone shaft from a pin, almost certainly the upper part of pin 119:1, although it does not join directly to that shaft. Circular to oval in section, straight throughout and highly polished.

Length:	14.8 mm
Width:	3.5 mm
Thickness:	2.8 mm
Weight:	0.1g

A008/002:175:1

A complete bone or antler pin with a shaft of circular section surmounted by a globular head with a flat apex. The lower part of the shaft changes to a square section and tapers to a sharp point. Slightly degraded, with traces of polish.

Length:	63.8 mm
Width:	4.7 mm
Thickness:	3.9 mm
Weight:	1.0g

A008/002:414:3

A fragmentary bone pin, produced from a pig fibula, with a straight shaft of oval section. The pin has a lightly rounded and bevelled apex, with no discernible head, and tapers evenly along its length. It is lightly polished and has fractured across the shaft.

Length:	57.6 mm
Width:	4.8 mm
Thickness:	4.1 mm
Weight:	1.7g

A008/002:432:1

A fragment of bone pin manufacturing waste, cut from a cattle sized longbone and roughly facetted by knife to a circular section, with part of the upper surface of the bone still visible. Fractured at either end.

Length:	91.7 mm
Width:	7.8 mm
Thickness:	7.7 mm
Weight:	7.9g

A008/002:639:1

A fragment of an antler pin, with a straight shaft of circular section leading to a flattened, spatulate head with a lightly curved apex. The head is decorated on one side with diagonal hatching set within a panel and including a vertical line at the centre. The reverse includes cortile tissue and is undecorated. Polished throughout.

Length:	42.9 mm
Width:	12.0 mm
Thickness:	6.0 mm
Weight:	1.8g

Awls

A008/002:108:3

A complete bone awl, produced from a pig fibula with the head cut from the distal end of the bone. The head is lightly rounded with a flat apex, and the shaft is straight and oval in section, leading to a rounded point. The object is highly polished.

Length:	68.6 mm
Width:	11.8 mm
Thickness:	3.6 mm
Weight:	2.5g

A008/002:598:3

A near complete bone awl, produced from a pig fibula with the head cut from the distal end of the bone. The head has been trimmed to provide a concave apex and relatively narrow sides, which lead to a lightly curved shaft of oval section, tapering to a sharp point, for which the tip is missing. Polished throughout.

Length:	83.0 mm
Width:	8.0 mm
Thickness:	3.3 mm
Weight:	1.4g

A008/002:620:4

A fragmentary bone awl, produced from a pig fibula with the head cut from the distal end of the bone; the apex is now missing. The shaft is straight and of irregular section, and tapers to a rounded point with traces of lateral wear on it. Polished throughout.

Length:	90.1 mm
Width:	7.8 mm
Thickness:	3.6 mm
Weight:	2.4g

A008/002:1285:1

A complete bone awl, produced from a pig fibula with the head cut from the distal end of the bone. The head has not been modified at all, whilst the shaft is lightly curved and irregular in section, leading to a rounded point. Highly polished throughout.

Length:	87.6 mm
Width:	12.9 mm
Thickness:	4.1 mm
Weight:	2.0g

Needles

A008/002:107:2

A complete bone needle, produced from a pig fibula with the head cut from the distal end of the bone. The head has been lightly trimmed, and pierced by an oval knife-cut perforation. The shaft is straight and oval in section, and tapers to a rounded point. Polished throughout.

Length:	82.2 mm
Width:	11.5 mm
Thickness:	4.3 mm
Perforation Diameter:	3.1 to 3.4 mm
Weight:	1.9g

A008/002:119:4

A complete bone needle, produced from a pig fibula with the head cut from the distal end of the bone. The head has been trimmed to a flat apex with rounded corners, and is pierced by an oval knife-cut perforation. It leads to a thick, lightly curved shaft of oval section, which tapers to a sharp point. The needle is highly polished throughout.

Length:	88.0 mm
Width:	9.6 mm
Thickness:	4.7 mm
Perforation Diameter:	3.5 to 3.6mm
Weight:	2.6g

A008/002:160:2

A fragment of a bone needle, produced from a pig fibula with the head cut from the distal end of the bone. The head has a lightly rounded apex and is pierced by an oval knife-cut perforation. The shaft is straight and oval in section; the lower part is missing. Lightly polished throughout; now in two pieces.

Length:	54.9 mm
Width:	11.8 mm
Thickness:	3.4 mm
Perforation Diameter:	4.2 to 4.7mm
Weight:	1.1g

A008/002:175:5

A complete bone needle, produced from a pig fibula with the head cut from the distal end of the bone. The head has a flat apex and rounded corners, and is pierced by a sub-oval knife cut perforation. The shaft is straight and flattened oval in section, and tapers to a rounded point. Highly polished throughout.

Length:	85.6 mm
Width:	11.2 mm
Perforation Diameter:	4.2 to 4.4 mm
Thickness:	4.5 mm
Weight:	2.2g

A008/002:643:1

A near complete needle, lacking just a part of the tip. It has been produced from a pig fibula, with the head cut from the distal end of the bone. The head is rounded throughout and pierced by an oval knife cut perforation. The shaft is straight and oval in section, and tapers to a rounded point. Polished along its length.

Length:	89.3 mm
Width:	8.8 mm
Thickness:	3.0 mm
Weight:	2.1g

A008/002:689:1

An unfinished bone needle, produced from a pig fibula with the head cut from the distal end of the bone. The head is unmodified, except for an oval, knife cut perforation. The shaft has been partially trimmed but not completed, and retains some of the proximal end of the bone.

Length:	117.9 mm
Width:	13.0 mm
Thickness:	4.2 mm
Weight:	2.7g

Fragmentary Pins or Needles

A008/002:100:13

The shaft and point of a bone pin or needle, made from a pig fibula and highly polished. The shaft is straight, and oval in section, and tapers to a rounded point.

Length:	56.0 mm
Width:	3.5 mm
Thickness:	3.4 mm
Weight:	0.8g

A008/002:100:17

The shaft of a bone pin or needle, produced from a pig fibula and oval in section. It is straight and relatively narrow, and tapers over the lower section to a point, which is missing. Polished throughout.

Length:	60.5 mm
Width:	3.5 mm
Thickness:	3.3 mm
Weight:	0.8g

A008/002:100:85

A fragment of the lower part of the shaft and point of a bone pin or needle, produced from a pig fibula. The shaft is straight and flattened oval in section, and tapers to a rounded point. Slight abraded, with traces of polish.

Length:	48.5 mm
Width:	5.1 mm
Thickness:	3.5 mm
Weight:	0.7g

A008/002:109:1

A fragmentary shaft from a bone pin or needle, made from a pig fibula. The shaft is straight, and oval in section, and tapers towards a point, which is missing. Highly polished.

Length:	45.9 mm
Width:	5.5 mm
Thickness:	4.4 mm
Weight:	0.9g

A008/002:119:3

The lower part of the shaft and point of a bone pin or needle, produced from a pig fibula. The shaft is straight and oval in section, and tapers to a sharp point; it is polished throughout.

Length:	54.5 mm
Width:	4.5 mm
Thickness:	3.2 mm
Weight:	0.8g

A008/002:144:1

A fragment of a bone pin or needle, produced from a pig fibula. It has fractured across a perforation at the head. The shaft is straight and oval in section; it has fractured above the point. Highly polished throughout.

Length:	57.1 mm
Width:	7.8 mm
Thickness:	3.6 mm
Weight:	1.2g

A008/002:144:3

A fragment of a bone pin or needle, produced from a pig fibula. It has fractured at the base of the head, across a perforation. The shaft is straight and facetted by knife; it is oval in section and leads to a sharp point. Polished throughout.

Length:	74.8 mm
Width:	7.3 mm
Thickness:	3.0 mm
Weight:	0.9g

A008/002:162:3

A fragment of the shaft of a bone pin or needle, produced from a pig fibula. The shaft is oval in section and tapers lightly along its length; it is fractured at both ends. Polished throughout.

Length:	47.6 mm
Width:	5.9 mm
Thickness:	3.8 mm
Weight:	1.2g

A008/002:162:4

A fragment of the shaft of a bone pin or needle, produced from a pig fibula. The shaft has a flattened oval section and is lightly curved. It tapers over the lower part to a rounded point. Slightly degraded; polished throughout.

Length:	62.8 mm
Width:	5.5 mm
Thickness:	3.2 mm
Weight:	1.1g

A008/002:255:1

A small fragment of the lower part of the shaft and rounded point of a bone pin or needle, produced from a pig fibula. The shaft is oval in section and tapers evenly to the point; it is highly polished.

Length:	24.7 mm
Width:	3.9 mm
Thickness:	2.0 mm
Weight:	0.1g

A008/002:566:18

A fragment of the lower part of a shaft from a bone pin or needle, produced from a pig fibula. The shaft is straight and has a flattened oval section. It tapers evenly to a point, which is now missing, and is highly polished.

Length:	46.8 mm
Width:	4.9 mm
Thickness:	3.1 mm
Weight:	0.8g

A008/002:580:1

A fragment of the lower part of a shaft from a bone pin or needle, produced from a pig fibula. The shaft is straight and has a flattened oval section, tapering evenly to a point, with the tip missing. It is highly polished.

Length:	34.6 mm
Width:	5.0 mm
Thickness:	2.9 mm
Weight:	0.5g

Spearheads

A008/002:100:28

A fragment of a bone spearhead, cut from an ovicaprid tibia midshaft and now fractured at both ends. A lateral perforation passes through two sides of the bone close to the upper end, where there is a modern break. The shaft is triangular in section and tapers to a point, the fracture at this end occurred in antiquity. The surface has been polished.

Length:	69.3 mm
Width:	13.5 mm
Thickness:	14.3 mm
Weight:	6.9g

A008/002:161:3

A fragmentary section of bone midshaft, cut from the lower part of an ovicaprid tibia, and fractured at either end. At one end the bone has been roughly sliced, and is facetted by knife; it is otherwise unmodified and appears to be an unfinished spearhead.

Length:	91.1 mm
Width:	12.6 mm
Thickness:	10.7 mm
Weight:	7.7g

A008/002:491:4

A near complete bone spearhead, produced from the lower midshaft of an ovicaprid tibia. The distal end has been removed, so that the object is hollow. It has been perforated laterally just below the butt end and sliced diagonally across the posterior face to produce a broad blade, the tip of which is missing. Highly polished throughout.

Length:	101.4 mm
Width:	14.6 mm
Thickness:	11.9 mm
Weight:	12.7g

Antler and Bone Stamps

A008/002:160:1

A complete antler stamp, formed from an antler tine end that has been facetted to a pentagonal section, and hollowed throughout. The narrow end includes two incised diagonal lines, forming a cruciform pattern.

Length:	47.3 mm
Width:	16.5 mm
Thickness:	14.7 mm
Weight:	7.8g

A008/002:161:7

A complete bone stamp, cut from the lower part of the midshaft of a cattle-sized long bone and facetted to shape by knife. One end has an oval indentation, whilst the other has three short teeth, curved in section.

Length:	75.6 mm
Width:	10.8 mm
Thickness:	5.7 mm
Weight:	3.5g

Antler Handle

A008/002:235:3-6

A near complete antler handle, produced from a straight section of tine, sawn at either end and hollowed throughout. The outer surface has been smoothed and facetted by knife and there is iron staining towards one end.

Length:	118.1 mm
Width:	31.5 mm
Thickness:	25.0 mm
Weight:	58.9g

Motif Pieces

A008/002:401:19

A fragment of cattle sized long bone, fractured at both ends and split along its length, providing a lightly curved section of midshaft. It is decorated with a single deeply carved triquetra motif, with a second motif nearby, that appears to be unfinished.

Length:	92.6 mm
Width:	41.4 mm
Thickness:	12.3 mm
Weight:	20.3g

A008/002:401:21

A small fragment of a cattle sized innominate bone, fractured at both ends. One side of the bone includes three incised patterns of the same type, with narrow rectangular interlace designs ending in winged terminals. Two of the patterns are set together, with the third perpendicular to them, and largely missing from the fractured bone.

Length:	59.5 mm
Width:	39.5 mm
Thickness:	19.3 mm
Weight:	15.7g

A008/002:412:1

A section of cattle sized innominate bone, decorated on one side with three carved panels, two of complex three strand interlace in butterfly patterns and one with an asymmetric looped pattern. There are numerous lightly inscribed, curved lines along the edge of the fragment, some of which are small triquetras. The same patterns are repeated on the other side of the bone and one triquetra has been indented in part, the initial stage in transforming it into a carved design.

Length:	123.4 mm
Width:	99.5 mm
Thickness:	24.4 mm
Weight:	91.2g

A008/002:414:4

A fragmentary horse scapula, including the glenoidal end and part of the blade, decorated on the flatter side with two carved panels (one finished and the other unfinished), as well as numerous incised patterns, some for interlace designs, whilst others are little more than scratches. The other side includes large numbers of curved lines, both irregularly shaped circles and ovals crossed by diagonal lines, covering most of the available space.

Length:	169.5 mm
Width:	94.4 mm
Thickness:	37.4 mm
Weight:	106.5g

A008/002:432:3

The lower midshaft and distal end of a horse metatarsal, decorated with three complete carved interlace panels, as well as five areas with incised patterns. The incised patterns largely reflect the designs of the complete panels and are generally placed in close proximity to them. The bone is otherwise unworked.

Length:	165.0 mm
Width:	44.9 mm
Thickness:	35.1 mm
Weight:	115.7g

A008/002:535:1

A section of cattle sized innominate bone with a modern fracture at one end, decorated with a rectangular panel of open geometric interlace on one side and with a faint linear pattern on the other side, as well as a small triquetra pattern.

Length:	102.0 mm
Width:	59.9 mm
Thickness:	25.4 mm
Weight:	49.3g

A008/002:685:1-3

Four fragments of bone, two of which join together, and all of which stem from a single bone, probably a scapula, of cattle size. Three of the fragments of bone include motifs, two of which are butterfly interlace panels, whilst the third in a narrow rectangular panel of interlace with winged terminals. One of the butterfly interlace panels overlies an earlier incised interlace panel, set at a different angle.

Length:	52.3 mm
Width:	25.0 mm
Thickness:	10.2 mm
Weight:	14.6g

A008/002:1291:1

The proximal end of a horse radius, including the articular surface and the upper part of the midshaft, as well as a section of the ulna. It is decorated by a series of sixteen interlace panels, as well as an area above the ulna, where a faint circle has been inscribed. There are also numerous scratches and smaller areas of lightly inscribed patterning. An area on the medial face, below the articulation, has been smoothed and is lightly scorched. It may have been used as a rest for hot metal implements.

Length:	148.5 mm
Width:	80.1 mm
Thickness:	46.1 mm
Weight:	128.9g

Miscellaneous Bone Fragment

A008/002:131:4

A fragment of a radius midshaft from a cow or horse, fractured at both ends and with one side smoothed and highly polished. The bone is otherwise unworked.

Length:	60.8 mm
Width:	24.3 mm
Thickness:	18.7 mm
Weight:	12.3g

Late Post-Medieval Butchered Bone

A008/002:400:80
A complete section of a pig radius midshaft, sawn neatly at both ends and representing animal butchery rather than bone working.

Length:	16.2 mm
Width:	23.3 mm
Thickness:	16.8 mm
Weight:	6.3g

A008/002:400:36

A complete section of the midshaft of a pig tibia, sawn at both ends and otherwise unmodified. Butchery rather than bone working.

Length:	67.1 mm
Width:	20.7 mm
Thickness:	16.9 mm
Weight:	21.1g

Unworked Bone

A008/002:110:2

A small fragment of one edge of a piece of rib bone, of fairly small size, possibly from a sheep-sized animal. Fractured at both ends and not worked.

Length:	29.6 mm
Width:	8.1 mm
Thickness:	2.4 mm
Weight:	0.6g

A008/002:211:1-2

Two conjoining foetal pig metapodial bones, unfused at both ends. One is complete and the other lacks one of its articulations. Not worked.

Length:	51.3 mm
Width:	7.2 mm
Thickness:	5.5 mm
Weight:	0.8g

A008/002:580:2

A length of ossified animal cartilage, oval in section and hollow throughout, fractured at one end.

Length:	129.7 mm
Width:	11.4 mm
Thickness:	8.3 mm
Weight:	6.4g

Bibliography

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APPENDIX 16a: *Worked stone by Anne Carey*

Six stones from Roestown 2 were examined as part of stone tool specialist analysis. They comprised one anvil, one possible rotary quern, one possible gaming piece, one whetstone, one pounder and one piece of perforated slate.

Anvils

The uniform feature defining an anvil is a roughened convex or flat working surface, displaying pockmarks and fractures, attained as a result of having been struck with another implement. The stones were rarely shaped prior to use and a variety of sizes of stone are usually encountered in excavation contexts. They can function in domestic use or in the ore benefication process, where ore is extracted from the host rock prior to smelting. Most stone tools are poor chronological indicators and they have not been afforded widespread detailed study.

A008/002:175:6

Roughly triangular shaped worked stone, possible anvil. The base and sides of the stone are rough and uneven. The working surface is irregular, with several areas of pecking, which localized into two main areas on this surface and not subject to grinding wear. The most intense area of pecking occurs in the centre of the stone, which is concave and the areas measure L. 110mm x Wth 100mm. The second area of pecking is near the top of the stone, measuring 90mm x 50mm. The rest of the surface is irregular without evidence of wear, though the surface is partly scored with lightly incised lines, though not of sufficient depth or number to indicate a reuse as a whet stone. Dimensions: L. 410mm, Wth 270mm, Th. 90mm.

Gaming Stones

It is clear from a review of the literature that board games have played throughout the world and from prehistoric to modern times. Gaming stones have not been the subject of a detailed study in Ireland or Britain but they have been extensively studied by Professor Stuart Swiny from the Aegean to the Middle East (1986 The Kent State University Expedition to Episkopi *Phaneromeni* in *Studies in Mediterranean Archaeology* Vol. LXXIV: 2, Part 2, pp33-64) and such is their profusion that they appear on most of the finds inventories from Bronze Age settlement sites in Cyprus and elsewhere in the region. The gaming stones consist of flat stones consisting of parallel rows of cups or squares, though there are numerous examples of fixed stones with similar markings. The games would then have been played with pebbles, seeds or shells. It is not possible to definitively classify a pebble as a gaming piece in the absence of other evidence but small smoothed pebbles may well have had this function.

Roestown 2 A008/002:654:1

Small, smoothed flat pebble, possible gaming piece. Dimensions: L 30.8mm, Wth 20.2mm, Th 3mm.

Whet Stones

Whetstones are hard, medium or fine-grained stones used for sharpening or honing tools. A distinction is sometimes made between a whetstone and a hone, on the basis that a hone is used for fine sharpening and they are almost exclusively fine-grained stones. They can also be perforated to allow them to be hung on a belt. Though the occurrence on sites in Ireland of whet stones and hones has not been the subject of much study, they have been mentioned in finds inventories over a wide period and sharpening tools in general can be numerous on medieval sites in particular. The geology of the stone is important in the choice of a stone, though re-used roof tiles have also been utilised as whetstones, and portability of the stone was probably also a factor.

Roestown 2 A008/002:400:58

Possible whetstone. Roughly d-shaped stone, unshaped apart from incised lines along the long edge. The incisions comprise eight lines along the short axis of the edge (max L 20.2mm, min L 10.3mm) and a single deeply incised line in the centre of the edge (L 70mm), cutting through the eight shorter lines. Dimensions: L 80mm, Wth 40mm, Th 20.6mm.

Pounders

Pounders are characterized by the presence of a pitted work surface marked with small pockmarks at one or both ends of a roughly oval stone. Pounders were hand held and are often cobble-sized stones, weather worn or water rolled and not specifically shaped to facilitate use. They can function in domestic use or in the ore benefication process, where ore is extracted from the host rock prior to smelting. Most stone tools are poor chronological indicators and they have not been afforded widespread detailed study.

Roestown 2 A008/002:570:1

Pounder. Roughly d shaped rolled pebble, smooth and regular all over. There is a small area with attrition marks on one edge (L 30mm, Wth 1mm). Dimensions: L 90mm, Wth 70.5mm, Th 40mm.

Roofing Slate

Roestown 2 A008/002:513:3

Roughly rectangular shaped slate, unworked on all sides apart from a perforation (Diameter 10mm) near the top of the object. Dimensions: L 50mm, Wth 30.5mm, Th 10mm.

Rotary Querns

Rotary querns are generally represented in the find inventories of medieval sites in Ireland and throughout Europe. In terms of their occurrence and use in Ireland, the rotary quern was introduced from the first or second century A.D. (Caulfield 1969, 61).

Some work that has been carried out on rotary quernstones in Ireland (Bennett and Elton 1898, Curwen 1937, Caulfield 1966 and 1969) and the results are valuable especially in their dating and typological discussions. In terms of technological innovation, the rotary quern represents a significant departure from earlier grain processing methods. Previously a to- and -fro grinding motion was employed, where the grain was placed on a broad lower stone and crushed, and ground to flour by a smaller hand held rubbing stone. The most common implement employed for carrying out this process was the saddle quern, known from agricultural communities as early as 7000 B.C. in the Near East. The introduction in the Iron Age of the rotary quern, with its revolving upper stone, was to have far reaching implications for the processing of grain, although the adoption of the new technology did not see the immediate dispatch of the less advanced quern. They were to work simultaneously, sometimes on the same sites, as at Cahercommaun and Ballinderry 2 for a short period (Connolly 1994, 32).

The rotary principle, employed in both the rotary quern and the mill, involves the crushing of grain between two circular stones, with the upper one revolving upon the lower. The upper stone was perforated centrally and it was through a spindle (originally wooden but later with metal components), set in the lower stone and fitted into the central perforation of the upper stone, that the mechanism was securely linked. Much work has been done on the classification of rotary querns. Three main types of rotary quern have been identified (Caulfield 1966). These are beehive, disc and pot querns.

Roestown 2 A008/002:400:60

Fragment of worked stone, only the dressed upper surface and one side of which survives. The working surface and the remaining sides are fractured and a more detailed classification cannot be made than either the upper stone of a rotary quern or a rubbing stone. Dimensions: L 60mm, Wth 40.5mm, Th 30mm.

APPENDIX 16b: *Stone objects by Jon Stirland*

Project	Roestown 2, M3 Stone Finds Description Report
Archaeologist	Jon Stirland
Site	Roestown 2
Project Start Date	20 January 2008
Report Date	20 January 2008
Job No	04_01

1.Introduction

This report provided descriptions 10 stone objects found during the excavation of the Roestown 2 Site along the route of the M3. The objects consist of:

- One unfinished broken Loom weight (A008/002:620:2),
- a stone ingot mound (A008/002:432:2),
- Three stone hones (A008/002:175: 7), (A008/002:108: 2) & A008/002:437:2
- a stone lamp (A008/002:2)
- one none archaeological objects a rounded river rolled stone (A008/002/401/17)
- Two fragments of gaming boards (A008/002:151:2) and (A008/002:108:1)
- One possible rubbing stone (A008/002:400:73)
- Stone Ball (Possible natural river rolled peddle) (A008/002:401:17)

The many of the stone objects within this assemblage have a limited diagnostic nature, which inhibits any accurate dating. With the exception of the two fragments of gaming boards (A008/002:151:2) and (A008/002:108:1) and the stone ingot mound (A008/002:432:2) which strongly suggest an early medieval date. The inscribed pattern found on both fragments of gaming board appears to suggest that both fragments of stones contains a pattern of inscribed squares possibly associated the game Tafl (pronounced TAH-bl) dates back to before 400 AD, and was played throughout Scandinavia, Iceland, Germany, England, Wales and Ireland. It remained popular until the C17th AD, when it was gradually supplanted by chess. The word tafl is probably derived from the Latin tabula, which also referred to a board game. The game was also sometimes called hnefatafl, meaning 'king's table'. Historical -tafl boards could have anywhere from 49 (7 X 7) to 324 (18 X 18) cells or squares. The squares were sometimes checkered, while other boards had only the centre and corner squares distinguished. Some tafl boards placed the pieces on the intersections of the lines rather than in the squares themselves. Others had holes for pegged pieces to be placed in.

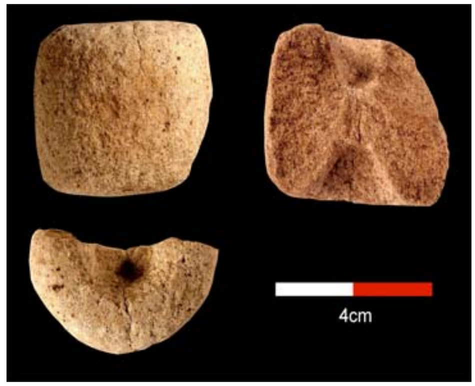
2. Methodology

The methodology used to assess the nature of these stone objects was stylistic relative dating and a literature review comparing and contrasting other example from previous archaeological excavations and publications.

3. List of Stone Finds

Site	Find No	Feature	Description
Roestown 2	A008/002:620:2	620	Broken Loom Weight
Roestown 2	A008/002:432:2	432	Stone Ingot Mound
Roestown 2	A008/002:175:7	175	Hone Stone
Roestown 2	A008/002:108:2	108	Hone Stone
Roestown 2	A008/002:437:2	437	Hone Stone
Roestown 2	A008/002:162:2	162	Stone Lamp
Roestown 2	A008/002:401:17	401	Stone Ball Possible natural river rolled pebble
Roestown 2	A008/002:151:2	151	Fragment of Gaming Broad
Roestown 2	A008/002:108:1	108	Fragment of Gaming Broad
Roestown 2	A008/002:400:73	400	Rubbing Stone

4. Catalogue

Project	04_01 M3 Contract 2	
Site	Roestown 2	
Finds No	A008/002:620:2	
Type	Broken Loom Weight	**A008/002:620:2 Broken Loom Weight** 
Stone Type	Sandstone	
Weight	53g	
Shape	Broken, slightly cylindrical	
Description	Part of a cylindrical loom weight. W: 42mm L: 36mm T: 21mm. It outside surface has been shaped into a cylindrical tube with rounded edges. It broken internal surface contains two u-shaped depression formed during an attempt to form a hole through the centre of the object.	
Interpretation	This loom weight appears to have been broken during its production.	

<table>
<tr><td>Project</td><td colspan="2">04_01 M3 Contract 2</td></tr>
<tr><td>Site</td><td colspan="2">Roestown 2</td></tr>
<tr><td>Finds No</td><td colspan="2">A008/002:432:2</td></tr>
<tr><td>Type</td><td>Stone ingot mould</td><td rowspan="6">A008/002:432:2 Stone ingot mould

</td></tr>
<tr><td>Stone Type</td><td>Sandstone</td></tr>
<tr><td>Weight</td><td>320g</td></tr>
<tr><td>Shape</td><td>Irregular slightly trapezoidal</td></tr>
<tr><td>Description</td><td>Stone ingot mould
L: 84mm
W: 64mm
T: 25mm

It consists of one worked surface containing two linear parallel moulds with a width of 9mm each and a length of 69mm and 57mm.

The stones worked surface also contains evidence of third unfinished mould located directly below the longer of the two finished moulds.

This trapezoidal shaped slab of sand stone has generally irregular sides that possibly suggest it originally form part of a larger slab that may have contained other ingot mould</td></tr>
<tr><td>Interpretation</td><td>Stone ingot mould used in the casting of metal ingots of two different sizes. The discolouration of its surfaces suggests it has been used.</td></tr>
</table>

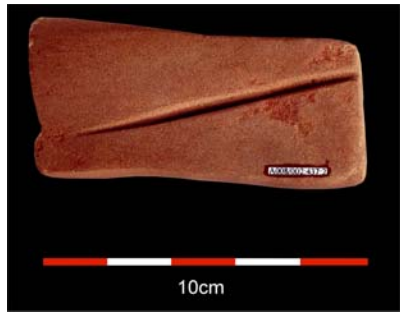
Project	04_01 M3 Contract 2
Site	Roestown 2
Finds No	A008/002:108:2
Type	Hone stone
Stone Type	Limestone
Weight	51g
Shape	Irregular
Description	Generally this irregular shaped slab of limestone contains very little evidence of general use. Its two main surfaces are covered in very shallow striations with no visible patterns. Both its main surfaces appear slight polished suggesting uses. L: 85mm W: 59mm D: 19mm.
Interpretation	Hone stone possibly used as an abrasive surface.

A008/002:108:2 Hone stone

Project	04_01 M3 Contract 2	
Site	Roestown 2	
Finds No	A008/002:175:7	
Type	Hone stone	**A008/002:175:7 Hone Stone** 
Stone Type	Quartz Mica Schist	
Weight	137m	
Shape	Elongated with rounded edges	
Description	All of this objects surface shows clear signs of being used. It edges are rounded and smooth and both its mains surfaces are polished in appearance. The object contains no other distinguishing features. L: 133mm W: 39mm T: 11mm.	
Interpretation	Hone stone used as an abrasive surface.	

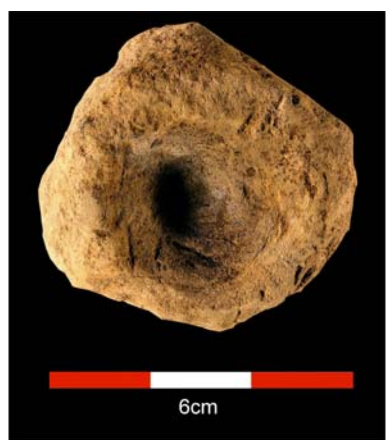
Project	04_01 M3 Contract 2
Site	Roestown 2
Finds No	A008/002:437:2
Type	Hone stone
Stone Type	Fine Sandstone
Weight	274g
Shape	Rectangular
Description	This hone stone has evidence for use on all its surfaces. Its two main surfaces contain deep pin-groves approximately 56mm long and 80mm long. L: 93mm, W: 40mm D: 26mm.
Interpretation	Hone stone used for producing point on pins, needles and other object.

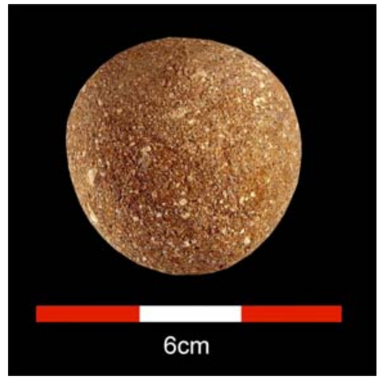
A008/002:437:2 Hone stone



Project	04_01 M3 Contract 2
Site	Roestown 2
Finds No	A008/002:162:2
Type	Stone lamp
Stone Type	Mudstone
Weight	43g
Shape	Rounded
Description	This rounded piece of mudstone contains a man made depression in one of its two surfaces. This depression as a diameter of 34mm and a depth of 12mm. There is slight evidence of discolouration located within the depression suggesting burning. L: 54mm W: 48mm D: 22mm.
Interpretation	Stone lamp.

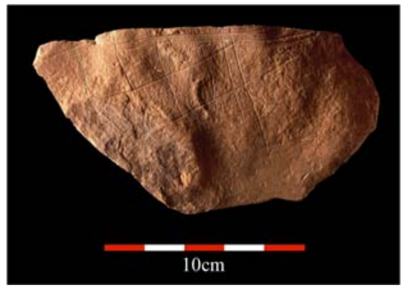
A008/002:162:2 Stone lamp



<table>
<tr><td>Project</td><td colspan="2">04_01 M3 Contract 2</td></tr>
<tr><td>Site</td><td colspan="2">Roestown 2</td></tr>
<tr><td>Finds No</td><td colspan="2">A008/ 002:401:17</td></tr>
<tr><td>Type</td><td>Stone ball, Possibly a natural river rolled pebble</td><td rowspan="7">A008/002:401:17 Stone ball (natural river rolled pebble?)

</td></tr>
<tr><td>Stone Type</td><td>Sandstone</td></tr>
<tr><td>Weight</td><td>95g</td></tr>
<tr><td>Shape</td><td>Round</td></tr>
<tr><td>Description</td><td>There is no visual evidence upon the surface of this stone to suggest use or wear. Its general appearance suggests it is a river rolled pebble.</td></tr>
<tr><td>Interpretation</td><td>Naturally occurring river rolled pebble.</td></tr>
</table>

<table>
<tr><td>Project</td><td colspan="2">04_01 M3 Contract 2</td></tr>
<tr><td>Site</td><td colspan="2">Roestown 2</td></tr>
<tr><td>Finds No</td><td colspan="2">A008/002:151:2</td></tr>
<tr><td>Type</td><td>Fragment of gaming board</td><td rowspan="6">A008/002:151: 2 Fragment of gaming board

</td></tr>
<tr><td>Stone Type</td><td>Limestone</td></tr>
<tr><td>Weight</td><td>161g</td></tr>
<tr><td>Shape</td><td>Irregular</td></tr>
<tr><td>Description</td><td>This irregular shaped slab of limestone contains an inscribed grid of squares on one of its surfaces, of which only a 5 x 5 area can now be seen, consisting of approx. 25 squares. It appears the grid pattern was originally more extensive across the slabs original surface.
L: 141mm
W: 140mm
D: 49mm.</td></tr>
<tr><td>Interpretation</td><td>Fragment of gaming board (See description in introduction).</td></tr>
</table>

Project	04_01 M3 Contract 2	
Site	Roestown 2	
Finds No	A008/002:108: 1	
Type	Fragment of gaming board	**A008/002:108: 1 Fragment of gaming board** 
Stone Type	Limestone	
Weight	299g	
Shape	Irregular	
Description	This small irregular shaped fragment of a limestone slab, containing an inscribed grid pattern of squares of which 13 full squares can still be seen. Located upon the same face as the grad pattern is a curving line of four parallel lines over which the grid pattern has been inscribed. L: 155mm W: 84mm D: 11mm.	
Interpretation	Fragment of gaming board (See description within introduction).	

Project	04_01 M3 Contract 2	
Site	Roestown 2	
Finds No	A008/002:400:73	
Type	Rubbing stone	**A008/002:400:73 Rubbing stone** 
Stone Type	Mudstone	
Weight	424g	
Shape	Rounded / Oval	
Description	Naturally occurring river rolled pebble with slight evidence of wear/ use upon one of its surfaces. L: 114mm W: 72mm D: 39mm.	
Interpretation	This naturally occurring pebble appears to have been used as an abrasive surface.	

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APPENDIX 16c: *Stone spindle whorl: Richard O'Brien*

General Introduction

Hand spinning of fibres was the earliest method to make yarn for clothing until the invention of the spinning wheel in the Middle Ages. The hand spinning was generally done using a spindle, usually of wood, weighted at one end with a perforated object giving balance and equilibrium during spinning. This weight is classed as the spindle whorl. This method of hand spinning is still in use today in under-developed countries. However spinning can be done without using a whorl; a thin relatively straight branch with a bulbous end can serve the purpose adequately.

As hand spinning was such an integral part of everyday life any materials to hand were utilised by the spinner. Raw materials as diverse as human femur ends, lead, wood, animal bone, antler, clay, Samian ware, jet, lignite, amber, bronze, iron, stone (generally sandstone but occasionally mudstone, limestone and slate), glass, coal and even dried cow dung have been used as whorls. Spindle whorls were also used in necklaces with many examples known from Africa: thus the same object served a dual purpose.

Irish Spindle Whorl Evidence

In Ireland early prehistoric whorls are rare as the raw materials were probably organic, and thus generally do not survive, although in the last ten years more examples have been found in response to increased excavation activity. It is likely than Neolithic people spun wool and other fibres into thread for clothing, but no definitive examples exist.

Disc-shaped whorls found in association with houses / domestic contexts include a highly decorated whorl from Killemly Co. Tipperary (E2126:15) firmly dated to the Middle Bronze Age 1256-1012 cal BC (UB-7205) (O'Brien 2009c) and an undecorated whorl from a round house in Tober Co. Offaly (Walsh 2007, 15 [illustrated]).

A number of possible Iron Age spindle whorls are known: one with hour-glass perforation was found from a hut-circle site dated to the Early Iron Age from Scrabo, Co. Down (Owens 1970). A bone whorl was also found on an earthwork dated to the Late Iron Age / Early Christian period in Grannagh, Co. Galway (Rynne 1971).

It is from the Early Medieval and Hiberno-Norse periods that the vast majority of spindle whorls are recorded with important assemblages from Garryduff ringfort Co. Cork and Lagore crannog Co. Meath. A number of lead examples have been recorded from Woodstown, Co. Waterford (O'Brien 2004). The stone varieties naturally survive better, but on some Early Medieval sites bone spindle whorls predominate. The classic example is Cahercommaun Stone Fort in Co. Clare where Hencken, excavating in 1934, defined a 4-stage classification based on sectional profiles; disc-shaped, hemispherical, cylindrical and bowl-shaped (Hencken 1938, Fig. 27, 43). The latter varieties invariably are made from cut-ends of femurs or humerii with the bowl-shaped whorls representing lathe-turned and finely decorated examples. Recently published whorls include a roughly cylindrical-shaped, possibly lathe-turned example made of antler burr, decorated on the edge, and a disc-shaped stone example, both from the 8th – 10th century dated enclosure site of Killickaweeny 1 Co. Kildare (Carlin et al 2008, Fig 3.10, 48).

Irish Spindle Whorl classification[23]

The primary consideration for spindle whorls was weight and this must be known for each object. Generally a weight range lying between 7.8g and probably not exceeding 500g, depending on the type of yarn desired, and the source fibre, is the acceptable range for spindle whorls. Often the lighter the whorl used the finer the yarn was produced. A diameter range between 34 – 134mm is standard with most whorls measuring less than 70mm in diameter. A diameter less than 30mm was probably too small to have allowed the whorl turn clock-wise during the spinning movement. A thickness range between 2.8mm – 24.3mm is acceptable - thickness does not have to be completely uniform across the surface. The thicker the whorl at the centre the better the grip on the spindle during rotation, making the spinning movements smoother. The overall shape is generally circular to allow the correct clock-wise movement on the spindle: once there is sufficient balance across the whorl a perfect circular shape is not a prerequisite for good whorl functionality. The sectional profile largely depends on the material used, so stone generally is disc-shaped, bone being hemispherical. A central or almost central perforation with a profile not overtly slanted was desirable, with a perforation size between 7.5 – 33.9mm in diameter. A diameter below 4mm is probably too thin to have gripped the spindle sufficiently to spin even the lightest of fibre. Such objects with narrow perforations were probably beads: conversely a large perforation relative to the overall whorl size meant the necessity of a thicker spindle, contributing to less weight where it was needed most.

Decoration should not be used to date whorls as the common concentric circles around the perforation are the simplest and most obvious way to decorate such objects: examples are found from the Bronze Age right through to the medieval era. The bowl-shaped examples from Cahercommaun, Co. Clare included perfectly concentric circles with ring-and-dot motifs but these are rarities. Type and degree of decoration was down to the spinner's preference so variation is to be expected.

[23] Based on Masters Thesis 1994 undertaken by the author

Roestown 2: A008/002:473:4

Description

The find came from a fill of the re-cut of the enclosure ditch, and was found in an assemblage of Early Medieval material. It is circular in plan and disc-shaped in section. The stone is dark grained shale and is undecorated - what appears to be 2 incomplete concentric lines along one edge are these bedding planes. Both faces are rough and uneven due to the bedding planes fragmenting. It measures 33-34mm in diameter, 8-9mm in thickness, and weighs 12g. The perforation is central, drilled from one face and measures 8mm diameter.

Discussion

The Roestown 2 object is an undecorated whorl of the disc-shaped variety. Disc-shaped whorls are recorded from the Middle Bronze Age onwards and represent the commonest form of stone whorls, being easy to manufacture. In the Early Medieval period stone disc-shaped whorls are frequently found in ringforts, often in the ditch fills. Recent stone disc-shaped examples include a shale whorl from the ditch of a multi-phase enclosure site in Kilnacranna, Nenagh Co. Tipperary, E3266 (O'Brien 2009a), and a sandstone whorl from the ditch of a uni-vallate enclosure in Hughes-Lot East, Cashel Co. Tipperary, 03E0807, (O'Brien 2009b).

In comparison to stone disc-shaped whorls from Garryduff I ringfort Co. Cork, Roestown 2 closely resembles examples (416(b)) and (530) in terms of weight, size, thickness and perforation details (O'Brien 1994, 211-4, Plate 7.2, Table 30; O'Kelly 1962).

Conclusion

The Roestown 2 object is a classic undecorated whorl of the disc-shaped variety. Although disc-shaped whorls have been dated from the Middle Bronze Age the contextual information here clearly points to a date from the Early Medieval period. The Roestown 2 whorl is smaller, slightly thinner and lighter than the circular disc-shaped whorls from Castlefarm 1 (A017/001:208:6 & A017/001:224:1). It can however be closely paralleled with two whorls from Garryduff I ringfort Co. Cork.

A comparison with the ten stone whorls from the nearby Lagore Crannog Co. Meath would be a beneficial study for further analysis of the Roestown 2b whorl.

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APPENDIX 17: *Glass Beads by Cecily Cropper*

The Beads

by Cecily Cropper

The assemblage comprised a total of 34 beads from 12 individual sites along the M3. Thirty of these are glass, 2 are of faience and one each is of bone and stone. A final object is a possible bead fragment of amber.

Classification

Within the glass, both monochrome and polychrome beads are represented including annular, globular, barrel, segmented, cable and dumb-bell beads. This report has drawn upon various classifications including those proposed by Beck (1927), Guido (1978) and Hirst (2000). In the bead inventory within this report, dimensions include L = Length, D = Diameter, PD = Perforation Diameter. The amber bead includes W = Width and Dp = Depth.

Manufacture

This report does not go into great detail on individual bead manufacture, as much is already written on methods of manufacture on beads from archaeological contexts, such as Guido (1978) and Küçükerman (1988). Further invaluable reference can also be taken from modern-day bead makers such as Adams (2005). All perforated beads, unless otherwise stated, have been wound, that is manufactured by winding molten glass around a thin metal rod (or mandrel) which is then heated to fuse and soften joins and irregularities within the bead. The glass for the dumb-bell beads has been gathered, where a gob of molten glass has been picked up on the end of a rod. Whilst hot, the molten glass has then been cinched in the middle to form the two lobes. In the case of the blue toggle from Roestown 2, the cracking-off point at the end of one lobe is still visible, where it has been knocked off from the rod in order to cool.

Monochrome Translucent Blue

Blue beads came predominantly from both Castlefarm 1 and Roestown 2 with one also from Ardsallagh 2, ranging in tone from pale blue-tinted to appearing opaque in reflected light. Blue annular and globular beads are renowned for being ubiquitous and long-lived, certainly from the Iron Age onwards, and thus not a great deal of help for dating. This infamy is caused no doubt in part, by the fact that blue glass, in most cases coloured by cobalt, is the easiest glass to make (Küçükerman, 1988, 81). It is likely however, that a proportion of the beads from the M3 excavations are of an Iron Age date, notably the one from Ardsallagh 2 and perhaps the darker blue examples from both Castlefarm 1 and Roestown 2. Guido (2000, 175) recognised that whilst this type of bead is not closely datable overall, a more significant number of Irish examples tend to come from sites or contexts dating from the 7th to the 10th centuries AD. This latter statement is well supported by finds of similar cobalt blue beads from a long list of sites including but certainly not limited to: Lough Gur, Co. Limerick (O Riordain, 1949), Lough Faughan Crannog, Co. Down (Collins, 1955), Garryduff, Co Cork (O'Kelly, 1963) and Feltrim Hill, Co. Dublin (Hartnett & Eogan, 1964).

The two barrel beads from Roestown 2 are both distinctive having the same paler grey-blue colour with a lot of small internal bubbles and a high gloss on the external surface. One (492:01) has the faint impression of a spiral pattern on opposing sides, as if a coloured glass had been applied there but perhaps not fused, possibly due to non-compatible coefficients of expansion. The pattern and general barrel shape is similar to a bead from Garryduff I, Co. Cork (O'Kelly, 1963, p.69, Fig.13, no.282) that is light blue with applied opaque white spirals on opposing sides and with an early medieval date. Both these beads from Roestown 2 have some residue on the perforation surface, most likely remnants of a ceramic-based bead release or former used to facilitate removal of a bead from the metal rod.

Blue segmented glass beads are also relatively common on early medieval sites in Ireland, even those comprising four units that have been recovered along with two and three segmented beads also, including Lough Gur (O Riordain, 1949, p.90, Fig.19, no.91), Lagore Crannog (Hencken, 1950, p.141; Fig.67, nos.51, 680, p.139), Garryduff (O'Kelly, 1963, p.69, Fig.13, nos. 484,485; p.76) and Deer Parks Farm, Co. Antrim (Hamlin & Lynn, 1988, p.47, Fig.56).

Castlefarm 1

1 A017/001:562:01	Translucent green-blue tinted, globular. L 5.5-7 mm; D 9 mm; PD 3.5-4 mm
2 A017/001:319:01	Translucent dark blue, annular. L 4.5-5.5 mm; D 7.5 mm; PD 3.5mm
3 A017/001:208:11	Translucent mid-blue, globular. l 4-6 mm; D 7.5 mm; PD 4-4.5 mm
4 A017/001:208:12	Translucent mid-blue annular. L 3.5-4 mm; D 7 mm; PD 4.5 mm

Ardsallagh 2

5 A008/034:4:01	Translucent dark blue, globular. l 5.5-6.5 mm; D 7.5 mm; PD 3.5-4 mm.

Roestown 2

6 A008/002:400:70	Translucent dark blue, globular. l 3.5-4 mm; D 6.5 mm; PD 3.75 mm.
7 A008/002:1081:01	Translucent dark blue, globular. L 5-5.5 mm; D 9 mm; PD 4-4.5 mm.
8 A008/002:492:01	Translucent light grey-blue, barrel. Faint spiral pattern on two sides. L 9 mm; D 8 mm; PD 4 mm.

9 A008/002:1182:01 Translucent light grey-blue, barrel. Reddish-brown residue on perforation surface. L 9 mm; D 9.5 mm; PD 6 mm.

10 A008/002:400:10 Translucent mid-blue, segmented. Comprising four segments. L 14 mm; D 9 mm; PD 4.5-5 mm.

Monochrome Opaque Yellow

The two opaque yellow beads both come from Roestown 2. The partial but diagnostic bead is an example of Guido's Class 8 (1978, 73-6), the main characteristics being the flattened perforation surfaces, and also the 'dull egg-yellow colour'. In Ireland, examples from a burial at Loughey, Donaghadee, Co. Down were found in association with a Meare Lake spiral bead dating from the 3rd to 2nd centuries BC and a fibula dating to the mid-1st century BC (*ibid*., 74-5). Other examples however, concentrating in Somerset and Moray in Scotland give a broader general date range for this bead type of the 3rd to 2nd centuries BC until about AD 50 (*ibid*., 76). The second opaque yellow (A008/002:566:03) is not illustrated and is too fragmentary to be diagnostic. However, it is more likely to be globular bead rather than an annular.

Roestown 2

11 A008/002:400:69 Partial opaque yellow annular bead, flattened perforation sides. L 2.5 mm; D 8 mm; PD 3 mm. Note: A008/002:566:03 Partial opaque yellow bead. *Not illustrated*

Cable (both monochrome and polychrome)

There are 5 beads made with one, two and three twisted and flattened cables. Three of these come from Roestown 2, and one each from Castlefarm 1 and Baronstown 1. Two further more conventionally-shaped cable beads come from Ardsallagh 5 and Dowdstown 2. The tightly twisted rilled bead (491:03) from Roestown can be compared to a similar example from the Viking burial assemblage from Kilmainham, Co. Dublin. This is labelled 'g' in Armstrong's illustration (Armstrong, 1921, p.72, Fig.1), a 'D'-shaped bead that Guido, in a more recent analysis of this particular assemblage, likens to contemporary metal examples, particularly from Scandinavia, but also copied from examples such as the bronze sword mounting from Lisnacrogher, Co. Antrim of a probable 9th century date (1985, 101).

491:05 is a roughly twisted single cable that is pretty much a flattened version of 491:03, though not as finely twisted. The join is still visible where the ends have fused, often the case with these types of folded beads (Guido, 1978, 8). It is worth noting that both of these beads, 491:03 and 491:05, were found immediately adjacent to each other and may possibly then have been closely associated with each other prior to deposition.

The three remaining beads (Roestown 2, Castlefarm 1 and Baronstown 1) consist of multiple cables fused together and also have in common the remnants of an opaque yellow vitreous glass or paste present all around the cables and in between twists. The Baronstown cable has been further fused rather unevenly onto a solid flattened core of translucent blue glass. This compares particularly with Nos.11 and 109 from Cush (O Riordain, 1940, p.147, Fig.35), but particularly No.11 that has also been fused onto a blue core. There is also an example (No. 35) from Garryduff (O'Kelly, 1963, p.69, Fig.13; p.76) that Beck classified as Saxon and from Feltrim Hill, Co. Dublin (Hartnett & Eogan, 1964, p.31, Fig.15, No.535).

The bead from Ardsallagh 5 is of 2 polychrome cables wound to form herringbone pattern comparable to one (no. 239) from Lough Gur (O Riordain, 1949, p.90, Fig.19) dating to approximately the 8th to 11th centuries. An example (no. 1289, unillustrated) from Lagore Crannog Period II is of similar colours, yellow and green glass fused onto a blue core (Hencken, 1950, 139) as is one from White Fort, Co. Down (Waterman, 1956, p.86, Fig.10, No.1). More complex herringbone beads came also from Lagore (Hencken, 1950, p.138-9, Fig.66-7, nos.283, 984), Garryduff I (O'Kelly, 1963, p.69, Fig.13, no.346) and Seacash, Co. Antrim (Lynn, 1978, p.66, Fig.9, no.1), the latter being dated to the 9th to 10th centuries AD.

What is interesting to note that technically the Ardsallagh 5 herringbone bead could be interpreted as being the finished stage of manufacture of the cable bead from Baronstown 1 that has the same colouration. Does this mean that the roughly twisted and crudely fused cable beads are perhaps unfinished? And if this were the case, it is then interesting to note the presence of these very similar beads at the three sites of Roestown, Baronstown and Castlefarm.

The annular from Dowdstown 2 has most likely been manufactured by winding a single *reticella* cable around a mandrel. Comparative beads, with this fine *reticella* cabling, can be seen in beads dating to the 6th-8th centuries AD from County Antrim, that Brugmann describes as having 'applied twisted trails' (2004, Fig.134).

Roestown 2

12 A008/002:491:03 Translucent colourless blue-green tinted rilled bead comprised of a single finely twisted rod, the ends overlapping where fused together. L 2.25 mm; D 9 mm; PD 5.5 mm.

13 A008/002:491:05 Translucent colourless blue-green tinted bead comprised of a single twisted rod. L 5 mm; D 9 mm; PD 5 mm.

14 A008/002:491:02 Opaque light yellow-green bead of two twisted rods, with remnants of an opaque yellow glass/paste trailed between both rods and individual twists. L 8 mm; D 8.5 mm; PD 5 mm.

Castlefarm 1

15 A017/01:34:01 Partial bead comprised of three twisted cables (aligned in the same direction) of opaque yellow-green glass fused together with the remains of opaque yellow vitreous paste between each cable and within some of the twists. Remnants of the same opaque yellow and some opaque red on the perforation surface, the latter possibly left over from a clay core used as a former. L 7.5 mm; D 10 mm; PD 5 mm.

Baronstown 1

16 A008/017:5012:01 Partial bead comprised of three twisted cables of gree-blue tinted glass fused onto a core of translucent blue glass. Remnants of opaque vitrous paste/glass between the two types of glasses, and between the cables and twists of the blue-green glass. L 6.5; D c.11 mm; PD c.7 mm.

Ardsallagh 5

17 A008/038:38:1 Opaque blue annular bead with an opaque yellow/translucent light green cable composed of two separate twisted rods forming a herringbone pattern. L 4.5-6.5 mm; D 9 mm; PD 4mm.

Dowdstown 2

18 A008/033:101:132 Translucent globular *reticella* bead comprising three twists of blue with very fine opaque white cables, creating a zig-zag pattern. L 5 mm; D 7 mm; PD 3.5 mm.

Polychrome Annular

Although this type of bead and decoration are relatively common bead throughout the Iron Age and early medieval periods the blue-green tinted bead itself is possibly re-used Roman glass. The red opaque applied glass forming the decorative but irregular wave pattern has weathered considerably.

Lismullin 1

19 A008/021:753:01 Translucent light green-blue globular bead with applied, opaque red trail. L 7 mm; D 14 mm; PD 4 mm.

Dumb-bells (both monochrome and polychrome)

There are 3 solid double-segmented objects that are known as 'dumb-bell' beads due to their shape and lack of perforation (Beck, 1927, 40). Two are from Roestown 2 and the third from Castlefarm 1, the latter being decorated with circular blobs of possibly opaque yellow or discoloured white glass. Dumb-bell beads are well represented in Ireland, mostly known from a number of crannog sites including Ballinderry Crannog 2, Co. Offaly (Hencken, 1942, 51; Fig.21, no.251, 57), Moylarg Crannog, Co. Antrim (Buick, 1893, 33, 35-6), Lagore Crannog, Co. Meath (Hencken, 1950, p.139, Fig.67, no.1471) all of an early medieval date. However, very similar Iron Age examples also come from the Isle of Man, including a pair from the fort at Scarlett on the southern coast (Gelling, 1958, p.94, Fig.4, nos.5-6), and a trio from a settlement site at Braust (Isle of Man Government, 2008). Wilde described this type as a 'medieval double bead' and part of a composite object, being attached by wire around the central indent to a metal pin (1857, 163-4, Fig.118, No.42). Hencken (1942, 51) places them as buttons or toggles rather than beads.

Castlefarm 1

20 A017/001:795:3	Translucent light green bead. Each lobe has three applied dots of creamy white opaque glass approximately 3 mm in diameter. The smaller lobe has a large internal bubble. L 13 mm; D 9.5 mm.

Roestown 2

21 A008/002:400:44	Translucent cobalt blue bead. Cracked off pontil mark present (diameter 2 mm). L 11 mm; D 6 mm.
22 A008/002:552:01	Translucent green-blue tinted bead. Chipped on one lobe. Vestigial pontil on intact lobe (diameter 2.5 mm). L 11 mm; D 6.5 mm.

Post-Medieval

The following beads are most likely post-medieval in date, with some exhibiting weathering consistent with that period. The two faceted beads are both from Rath Hill 1 and have been made in the same fashion. The facets have been produced by pressing the bead onto a flat surface or marver, rather than cutting. They are not particularly well made. Although the site of Boyerstown 1 is of 12th-14th century date, the black bead would appear to be post-medieval, perhaps even 20th century.

Philpotstown 1

23 A008/024:32:01	Partial translucent blue globular bead, iridescent weathering. L 8.5 mm; D c.10.5 mm; PD 3.5 mm.

Philpotstown 4

24 A008/083:10:01-03 Three translucent pale lemon yellow globular beads, opalescent weathering. L 7.5 mm; D 7.5 mm; PD 2.5 mm.

Boyerstown 1

25 A023/013:4:4320 Opaque black globular bead, high gloss. L 7.5 mm; D 10 mm; PD 2.5 mm.

Rath Hill 1

26 A017/018:89:02 Translucent blue-green faceted bead. L 10.5 mm; PD 3 mm.

27 A017/018:132:03 Translucent blue faceted bead, opalescent weathering. L 13 mm; PD 3 mm.

Faience

Faience melon beads are not found in pre-Roman contexts and the example from Lismullin 1 is likely to be of a c. mid 2nd century AD manufacture (Dr. Alison Sheridan[24], pers.comm.). Interestingly, good comparisons to the melon bead can be found from Garranes, Co. Cork (O Riordain, 1942) that have not been distinguished as being faience although their descriptions imply a glazed surface rather than an entirely glass bead. A further example of what is certainly faience (again, a note of a blue glazed surface only) comes from Ballinderry Crannog 2 (Hencken, 1942, 51; Fig.21, no.12, 52) dated as Roman but from an early medieval context. Faience is well evidenced in Britain and Ireland during the Bronze Age period, from the early 2nd millennium BC to approximately 1500BC and in Britain it is most well known from sites concentrated around Stonehenge, attributed to the Wessex culture, and Scotland (Sheridan 2005, 218). Blue segmented faience beads are the most common type in the Bronze Age (Williams et al, 1991, 55) so it is possible that the small bead from Calliaghstown is indeed of this period.

Lismullin 1

A008/021:160:06 Partial melon bead with light turquoise blue glaze on external and internal surfaces. L 10 mm; D c.15 mm; PD 8.5 mm.

Calliaghstown 1

A030/002:118:01 Partial segmented ?bead. Light turquoise blue glaze on external surface. L 5 mm; D 4-4.5 mm; PD 2 mm.

[24] Head of Early Prehistory, Archaeology Department, National Museums Scotland

Bone

There is little further to say about this; identification of animal source is impossible without thin section analysis.

Boyerstown 1

A023/013:4:388	Globular bead, polished external surface. Remains of tool marks on one perforation side. L 6 mm; D 6 mm; PD 2.5-3 mm.

Stone

Calliaghstown 1

A030/002:212:01	Partial opaque ivory-white annular bead. External surface highly polished. Possibly of a fine-grained impure marble. L 3.5 mm; D c.6mm; PD c.4 mm.

Amber

The single find of amber has possibly been worked and if so is a fragment only of a larger object. It is a common material on Early Christian sites and is not out of place at Roestown 2.

Roestown 2

A008/002:570:02	Small irregular fragment of weathered orange amber, in two pieces. L 10mm; W 8 mm; Dp 5 mm.

Discussion

The assemblage points towards imports, possibly from as early as the Bronze Age in the form of a small segmented bead of faience recovered from the ring-fort of Calliaghstown 1. Recent analysis has indicated significantly different chemical compositions between Bronze Age faience from Egypt and the Mediterranean and that occurring within Britain, Scotland and Ireland, enough to suggest discrete manufacturing centres in the south of England and Scotland, rather than long distance trade (Sheridan, 2005, 224). Faience also occurs as a 2nd century Roman import at the Iron Age site of Lismullin 1, not an isolated occurrence as others have been located from the long-lived sites of Garranes (also yielding Roman pottery) and Ballinderry Crannog 2. A bead of possibly re-used Roman glass also comes from Lismullin 1.

The assemblage also points towards continuity. Dumb-bell beads show a Celtic origin, not just from Ireland but interestingly a significant number also coming specifically from Iron Age sites on the Isle of Man. The dumb-bell beads also show a continuity of bead type, whether through continued manufacture or just through heirloom status, from the Iron Age and throughout the early medieval period as evidenced through the two from Roestown 2 and the third from Castlefarm 1. This continuity from Iron Age to early medieval is also seen in the Iron Age type of opaque yellow annular, also from Roestown 2.

As well as external trade the assemblage also points towards internal interaction, at least. All the cable beads are typically early medieval, and can be readily and easily compared to others from significant early medieval sites dating from the 6th to the 10th centuries such as Lagore Crannog, Garranes, Garryduff, Cush and Lough Gur, amongst others throughout Ireland. The similarity between the cable beads from Roestown 2, Castlefarm 1 and Baronstown 1 certainly indicates local interaction and on a wider scale, trade, though perhaps not necessarily in high-quality finished products.

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APPENDIX 18: *E-ware pottery by Ian Doyle*

The Early Medieval pottery (E ware) from Roestown 2, Collierstown 1 and Castletown Tara 1, Co. Meath

Ian W. Doyle MA MIAI

The excavations at Roestown 2, Collierstown 1 and Castletown Tara 1 produced a small quantity of Early Medieval pottery from a range of contexts. This report identifies and describes this material and a background discussion concerning the occurrence of the pottery follows. It should be noted that Mediterranean imports (a Bii/LRA 1 amphora and a PRSW bowl) from Collierstown II have been reported upon separately. The pottery as excavated was washed and numbered and subsequently examined by the writer. The pottery has been grouped according to type and a minimum number of vessels have been calculated. The size of each sherd is given, as is the thickness and the diameter where possible.

Gaulish imported pottery

In summary, there are five sherds of E ware representing two E1 pots from Roestown II, a single sherd of E ware from Collierstown I and two sherds of E ware from Castletown Tara I.

Roestown 2

A008/002:772:1 and 805:1 Rim sherd from E1 jar. Two well preserved joining sherds. Approximately 20% of the rim circumference. Everted rim with shallow lid seat. Fabric is brown-grey in colour. Rim diameter 17cm, Size 98mm x 31mm, Thickness 6mm.
F772 fill of pit F1103, F805 fill of ditch F642

A008/002:1449:1 Rim sherd from E1 jar. Weathered, approximately 12% of the rim circumference. Everted rim. Fabric has buff-white internal surface and a grey–black rim and external surface.
Rim diameter 16cm, Size 55mm x 22mm, Thickness 6mm
Fill of sub-rectangular feature F1453

A008/002:131:2 E ware body sherd. Well preserved, fabric has cream-grey internal surface, grey-brown external surface. Shoulder sherd.
Size 42mm x 24mm, Thickness 5mm
Fill of ditch F282

A008/002:131:3 E ware body sherd. Well preserved, fabric has cream-white surfaces.
Size 30mm x 16mm, Thickness 4mm. Fill of ditch F282

Castletown Tara I

A008/025:287:1 E ware body sherd. Slightly weathered, fabric has cream-white surfaces. Shoulder sherd. Size 54mm x 23mm, Thickness 4mm. Fill of ditch F358

A008/025:248:1 E ware body sherd. Slightly weathered, fabric has cream-brown surfaces. Shoulder sherd. Size 35mm x 31mm, Thickness 4mm.
Fill of ditch C900

Collierstown I

A008/015:69:1 E ware rim sherd. Well preserved, but split such that only external face survives. Fabric is buff-brown. Lack of everted rim form suggests that sherd may represent an E5 lid sherd or possibly E3 bowl. This is not 'imitation PRSW' (*Medieval Archaeology* 2008, 370).
Rim diameter 19cm, Size 52mm x 21mm, Thickness 6mm
Fill of ditch F409

Table 1: Details of pottery by excavated context

Context	Find No.	Comment	Area	Phase	Context Summary
Roestown 2					
772	:1	E1/E4 rim	B	I A	Fill of pit F1103; sherd joins 805:1
805	:1	E1/E4 rim	B	2 B	Fill of ditch F642
1449	:1	E1/E4 rim			Fill of sub-rectangular feature F1453
131	:2,:3	2 E ware bodysherds	A	1A	Fill of ditch F282
Castletown Tara 1					
287	:1	E ware bodysherd			Fill of ditch F358
248	:1	E ware bodysherd			Fill of ditch F900
Collierstown 1					
69	:1	Possible E5 lid		2	Fill of ditch F409

Discussion

The ceramics from Roestown represent the remains of two E1 jars while the sherds from Castletown Tara 1 and Collierstown 1 represent single vessels. This material adds to the known quantity of this material in the north Leinster area. Other sites in this area of Co Meath, which are predominantly secular settlements, such as Randalstown, Lagore, Moynagh Lough, Rathoath, have also produced imported pottery of this period (Thomas 1981; Doyle forthcoming).

The presence of imported pottery inland in Co Meath is not surprising given the fact that at least two potential importation points near the coast have been discovered. In 1988 a gas pipeline project uncovered a series of burials and enclosures at Colp West near the mouth of the Boyne. While this archaeological complex was only partly excavated a series of enclosing ditches, an annular gulley and over one hundred extended burials were revealed. Sherds from three Mediterranean amphorae and five to six E ware vessels were found within an enclosure. References to Colp can be cited from the seventh century Muírchu's Life of Patrick, which refer to '*Inber Copla/Inber Colpidi'* (Gowen 1989; Charles-Edwards 2000, 16; Doyle 2001). These historical references appear to suggest a landing point at *Inber Colptha*. Sherds were also recovered during the excavation of a sequence of enclosures near the coast at Ninch near Laytown (Mc Conway 2004). The quantity and frequency of imports at Ninch suggests that this site had direct access to sea borne trade and that imports further inland in Co Meath were perhaps mediated through sites such as Ninch or Colp West.

It is this area between the rivers Liffey and Boyne, which is coeval with the early historic kingdom of Brega that significant quantities of E ware were imported. It is clear that Mediterranean vessels also circulated in smaller quantities in this area, as attested to by finds from Colp West, Lusk, Randalstown and Collierstown 1. What is of interest from the archaeological investigations associated with the M3 is the concentration of sherds of E ware in the area around Lagore. The material from the M3 project adds to the growing volume of imported pottery in this part of southern Co Meath. The M3 project has yielded E ware from Collierstown, Garretstown and Roestown, which are all located within close proximity to Lagore crannog. Other finds in this vicinity include sherds of E ware from Ratoath and Summerhill Demesne. Against the background of the general distribution of E ware pottery in northern Leinster this appears as a distinct cluster away from the known finds closer to the Boyne and the coast. Accordingly, Lagore may have acted as a focal point for trade and subsequent redistribution outwards to locations such as Roestown and others.

The Collierstown sherd of E ware is notable in that it represents a probable E ware E5 lid. This is not ‘imitation PRSW’ (*Medieval Archaeology* 2008, 370). The sherd lacks the typical everted rim form of E1 jars and is also larger than the typical diameter of the E1 jar. Accordingly, it is potentially an example of an E5 lid. These ceramic lids were conical in shape with an increase in body thickness towards a central raised boss (Campbell 2007, Fig. 33). While a groove or seat to accommodate a lid is a feature on some E1 rim sherds the number of E5 pot lids, which have been recognized, is relatively low. Fragments of E5 lids are known from Dalkey Island, Mount Offaly, Co Dublin, Caherlehillan, Co Kerry, Ballycatteen, Co Cork, Clogher, Co Tyrone, Colp West, and Site M at Knowth, Co Meath. Lids such as these are quite rare and what is equally significant in the Collierstown example is that it was stratified in the same context with a sherd of Phocaean Red Slipware (PRSW). In terms of dating, PRSW is normally assigned to the fifth-sixth centuries AD, whereas the conventional dating for E ware is somewhat later, generally between the late sixth – later seventh centuries AD (Campbell 2007, 46). The presence of two quite rare ceramic forms in a cemetery context is notable and may suggest activity at the site involving consumption or simply the deposition of sherds.

The point of origin of E ware is somewhat unclear, though that it is western Gaul is likely as vessels in similar fabrics are known from post-Roman sites in western France, in Bordeaux in particular and in the regions of the Touraine, Saintonge and Poitou to the north of Bordeaux (Wooding 1996, 77-8). E ware, as a kitchen or table ware, is likely to have been carried as a commodity in ships with wine in wooden casks and possibly with other perishable goods (Thomas 1990). Recently Campbell has argued that E ware should not be seen as a kitchen ware but as a range of containers for goods rather than as pottery *per se*. The product identified by Campbell is a red dye stuff from the plant Dyer’s Madder, however nuts, spices and honey are suggested products as well as other exotic luxury goods (Walton Rogers 2005; Campbell 2007, 80). E ware has a wide Insular distribution ranging from south-west Britain, southern Wales, the Isle of Man, western Scotland and north-eastern, eastern, southern and midland parts of Ireland. E ware has a more marked Irish distribution with some forty sites in Ireland, primarily with settlement functions, known to have produced this pottery to date.

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APPENDIX 19: *Medieval pottery by Niamh Doyle*

Medieval and post medieval pottery from Roestown 2

By Niamh Doyle MA MIAI

The pottery assemblage from Roestown 2, County Meath contains thirty-four sherds of pottery including locally made 13th-14th century wares, Leinster Cooking Ware and a sherd of imported Merida-type pottery. Post medieval activity is represented by fragments of 18th-19th century glased red earthenware.

Methodology

These fragments were identified visually in accordance with existing typologies. A brief description of fabric and decoration is given. The different types of pottery are presented in tabular form. Medieval vessel types and styles of manufacture were identified in accordance with the Medieval Pottery Research Group's classification of ceramic forms (1998). Both medieval and post medieval types were identified based on information from published excavations in Ireland and existing typologies.

Dating

Date ranges for the pottery types are based on published dates for the production and distribution of pottery excavated from archaeological sites in Ireland, England and the United States of America.

Quantification

The table in figure x illustrates the number of sherds found within each type and their percentage within the whole assemblage. The Minimum Number of Vessels (MNV) is a vessel count based on a frequently occurring diagnostic feature of the vessels represented in the assemblage. The high instance of jugs within the assemblage means that basing the MNV on the occurrence of rim-handle fragments, as representative of handled jars, is suitable. Unfortunately there are no rim-handle fragments present within the assemblage from Roestown 2, indicating a MNV of 0. The table shown in figure x illustrates the date range and MNV for each medieval and post medieval pottery type. A count of the Minimum Number Represented (MNR) of each vessel type is included where possible.

Type	Number of Sherds	Form	Date range
Local medieval	21	jar/jug	13th-14th C
Local Fine ware	4	jar/jug	13th-14th C
Leinster Cooking Ware	8	jar, cooking vessel	12th-14th C
Merida type	1	jar/jug	13th-14th C
Glazed red earthenware	1	jar	18th-19th C
Total	35		

Figure 1. Table of pottery from Roestown 2, County Meath.

- **Medieval Pottery**

Local Medieval pottery

The pottery has a sandy fabric and is orange in colour with inclusions of small stones, haematite, mica and quartz and small pores on the surface. This medieval pottery is similar to the local pottery described by Sands (2006) from Tullykane, which, at 3201 sherds, has had the largest assemblage of this type to date. The surface of the pottery is quite abraded, making it difficult to determine if the pottery was hand built or wheel thrown, although it is recorded in both forms at Tullykane (Sands 2006).

This pottery was also identified within pottery assemblages from excavations in County Meath at Castlefarm 1(Doyle 2007 c), Garretstown 2 (Doyle 2007 b) and Dunboyne 4 (Doyle 2007 a) and is similar to the Killeen-type pottery in the medieval pottery assemblage from Killeen Castle (Doyle 2006). This locally made medieval pottery type has also been found at excavations in County Meath in advance of road works at Rathhill 1, Ross 1 and 2, and 4, Williamstown Bawn 2, Collierstown 1 and 2, Skreen 2, Dowdstown, Castletown Tara 1, Baronstown 1 and Lismullin 1. This local type of pottery from County Meath is different to that identified at Trevit 1, County Meath (Doyle 2007 d) and to the Meath-type ware identified at Pheonixtown 1 (Doyle 2007 e), both of which had a soft, powdery fabric.

60% of the assemblage is comprised of local medieval pottery, represented by body sherds from jug and jar forms. At least one jug/-handled jar is represented by the presence of a strap handle fragment (400:3) with an incised pattern, unfortunately the fragment is too small to identify the pattern. A jug form with an everted sagging (1484:1) base is also represented, the vessel has been burnt externally indicating it was used to heat its contents over a fire.

Local Fine ware

Sands discusses the presence of Dublin-type fineware and a local fineware similar to Trim ware at Tullykane (Sands 2006). The assemblage from Roestown 2 contains four fragments of fineware, ranging from reduced grey and buff to orange, with consistently soft powdery fabric with occasional haematite inclusions. A MNR of three vessels are represented (11% of the pottery assemblage) with a patchy green/yellow lead glaze.

Leinster Cooking Ware

Leinster Cooking Ware is a hand built ware found on most sites in southeastern Ireland from the 12th to 14th centuries. The fabric is coarse and contains large plates of quartz, mica and occasionally decomposed feldspar (Ó Floinn 1988). The assemblage contains eight fragments from a MNR of three vessels of this type, representing 21% of the pottery assemblage.

Merida-type

The assemblage contains one fragment of Merida type with the characteristic red-orange coloured hard sandy fabric with a burnished exterior. These vessels have been made in the Iberian Peninsula since the thirteenth century until present day. The assemblage contains a single fragment (473:10) of this type with the characteristic fine, sandy micaceous fabric, it is orange in colour with a grey-brown burnished surface (Hurst et al, 1986 69). The fragment reveals a bubble within the fabric that could account for the vessel breaking at this weakened part of the vessel. 13th-14th century Merida-type pottery was also found at Tullykane, County Meath (Sands 2006).

- **Post medieval pottery**

Glazed red earthenware

A wide variety of glased red earthenware vessel forms were produced in Ireland and England in the 18th and 19th century for use in the kitchen, garden, pantry and for both household chores and industry. A body fragment (401:18) from a small jar is glazed with a green/black glaze, indicating a MNR of one.

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Appendix 1: Catalogue for Roestown 2

Scheme Number	Context	Find number	Type	Part
A008/002	100	12	Local Fine Ware	bf
A008/002	100	19	Leinster Cooking Ware	bf
A008/002	100	36	Leinster Cooking Ware	bf
A008/002	100	37	Local Medieval	bf
A008/002	100	41	Leinster Cooking Ware	bf
A008/002	100	80	Local Medieval	bf
A008/002	100	82	Local Fine Ware	bf
A008/002	100	87	Local Medieval	bf
A008/002	100	88	Local Fine Ware	bf
A008/002	175	4	Local Fine Ware	bf
A008/002	235	1	Local Medieval	bf
A008/002	400	1	Local Medieval	bf
A008/002	400	14	Local Medieval	bf
A008/002	400	15	Local Medieval	bf
A008/002	400	22	Local Medieval	bf
A008/002	400	23	Leinster Cooking Ware	bf
A008/002	400	30	Local Medieval	bf
A008/002	400	33	Local Medieval	bf
A008/002	400	39	Local Medieval	bf
A008/002	400	48	Leinster Cooking Ware	bf
A008/002	400	52	Local Medieval	bf
A008/002	400	62	Local Medieval	bf
A008/002	400	72	Local Medieval	bf
A008/002	400	75	Local Medieval	bf
A008/002	400	93	Local Medieval	bf
A008/002	400	102	Leinster Cooking Ware	bf
A008/002	401	1	Local Medieval	bf
A008/002	473	8	Leinster Cooking Ware	bf
A008/002	473	10	Merida-type	bf
A008/002	512	1	Local Medieval	bf
A008/002	598	5	Local Medieval	bf
A008/002	1484	1	Local Medieval	basf

APPENDIX 20: *Slag Report by Angela Wallace*

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Archaeometallurgical Report on material from Roestown 2

For

Archaeological Consultancy Services Ltd.

Angela Wallace MSc, MIAI

January 2009

Introduction

A total of 10.35Kg of slag was recovered from the medieval site at Roestown 2.

> Excavations at this site revealed extensive evidence for early medieval settlement that may have originated in the mid-sixth century AD and probably continued as a settlement into the 11th century AD. Carpentry and ironmongery must have been part of daily life, but other crafts were also practised; particularly bone working and textile weaving. There was strong evidence for fine metalworking during the seventh century. The principal enclosure was re-cut on at least two successive occasions between the eighth and 10th centuries AD, with the character of the enclosure changing noticeably on each occasion (O'Hara & Murphy 2007).

As is usually the case on many medieval sites the majority of the slag from this site came from ditch fills and there was no evidence for any residues being closely associated with distinctive metalworking hearths or deposits.

The majority of the slag from this site is associated with iron-working, the morphology of the slags indicates that most are associated with iron smithing. There was no evidence for any smelting slags amongst the assemblage. A total of nine definite and two possible broken smithing hearth cakes were identified in the assemblage. They range from 0.15-0.80Kg in weight which is generally quite a low weight range for this type of material, many medieval sites would have smithing cakes with average weights in excess of 1.0Kg and often up to 2.5Kg. Smaller smithing cakes point to small-scale iron-working taking place, rather than being a production centre, sites with only a few small cakes would indicate that only artifact repair and recycling was taking place.

2.0 Stages in the Iron-working Process

The iron-working process is quite complex and involves several stages:

- **Stage 1:** Sourcing of ore and fuel resources (may have exploited bog ore or local mineral resources, difficult to identify ore on site as it may appear similar to stones found naturally in the soil. Examination of charcoal deposits can provide information on fuel types being exploited, impact on local environment can be mapped using pollen analysis).
- **Stage 2:** Ore preparation for smelting (this often involves sorting, crushing and roasting of the ore).
- **Stage 3:** Furnace construction for smelting (there is a large variety in shapes and sizes of furnaces and it is often difficult to tell from the archaeological remains what the original furnace was like. The superstructure was usually clay-built and often destroyed by the smelting process or by weathering over time).
- Furnace construction for smithing (this could involve slight changes and re-use of the smelting furnace).

- **Stage 4:** Bloom refining or primary smithing (all that may remain in the archaeological record is a charcoal patch, hammerscale, slag and some evidence for an anvil in the form of a large flat stone or a post-hole which may have held a wooden block. Iron blooms could appear very similar to slag cakes on the site due to corrosion on the outer surface, the only way to clearly distinguish a bloom is to X-ray any of the heavier/more dense pieces to determine levels of pure iron).

- **Stage 5:** Artefact manufacture or secondary smithing (also repair and recycling, scraps and off-cuts of waste material may be found).

3.0 Evidence for non-ferrous activity at Roestown 2

There were three crucible fragments recovered during excavation at this site, these were not included within assemblage for archaeo-metallurgical report, but their presence points to some small-scale non-ferrous metal-working on the site**.**

> It was noted that some of the Roestown 2 crucible fragments bore glazed residues (A008/002:566:8) which, with a number of hardened glassy residues recovered during excavation, suggested some glass working on-site.

There is very little comparative published material available for analysis on Irish crucibles, they have mainly been examined from a morphological perspective and not a technical/analytical one. Analyses were carried out on several Irish crucibles in 1927, the analyses carried out were mainly on crucibles which had slag or metallic prills adhering to their inner surfaces. Of the eight analyses carried out the results indicated mainly copper and tin as the metallic elements present, no lead, zinc or silver were detected (Moss 1927: 178). Apart from this work carried out in 1927 there are no other published data presently available on analyses of Irish crucibles.

The recent analysis carried out on a crucible from Coonagh West in Co. Limerick revealed that copper and tin were the main metals being melted within the crucible, with smaller quantities of silver, lead and zinc and trace quantities of gold (Wallace 2008). Elements such as zinc are very volatile and so diffuse into the crucible wall, zinc can be over-represented in analytical results as it leaves a far higher signature due to its volatility (Bayley 1992: 817-8). Lead was often added to copper alloys to enhance the casting properties.

Most crucibles have a glaze on their inner surface where metals and crucible fabric have been heated to temperatures in excess of 1000°C these high temperatures often cause partial melting of the inner surface of the crucible along with the metals within.

When the molten metal is poured off there is a residue of crucible slag left behind which has formed a glazed or vitrified layer often glassy in appearance. This vitrified layer has often led to the assumption that crucibles or vitrified material is associated with glass-working. Molten fragments of glass and discarded faulty glass objects are usually more indicative of glass-working. Crucibles can be associated with glass-working but there have been very few examples identified in medieval north European contexts.

Small vitrified glassy slags are frequently formed during iron smithing activities, as the hot slag hits the surrounding clay the silica and alumina in the clay are heated rapidly often cooling into a glassy state.

4.0 Analysis of 5 samples of archaeo-metallurgical material excavated at Roestown 2

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Introduction

Five samples of metallurgical debris were examined to identify the formation processes, the raw material used and the firing conditions. The five samples were all identified as iron smithing slag and underwent petrographic, chemical and mineralogical investigation.

ETC ID	Site	Feature	Sample No.
24108_12	Roestown 2	F1252	sample 298
24108_13	Roestown 2	F162	sample 25
24108_14	Roestown 2	F400	sample 253
24108_15	Roestown 2	F316	sample 118
24108_16	Roestown 2	F414	sample 168

Table 1: Roestown 2 samples examined, and project IDs

Visual inspection

A visual examination of the samples was carried out before and after the cutting of the samples. The samples were all identified as smithing slags of the concave/convex type. The slags are of a circular/elliptic shape, indicating that the air flow was strong enough to produce the slag in the centre of the pit (see Plates 1 & 2).

Plate 1: Sample 24108_12

Plate 2: Sample 24108_16

After the initial visual screening the samples were given a project ID (Table 1), and were cut to perform the chemical and petrographic analyses. Two fragments were cut at the edge of each sample to leave the bulk of the sample as intact as possible. One fragment was cut and mounted in resin and to be analysed using optical and electron microscopy, and one fragment was used to produce a fine powder for analysis using X-Ray Diffraction and X-ray Fluorescence.

Optical Microscopy allows identification of the iron bearing phases and their texture. The Scanning Electron Microscope facilitates chemical analyses of the phases initially identified using Optical

Microscopy and provides more detailed imaging of the samples due to a far higher magnification capacity. Both X-Ray Diffraction and Fluorescence techniques allow bulk analyses. The diffraction technique allows identification of the mineral phases present in the samples, while the fluorescence technique gives a bulk chemical analysis of the sample.

X-Ray Diffraction analysis

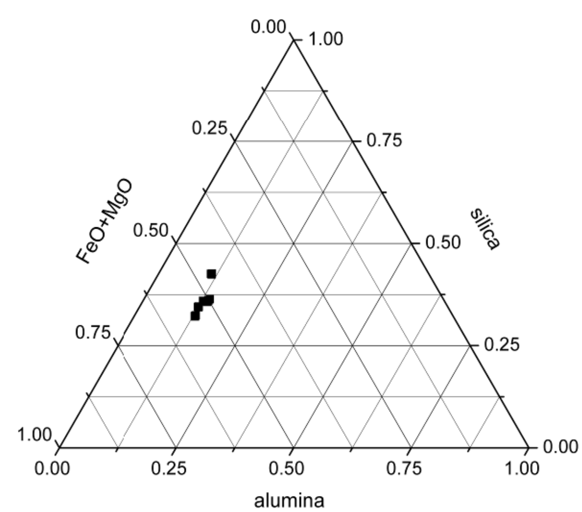
As already mentioned in the previous section the X-ray diffraction technique was used to identify the mineralogical association in the slag. The results show that all the slags contain olivine and quartz (SiO_2).

	fayalite	Mg Fayalite	Mn fayalite	quartz	cristobalite	maghemite	w ustite	hematite	MgAlspinel	leucite	NaAlSiO4
24108_12			X	X		X		X			
24108_13	X			X	X						
24108_14		X	X	X			X			X	
24108_15	X			X			X				
24108_16			X	X			X		X		X

Table 2: XRD Results indicating the mineral phases present in each sample.

X-Ray Fluorescence analysis

The bulk chemical analyses performed with X-Ray Fluorescence indicates the samples are generally chemically uniform for the major compounds (see Appendix 1), FeO around 40%, silica around 30%, alumina and MnO around 10% with one outlier depleted in iron oxide (~35%) and enriched in silica (~35%) (24108_13).



Scanning electron microscopy and X-ray microprobe analysis

Sample 24108_13 was thoroughly analysed by SEM-EDS showing fayalite with hopper polyhedral morphology indicating a slow cooling speed, associated with an iron oxide not detected by XRD, from the morphology the iron oxide can be identified as wustite (Figure 8). The olivine has a concentration of CaO and MgO around 0.5wt% zoned in the crystals.

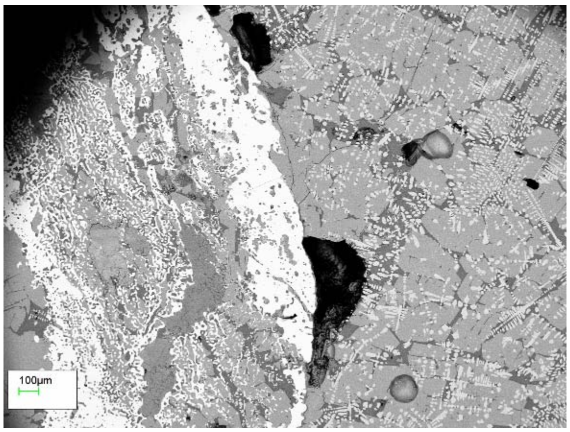


Plate 3: SEM Image of sample 24108_13 showing polyhedral/skeletal olivine (grey) and very fine dendritic iron oxide (light grey) associated with the formation of iron metal (white).

5.0 Conclusions from Visual, Contextual & Analytical Assessment

The evidence from analysis points to all of the slags analysed being related to the iron smithing process (Stages 4 & 5, refer Section 2.0). There was no evidence for any of the slags being associated with non-ferrous working. Overall the slags from Roestown indicate the presence of a specialised process. The concavo-convex shaped slags are the product of hot oxidation of the metal with a small input of silica from various sources (lining, ashes, dust and eventually flux). This is the dominant process during heating of the iron piece for hot forging. The quantity of iron oxide lost during this type of work must be related to the size of the bar to be shaped and the length of the work. In this case the amount of iron oxide varies between the samples, the types of oxides also change indicating a change in the oxidation conditions during the process. The polyhedral shape of the olivine indicates a very slow cooling speed that correlates with a long working period when the slags stay at the crystallisation temperature around 1000ºC for several hours.

One tiny piece of copper waste was identified during visual assessment; this may have been a small spillage during the casting of an artifact in a mould. The results of analyses did not point to any evidence for copper slags on the site.

The large quantity of pins (16 ferrous and 16 non-ferrous) and the variety of other copper alloy and iron objects point to some of these artefacts being manufactured on site. The analytical results suggest slags are mainly linked to iron smithing. The quantity of slag is relatively quite small in comparison to the many medieval iron slag assemblages in excess of 50Kg, and occasionally up to 1.5 tonnes such as the assemblage from Lowpark, Co. Mayo (Wallace & Anguilano 2007).

Metalworking evidence from Roestown 2 points mainly to small-scale ferrous activity being carried out at the site. The ferrous evidence points exclusively to smithing activity, no smelting slags were identified. The morphological and analytical evidence from the Roestown 2 metallurgical material points mainly to secondary smithing or artefact forging being carried out and it is quite likely iron artefacts found were also being produced and repaired on the site.

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Appendix 1: Bulk chemical analysis obtained by X-Ray Fluorescence showing the chemical comparison between Ardallagh, Dunboyne, Roestown and Castelfarm

	Na2O	MgO	Al2O3	SiO2	P2O5	S	K2O	CaO	TiO2	V2O5	Cr2O3	MnO	FeO	CoO	NiO	CuO	ZnO	As2O3	PbO
24108_1	1.40	1.30	10.01	28.09	0.38	0.22	1.94	2.18	0.11	0.01	0.01	11.32	42.68	0.00	0.01	0.00	0.03	0.01	0.31
24108_2	1.52	1.39	10.53	31.17	0.40	0.30	2.07	2.32	0.18	0.01	0.01	10.51	39.23	0.00	0.01	0.00	0.04	0.00	0.31
24108_3	1.60	1.56	7.92	42.42	0.34	0.21	2.32	2.92	0.27	0.01	0.01	8.07	31.94	0.00	0.02	0.00	0.04	0.00	0.37
24108_4	1.48	1.37	10.03	31.22	0.38	0.31	2.06	2.49	0.21	0.01	0.01	11.04	39.07	0.00	0.01	0.00	0.04	0.00	0.26
24108_5	2.18	2.05	10.23	58.04	0.41	0.50	3.14	2.59	0.48	0.01	0.01	3.45	16.78	0.01	0.04	0.01	0.06	0.02	0.00
24108_6	1.71	1.74	10.75	44.24	0.42	0.36	2.60	3.20	0.31	0.01	0.01	6.74	27.62	0.00	0.02	0.01	0.04	0.00	0.21
24108_7	1.52	1.48	11.06	32.27	0.44	0.12	2.15	3.47	0.10	0.01	0.01	9.66	37.36	0.00	0.01	0.00	0.04	0.00	0.31
24108_8_1	1.51	1.17	9.66	25.00	0.36	0.35	1.82	1.38	0.14	0.01	0.01	12.27	45.67	0.00	0.00	0.00	0.03	0.00	0.62
24108_8_2	1.35	1.17	9.66	24.97	0.36	0.35	1.83	1.39	0.09	0.01	0.01	12.30	45.81	0.00	0.00	0.00	0.03	0.00	0.69
24108_8_3	1.28	1.18	9.77	25.02	0.36	0.33	1.84	1.40	0.13	0.01	0.01	12.23	45.60	0.00	0.00	0.00	0.02	0.00	0.84
24108_8_4	1.38	1.17	9.70	25.00	0.36	0.34	1.83	1.39	0.12	0.01	0.01	12.27	45.69	0.00	0.00	0.00	0.03	0.00	0.72
24108_9	1.71	1.57	13.05	32.13	0.48	0.40	2.42	1.89	0.66	0.01	0.00	11.78	33.41	0.02	0.02	0.00	0.05	0.00	0.39
24108_10	1.42	1.47	11.48	31.67	0.43	0.36	2.14	4.38	0.61	0.01	0.00	12.60	33.13	0.02	0.02	0.00	0.03	0.00	0.22
24108_11	1.42	1.34	10.48	28.94	0.39	0.27	2.04	1.83	0.10	0.01	0.00	12.37	40.21	0.01	0.01	0.00	0.03	0.01	0.53
24108_12	1.42	1.34	10.54	29.44	0.39	0.29	2.02	2.10	0.22	0.01	0.01	10.86	40.99	0.00	0.01	0.00	0.04	0.01	0.31
24108_13	1.59	1.46	9.32	35.17	0.37	0.32	2.11	2.42	0.11	0.01	0.01	9.60	37.17	0.00	0.01	0.00	0.02	0.00	0.30
24108_14	1.26	1.29	10.11	27.81	0.38	0.32	1.88	2.90	0.02	0.01	0.01	11.47	42.00	0.00	0.01	0.00	0.02	0.01	0.51
24108_15	1.46	1.40	11.34	29.40	0.42	0.35	2.11	2.47	0.04	0.01	0.01	10.57	40.03	0.00	0.01	0.00	0.03	0.00	0.29
24108_16	1.34	1.26	10.49	26.11	0.39	0.21	1.92	2.29	0.02	0.01	0.01	11.67	43.62	0.00	0.00	0.00	0.03	0.00	0.62

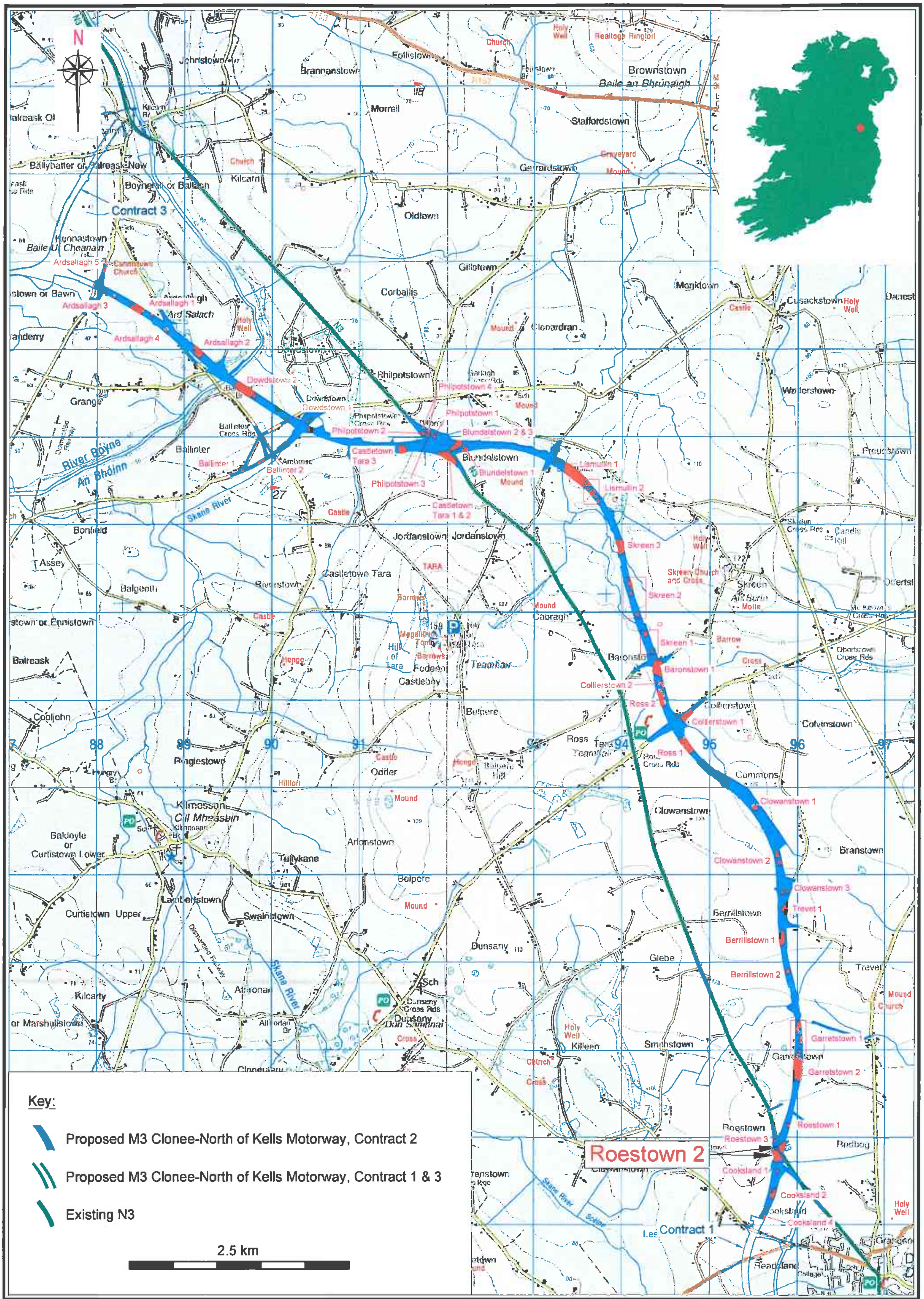
APPENDIX 21: *Coin Report by John Stafford Langan*

Job no./Site: 04_01 Roestown 2
Licence no.: A008/002
Feature no.: 143
Find no.: A008/002:143:29
Description: Coin
E3055

This find is an Irish copper halfpenny of George III struck in either 1766 or 1769. The coin is corroded but was obviously very worn before deposition and the only remaining feature is the differential corrosion pattern over the bust and several characters of the legend. The bust style is identifiable as being one used only on Irish coins of these two dates.

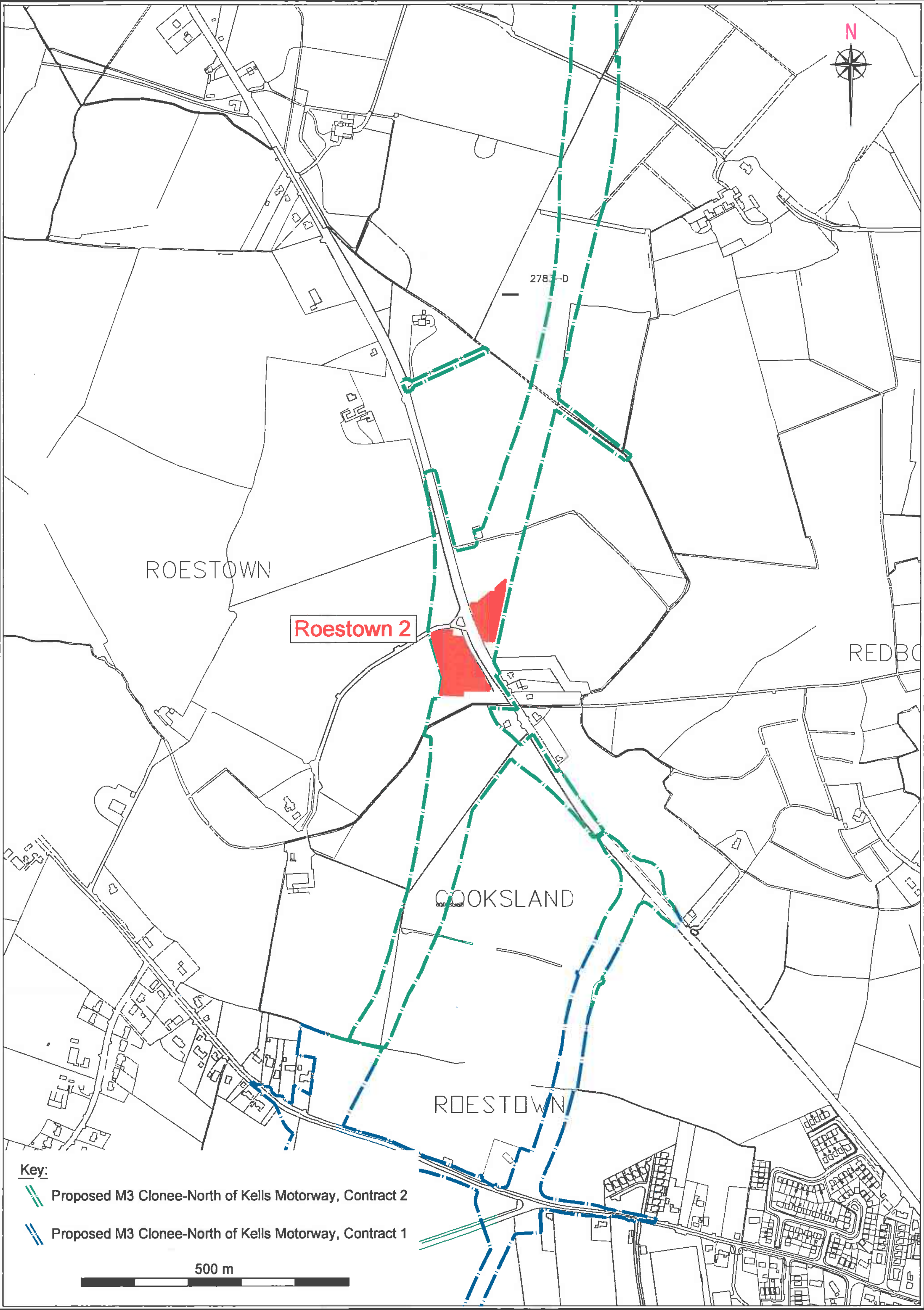
Coins of this type circulated in Ireland up to 1860, but in practice examples are seldom encountered or identified later than 1830 or so. However the circulating copper currency of the time did include a quantity of completely worn copper disks which from slightly early finds where they are still recognisable must be the remaining English and Irish coppers from George II and George III's earlier issues.

This find is such a piece - a coin from just before 1770, which has circulated until it is almost completely flat, but fortunately still marginally recognisable, which places its deposition at 1830–1840 or slightly later.



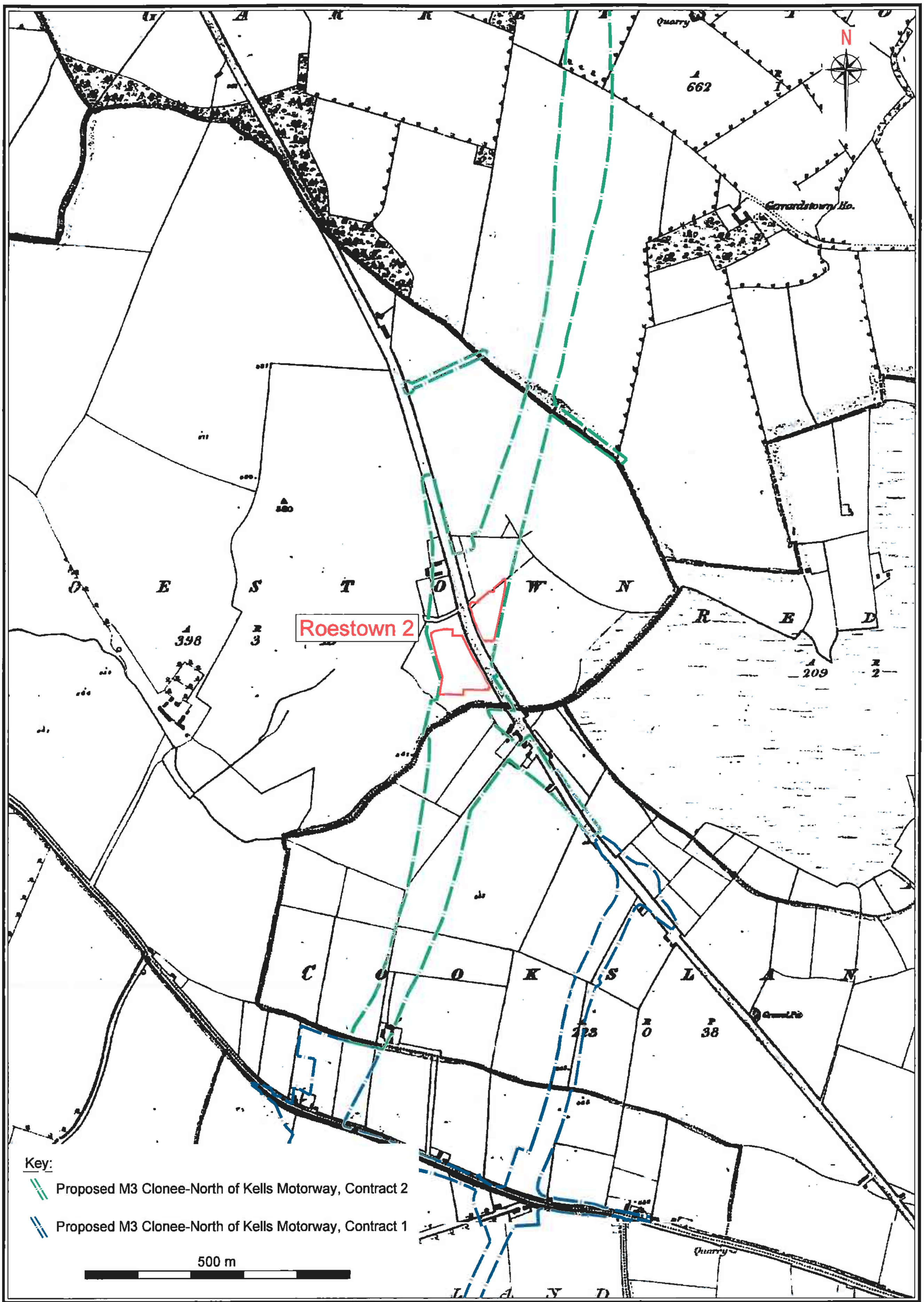
Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	*Site:* *M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2*	*Scale: 1:60,000 A4*
		Date: Jul '08
	Issued for: Excavation Report	*Origin: OSi Discovery Series*
	Client: Meath County Council	*Drawing no.: 04_01_C7761i*

Figure 1: Location of Roestown 2



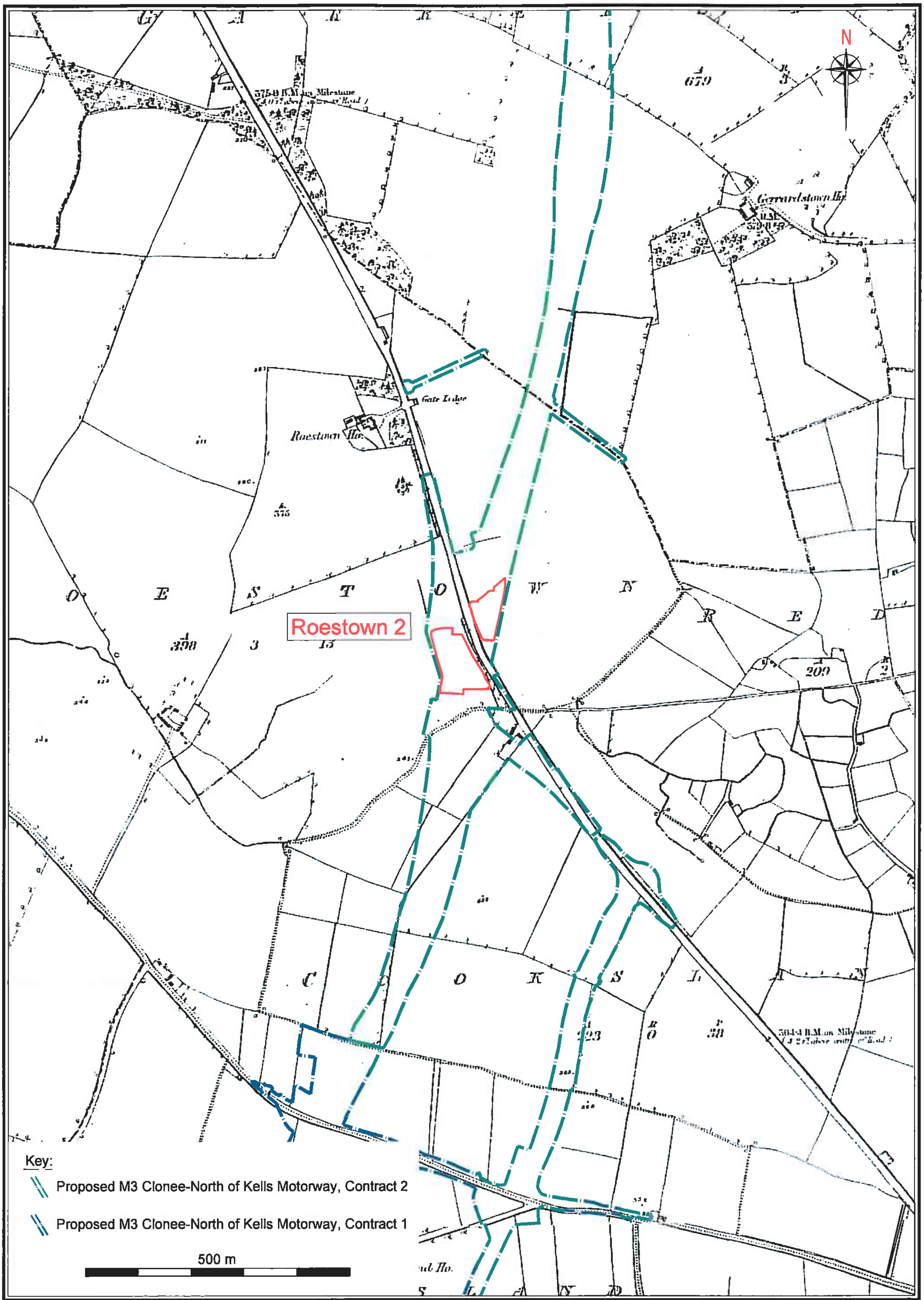
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7762i

Figure 2: Location of Roestown 2 on current OS background



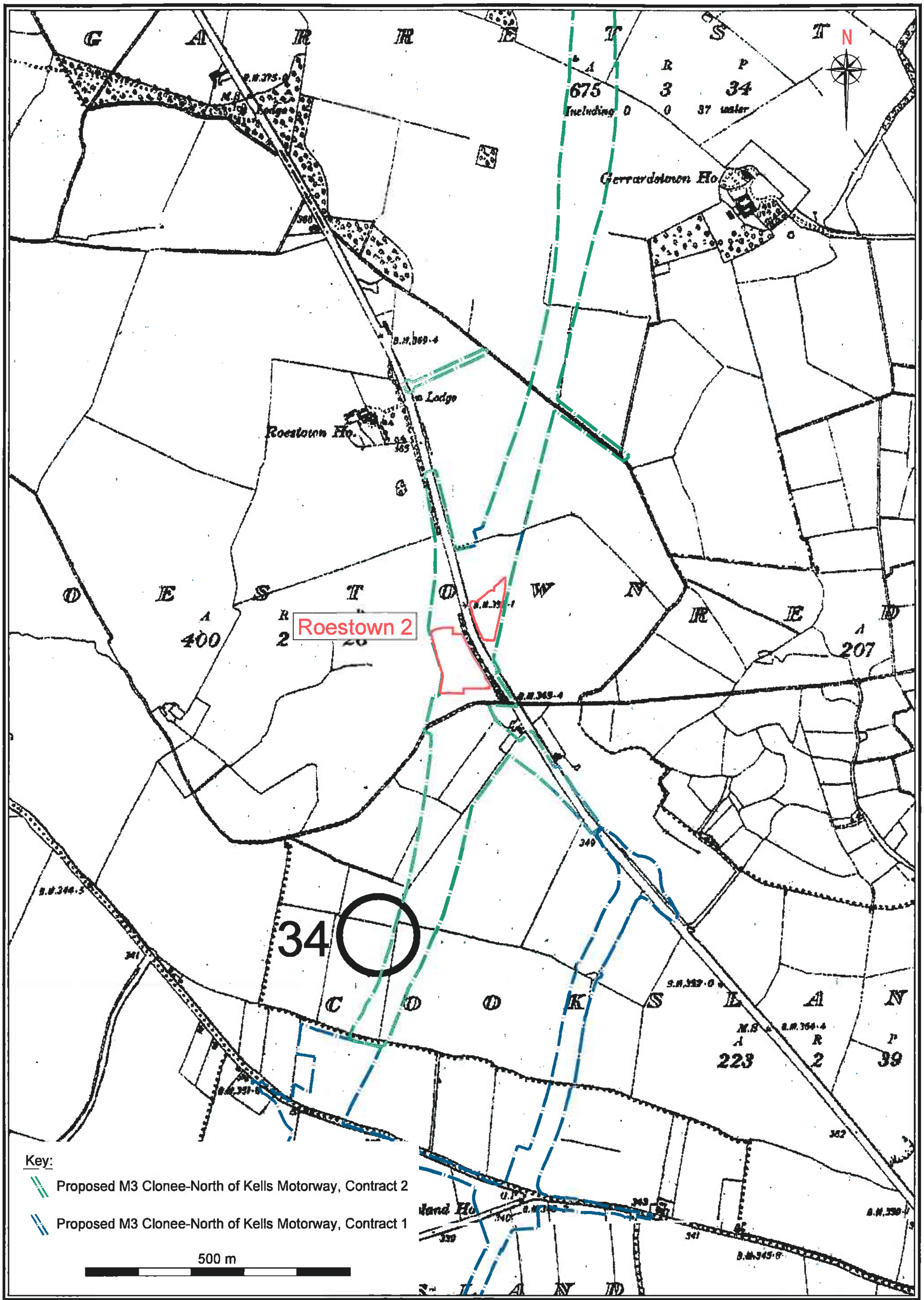
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: OSi (1836)
	Client: Meath County Council	Drawing no.: 04_01_C7763i

Figure 3: Roestown 2, extract from 1st edition OS map, Meath sheets 38 & 44



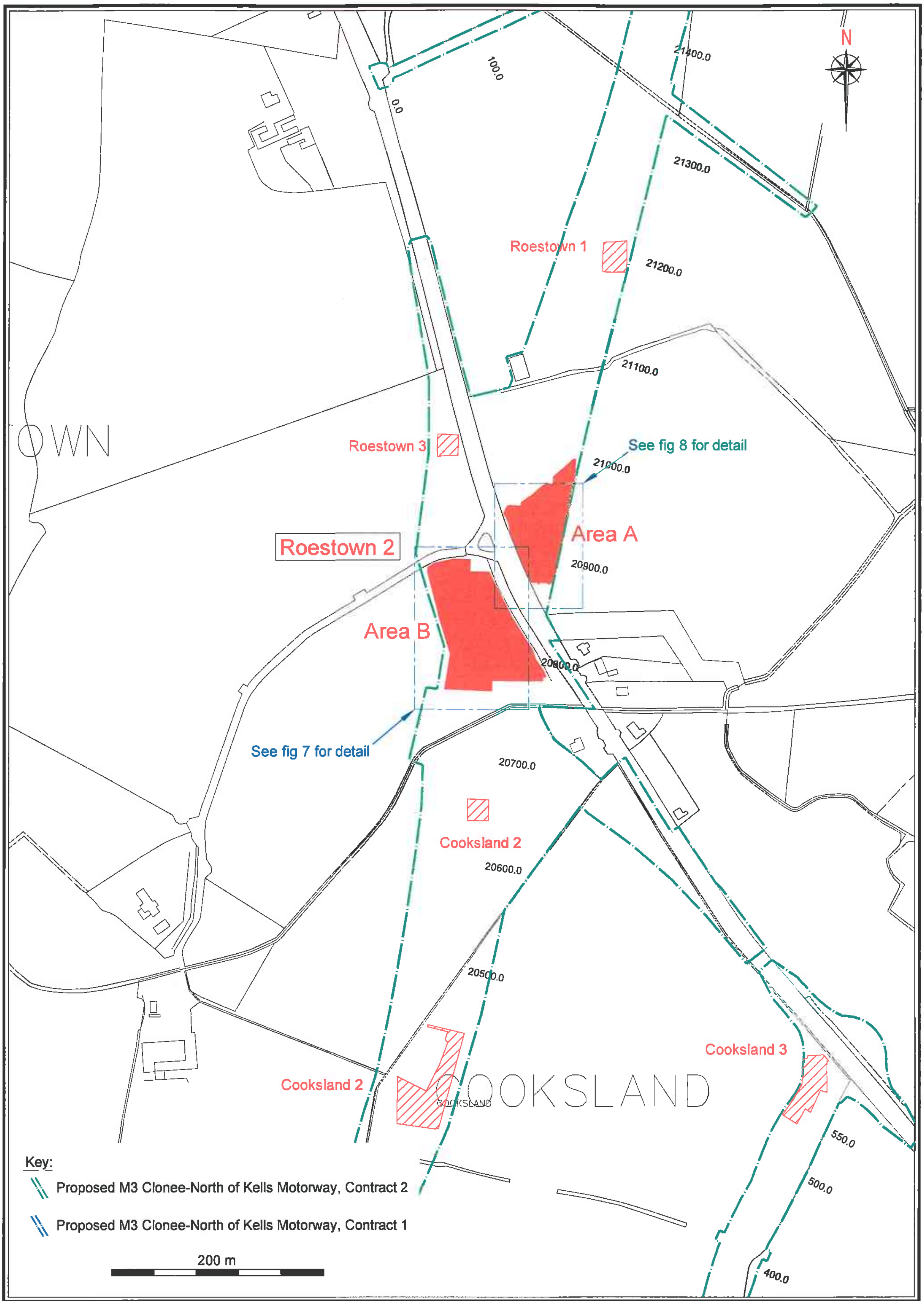
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	*Origin:* OSi (1883)
	Client: Meath County Council	*Drawing no.:* 04_01_C7764i

Figure 4: Roestown 2, extract from 2nd edition OS map, Meath sheets 38 & 44



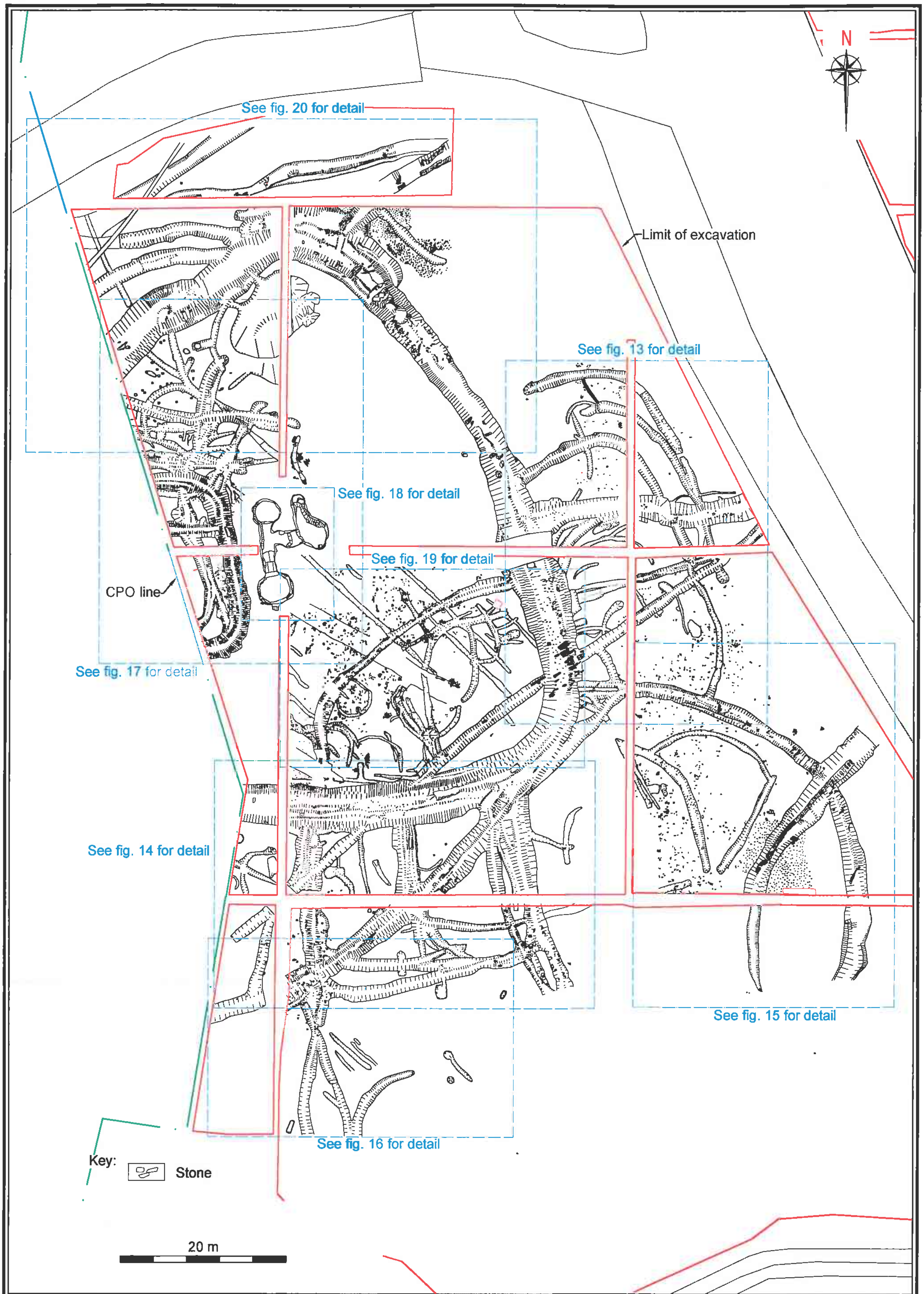
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: OSi (1909)
	Client: Meath County Council	Drawing no.: 04_01_C7765i

Figure 5: Roestown 2, extract from 3rd edition OS map, Meath sheets 38 & 44



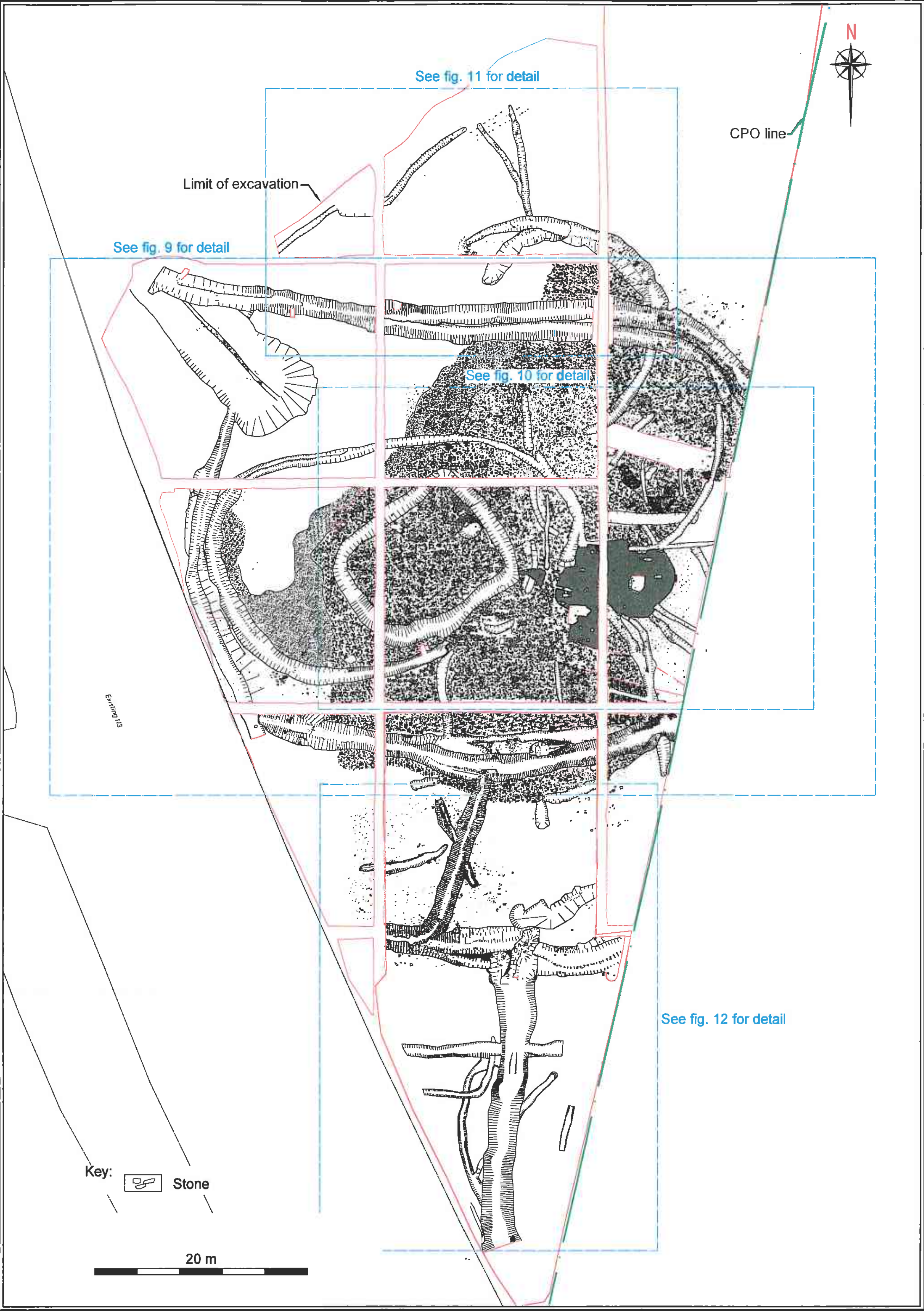
Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	*Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2*	*Scale: 1:5,000 A4*
		Date: Jul '08
	Issued for: Excavation Report	*Origin: Client/ACS Ltd.*
	Client: Meath County Council	*Drawing no.: 04_01_C7766i*

Figure 6: Detailed location of Roestown 2



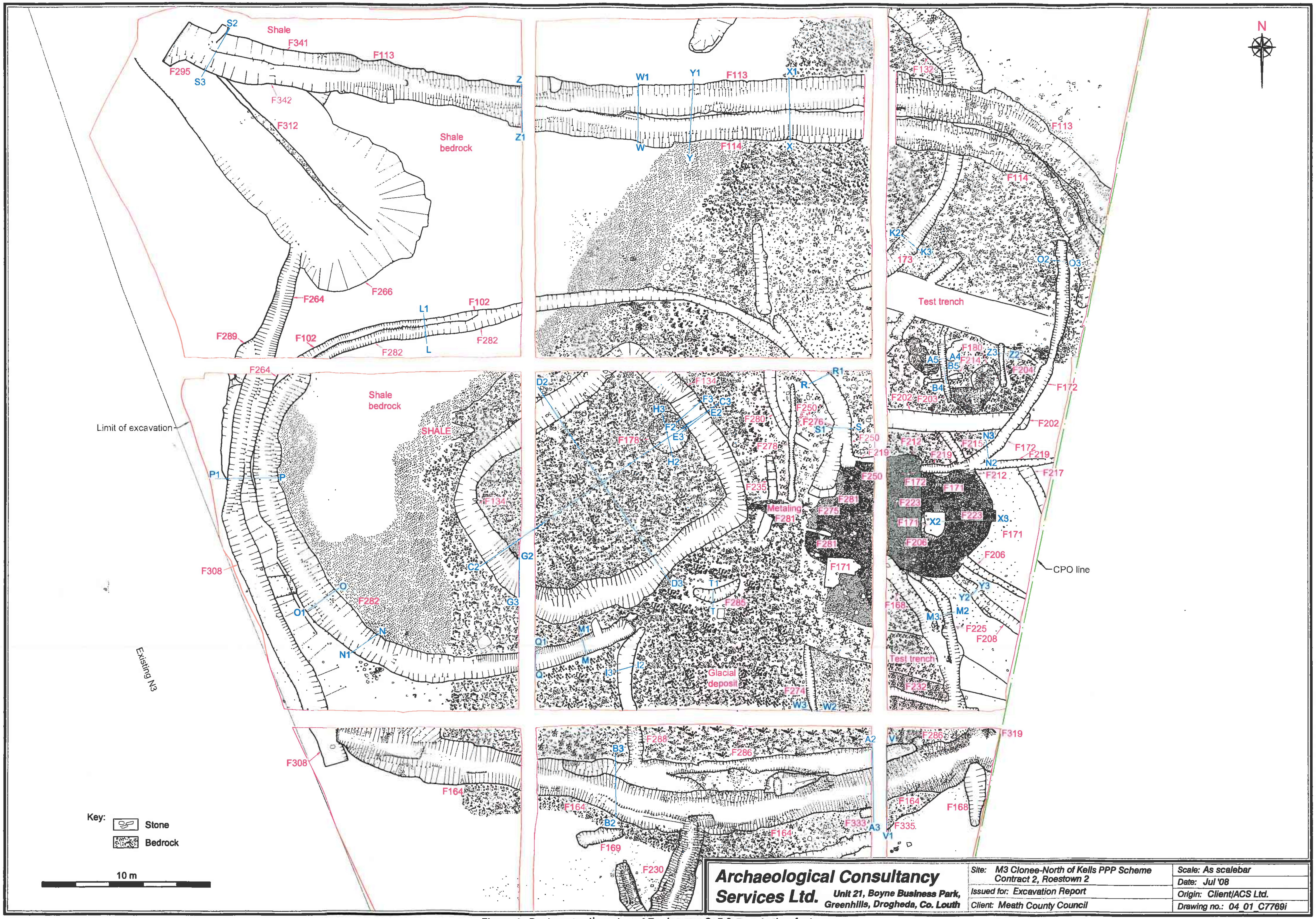
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued For: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7767i

Figure 7: Post-excavation plan of Area B showing location of detailed plans



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:500 A4
		Date: Jul '08
	Issued For: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7768i

Figure 8: Post-excavation plan of Area A showing location of detailed plans



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7769i

Figure 9: Post-excavation plan of Enclosures 2–5 & 7 and other features

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:125 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7770i

Figure 10: Post-excavation plan of Enclosure 4 and other features

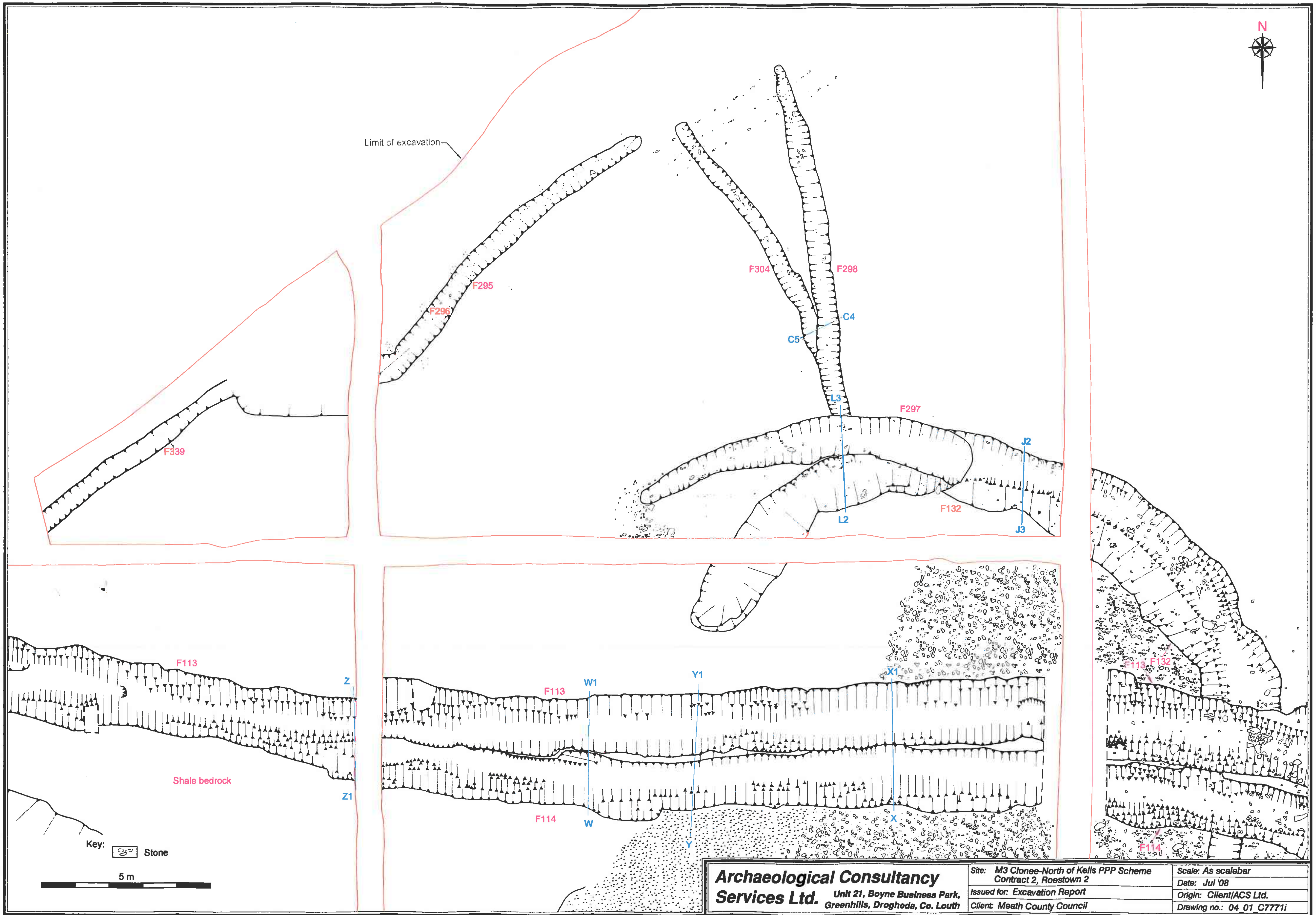
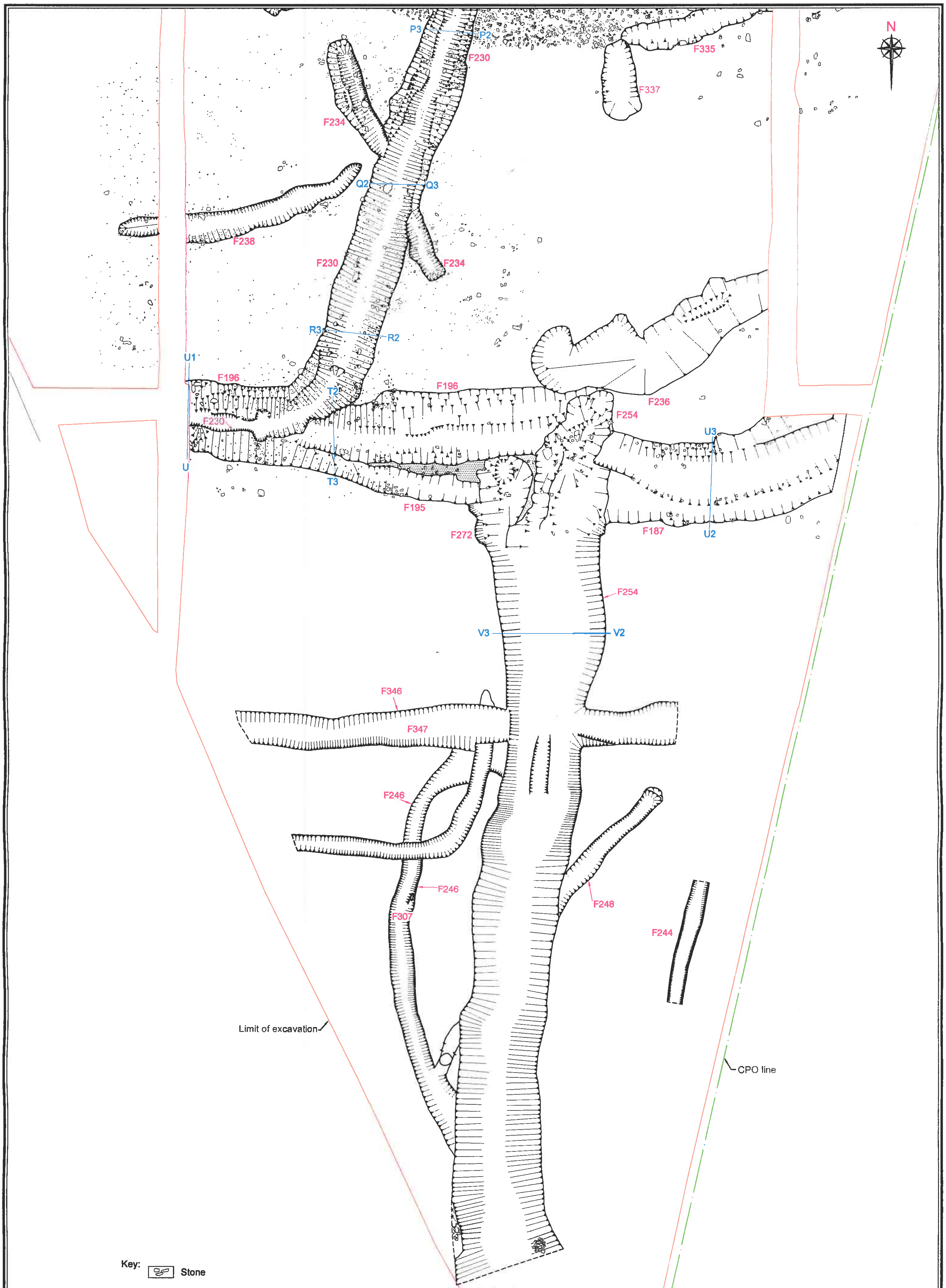
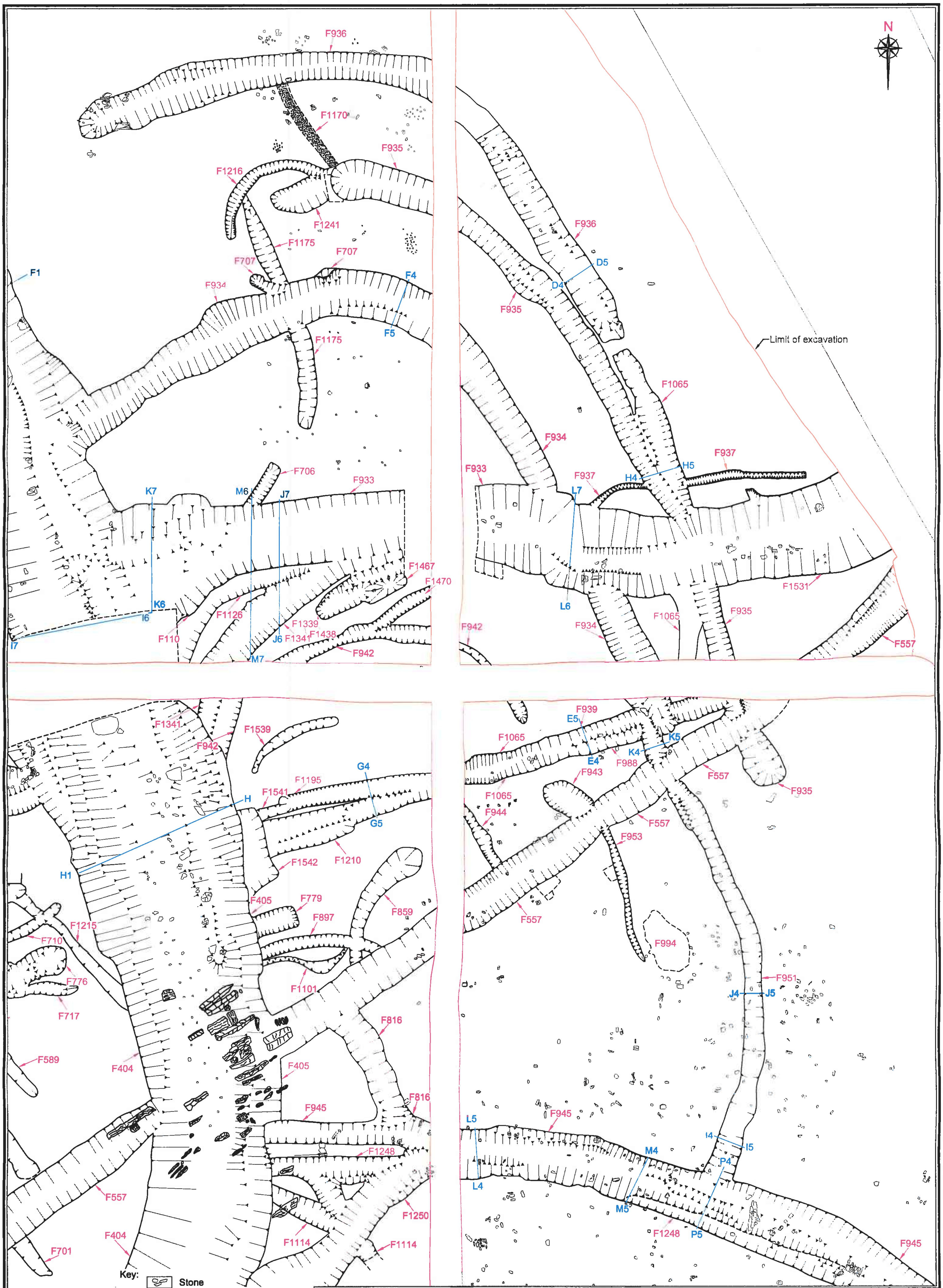


Figure 11: Post-excavation plan of Enclosure 6 and other features



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
	Issued for: Excavation Report	Date: Jul '08
		Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7772i

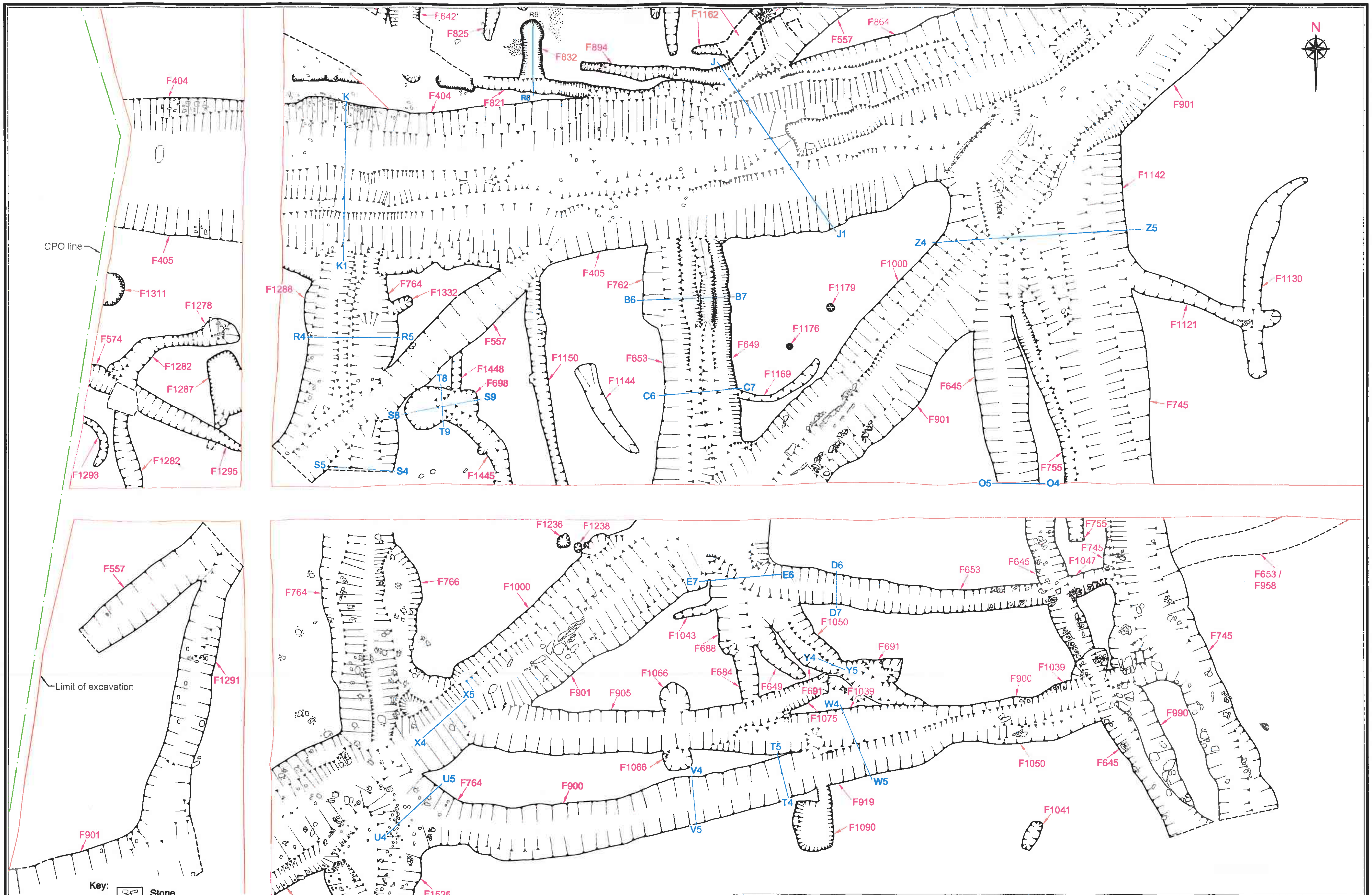
Figure 12: Post-excavation plan of Enclosures 8 & 9 and other features



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:125 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7773i

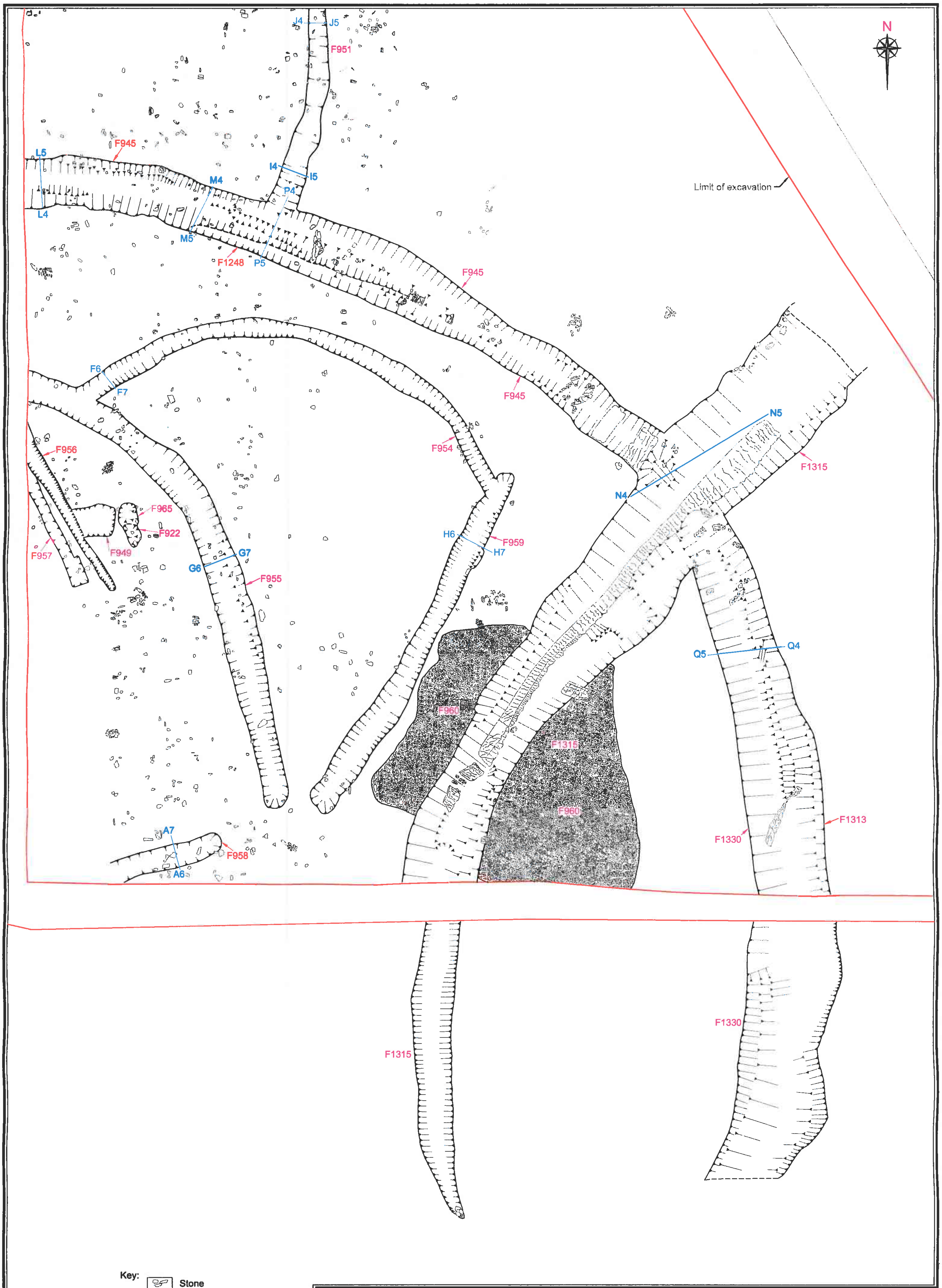
Figure 13: Post-excavation plan showing Enclosure 10, F933 etc. and other features



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

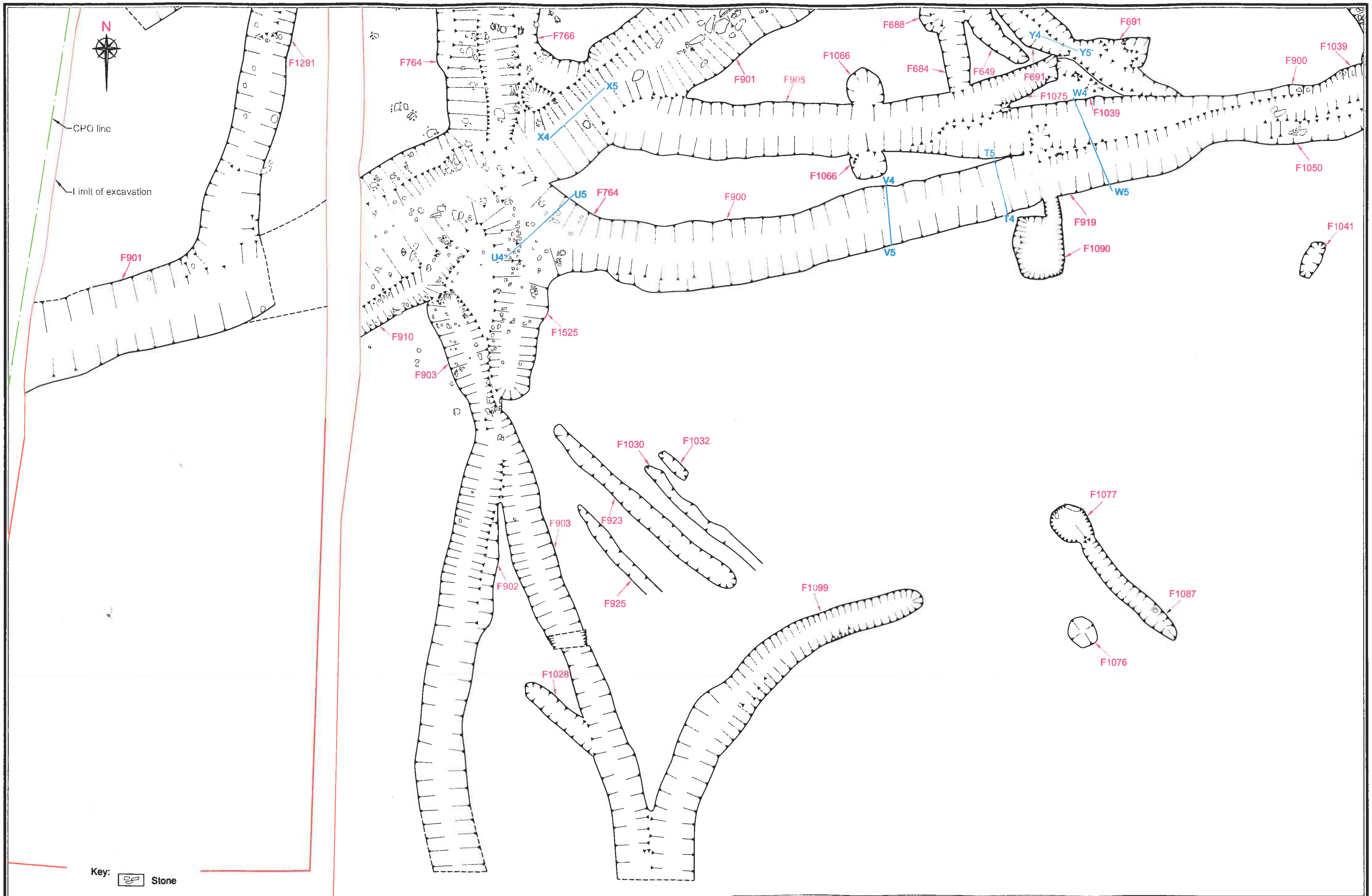
Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:125 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7774i

Figure 14: Post-excavation plan showing Enclosures 11, 14 & 15 and other features



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2
	Issued for: Excavation Report
	Client: Meath County Council
Scale: 1:125 A3	*Date:* Jul '08
Origin: Client/ACS Ltd.	*Drawing no.:* 04_01_C7775i

Figure 15: Post-excavation plan of Enclosures 12, 14 and 16, F1315 and other features

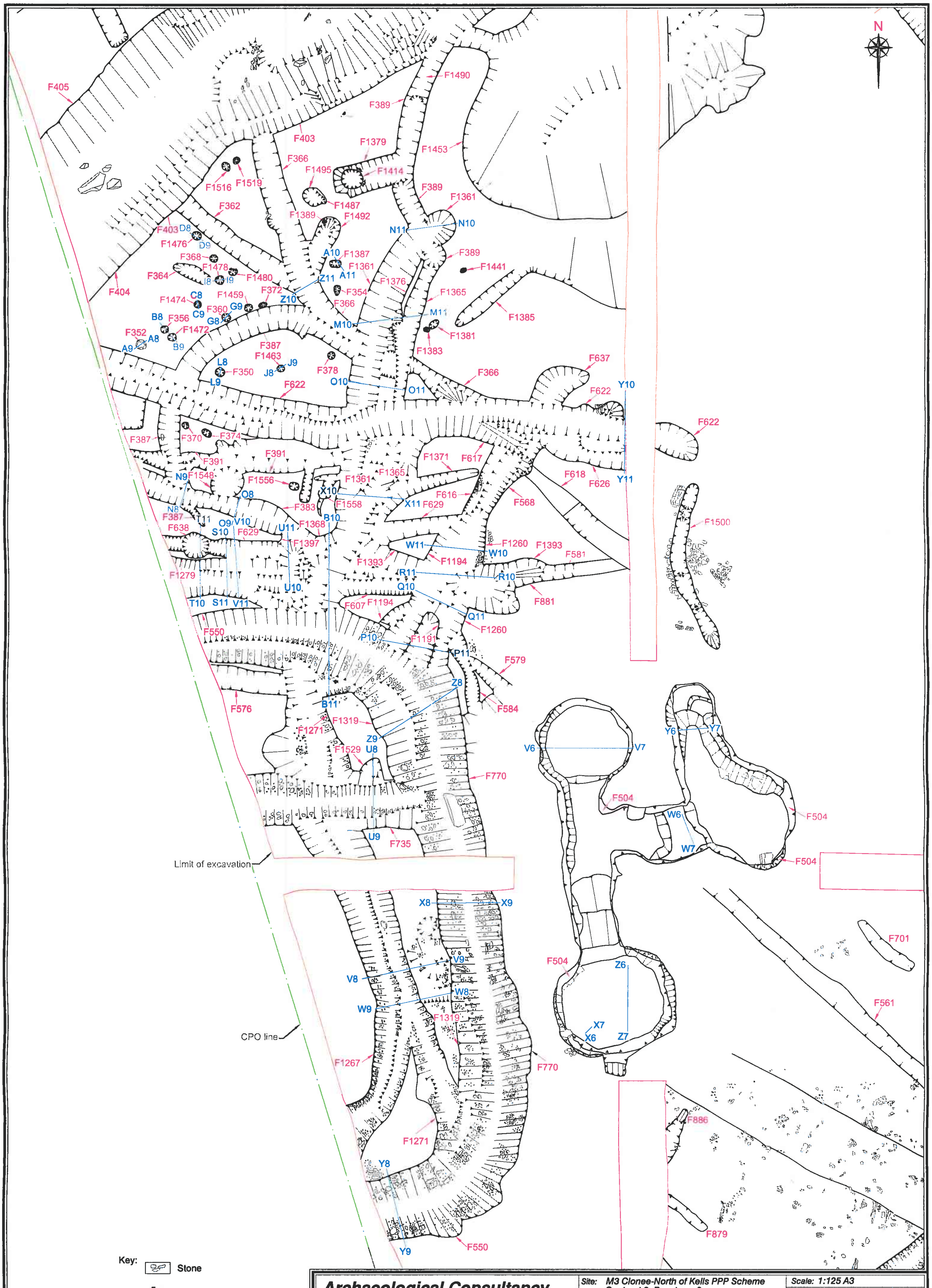


Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site:	M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2
Issued for:	Excavation Report
Client:	Meath County Council

Scale:	1:100 A3
Date:	Jul '08
Origin:	Client/ACS Ltd.
Drawing no.:	04_01_C7776i

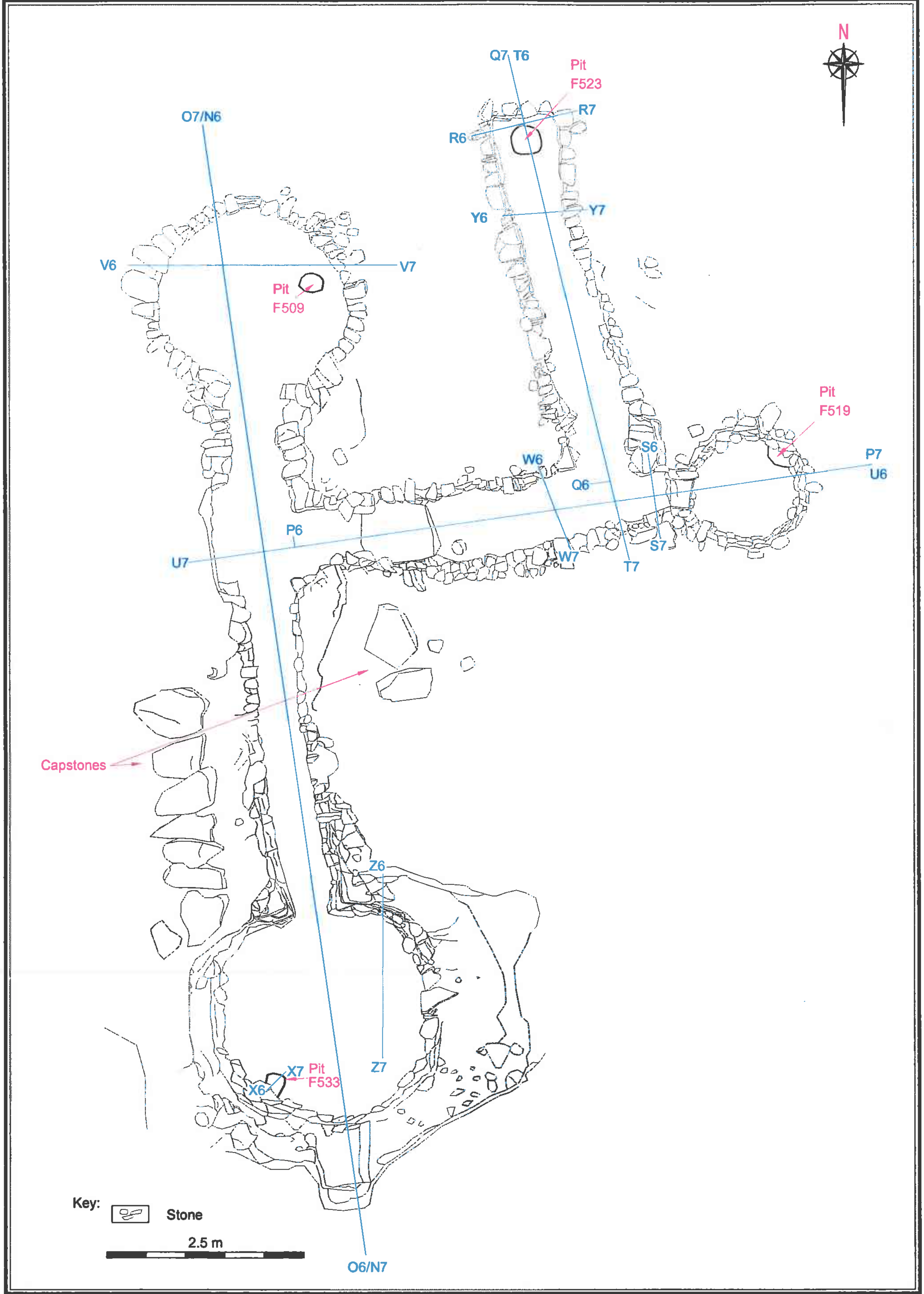
Figure 16: Post-excavation plan showing features south of Enclosure 15



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2
	Issued for: Excavation Report
	Client: Meath County Council

Scale: 1:125 A3	
Date: Jul '08	
Origin: Client/ACS Ltd.	
Drawing no.: 04_01_C7777i	

Figure 17: Post-excavation plan of western interior of Enclosure 1



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2*	*Scale: As scalebar*
	Issued for: Excavation Report	*Date: Jul '08*
		Origin: Client/ACS Ltd.
	Client: Meath County Council	*Drawing no.: 04_01_C7778i*

Figure 18: Mid-excavation plan of souterrain

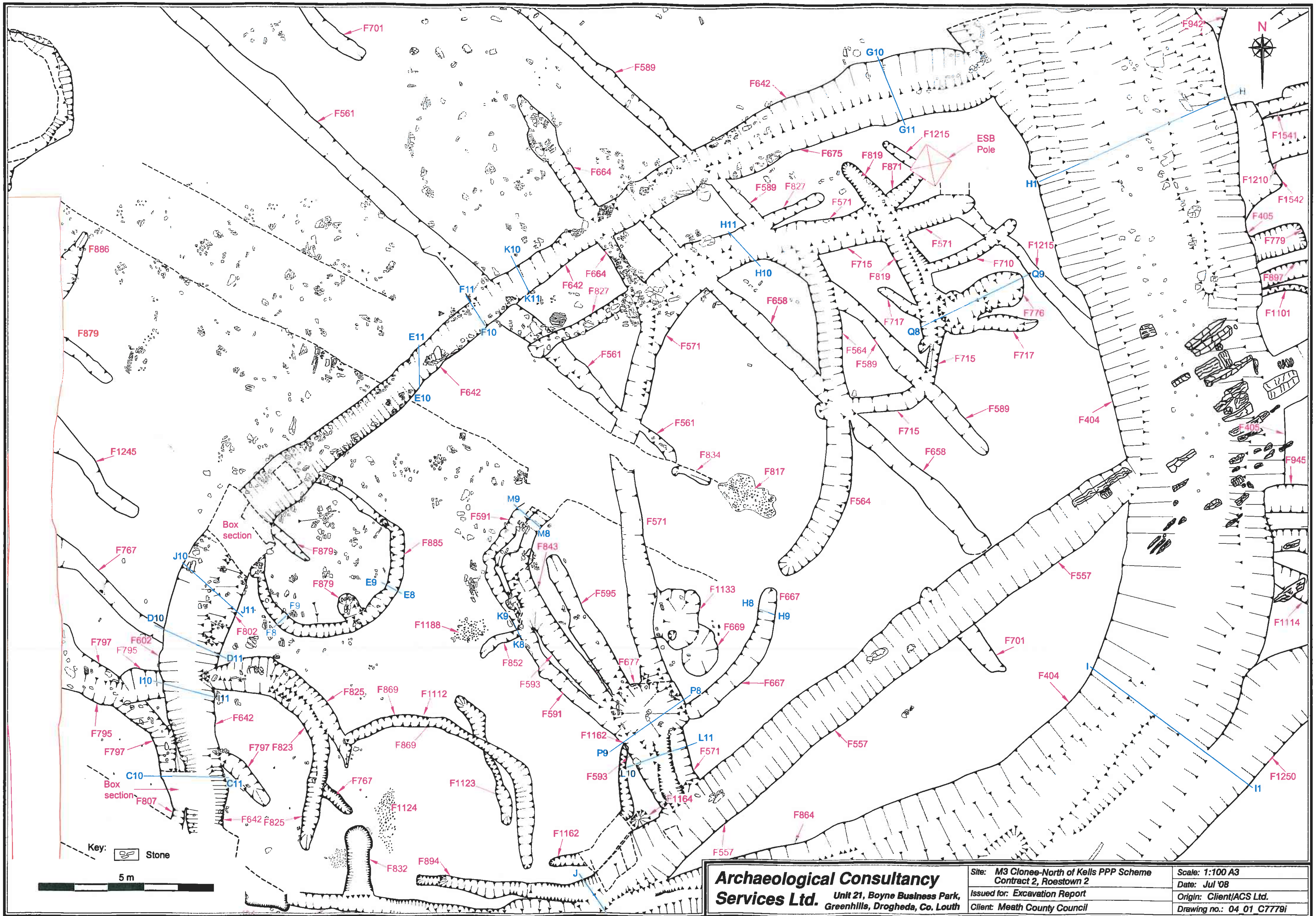
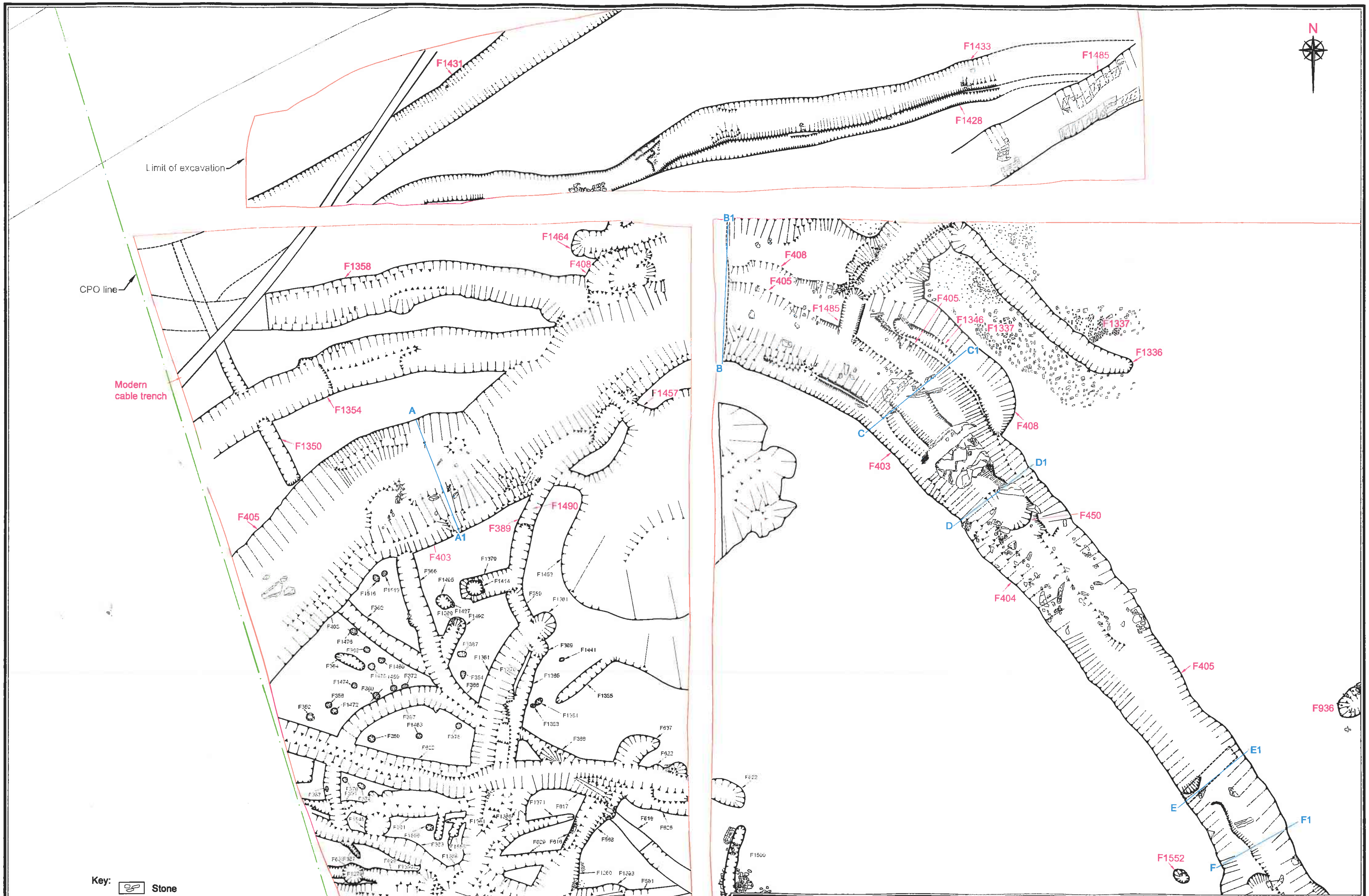
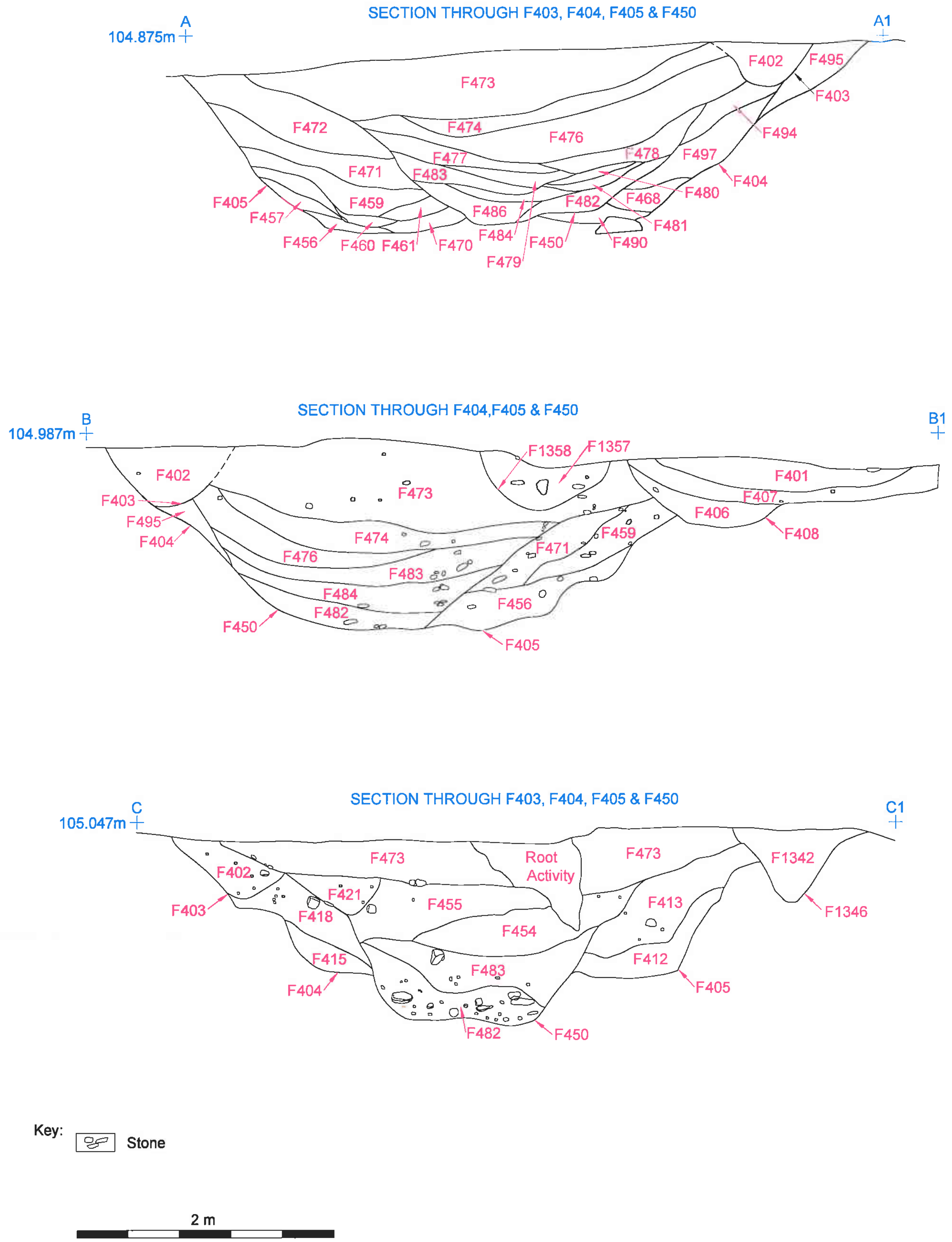


Figure 19: Post-excavation plan showing southern part of Enclosure 1



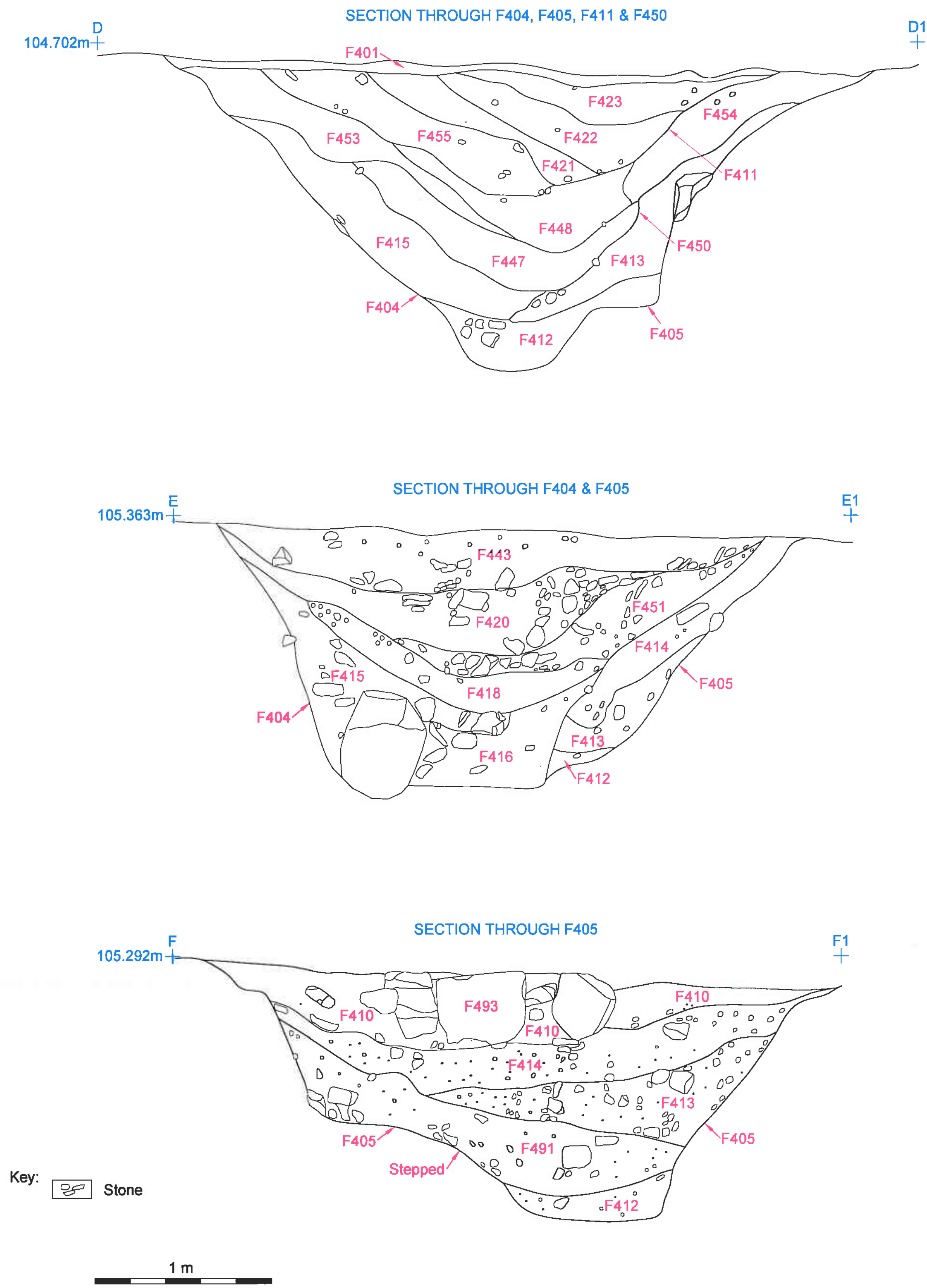
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7780i

Figure 20: Post-excavation plan of northern part of Enclosure 1 and other features



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* As scalebar
		Date: Jul '08
	Issued For: Excavation Report	*Origin:* ACS Ltd.
	Client: Meath County Council	*Drawing no.:* 04_01_C7781i

Figure 21: Enclosure 1 ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
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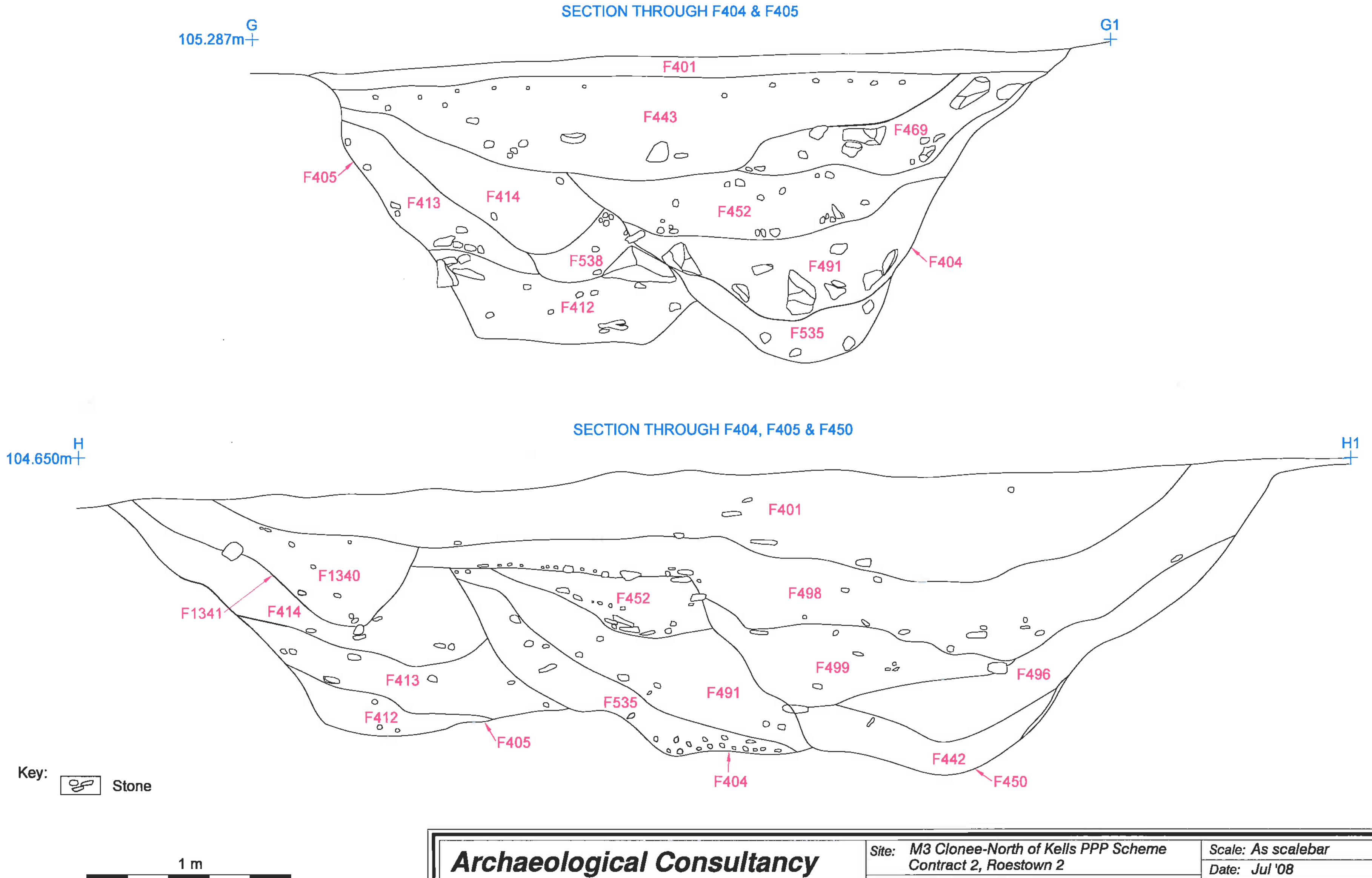
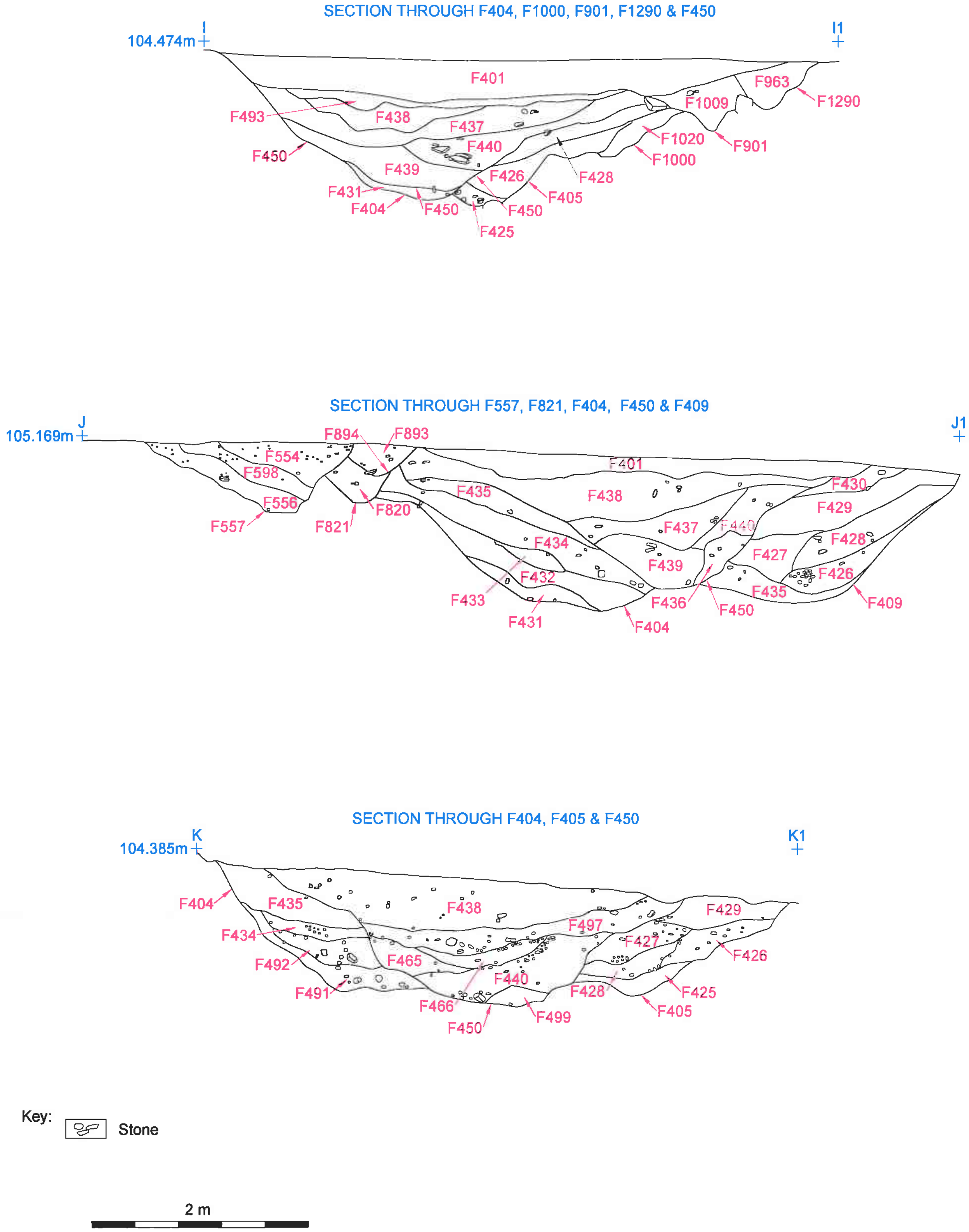
	Client: Meath County Council	Drawing no.: 04_01_C7782i

Figure 22: Enclosure 1 ditch sections



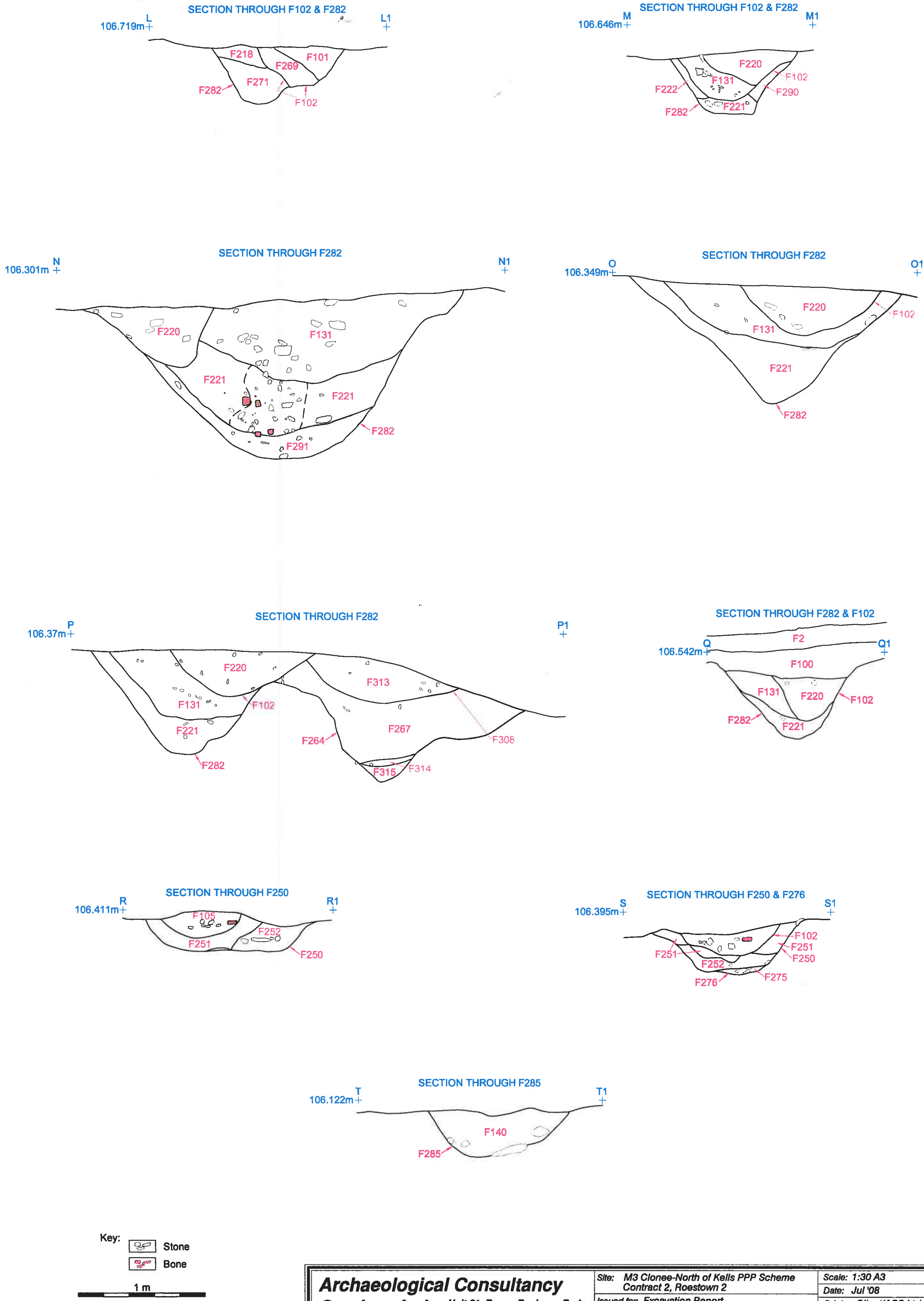
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7783i

Figure 23: Enclosure 1 ditch sections



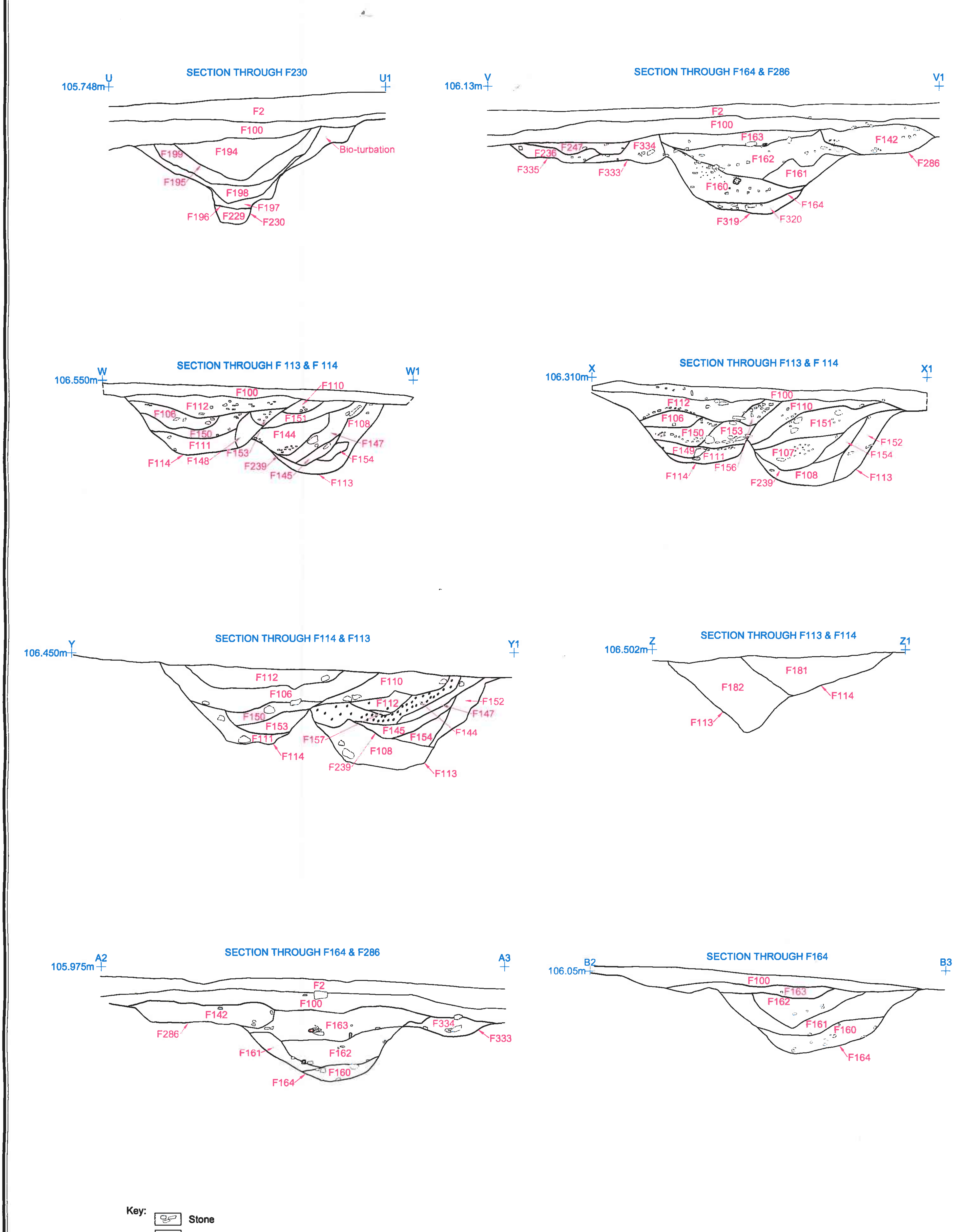
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* *M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2*	*Scale: As scalebar*
	Issued For: Excavation Report	*Date: Jul '08*
	Client: Meath County Council	*Origin: ACS Ltd.*
		Drawing no.: 04_01_C7784i

Figure 24: Enclosure 1 ditch sections



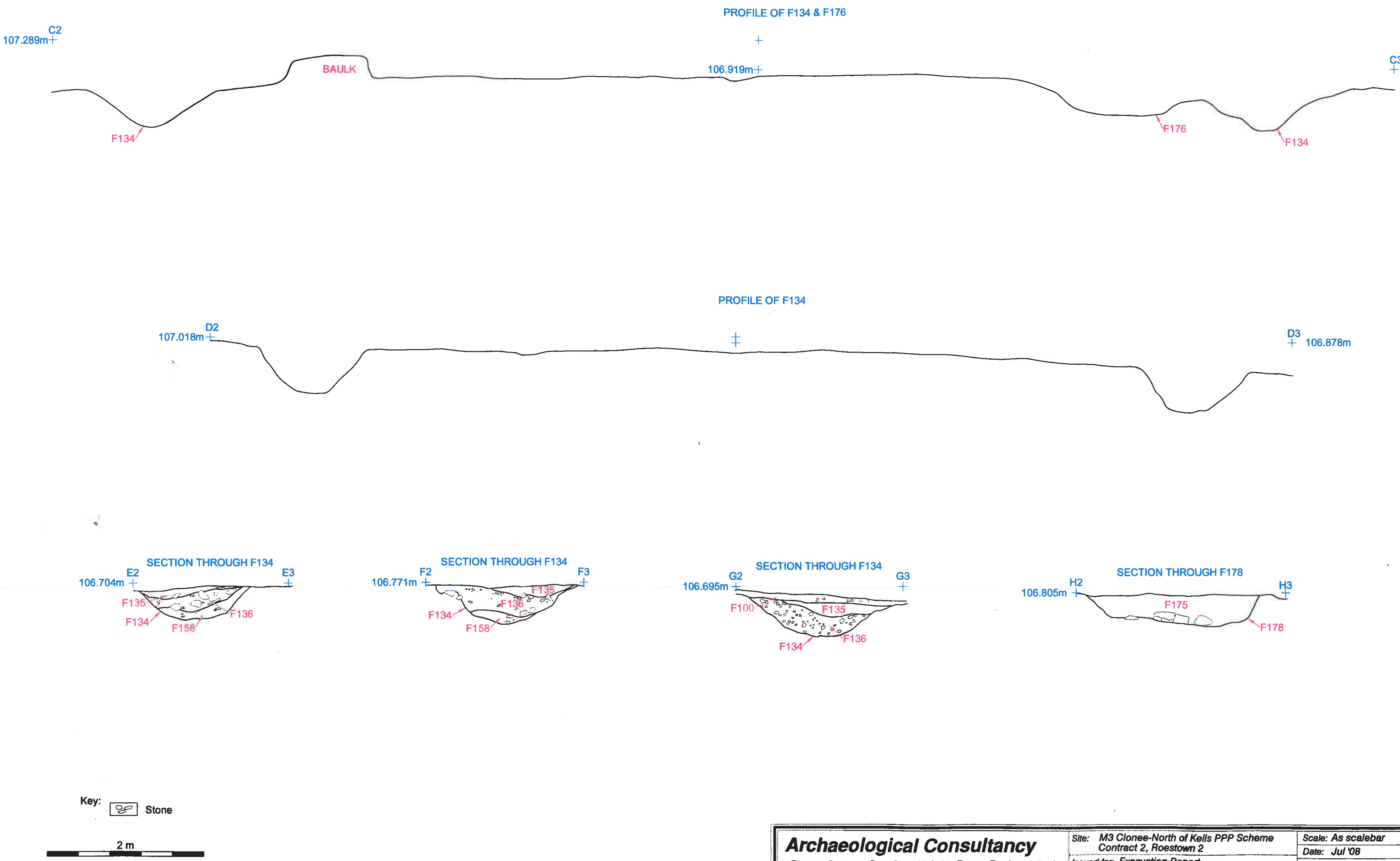
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* 1:30 A3
		Date: Jul '08
	Issued for: Excavation Report	*Origin:* Client/ACS Ltd.
	Client: Meath County Council	*Drawing no.:* 04_01_C7785i

Figure 25: Enclosure 2 ditch sections



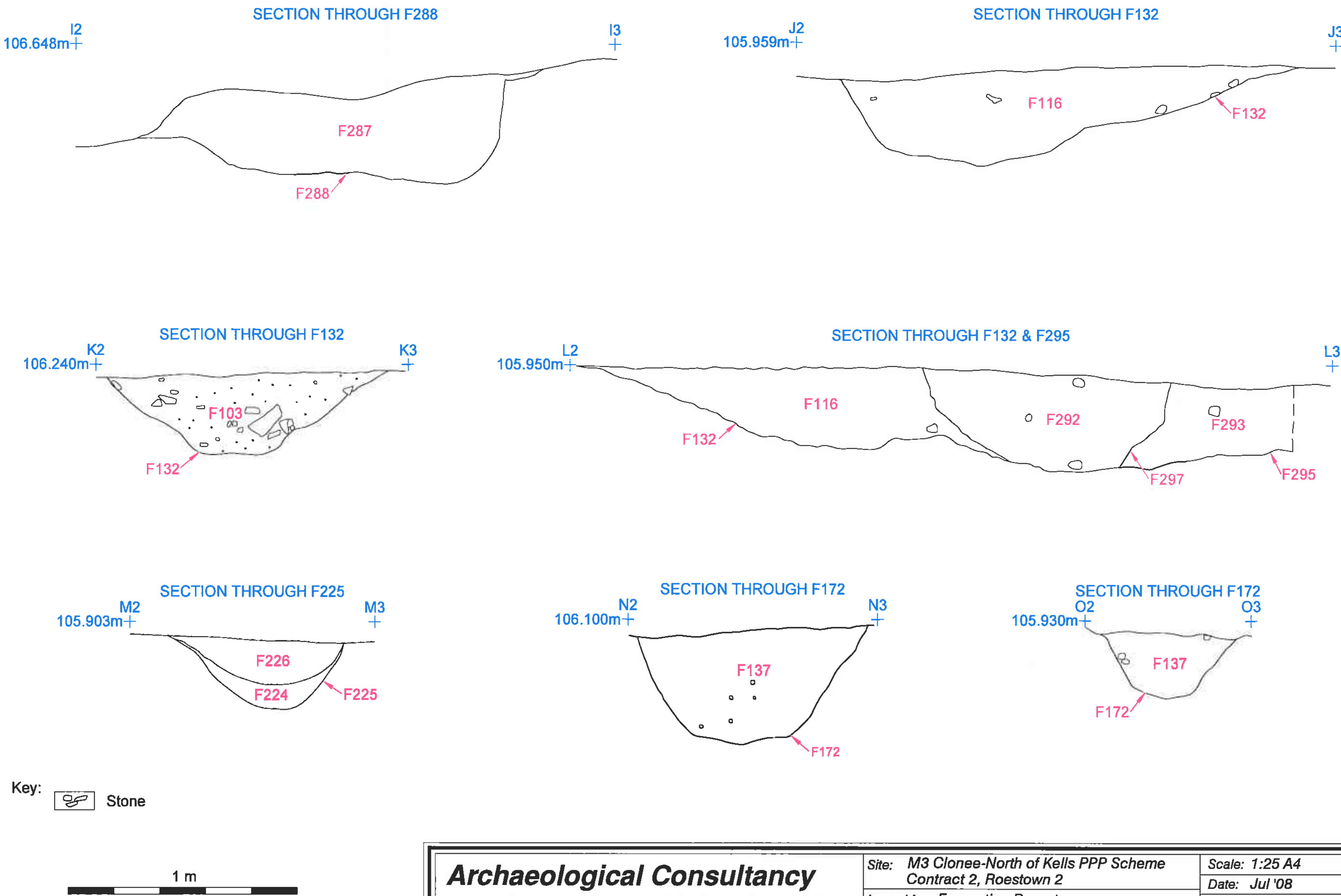
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:30 A3
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7786i

Figure 26: Enclosure 3 ditch sections



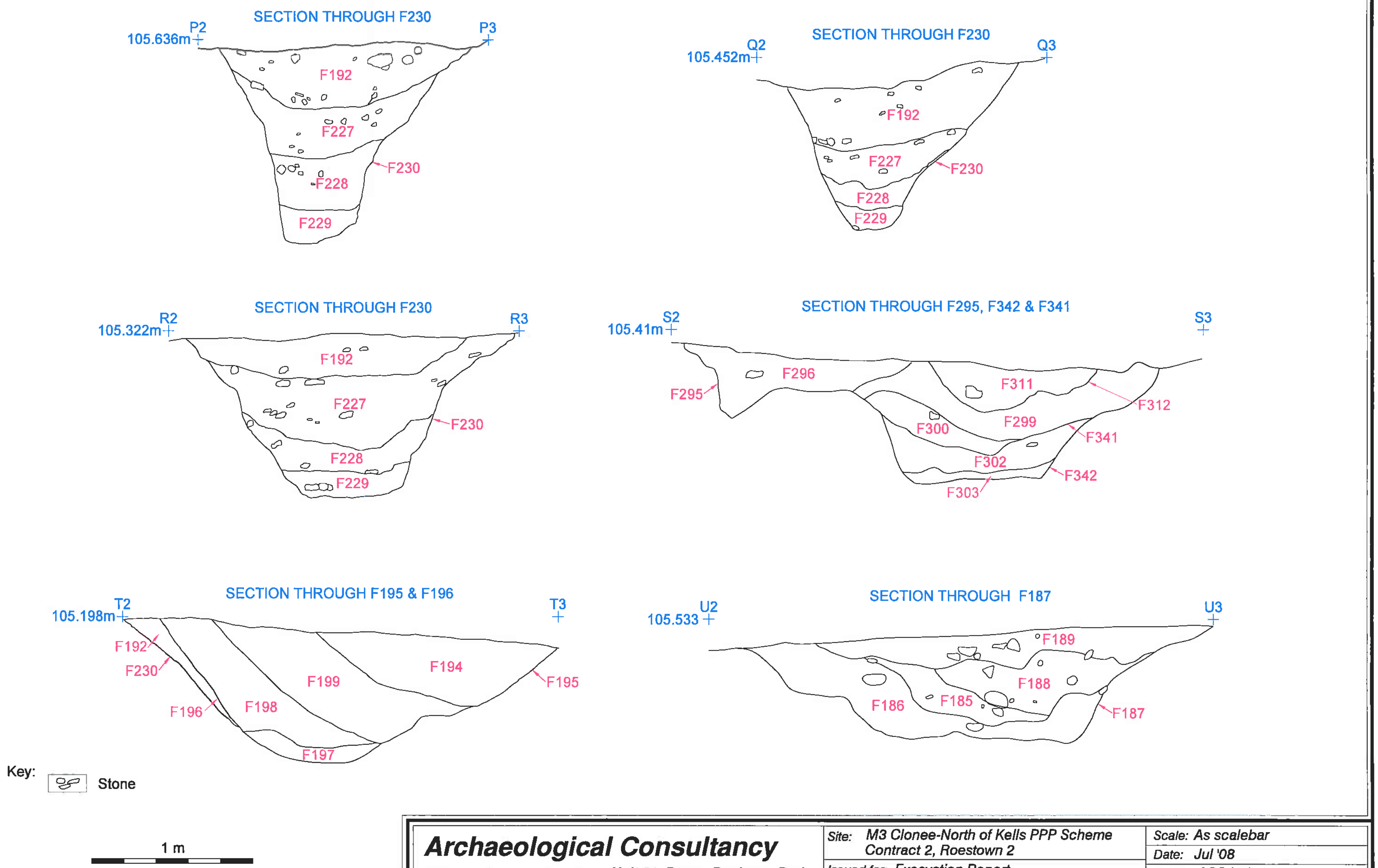
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7787i

Figure 27: Enclosure 4 sections



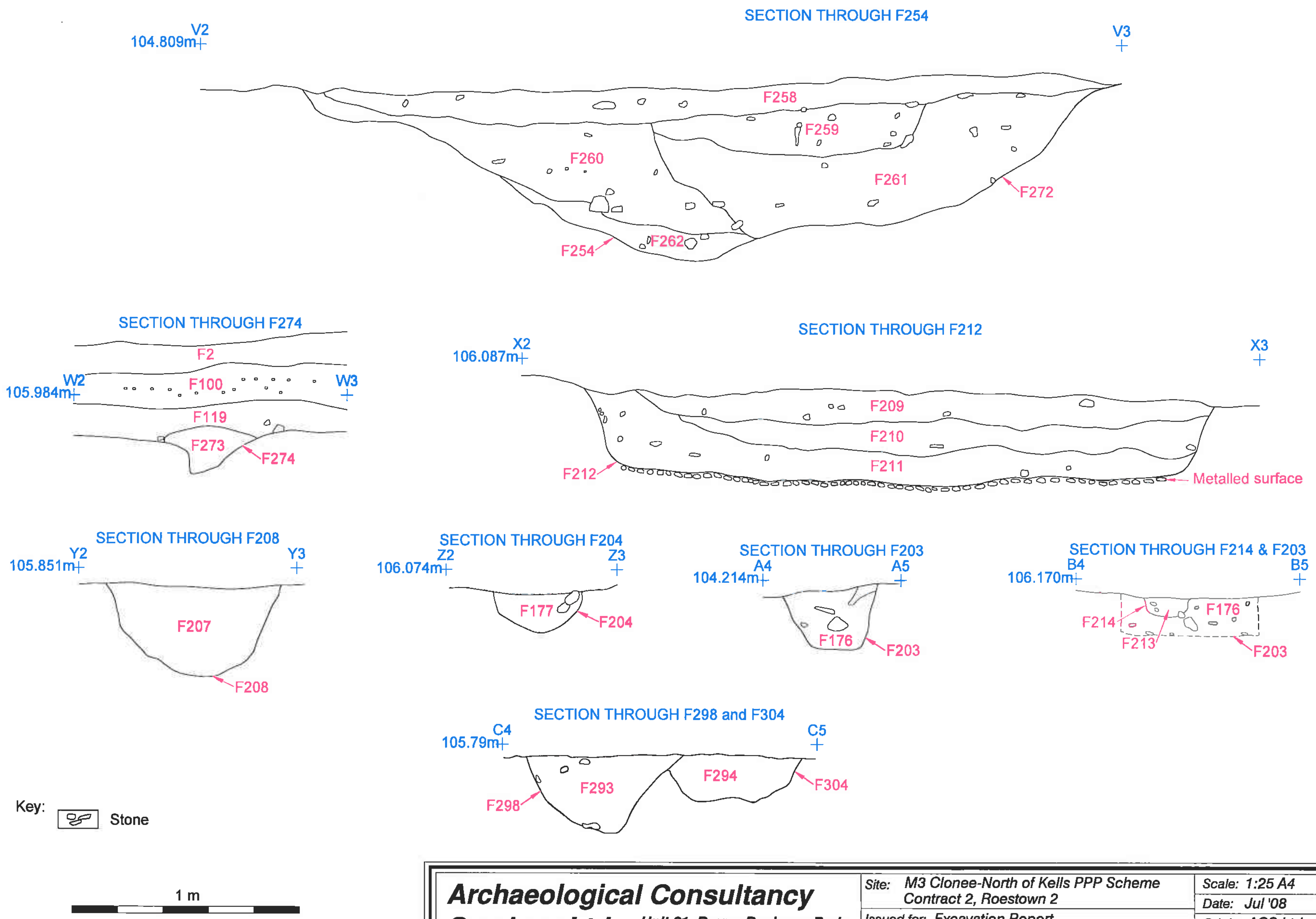
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:25 A4	Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.	
	Client: Meath County Council	Drawing no.: 04_01_C7788i	

Figure 28: Enclosures 5, 6 and 7 ditch sections



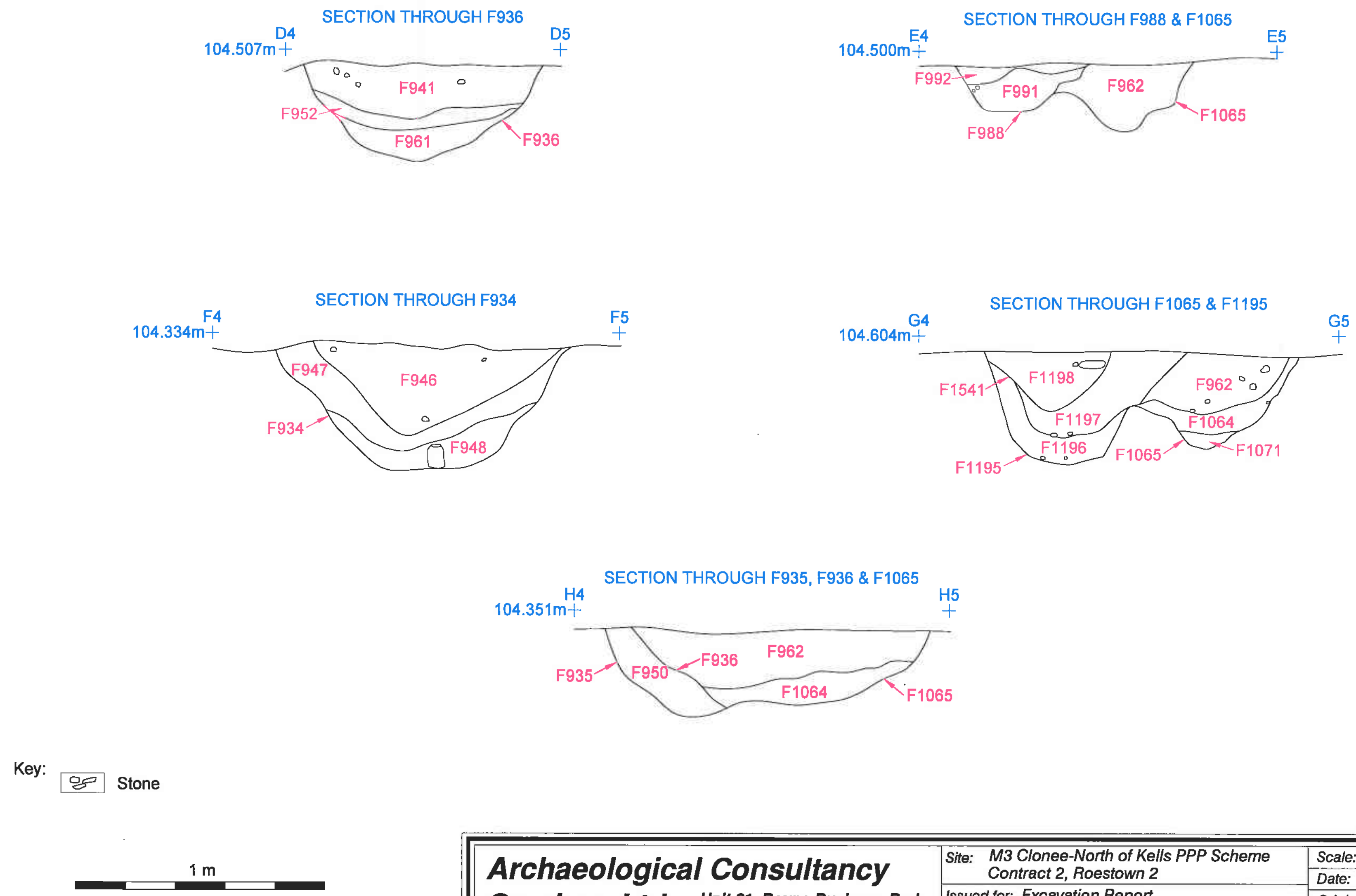
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7789i

Figure 29: Enclosures 8 and 9 ditch sections



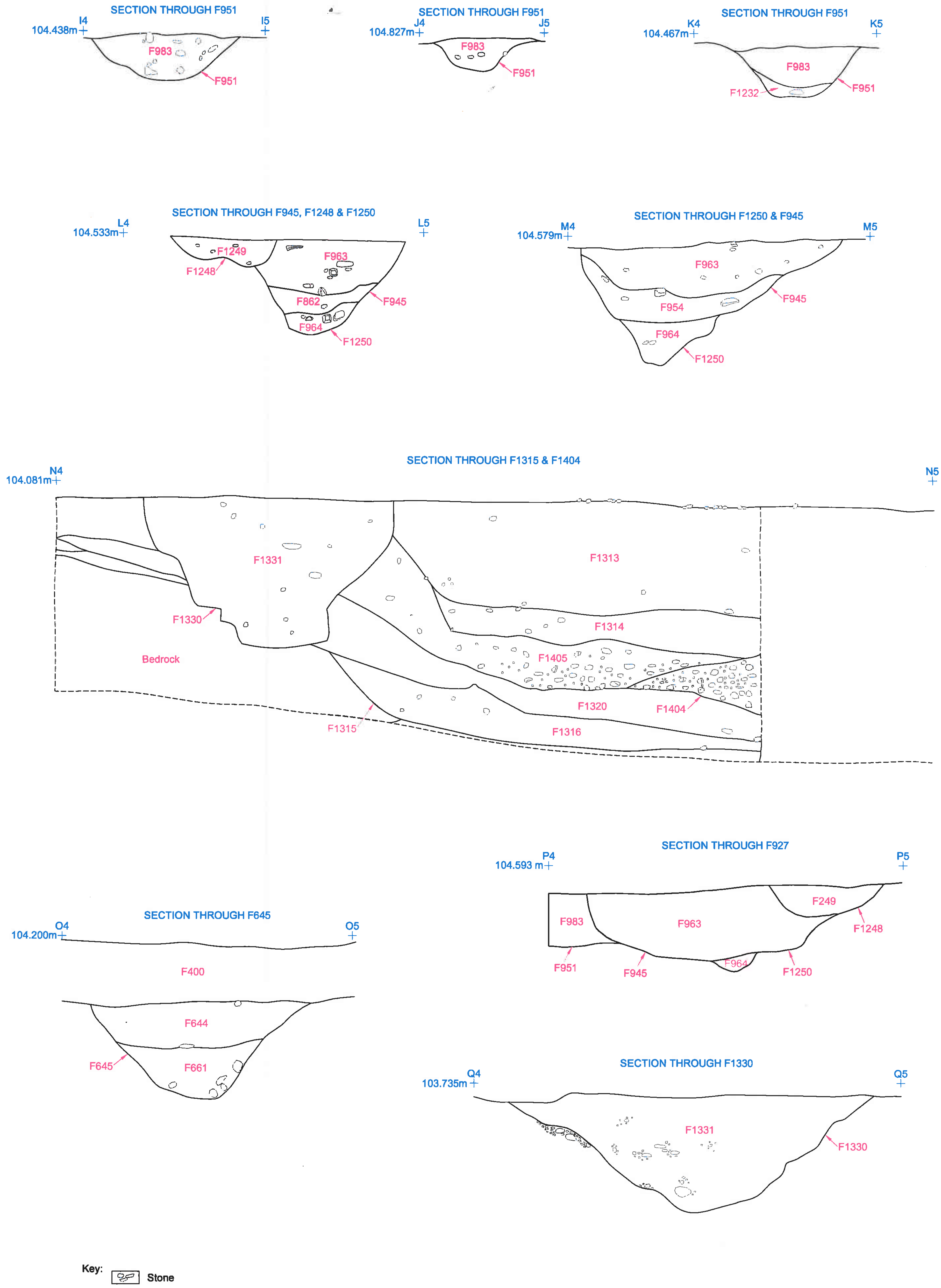
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:25 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7790i

Figure 30: Area A. Various feature sections



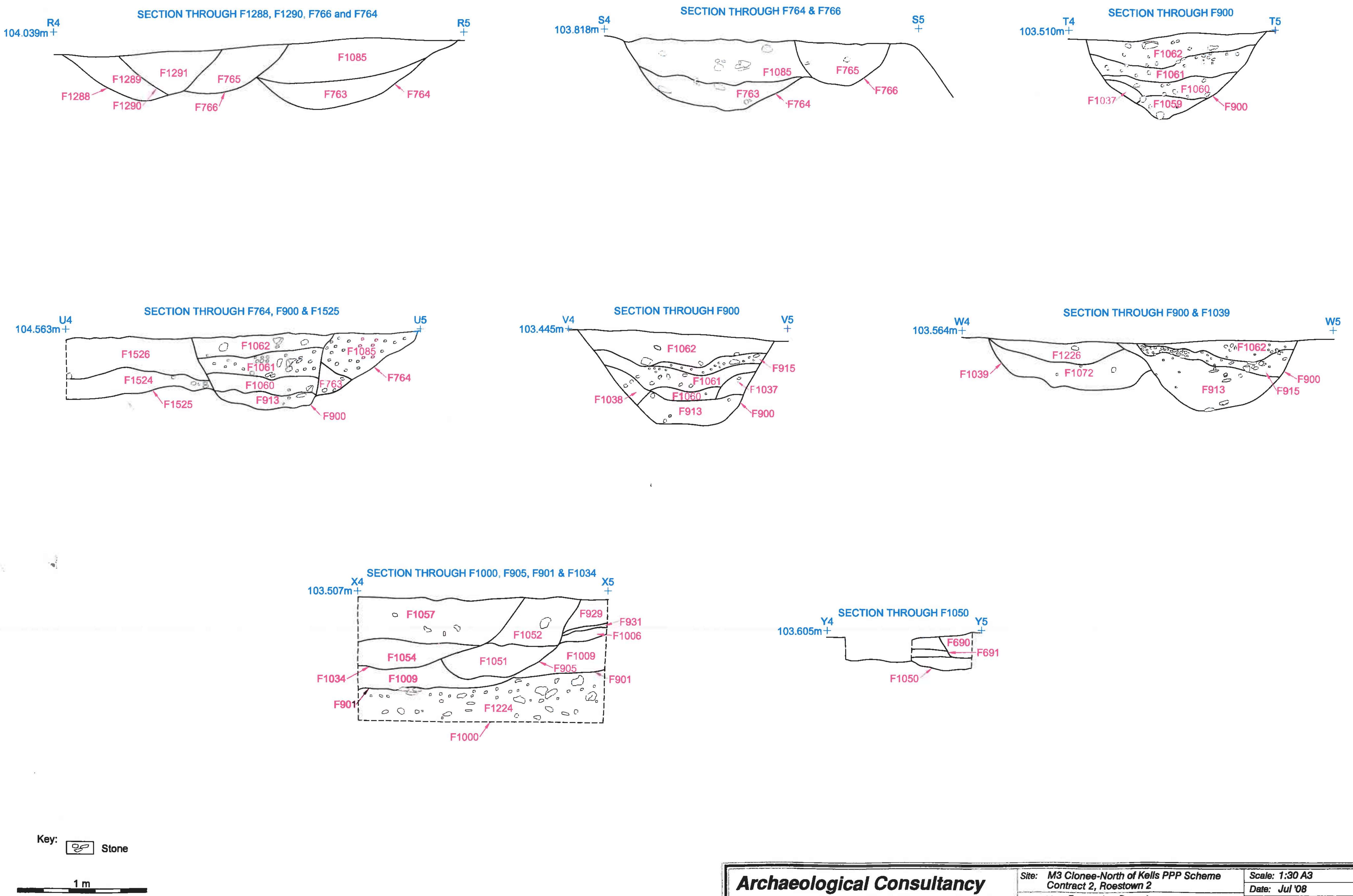
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* *M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2*	*Scale: 1:25 A4*
	Issued for: Excavation Report	*Date: Jul '08*
	Client: Meath County Council	*Origin: ACS Ltd.*
		Drawing no.: 04_01_C7791i

Figure 31: Enclosures 10 and 11 ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:25 A3
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7792i

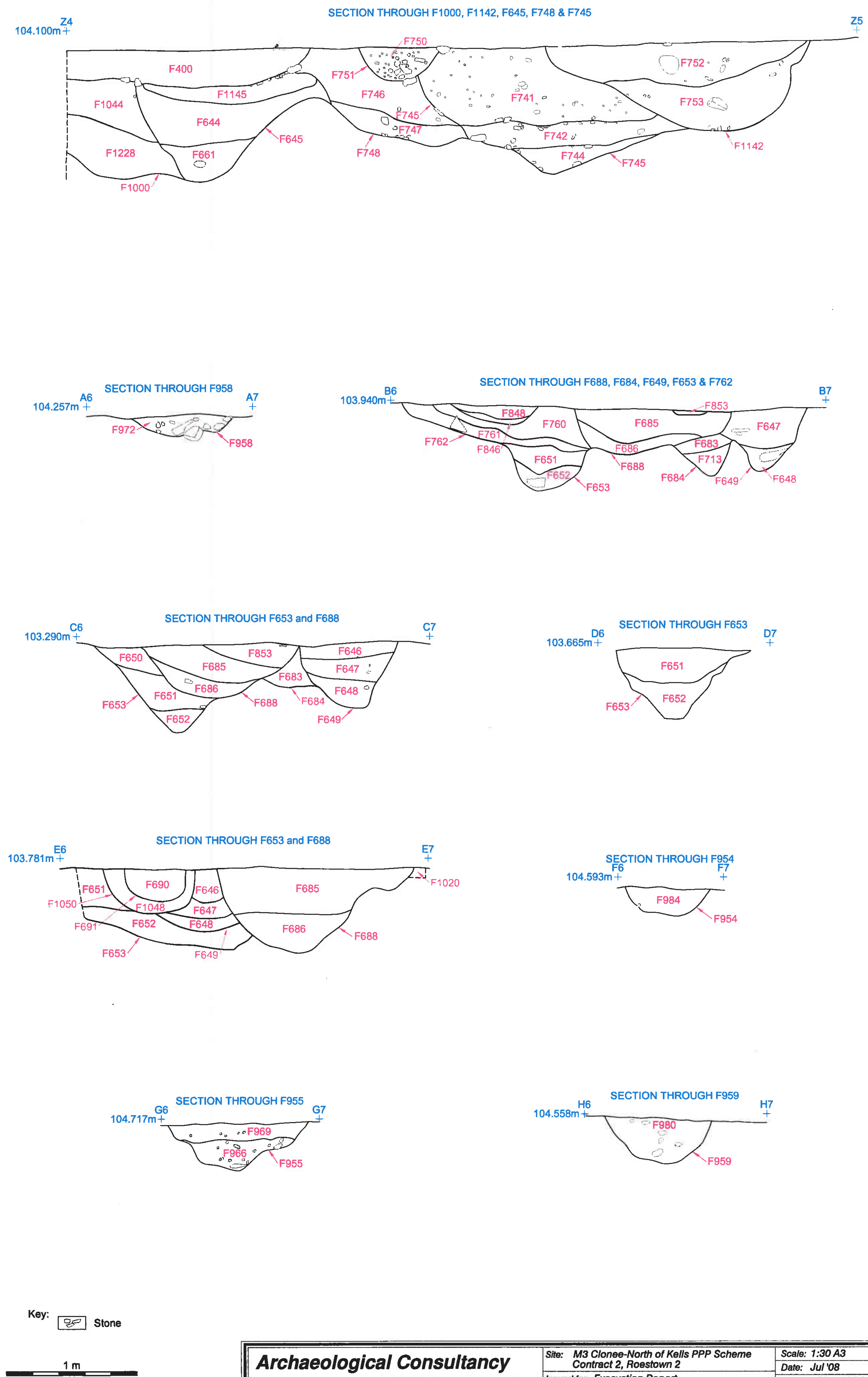
Figure 32: Enclosures 12 and 13 ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:30 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7793i

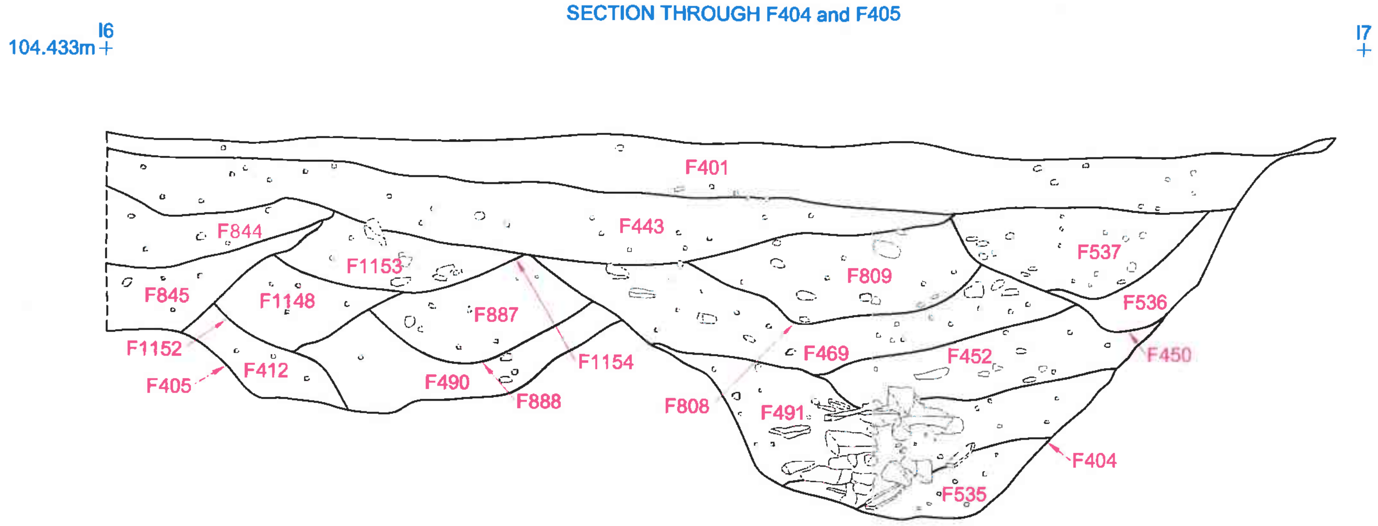
Figure 33: Enclosures 14 and 15 ditch sections



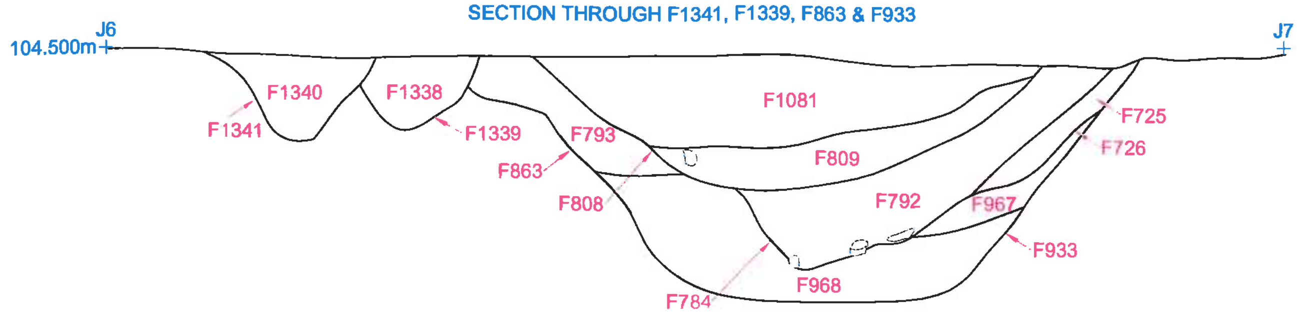
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:30 A3
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7794i

Figure 34: Enclosures 15 and 16 ditch sections

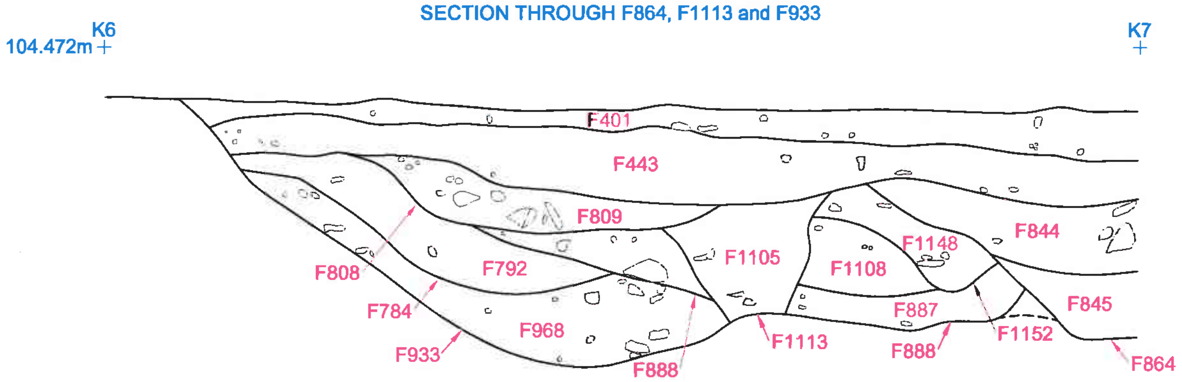
SECTION THROUGH F404 and F405



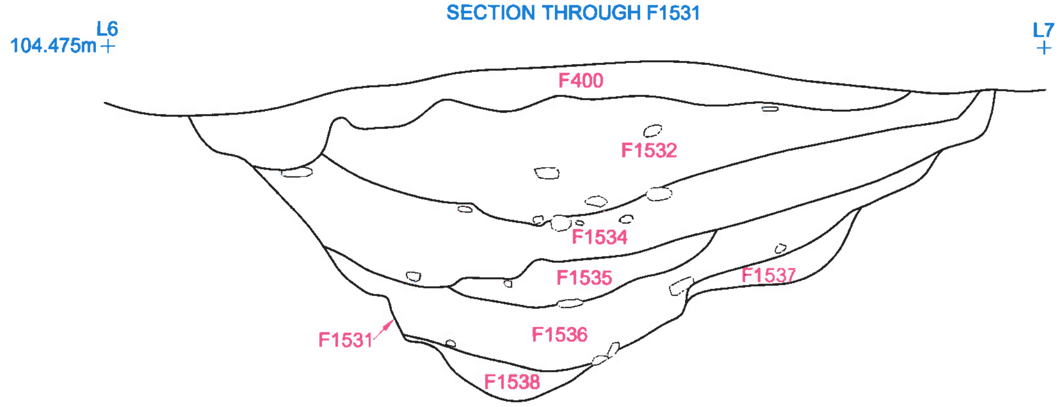
SECTION THROUGH F1341, F1339, F863 & F933



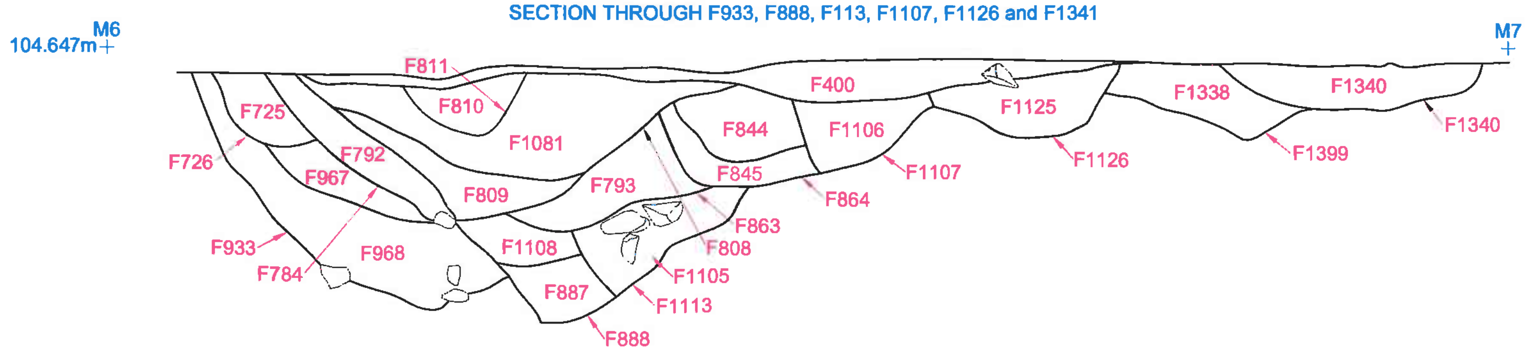
SECTION THROUGH F864, F1113 and F933



SECTION THROUGH F1531



SECTION THROUGH F933, F888, F113, F1107, F1126 and F1341

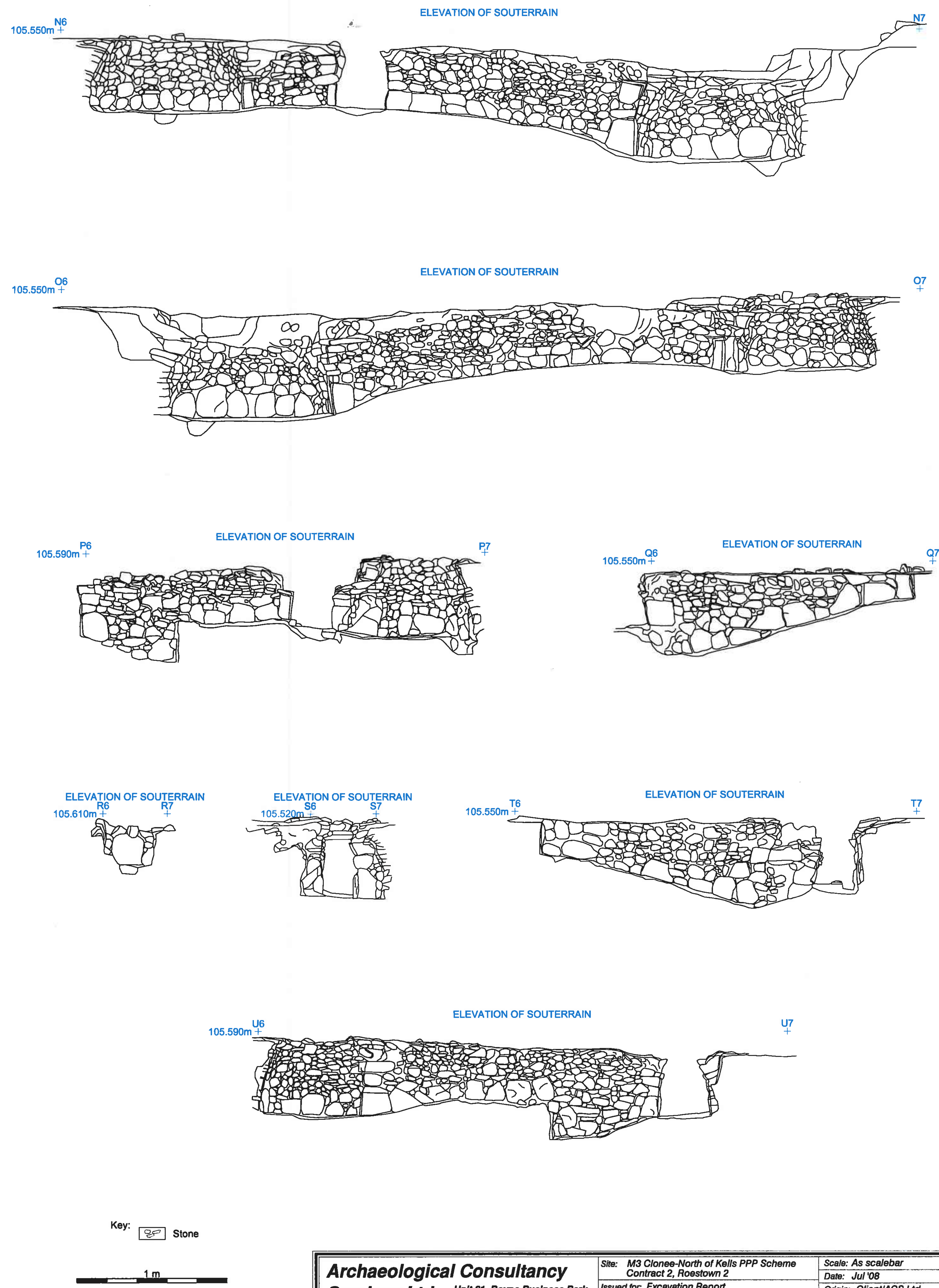


Key: Stone

1 m

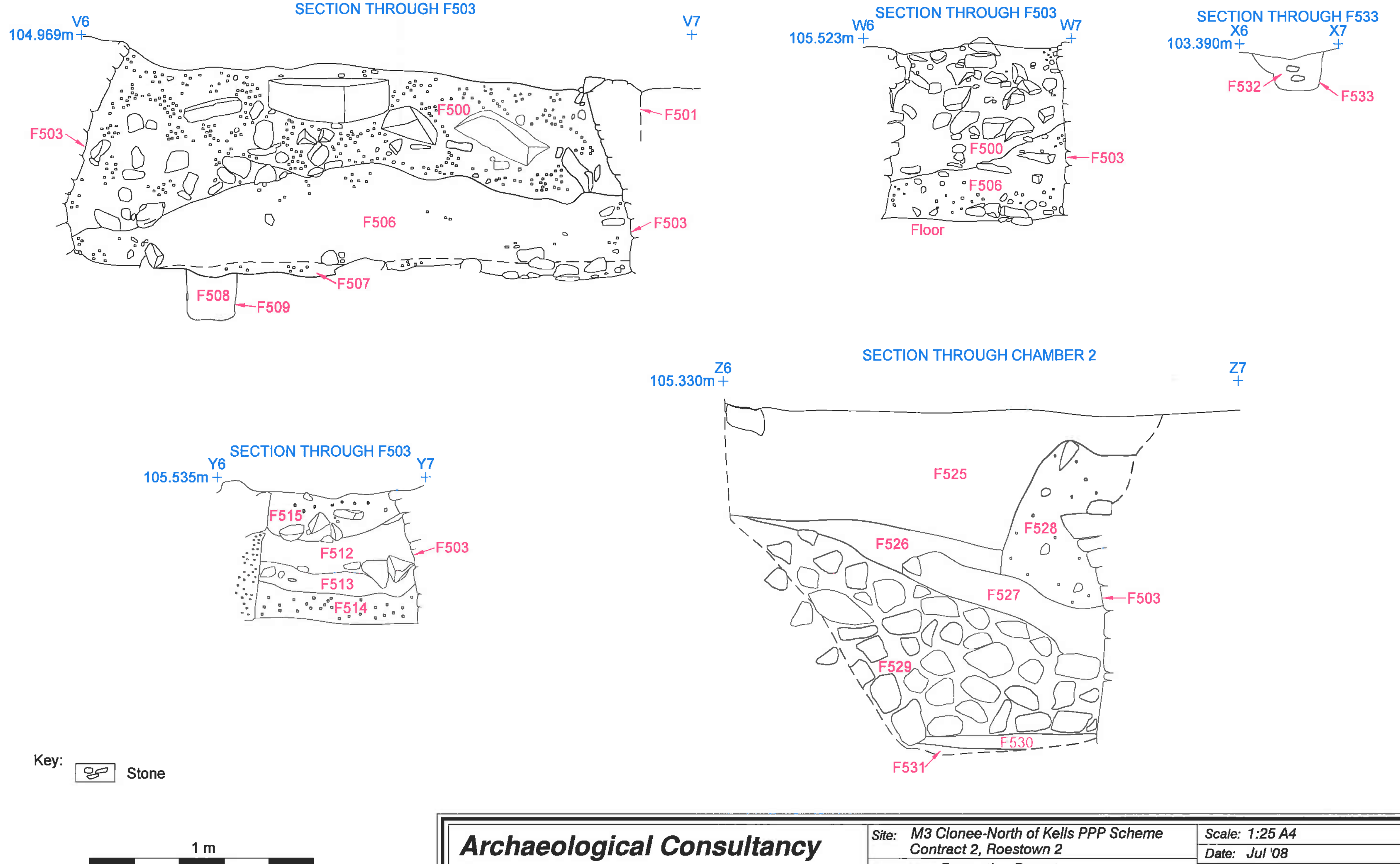
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:30 A3
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7795i

Figure 35: F933 etc. ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7796i

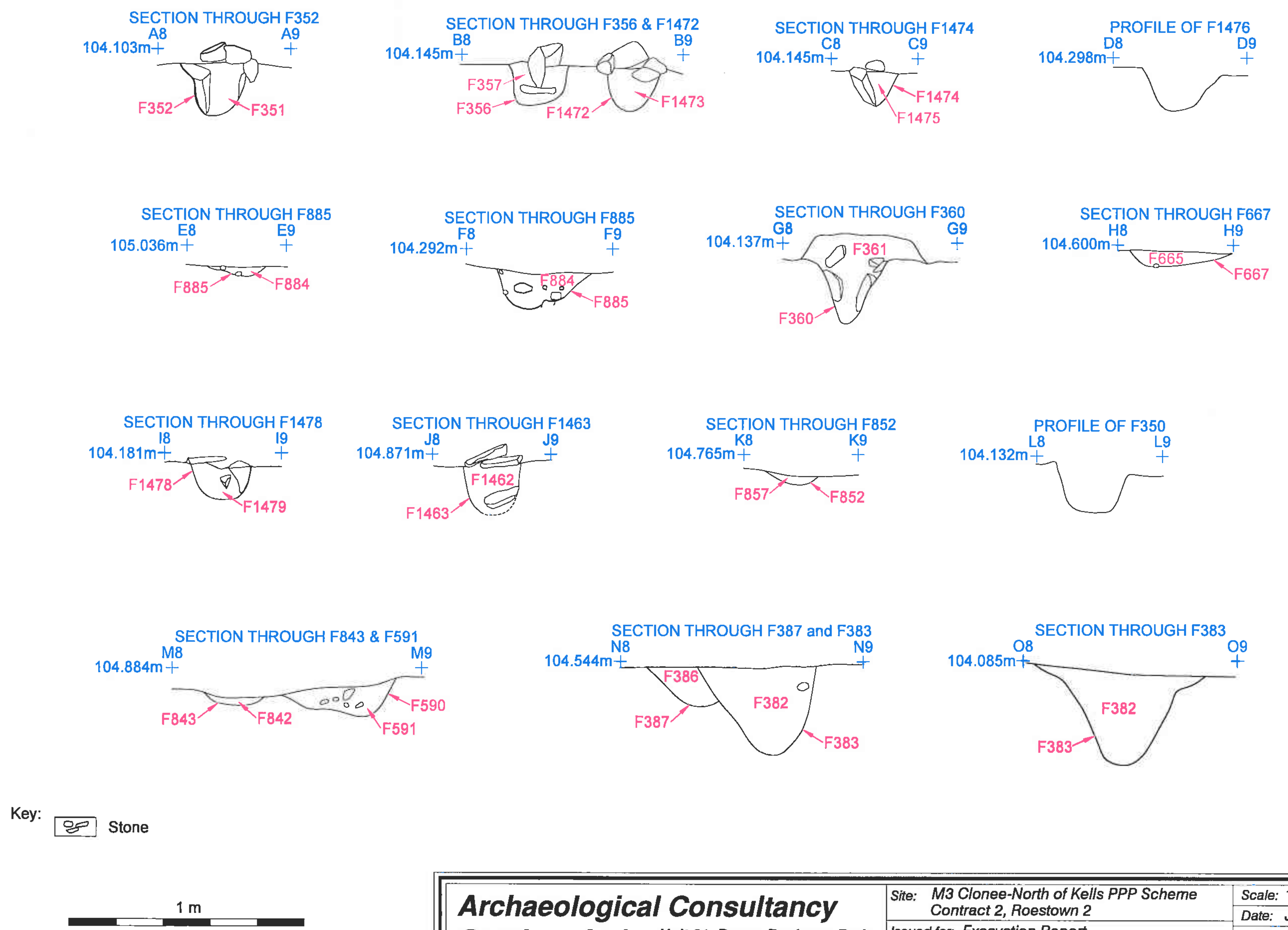
Figure 36: Souterrain profiles



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

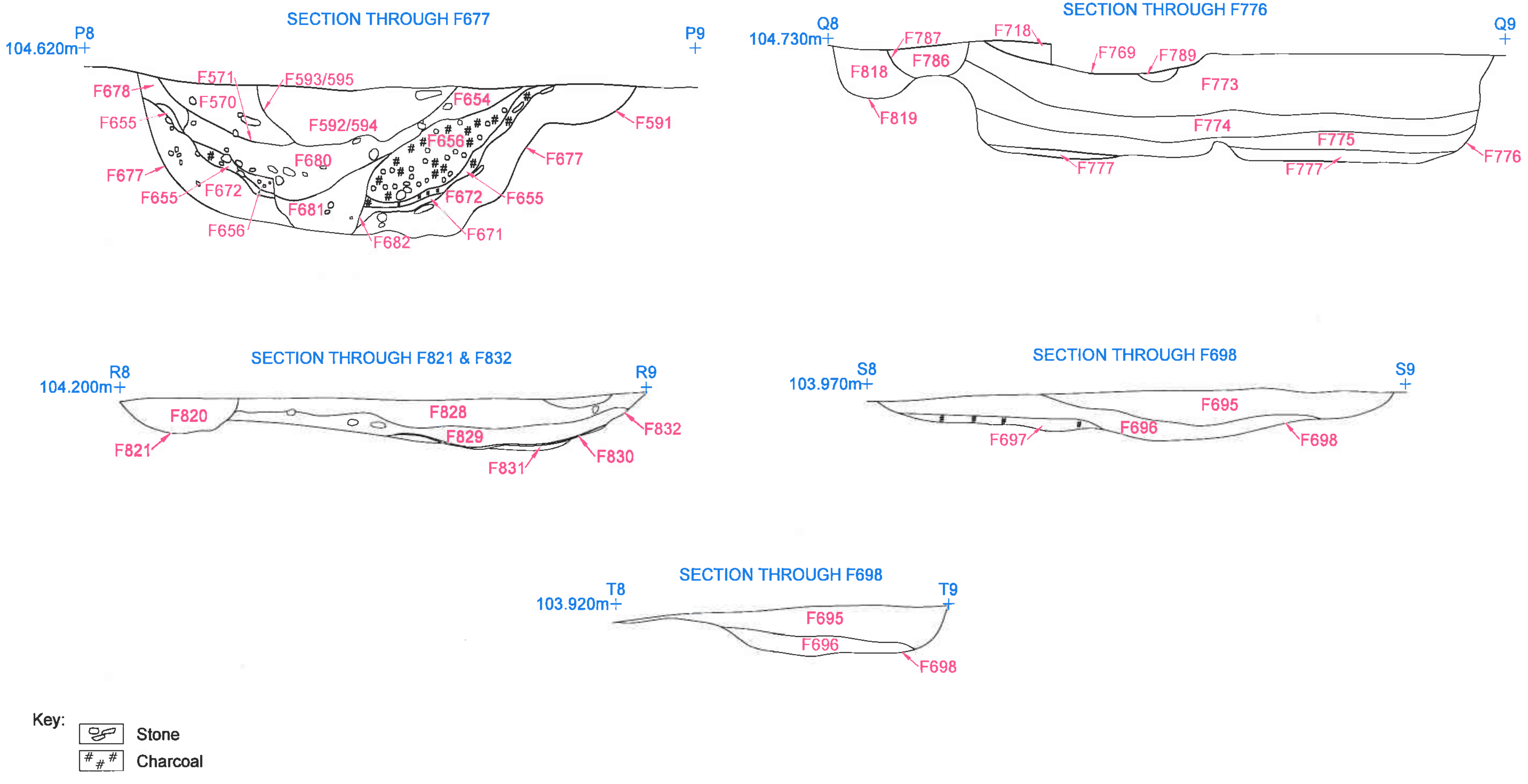
Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* 1:25 A4
	Date: Jul '08
Issued for: Excavation Report	*Origin:* ACS Ltd.
Client: Meath County Council	*Drawing no.:* 04_01_C7797i

Figure 37: Souterrain sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* 1:25 A4
		Date: Jul '08
	Issued for: Excavation Report	*Origin:* ACS Ltd.
	Client: Meath County Council	*Drawing no.:* 04_01_C7798i

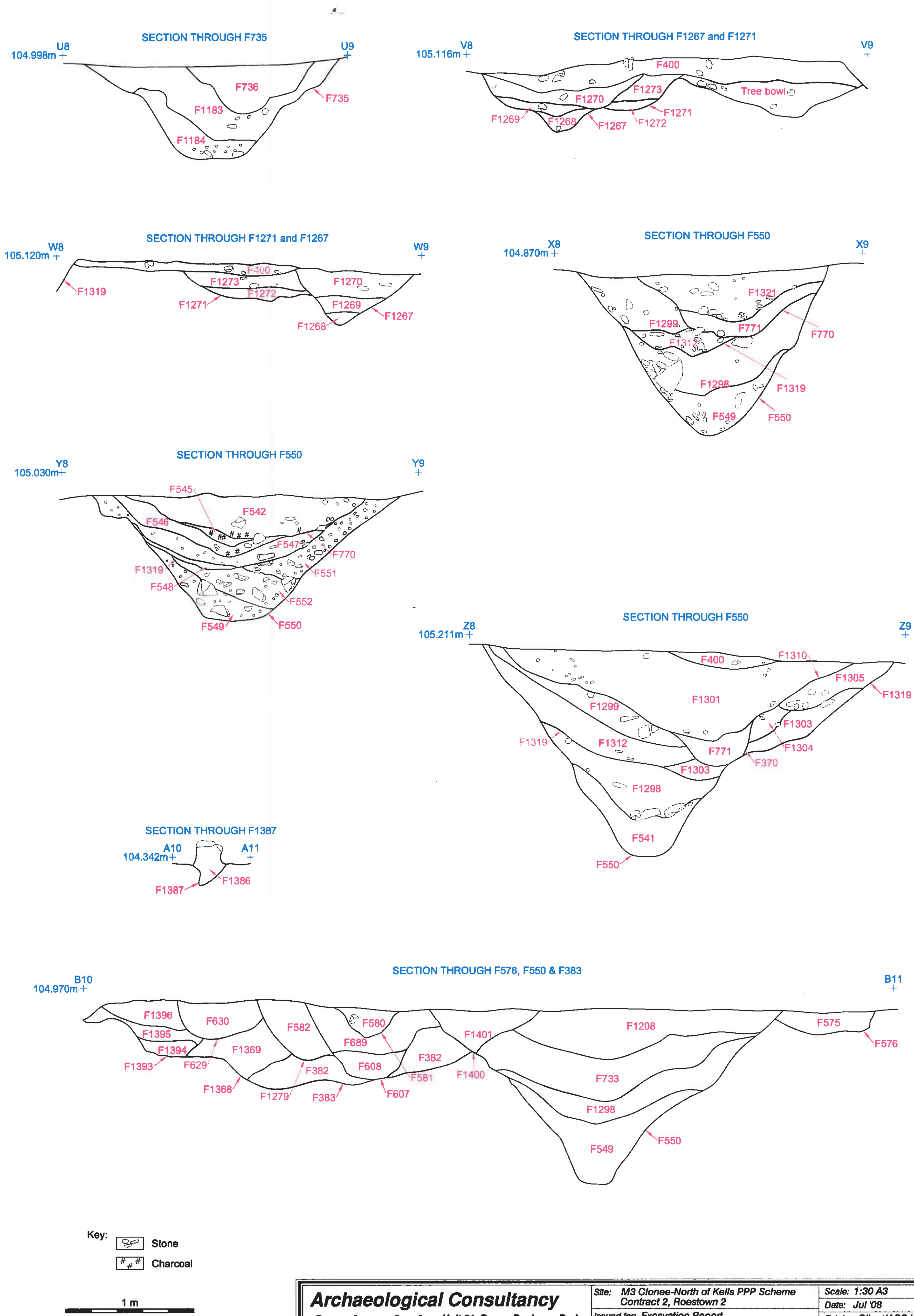
Figure 38: Structures A–E sections



1 m

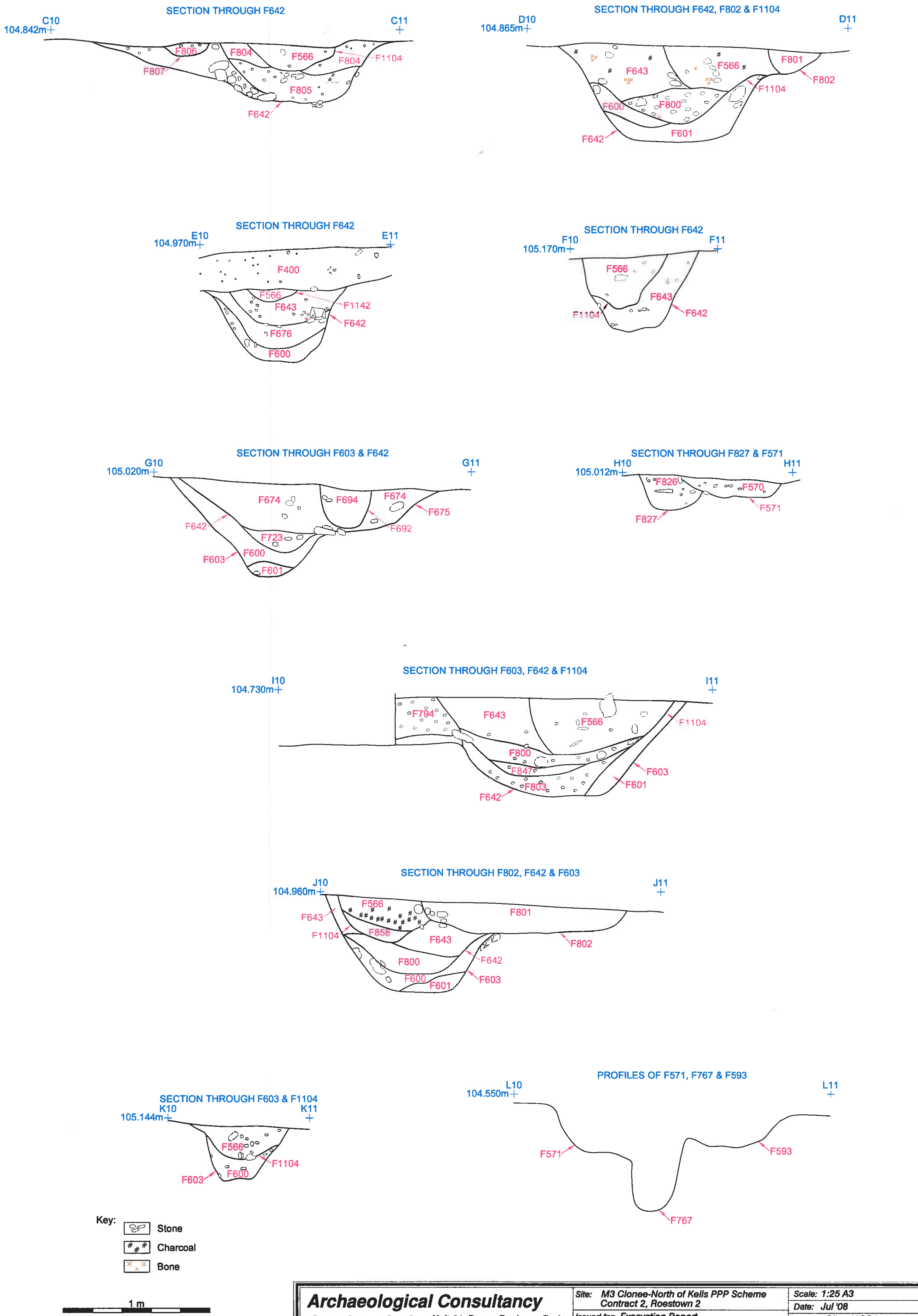
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	
Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* 1:30 A4
	Date: Jul '08
Issued for: Excavation Report	*Origin:* ACS Ltd.
Client: Meath County Council	*Drawing no.:* 04_01_C7799i

Figure 39: Kiln sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	
Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:30 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7800i

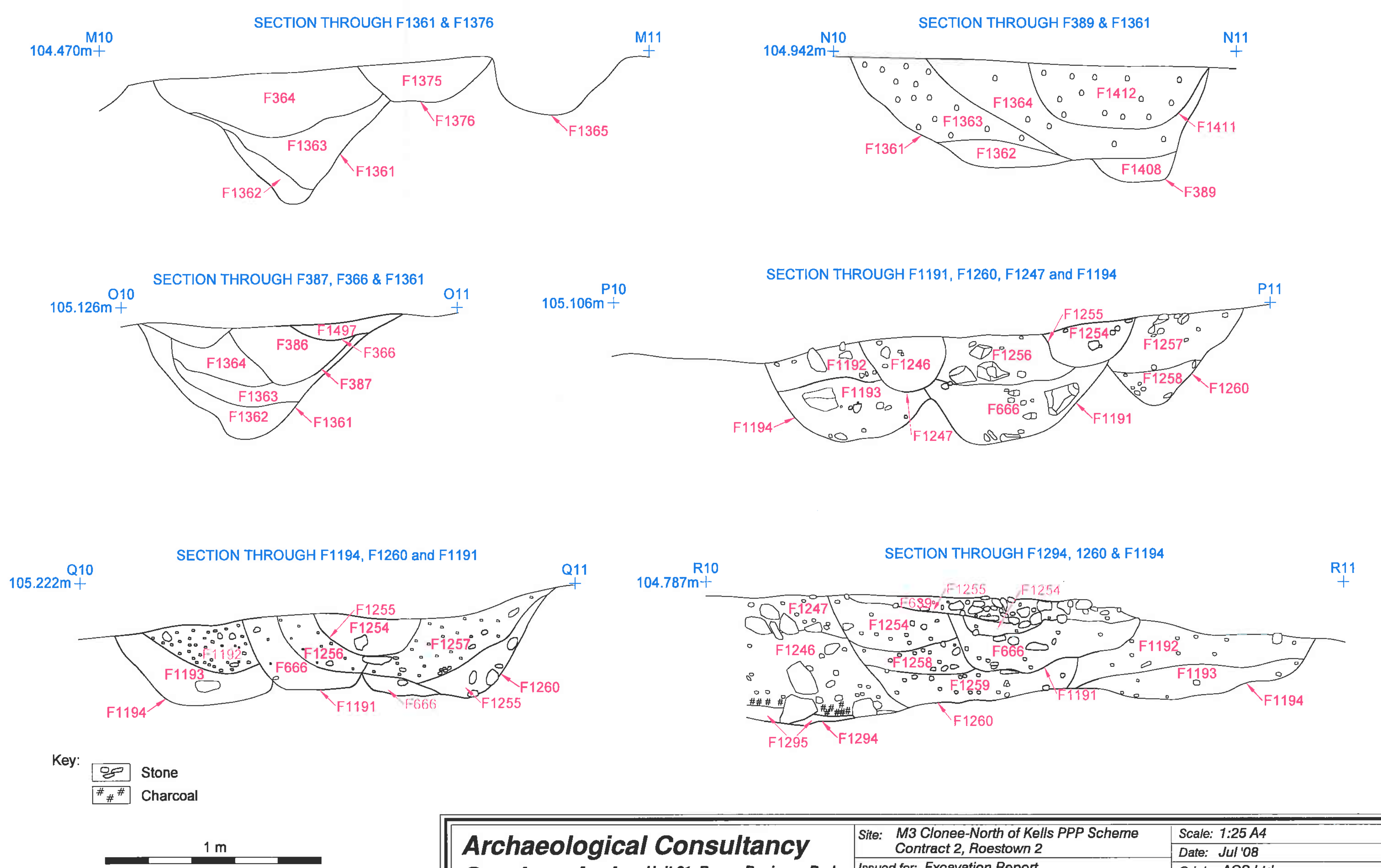
Figure 40: Western partition ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* 1:25 A3
	Date: Jul '08
Issued for: Excavation Report	*Origin:* Client/ACS Ltd.
Client: Meath County Council	*Drawing no.:* 04_01_C7801i

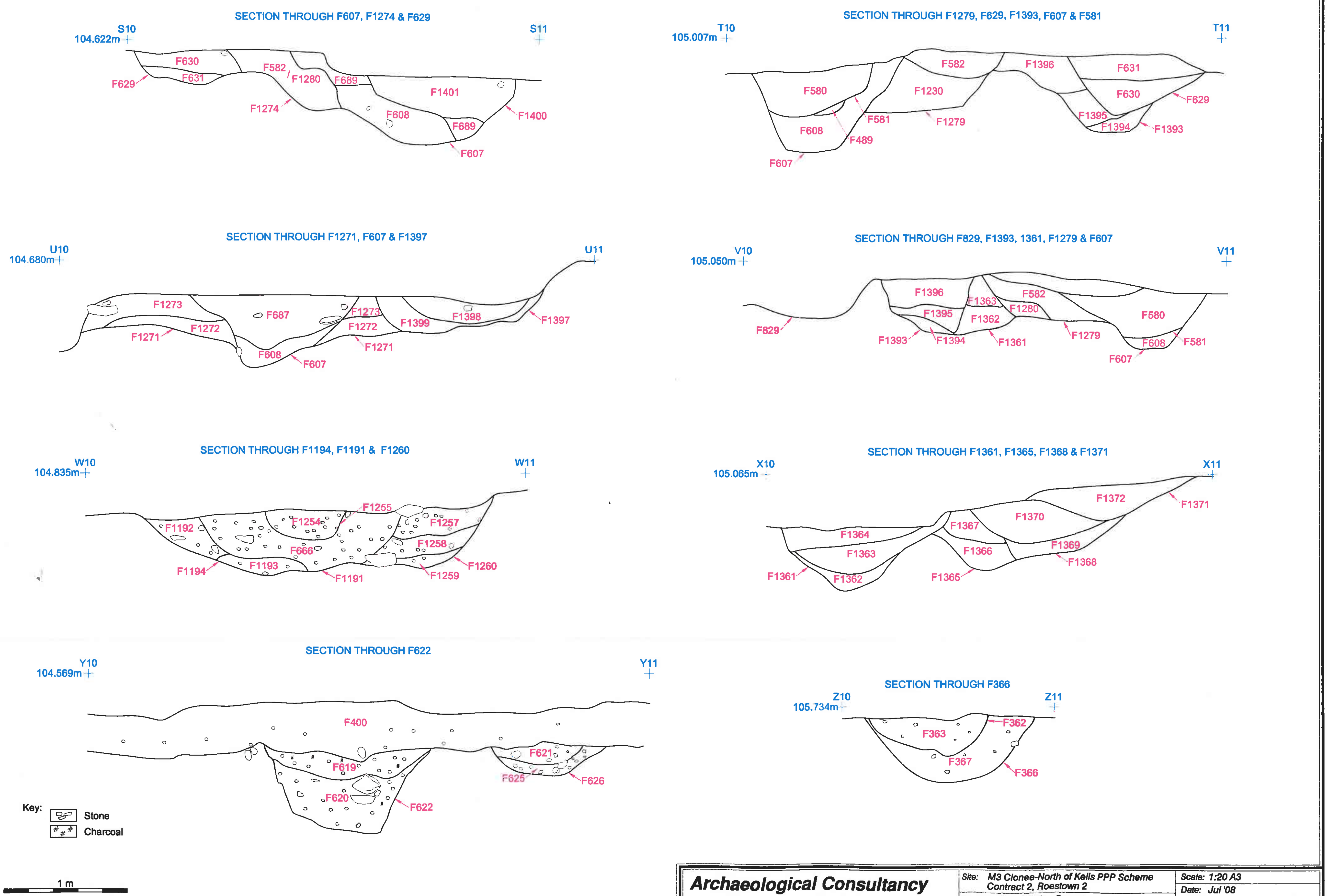
Figure 41: Southeast partition ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:25 A4
	Date: Jul '08
Issued for: Excavation Report	Origin: ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7802i

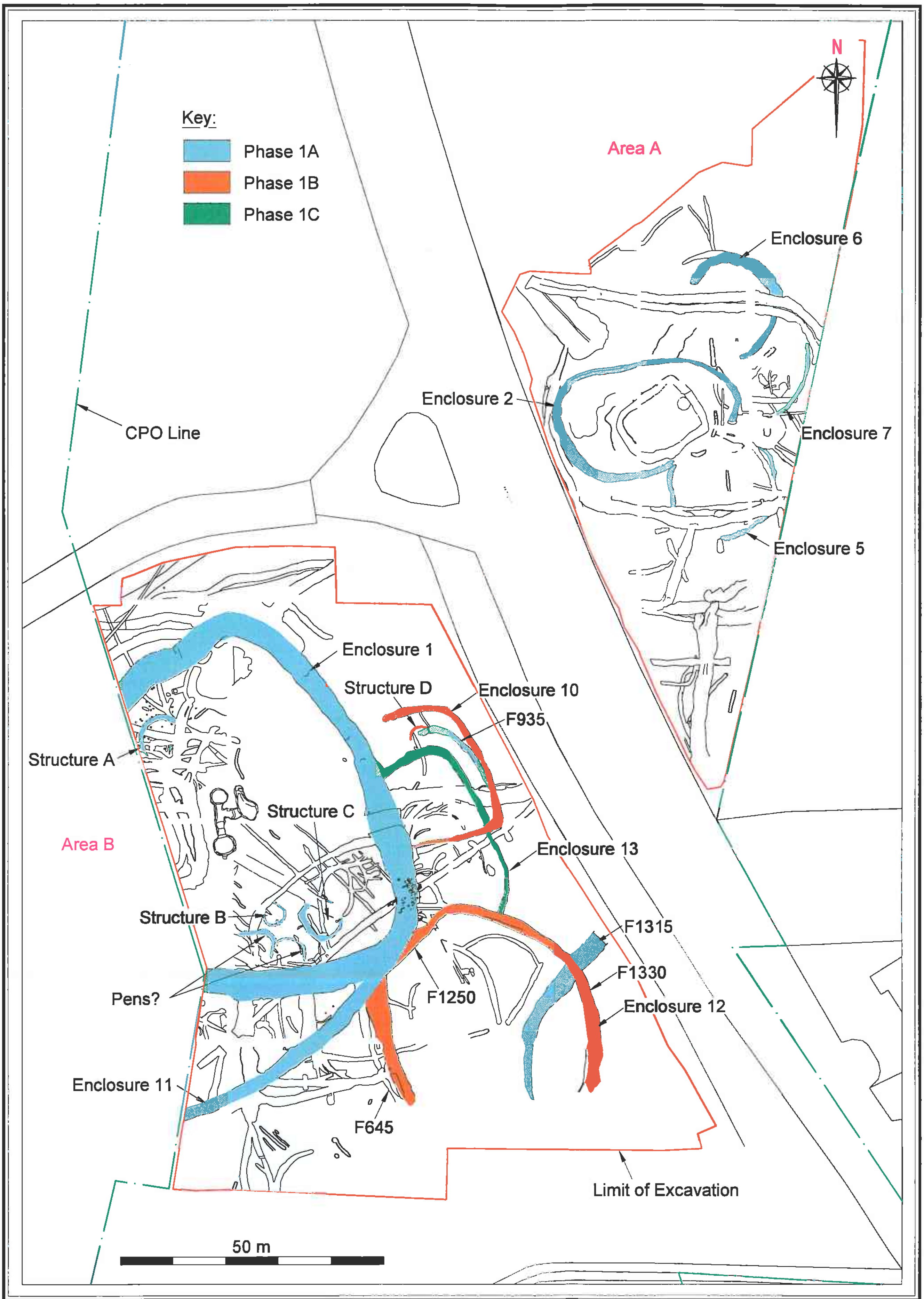
Figure 42: Bii ditch sections



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

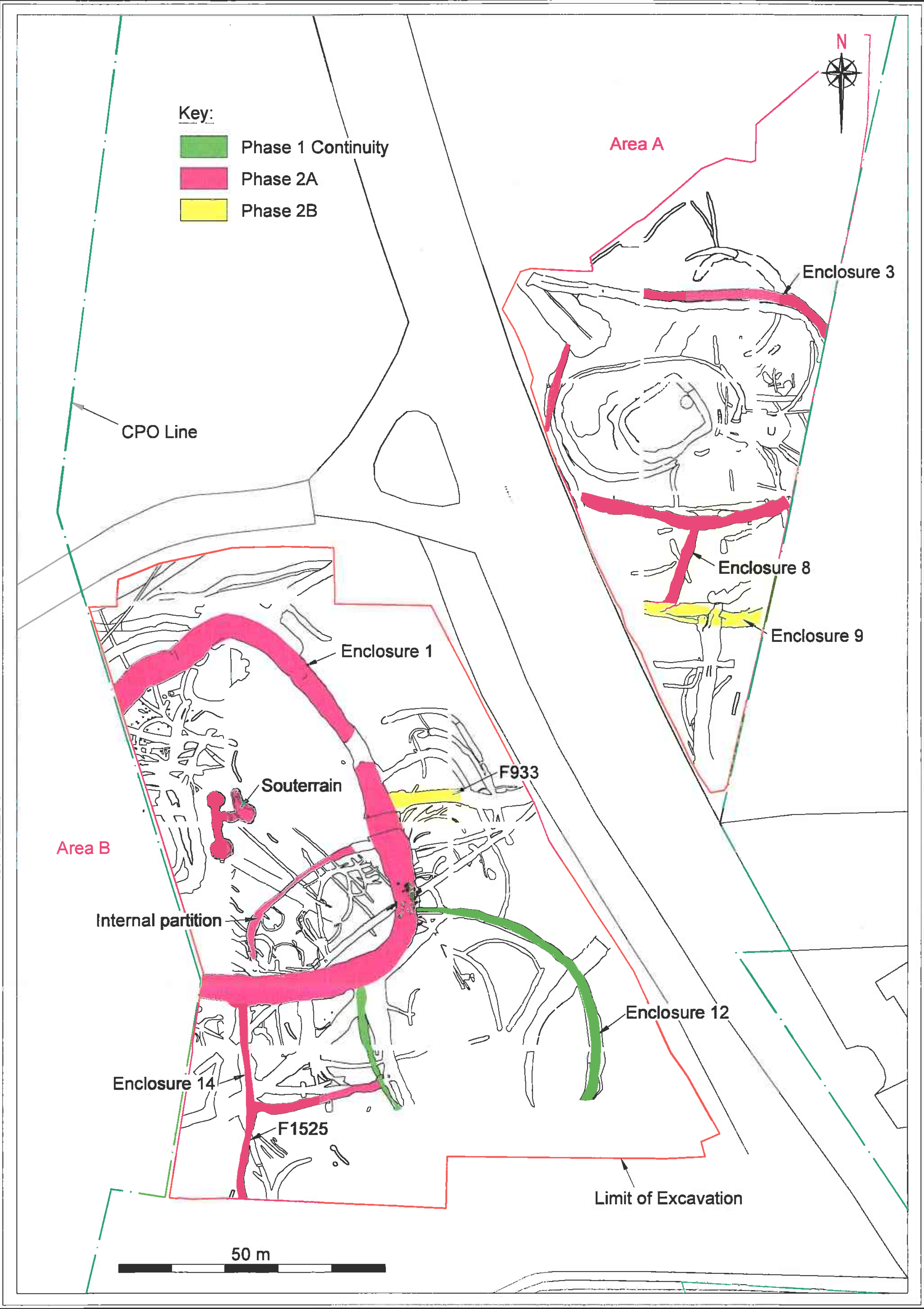
Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:20 A3
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7803i

Figure 43: Bii ditch sections



Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	*Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2*	*Scale: 1:1,000 A4*
		Date: Jul '08
	Issued for: Excavation Report	*Origin: Client/ACS Ltd.*
	Client: Meath County Council	*Drawing no.: 04_01_C7804i*

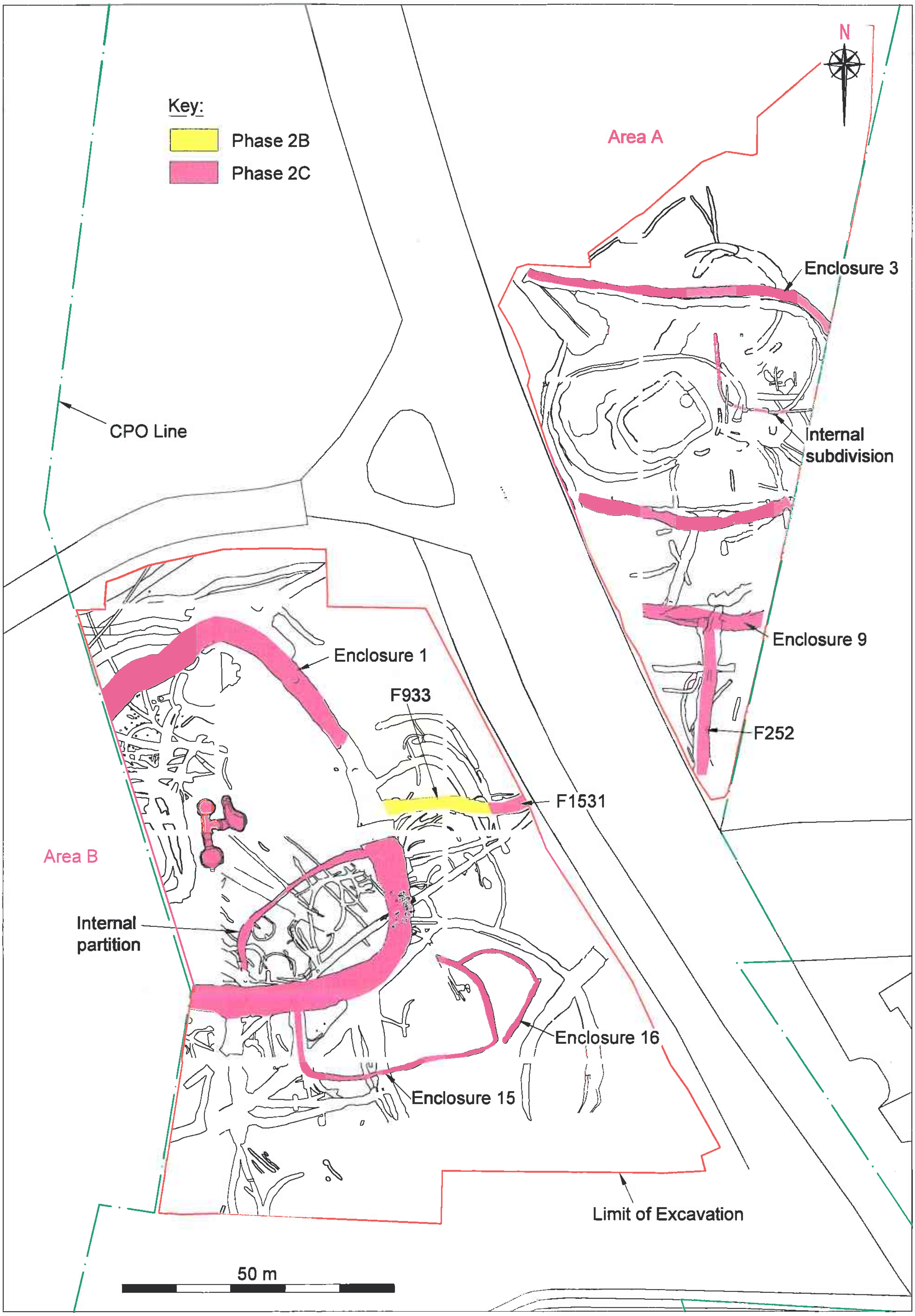
Figure 44: Phases 1A, 1B & 1C



Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*

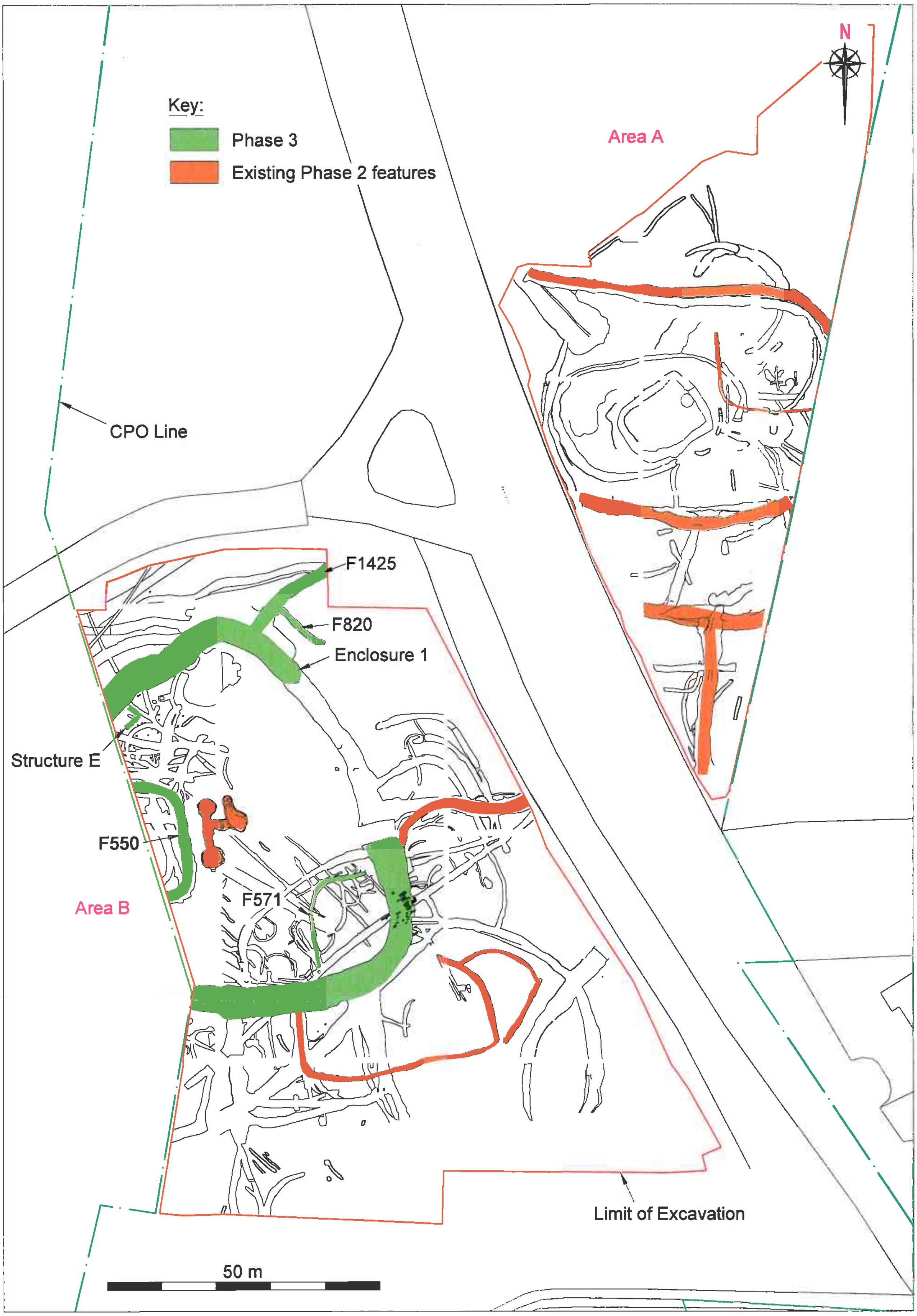
Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale: 1:1,000 A4*	*Date: Jul '08*
Issued for: Excavation Report	*Origin: Client/ACS Ltd.*	
Client: Meath County Council	*Drawing no.: 04_01_C7805i*	

Figure 45: Phases 1 Continuity, 2A & 2B



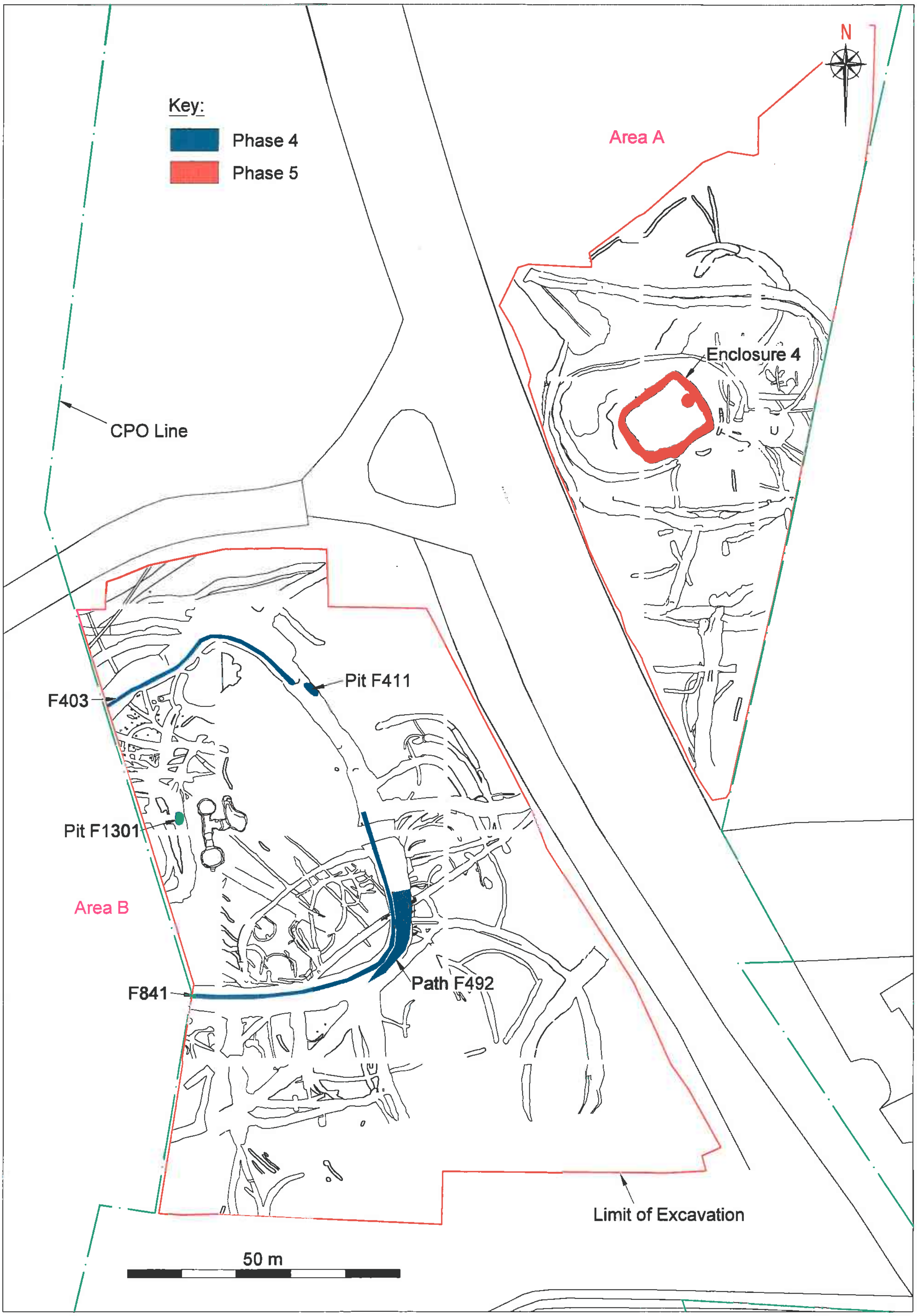
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:1,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7806i

Figure 46: Phases 2B & 2C



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:1,000 A4 / Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C7807i

Figure 47: Phase 3 and existing Phase 2 features



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: 1:1,000 A4
	Date: Jul '08
Issued for: Excavation Report	Origin: Client/ACS Ltd.
Client: Meath County Council	Drawing no.: 04_01_C7808i

Figure 48: Phases 4 & 5


Plate 1: Aerial view of the site from the north showing location of Redbog and Dunshaughlin (04_01_Roestown 2_CP100_1; Studiolab)


Plate 2: Aerial view of Roestown 2 from the west (04_01_Roestown 2_CP100_2: Studiolab)

Plate 3: View of stepped entrance of Enclosure 1 (F405) from the southwest (04_01_Roestown 2_CP100_3)

Plate 4: View of causeway F493 over backfilled ditch F405 from the northeast (04_01_Roestown 2_CP100_4)

Plate 5: View of articulated dog skeleton in Enclosure 1 (F405). C_{14} date 710-960 AD (04_01_Roestown 2_CP100_5)

Plate 6: View of F450 cutting fill of F404 in Enclosure 1 from the west (04_01_Roestown 2_CP100_6)

Plate 7: View of articulated dog skeleton in Enclosure 1 (F450). C_{14} date 770-980 AD (04_01_Roestown 2_CP100_7)

Plate 8: Aerial view of enclosures in Area A from the northeast (04_01_Roestown 2_CP100_8: Studiolab)

Plate 9: Detail of articulated chicken skeleton in Enclosure 3 (F113). C_{14} date 650-780 AD (04_01_Roestown 2_CP100_9)

Plate 10: View along F264 with earlier ditches F282 & F102 in the background from the west

Plate 11: Post-excavation view of Enclosure 4 (F134) from the southwest (04_01_Roestown 2_CP100_11)

Plate 12: Pre-conservation image of spearhead A008/002:135:3 (04_01_Roestown 2_CP100_12)


Plate 13: Post-excavation view of pit F178 from the northwest (04_01_Roestown 2_CP100_13)


Plate 14: View of terminals of Enclosure 2 (F282) & Enclosure 5 (F288) from the south (04_01_Roestown 2_CP100_14)


Plate 15: View of Enclosure 6 (F132) from the north (04_01_Roestown 2_CP100_15)


Plate 16: View of articulated dog skeleton in F132. C_{14} date 630-710 AD (04_01_Roestown 2_CP100_16)

Plate 17: Post-excavation view of Enclosure 8 (F230) from the south (04_01_Roestown 2_CP100_17)

Plate 18: Post-excavation view of ditches (F934–F936) forming Enclosure 10 from the north (04_01_Roestown 2_CP100_18; Hawkeye)

Plate 19: Post-excavation view of Structure D in relation to F934–F936 from the north (04_01_Roestown 2_CP100_19: Hawkeye)

Plate 20: Overhead view of Enclosure 11 from the west (04_01_Roestown 2_CP100_20: Hawkeye)


Plate 21: Overhead view of Enclosure 12 showing F645 & F1250 from the south (04_01_Roestown 2_CP100_21: Hawkeye)


Plate 22: View of F1250 cutting backfilled ditch F1315 from the south (04_01_Roestown 2_CP100_22)


Plate 23: View of metalled surface F960 sealing ditch F1315 from the north (04_01_Roestown 2_CP100_23)


Plate 24: View of Enclosures 14 and 15 from the southeast (04_01_Roestown 2_CP100_24: Hawkeye)


Plate 25: View of ditch sequence F933 etc cutting Enclosure 10 from the north (04_01_Roestown 2_CP100_25: Hawkeye)


Plate 26: View along F343 at the western terminal of F114 from the west
(04_01_Roestown 2_CP100_26)


Plate 27: Overhead view of souterrain from the east (04_01_Roestown 2_CP100_27: Hawkeye)


Plate 28: Pre-excavation view of Chamber 1 from the north (04_01_Roestown 2_CP100_28)

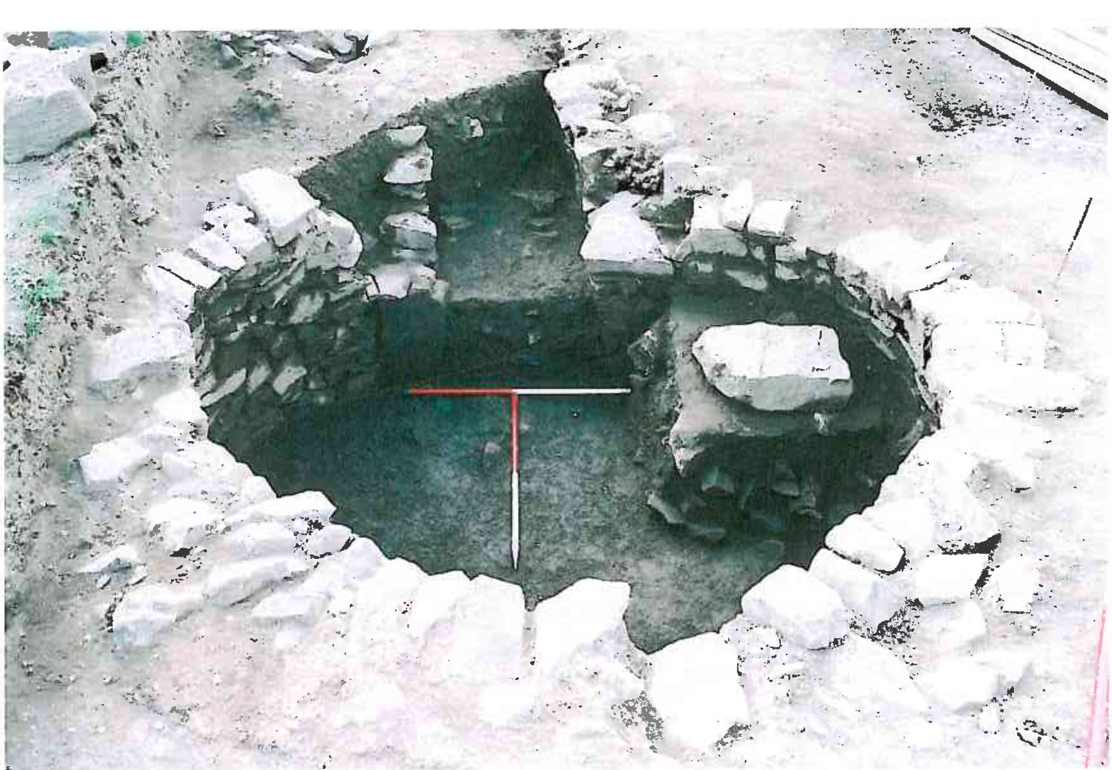


Plate 29: Mid-excavation view of Chamber 1 from the north. Note backfill and damage to walls (04_01_Roestown 2_CP100_29)

Plate 30: Pre-excavation view of in-situ capstones (F504) along the southern half of Passage 1 (04_01_Roestown 2_CP100_30)

Plate 31: Post-excavation view along Passage 1 from the south
(04_01_Roestown 2_CP100_31)

Plate 32: Post-excavation view of Chamber 2 from the west. Note air vent (F534) (04_01_Roestown 2_CP100_32)

Plate 33: View of Passage 3 towards Chamber 3 from the west. Note trapdoor in foreground (04_01_Roestown 2_CP100_33)

Plate 34: Pre-excavation view of backfill deposits within Passage 2 from the west (04_01_Roestown 2_CP018_09)

Plate 35: View of trapdoor feature from the east (04_01_Roestown 2_CP100_35)

Plate 36: Mid-excavation view of Passage 2. Note capstone within Chamber 3 (04_01_Roestown 2_CP100_36)

Plate 37: Post-excavation view of doorway to Chamber 3 from the east (04_01_Roestown

Plate 38: Detail of cubbyhole (F524) in the eastern wall of Passage 3 from the west (04_01_Roestown 2_CP100_38)

Plate 39: View along Passage 3 detailing width constriction from the south (04_01_Roestown 2_CP100_39)

Plate 40: Post-excavation view of Structure A truncated by later features from the southwest (04_01_Roestown 2_CP100_40: Hawkeye)

Plate 41: View of Structure B (F885) from the east (04_01_Roestown 2_CP100_41)

Plate 42: Overhead view of Structure B and gullies (F823, F825, F1112, F1188) cut by F603 (04_01_Roestown 2_CP100_42: Hawkeye)

Plate 43: Overhead view of Structure C (F591, F667, F834, F843) and gullies (F590, F665) (04_01_Roestown 2_CP100_43; Studiolab)

Plate 44: Detail of Structure D (F707, F1216) cut by later features (F934, F1241) from the north (04_01_Roestown 2_CP100_44: Hawkeye)

Plate 45: Post-excavation view of Structure E from the northwest (04_01_Roestown 2_CP100_45: Hawkeye)

Plate 46: Post-excavation view of kiln F677 from the south (04_01_Roestown 2_CP100_46)

Plate 47: Section through kiln F677 showing burnt layers cut through by F682 from the north (04_01_Roestown 2_CP100_47)

Plate 48: Post-excavation view of kiln F698 from the south (04_01_Roestown 2_CP100_48)

Plate 49: Post-excavation view of kiln F776 from the south (04_01_Roestown 2_CP100_49)

Plate 50: Pre-excavation view of kiln F832 cut by F821 from the east (04_01_Roestown 2_CP100_50)

Plate 51: Post-excavation view of kiln F832 cut by ditch F821 from the east (04_01_Roestown 2_CP100_51)

Plate 52: Post-excavation view of F550, F1267 & F1271 from the east (04_01_Roestown 2_CP100_52:

Plate 53: Detail of section through F550 etc from the south (04_01_Roestown 2_CP100_53)

Plate 54: Detail of section through F550 etc from the south (04_01_Roestown 2_CP100_54)

Plate 55: Detail of section through F550 etc from the north (04_01_Roestown 2_CP100_55)

Plate 56: Pre-conservation image of decorated bone comb A008/002:1321:1 (04_01_Roestown 2_CP100_56)

Plate 57: Post-excavation view of F603 etc from the southwest (04_01_Roestown 2_CP100_57: Hawkeye)

Plate 58: Detail of metalled surface F255 from the south (04_01_Roestown 2_CP100_58)

Plate 59: Detail of metalled surface F817 from the south (04_01_Roestown 2_CP100_59)

Plate 60: Detail of metalled surface F1188 from the south (04_01_Roestown 2_CP100_60)

Plate 61: View of F492 sealing Enclosure 1 (F450) from the northeast (04_01_Roestown 2_CP100_61)

Plate 62: View of metalled surface F960 from the southeast (04_01_Roestown 2_CP100_62)

Plate 63: View of metalled surface F1337 cut by F1336 from the south-east (04_01_Roestown

Plate 64: Burial 1 from the east. Note possible metalled surface F180 beneath remains (04_01_Roestown 2_CP100_64)

Plate 65: Burial 2 from the north. Note metalled surface F181 beneath remains (04_01_Roestown 2_CP100_65)

Plate 66: View of disarticulated human skull fragment in souterrain backfill of Passage 3 (04_01_Roestown 2_CP100_66)

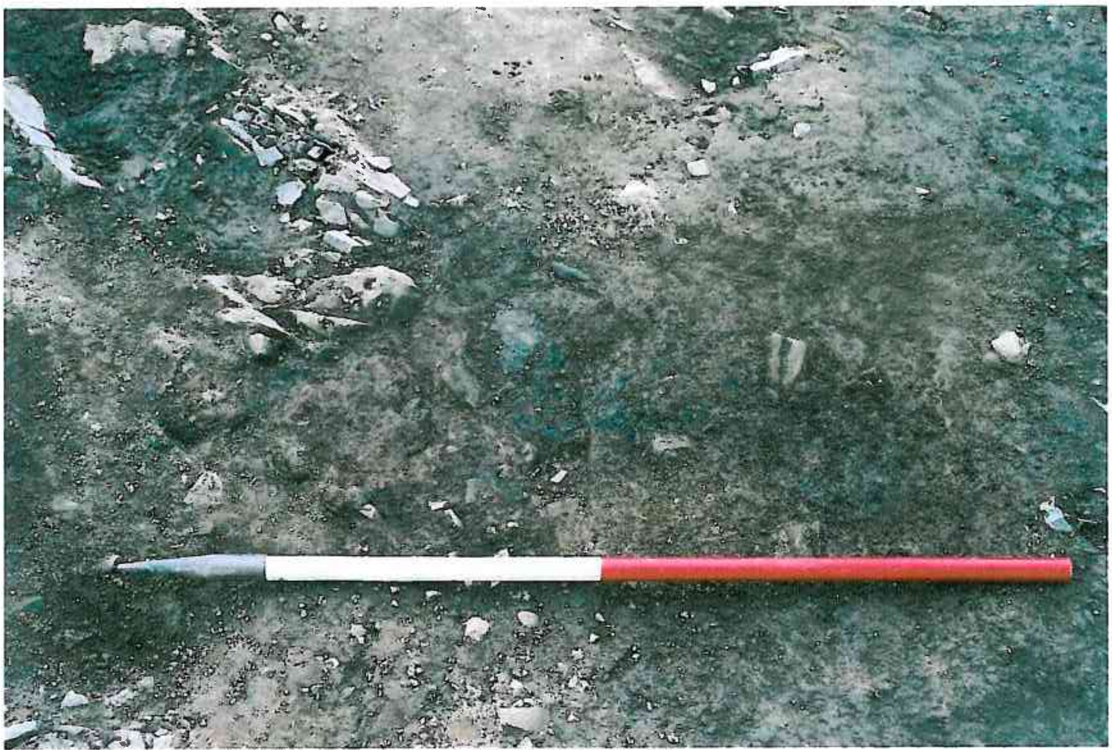


Plate 67: View of fire spot F1076 from the south (04_01_Roestown 2_CP100_67)

Plate 68: View of fire spot F1077 from the north (04_01_Roestown 2_CP100_68)

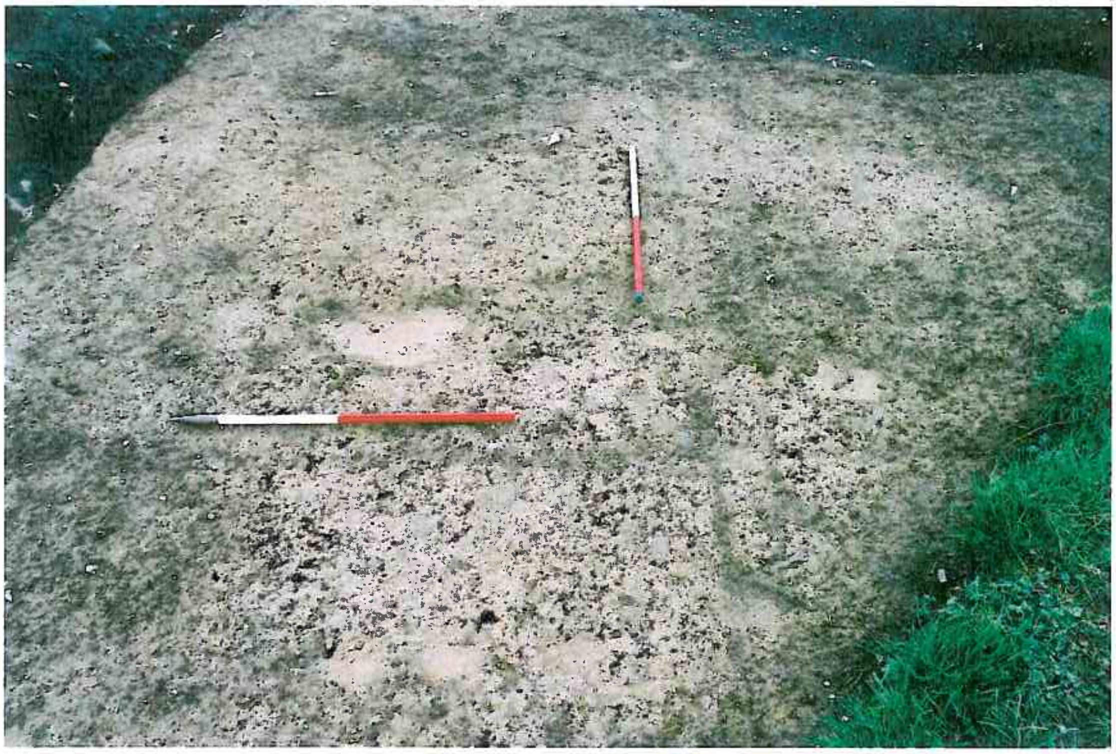


Plate 69: Faint traces of crossed plough marks within Enclosure 14 from the north (04_01_Roestown

Plate 70: Selection of finds from Roestown 2 (John Sunderland 04_01_JSUN_1040)

Plate 71: Copper alloy cross-shaped mount A008/002:765:1 and other finds from Roestown 2 (John Sunderland 04 01 JSUN 1032)

Plate 72: Bone motif piece from Roestown 2 A008/002:1291:1 (John Sunderland 04_01_JSUN_1007)

Plate 73: Selection of iron knives from Roestown 2 (John Sunderland 04_01_JSUN_1025)

Plate 74: Merels game board from Roestown 2 A008/002:401:20 (John Sunderland 04_01_JSUN_1037)

Plate 75: Selection of glass beads from Roestown 2 (John Sunderland 04_01_JSUN_1024)

Plate 76: Selection of lignite bracelet fragments from Roestown 2 (John Sunderland 04_01_JSUN_1030)

Plate 77: Selection of bone pins from Roestown 2 (John Sunderland 04_01_JSUN_1003)

Plate 78: Selection of ringed pins from Roestown 2 (John Sunderland 04_01_JSUN_1034)

Plate 79: Selection of bone combs from Roestown 2 A008/002:422:1-2, A008/002:227:3, A008/002:1321:1-25 (John Sunderland 04_01_JSUN_1013)

Plate 80: Medieval iron javelin head A008/002:135:3 (John Sunderland 04_01_JSUN_1028)

Plate 81: Fragment of bone spearhead A008/002:100:28 (204 Roes 0100 28)

Plate 82: Fragment of antler comb A008/002:100:29 (204 Roes 0100 29)

Plate 83: Bone needle A008/002:107:2(204 Roes 0107 02)

Plate 84: Bone pin fragment A008/002:119:1 (204 Roes 0119 01a)

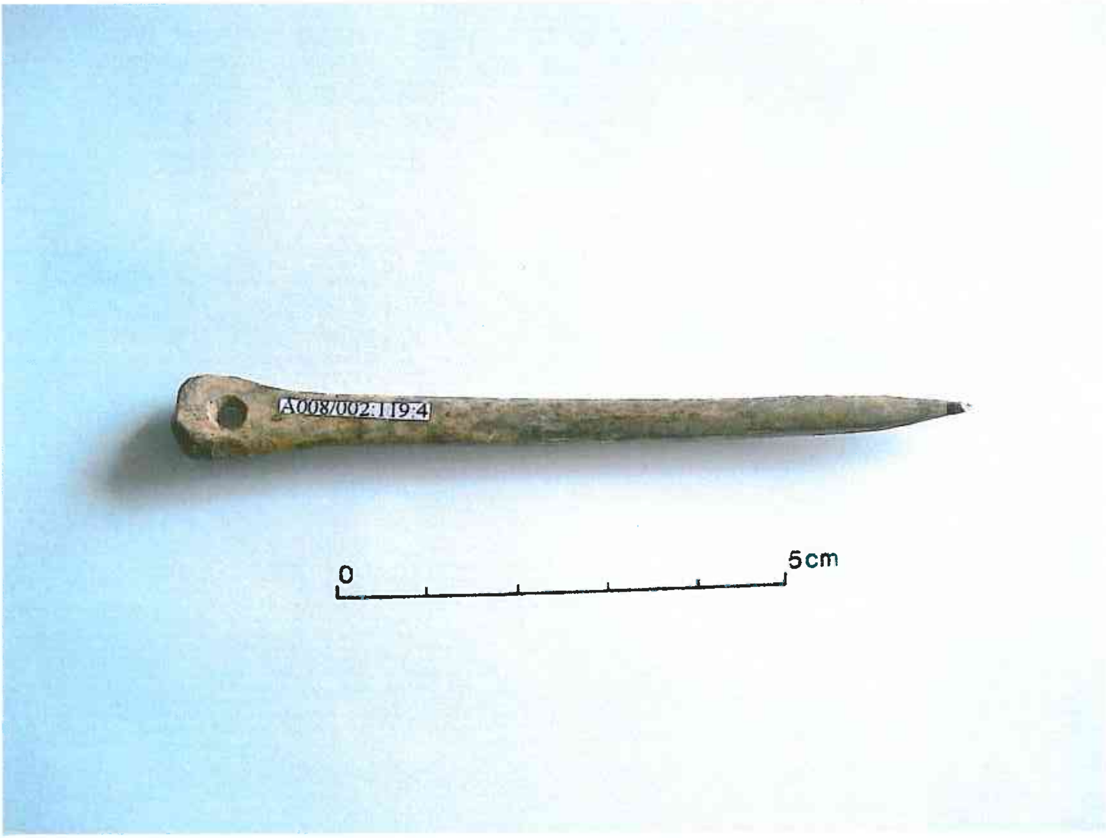


Plate 85: Bone needle A008/002:119:4 (204 Roes 0119 04a)

Plate 86: Fragment of antler comb A008/002:131:1 (204 Roes 0131 01e)

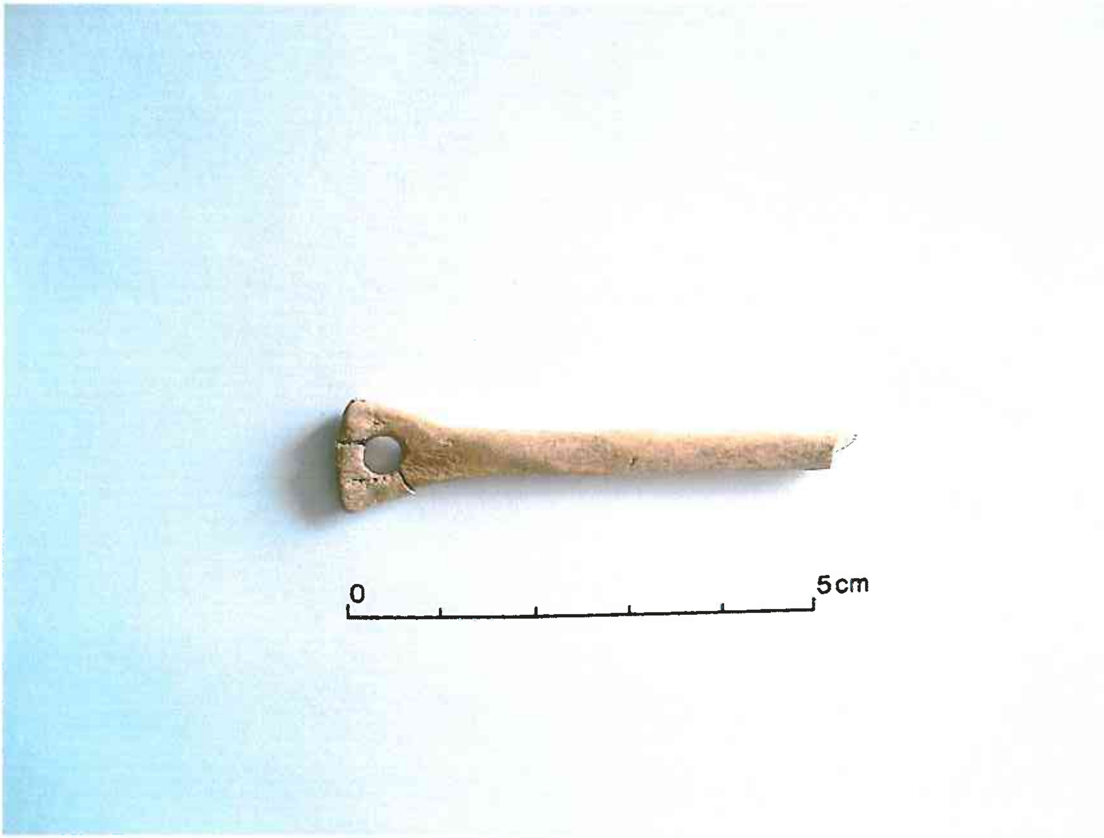


Plate 87: Bone needle fragment A008/002:160:2 (204 Roes 0160 02)

Plate 88: Bone or antler pin A008/002:175:1 (204 Roes 0175 01)

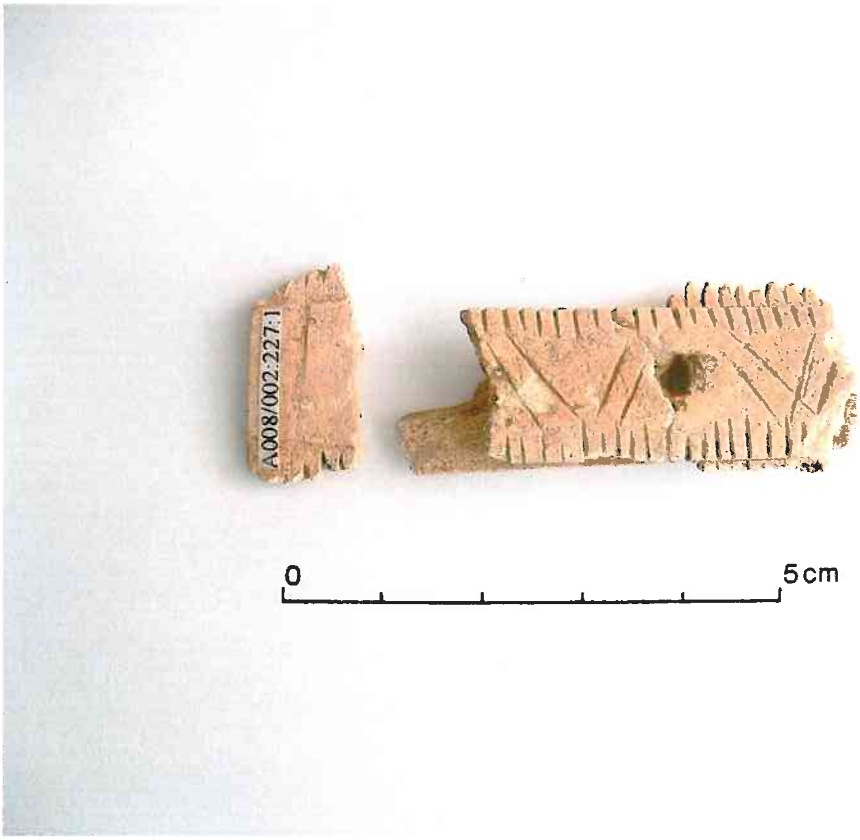


Plate 89: Fragment of antler comb A008/002:227:1 (204 Roes 0227 01)

Plate 90: Near complete antler handle A008/002:235:3-6 (204 Roes 0235 03)

Plate 91: Midshaft of pig tibiaA008/002:400:36 (204 Roes 0400 36a)

Plate 92: Decorated bone A008/002:401:19 (204 Roes 0401 19r)

Plate 93: Decorated bone A008/002:412:1 (204 Roes 0412 01zk)

Plate 94: Decorated bone A008/002:414:4 (204 Roes 0414 04zm)

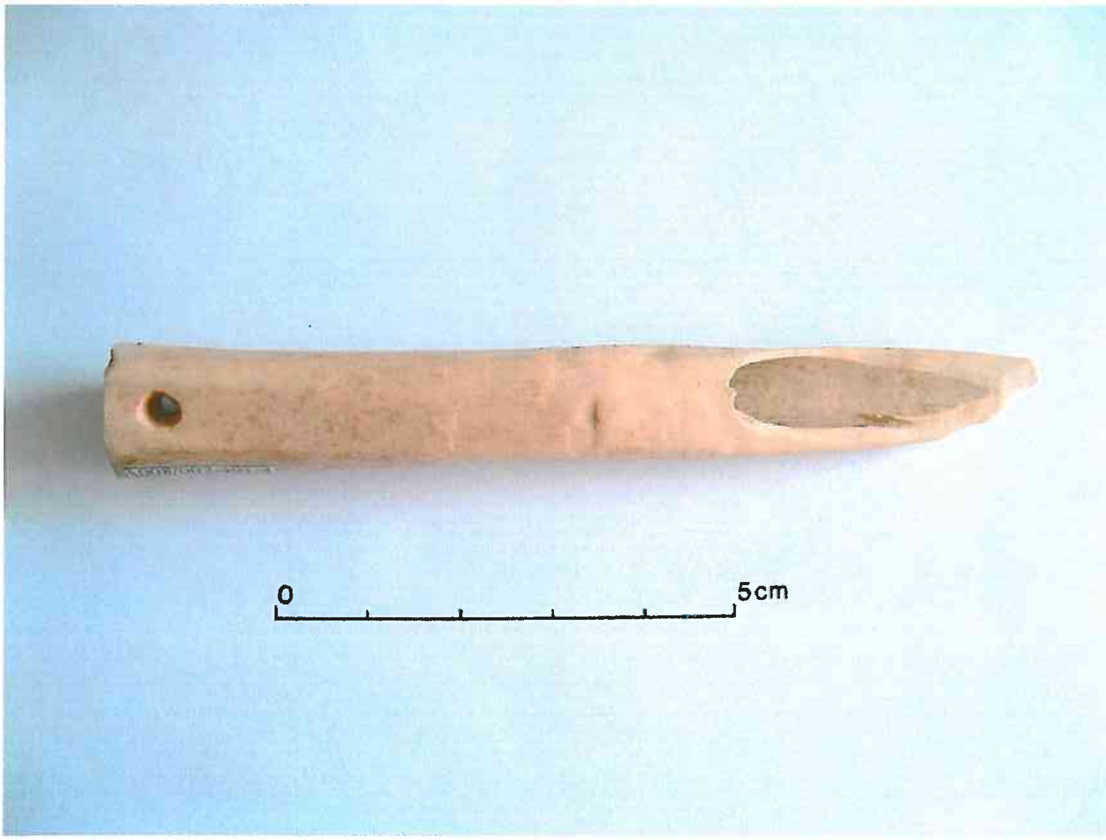


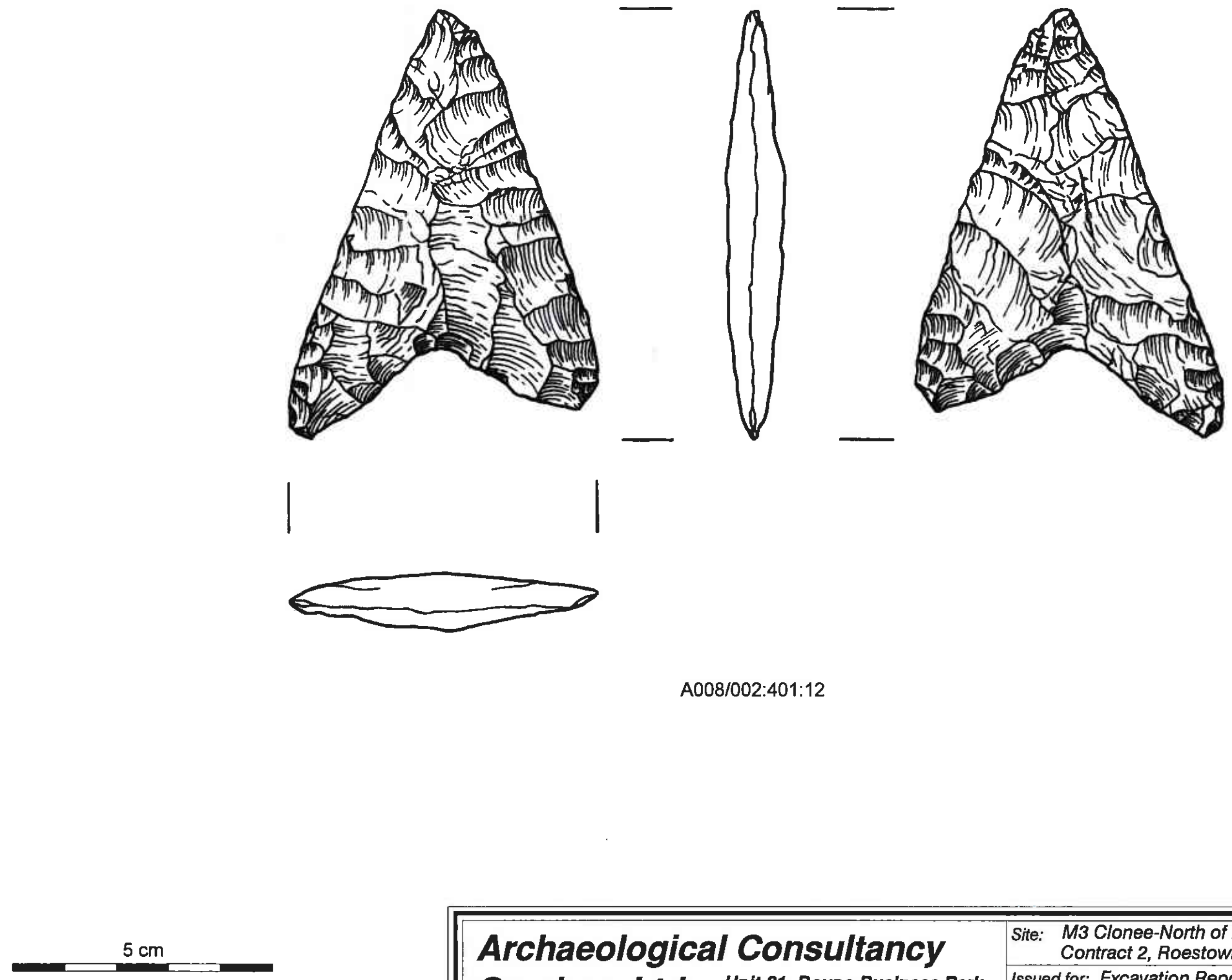
Plate 95: Bone spearhead A008/002:491:4 (204 Roes 0491 04)

Plate 96: Bone awl A008/002:598:3 (204 Roes 0598 03)

Plate 97: Antler pin fragment A008/002:639:1 (204 Roes 0639 01b)

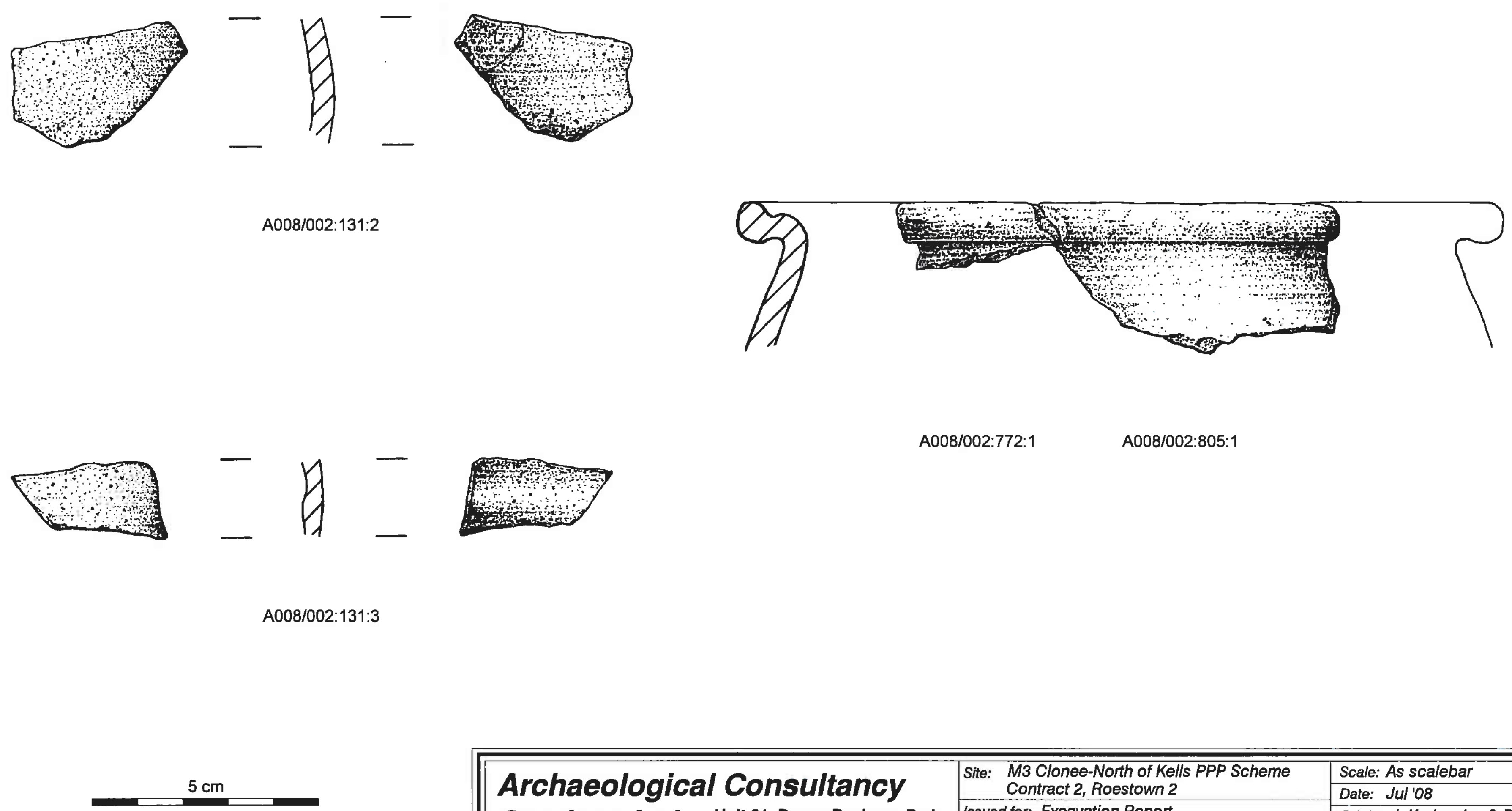
Plate 98: Bone needle A008/002:643:1 (204 Roes 0643 01a)

Plate 99: Decorated bone A008/002:685:1 (204 Roes 0685 01ze)



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: J. Kurkowicz & P. Wolff
	Client: Meath County Council	Drawing no.: 04_01_C3271i

Illustration 1: Late Neolithic Hollow-based arrowhead from Roestown 2



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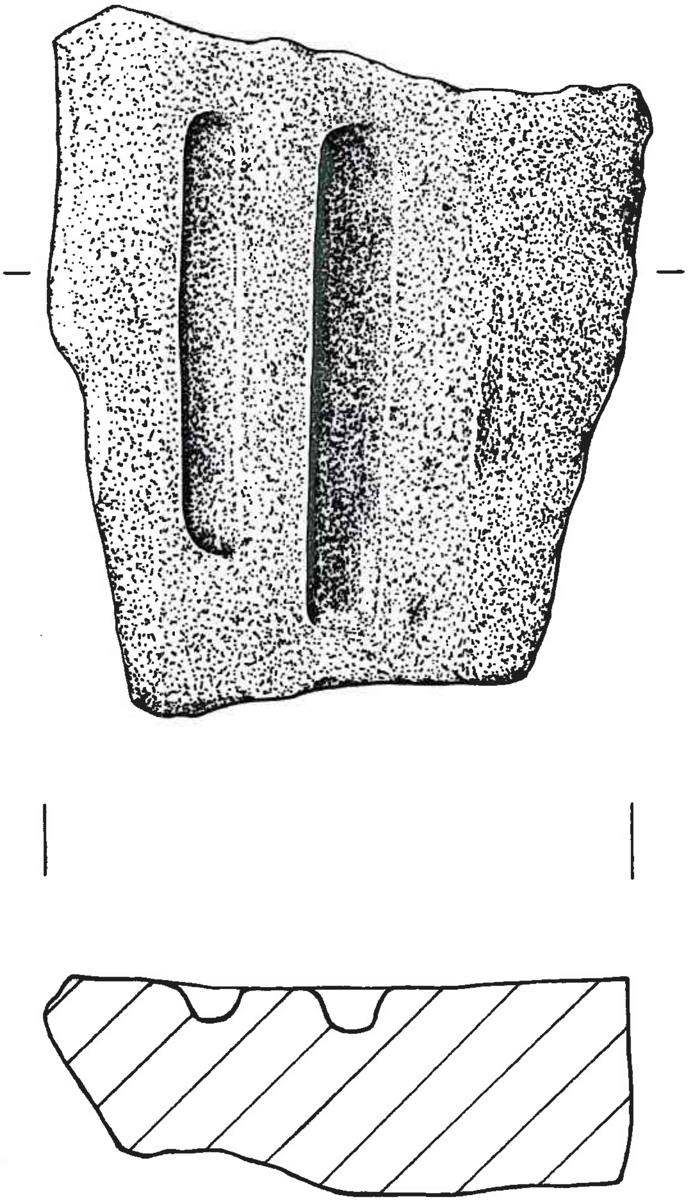
	Client: Meath County Council	*Origin:* J. Kurkowicz & P. Wolff
		Drawing no.: 04_01_C3272i

Illustration 2: E-ware sherds from Roestown 2



A008/002:432:2

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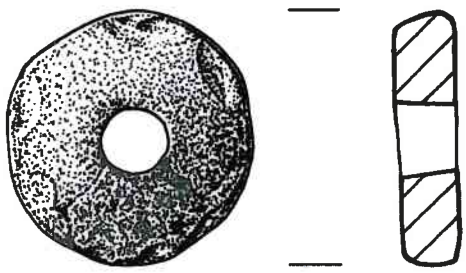
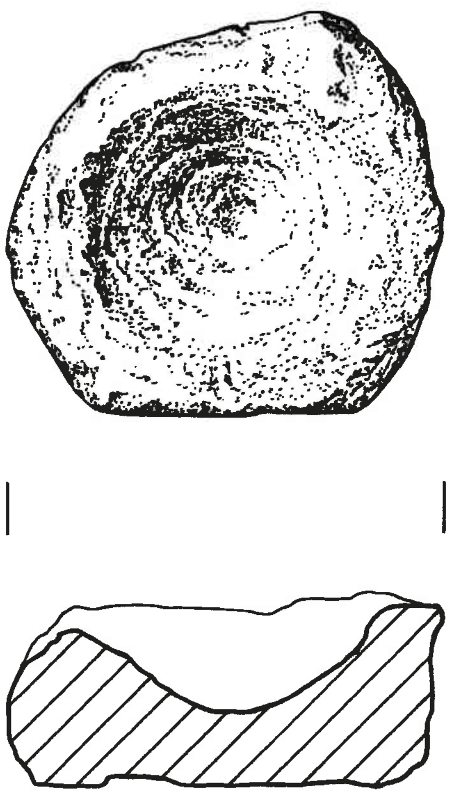
	Issued for: Excavation Report	Origin: J. Kurkowicz & P. Wolff
	Client: Meath County Council	Drawing no.: 04_01_C3273i

Illustration 3: Stone ingot mould from Roestown 2



A008/002:473:4



A008/002:162:2

5 cm

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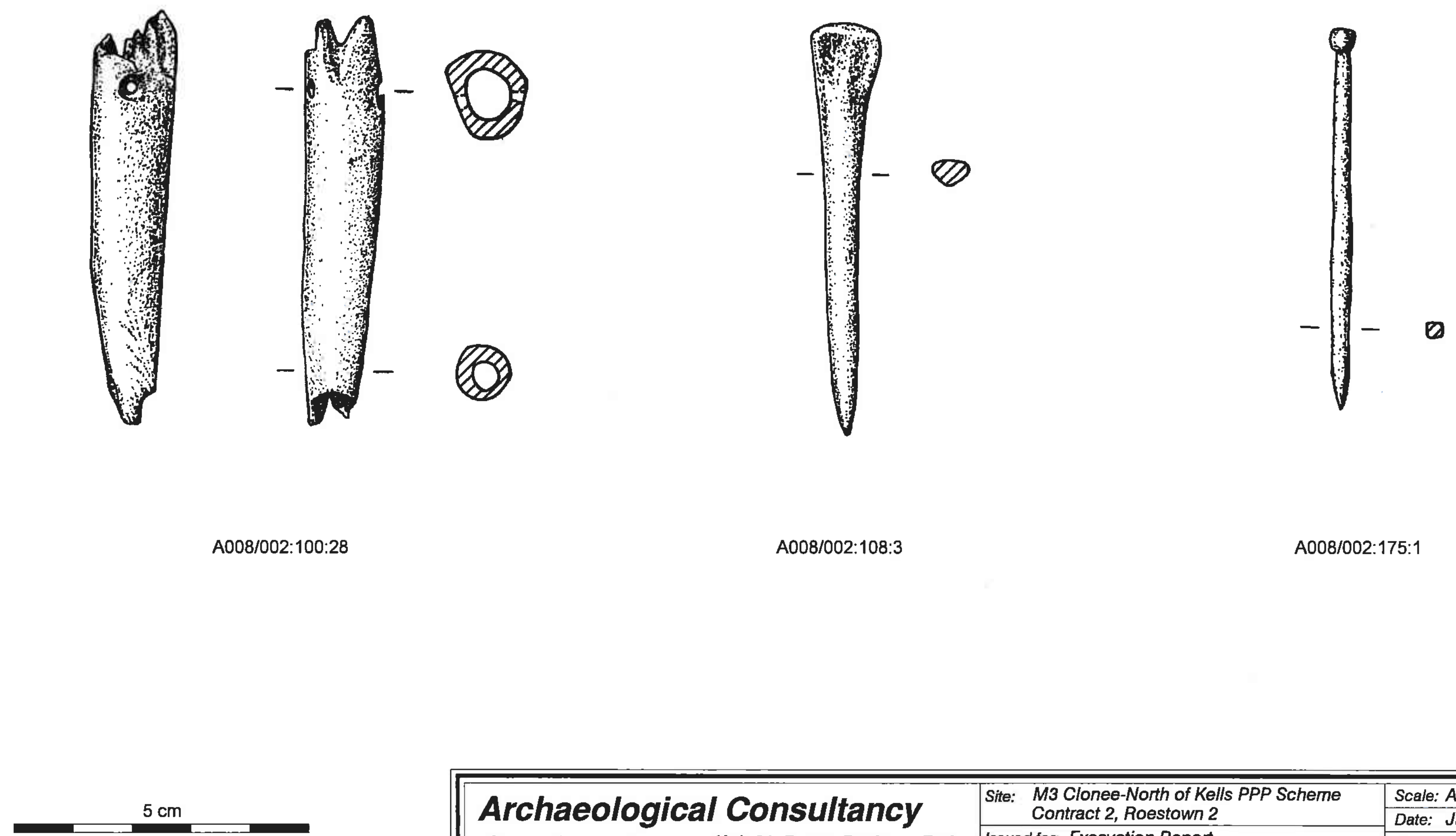
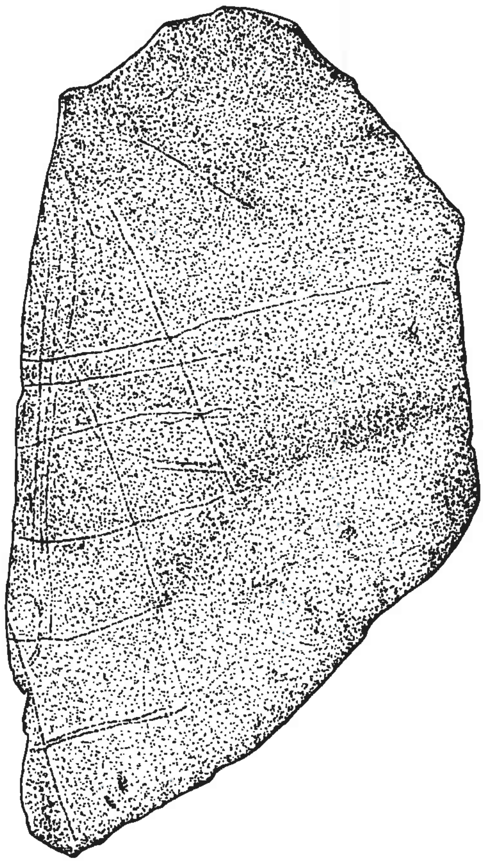
	Client: Meath County Council	Drawing no.: 04_01_C3274i

Illustration 4: Stone spindle whorl and stone lamp from Roestown 2

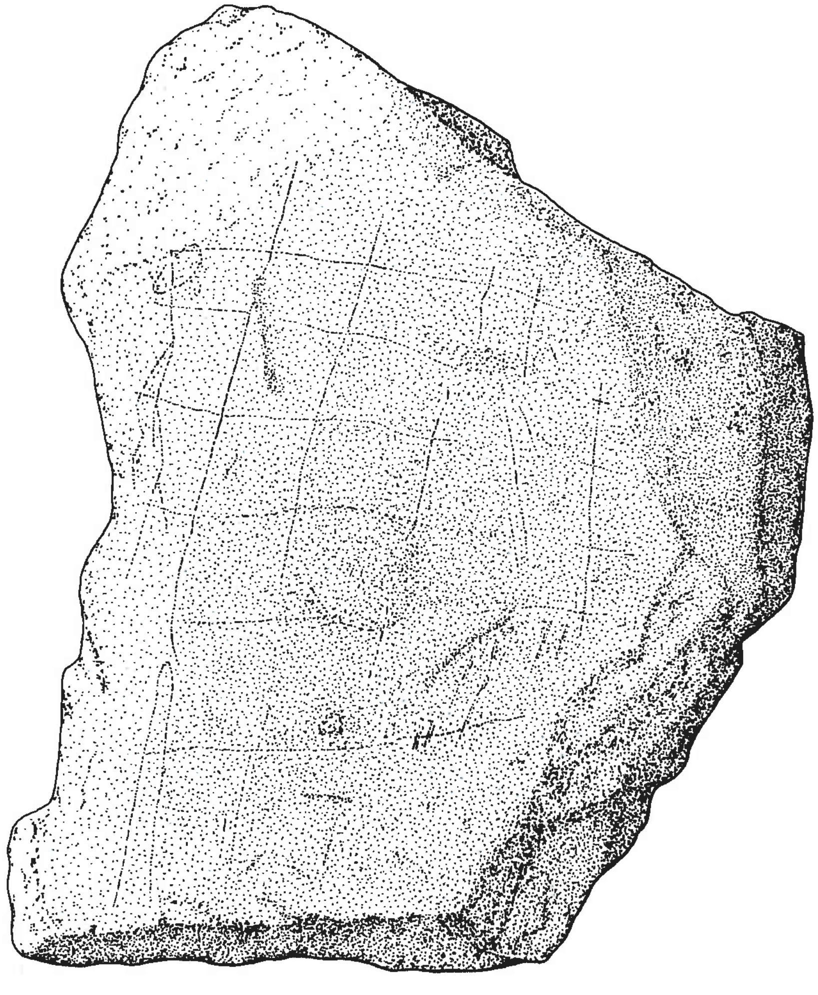


Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	*Site:* M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	*Scale:* As scalebar
		Date: Jul '08
	Issued for: Excavation Report	*Origin:* J. Kurkowicz & P. Wolff
	Client: Meath County Council	*Drawing no.:* 04_01_C3275i

Illustration 5: Bone needle holder and bone pins from Roestown 2



A008/002:108:1

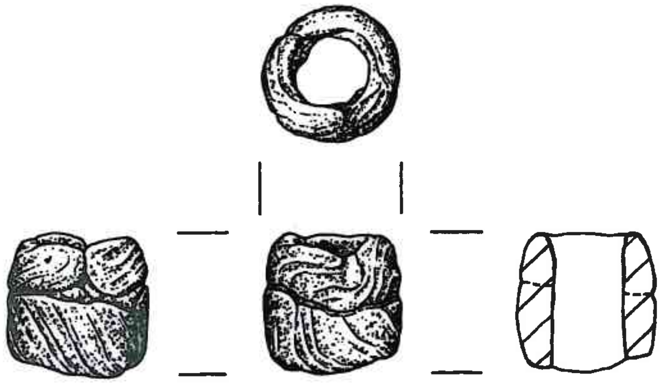


A008/002:151:2

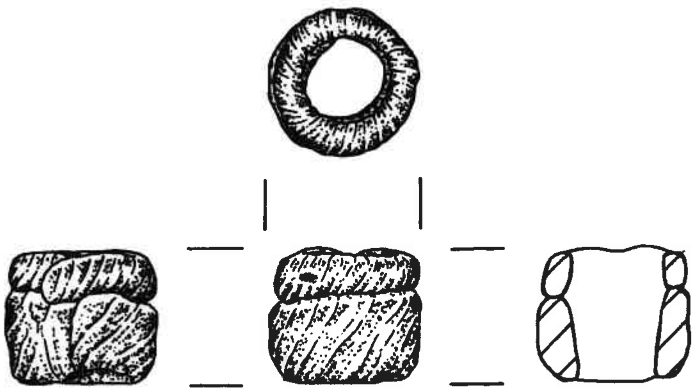
5 cm

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: J. Kurkowicz & P. Wolff
	Client: Meath County Council	Drawing no.: 04_01_C3276i

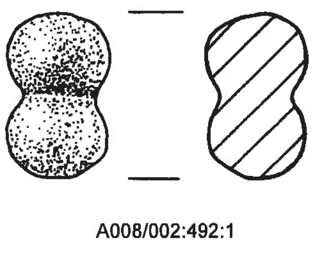
Illustration 6: Stone game boards from Roestown 2



A008/002:491:2



A008/002:491:3



A008/002:492:1

25 cm

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Roestown 2	Scale: As scalebar
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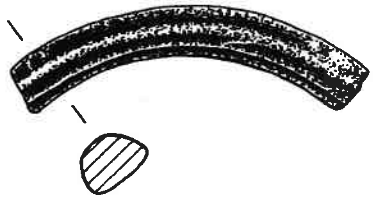
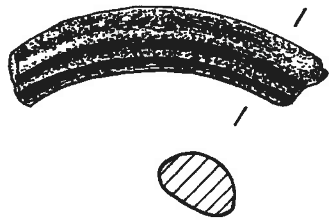
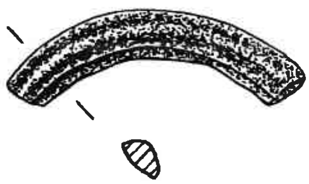
Illustration 7: Selection of glass beads from Roestown 2



A008/002:161:1



A008/002:438:3



A008/002:566:23

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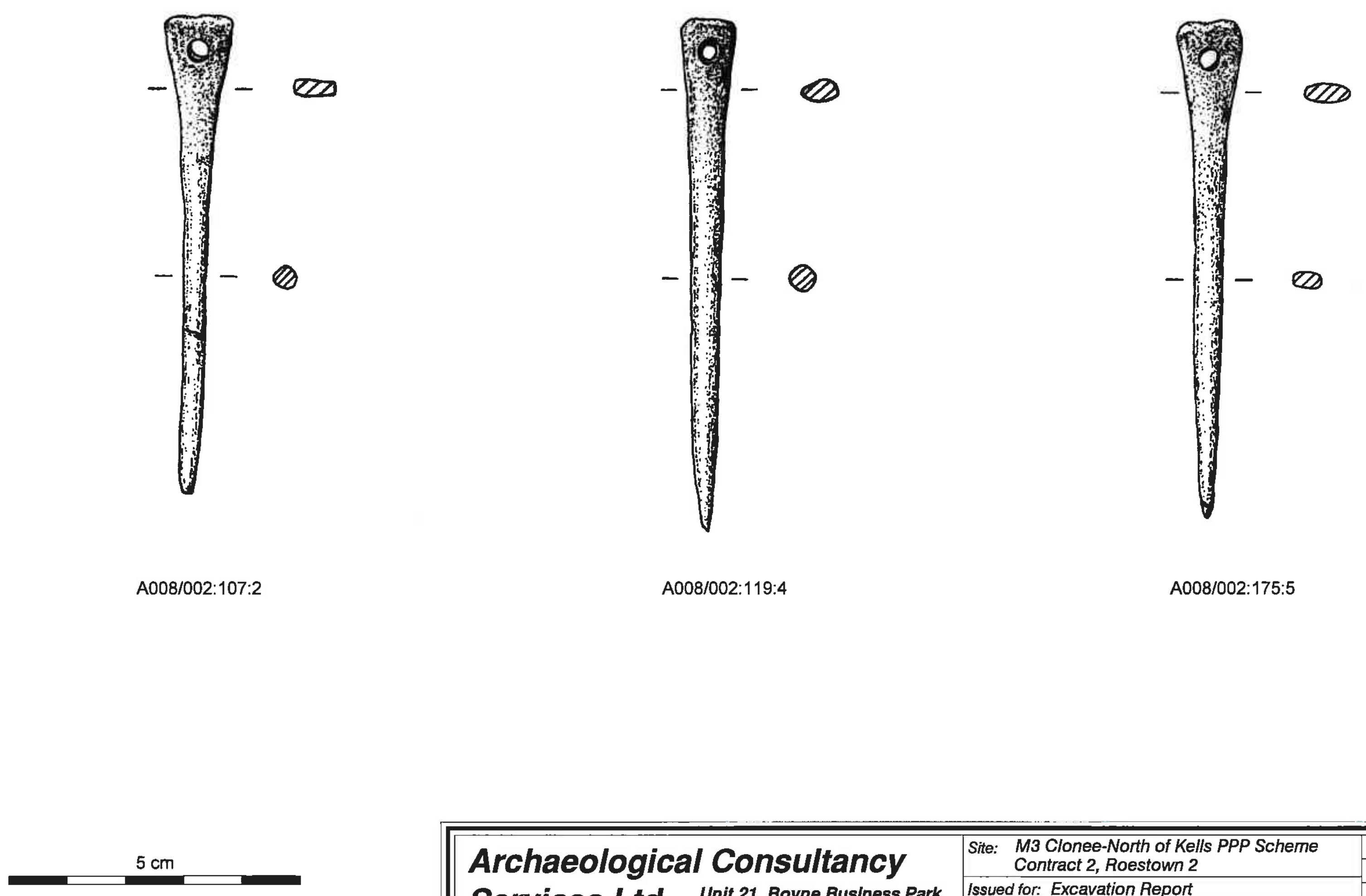
		Date: Jul '08
	Issued for: Excavation Report	*Origin:* J. Kurkowicz & P. Wolff
	Client: Meath County Council	*Drawing no.:* 04_01_C3278i

Illustration 8: Selection of lignite bracelet fragments from Roestown 2



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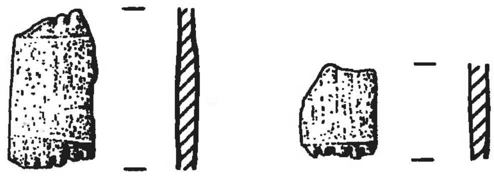
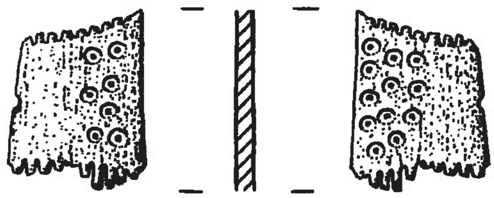
		Date: Jul '08
	Issued for: Excavation Report	Origin: J. Kurkowicz & P. Wolff
	Client: Meath County Council	Drawing no.: 04_01_C3279i

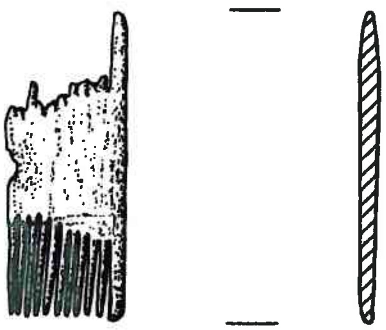
Illustration 9: Selection of bone pins from Roestown 2



A008/002:227:1-2



A008/002:131:1



A008/002:100:29

5 cm

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		Date: Jul '08
	Issued for: Excavation Report	Origin: J. Kurkowicz & P. Wolff
	Client: Meath County Council	Drawing no.: 04_01_C3280i

Illustration 10: Selection of bone comb fragments from Roestown 2