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An tÚdarás um Bóithre Náisiúnta
National Roads Authority
Archaeology



Date: February 2010
Client: Kildare County Council
Project code: KCK06

**N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
Archaeological Services Contract No. 5 – Resolution, Kilcullen to
Moone and Athy Link Road.**

**Final Report on archaeological investigations at Site E2992, in the
townland of Burtown Big, Co. Kildare.**

By: John Twomey
National Monuments Section Registration Number: E2992
Director: Lydia Cagney
NGR: 275190/194478

Report Status: Final



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ARCHAEOLOGY Ltd



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Executive Summary

This final report presents the results of the archaeological resolution works carried out on behalf of Kildare County Council and the National Roads Authority as part of the Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. The works were undertaken prior to the commencement of construction of the N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. The Minister of the Environment, Heritage & Local Government, following consultation with the National Museum of Ireland, issued Directions to Kildare County Council on 8 March 2007 for archaeological resolution works relating to the road development. The registration number, E2992, was allocated by the Department for the excavation of the present site in Burtown Big townland under the directorship of Caitriona Gleeson of Headland Archaeology (Ireland) Ltd.

An Environmental Impact Assessment was published in 2003 for the Kilcullen to Powerstown Scheme, with Valerie J Keeley Ltd preparing the Archaeological, Architectural and Cultural Heritage Assessment. This formed Chapter 10 of the EIS produced by the Roughan and O'Donovan - Faber Maunsell Alliance. Geophysical prospection was carried out on certain areas of high archaeological potential by Bartlett-Clark Consultancy as part of the Environmental Impact Assessment, on behalf of Valerie J. Keeley Ltd/Kildare County Council.

Aerial photography was undertaken along the entire route selection as part of the non-invasive assessment after the EIA stage. This work was carried out in April 2004 by Markus Casey.

Archaeological testing carried out by CRDS Ltd. for the N9/N10 Kilcullen to Waterford Scheme: Kilcullen to Powerstown. Archaeological Services Contract No. 2 – Test Excavations, Mullamast to Prumplestown and Athy Link Road under Ministerial Direction Numbers A021/187 on this site between 20 May and 21 July 2006 identified three pits and a segmented linear ditch.

Full archaeological resolution was conducted on this site between 18 June and 6 July 2007. The features identified during testing were re-identified in addition to a number of other features. Two phases of activity were apparent on this site. The earliest of these dated to the Early Bronze Age with a later medieval reuse of the site. A Preliminary Report of works on the site was completed by Headland Archaeology (Ireland) Ltd in April 2009.

1 Introduction

The N9/N10 Kilcullen to Waterford Road Scheme, of which the Kilcullen to Powerstown Scheme forms part, was proposed as a High Quality Dual Carriageway/Motorway, forming the Major Inter Urban route between Dublin and Waterford. The Kilcullen to Powerstown Scheme was advanced as a single entity up to the Compulsory Purchase Order/Environmental Impact Statement and was subsequently divided into two separate construction contracts: the Carlow By-pass (Phase 1) and the Kilcullen to Carlow Scheme (Phase 3). Kildare County Council, National Roads Design Office, has responsibility for overseeing the project management of these two schemes. The entire road scheme from Kilcullen to Waterford has now been designated as Motorway.

An Environmental Impact Assessment was published in 2003 for the Kilcullen to Powerstown Scheme, with Valerie J Keeley Ltd preparing the Archaeological, Architectural and Cultural Heritage Assessment. This formed Chapter 10 of the EIS produced by the Roughan and O'Donovan & Faber Maunsell Alliance. Geophysical prospection was carried out on certain areas of high archaeological potential by Bartlett & Clark Consultancy as part of the Environmental Impact Assessment, on behalf of Valerie J. Keeley Ltd/Kildare County Council.

Aerial photography was undertaken along the entire route selection as part of the non-invasive assessment after the EIA stage. This work was carried out in April 2004 by Markus Casey.

Construction commenced on Phase 1, the Carlow By-pass, in January 2006 and the road was completed and opened in May 2008. Construction of Phase 3, the Kilcullen to Carlow Scheme, which also includes a new single carriage link road to Athy town, commenced in January 2008.

Archaeological test-trenching was undertaken in advance of Phase 1, the Carlow By-pass, by Headland Archaeology (Ireland) Ltd between June and August 2005 (Archaeological Services Contract No. 3). This work identified 64 archaeological sites, which required archaeological excavation in advance of road construction. The resolution works for these sites were undertaken by Headland Archaeology (Ireland) Ltd between January and August 2006 (Archaeological Services Contract No. 4).

Archaeological test-trenching was undertaken in advance of the construction of Phase 3, the Kilcullen to Carlow Scheme, by IAC Ltd and CRDS Ltd, between October to November 2005 and May to August 2006 (Archaeological Services Contracts No. 1 and No. 2, respectively). This work resulted in the identification of 102 archaeological sites, which required resolution in advance of construction. The resolution works for these sites were undertaken by Headland Archaeology (Ireland) Ltd between March and December 2007 (Archaeological Services Contracts No. 5 and No. 6). This report details the results of one of those excavations, undertaken under NMSR Number E2992.

The project was funded by the Irish Government and the European Union through Kildare County Council/National Roads Authority, under the National Development Plan 2000-2006 and 2007-2013.

Construction Phases 2 and 4 relate to the section of road between Powerstown, Co. Carlow and the Waterford city By-pass and are project managed by Waterford County Council, National Roads Design Office.

2 Site description and location

Site E2992 was situated in the townland of Burtown Big, parish of Moone, barony of Kilkea and Moone, and was located to the northeast of Burtown crossroads, between the towns of Athy and Ballitore, Co. Kildare at National Grid Reference: 275190/194478 (Figure 1). The site was located 6 km west of the River Barrow and overlooked the surrounding landscape of the Barrow Valley to the southwest. It was situated towards the western end of a large sub-rectangular field used primarily for crop cultivation (Figure 1). The eastern field boundary defined the boundary between the townlands of Burtown Big and Burtown Little while the southern field boundary defined that between Burtown Big and Irishtown (Figure 2).

A number of known archaeological sites were identified in the vicinity of E2967 in advance of the current road development including a mound (RMP KD035-041) 350 m to the south, a church (RMP KD035-030) and graveyard (RMP KD035-030001) 420 m to the east, a ringfort (RMP KD035-039) 1.5 km to the southwest, an enclosure (RMP KD035-055) and field system (RMP KD035-055001) 1.5 km to the southwest, and an enclosure (RMP KD035-056) and field system (RMP KD035-056001) 1.5 km to the southwest.

The hill of Mullamast is visible to the northeast at a distance of 2.5 km. Named after the mythological character Maistiu, daughter of a Firbolg chief Oengus who gave his name to the fort of Dún Aonghusa, the hill has a concentration of prehistoric activity with five barrows identified at its summit (RMP KD036-000, 011-014). An enclosure is also recorded (RMP KD036-010) along with a standing stone (RMP KD036-017) and an early medieval ringfort (RMP KD036-008). The site is also of later historical significance being the location of a slaughter of the chiefs of Offaly and Laois in 1577, and a venue for one of Daniel O'Connells monster meetings calling for a repeal of the union with Britain in October 1843 (Ó Riain 2000, 37-8).

Archaeological investigations undertaken as part of Archaeological Services Contract No. 5 on the road scheme identified a number of archaeological sites in the vicinity of site E2992. Located 350 m to the west, Site E2994 revealed three oval pits, one of which returned an Iron Age radiocarbon date (Cagney and Kozłowska 2009d). Site E2983 was located 2.7 km to the west and contained medieval and post-medieval pits and furrows (Cagney and Kozłowska 2009a). Site E2985 was located 3.2 km to the west where a hearth, postholes, a pit and a ditch were uncovered and returned Later Mesolithic and Bronze Age radiocarbon dates. (Cagney and Kozłowska 2009b) A further 200 m west of Site E2985, Site E2986 revealed a medieval figure-of-eight shaped kiln and an isolated posthole (Cagney and Kozłowska 2009c). Extending eastwards along the road corridor were a number of further archaeological sites. Located 500 m to the east Site E2990 contained the remains of medieval and post-medieval kilns and a number of linears (Moloney 2009c). Site E2989 was 600 m to the east and revealed an Early Bronze Age ritual complex with two ring-ditches and associated pits including cremation burials (Moloney 2009b). A further 150 m to the east Site E2988 revealed evidence for Late Bronze Age activity in the form of cremations and a large oval pit, along with the remains of a rectangular post built structure (Moloney 2009a). Three adjacent sites, E2984 (Dennehy, Mallia-Guest, and Lenihan 2010b), E2982 (Dennehy and Lenihan 2010), and E2981 (Dennehy, Mallia-Guest, and Lenihan 2010b), were located between 1.6 and 1.8 km to west and contained, a Middle Bronze Age enclosure and associated structure and a medieval figure-of-eight shaped kiln, a multiphase site with evidence of domestic, ritual, and industrial occupation, and an Iron Age burnt mound and associated feature respectively.

3 Aims and methodology

The objective of the work was the preservation by record of any archaeological features that would be impacted by the proposed development, in advance of the road construction programme.

Topsoil stripping of the site was conducted using a 360° tracked machine fitted with a 1.9 m wide ditching (toothless) bucket under constant archaeological supervision. A total area of 2090 m² was exposed. The resulting surface was cleaned and all potential features investigated by hand. Archaeological contexts were recorded by photograph and on *pro forma* record sheets. Plans and sections were drawn at scales of 1:20 and 1:10 respectively. Registers are provided in the appendices (Appendices 1-5). Ordnance Datum levels and feature locations were recorded using Penmap and a total station theodolite.

Environmental samples, animal bone samples, were taken on any deposits suitable for analysis or dating as per Headland Archaeology (Ireland) Ltd environmental guidelines and following consultation with environmental archaeologist and archaeobotanist Karen Stewart and zooarchaeologist Dr. Auli Tourunen. All thirty-six of the soil samples taken were processed to retrieve any palaeoenvironmental material that may aid in the interpretation of the site and function of the pits. All faunal remains were also examined. In addition, cremations/inhumations were recovered as per Headland Archaeology (Ireland) Ltd treatment of human remains guidelines and following consultation with osteoarchaeologist Carmelita Troy. Artefacts recovered during the excavation were assigned unique numbers and treated in accordance with National Museum of Ireland guidelines.

Full archaeological resolution was conducted on this site between 18 June and 6 July 2007. The crew on site E2992 consisted of 1 director, 1 deputy site manager and 11 site assistants.

Following excavation, artefacts were analysed by the appropriate specialists and reports produced on the findings for incorporation into this report (see appendices).

4 Excavation results

During resolution the area was stripped of 0.3 to 0.5 m of topsoil, a mid-brown sandy silty clay (001), revealing the underlying sub-soil, a mid-orange brown clayey silt (002). This uncovered a concentration of features in the mid-eastern portion of the site which were prehistoric in date (Figure 4). A second area of prehistoric activity was recorded near the western baulk and included a probable cremation pit and an associated posthole.

Three linear features that continued beyond the CPO zone were uncovered on the site. Two of these were truncated by a relatively long slightly key-hole shaped kiln and appeared to represent medieval activity on the site.

Five small pits/postholes were recorded towards the eastern end of the site, two pits were recorded towards the northwest corner and one pit was recorded towards the southwest corner but did not provide evidence of their function or purpose.

Phase I – Early Bronze Age ritual activity (Figure 4)

A number of features in the mid-east portion of the site produced Early Bronze Age artefacts. The first of these was recovered from a possible posthole (034) located approximately 5.25 m north of the

southern limit of excavation. This was oval in plan with steep sides and a tapered round point at the base. It measured 0.43 m in length, 0.18 m in width and 0.2 m in depth. It contained a single fill (033) of mid-brown sandy clay from which a single minimally retouched flint core waste flake (E2992:033:001) was retrieved (Appendix 11).

A small pit (055) (Figure 5) (Plate 1) located 0.3 m southwest was also found to contain a lithic artefact along with a number of pottery sherds. This pit was sub-oval in plan with irregular sides and an irregular base. It measured 0.82 m in length, 0.75 m in width and 0.7 m in depth and contained two fills. The basal fill (057) was composed of dark grey brown silt and sand with frequent charcoal. A radiocarbon date range of 2280-2030 cal BC (2 σ) (SUERC-26397) (Appendix 9) was obtained from hazel charcoal recovered from this deposit dating it to the Early Bronze Age. Two flakes of chert debitage (E2992:057:002 and 010; Appendix 11) and eight sherds of pottery (E2992:057:001; 003-009; Figure 10) from an Early Bronze Age encrusted urn: four neck sherds, three belly sherds, and one fragment (Appendix 10), were retrieved from this deposit. Above this was the upper fill (056) composed of dark yellow orange sand with occasional charcoal.

A large shallow pit (026) was located above the posthole (034) and pit (055) and appeared to truncate both. This pit was irregular in plan with steep to vertical sides and an uneven base and measured 2.37 m in length, 2.25 m in width and 0.3 m in depth. It contained three fills with the basal fill (027) composed of light to medium brown sand with occasional stones and charcoal. Above this was dark brown clayey sand with frequent charcoal and frequent small to large stones (029). A chunk of flint debitage (E2992:029:001) was recovered from this deposit (Appendix 11). The upper fill (028) was composed of dark brown clayey sand with infrequent inclusions of charcoal and occasional stones. This deposit (028) produced 18 sherds (E2992:028:001-013; 015-019; Figures 10 and 11) from two Early Bronze Age ceramic vessels: seven necksherds, three bellysherds, and a single body sherd from a bowl food vessel; and three necksherds, three rimsherds, 13 fragments, and 132 crumbs from an encrusted urn (Appendix 10), along with a flint convex side scraper (E2992:028:014) and debitage (E2992:028:125) (Appendix 11). These three features were sealed by a deposit of dark brown charcoal-rich silty sand (063) which measured 3.41 m in length, 2.38 m in width and 0.22 m in depth.

Another pit located 2 m south of the large shallow pit (026) was also found to contain a lithic artefact. This probable pit (061) (Figure 4) was oval in plan with concave sides and a flat base (Figure 6). This pit measured 0.69 m in length, 0.51 m in width and 0.11 m in depth and contained one fill. This fill (062) was composed of yellow brown sandy silt with occasional charcoal and contained one minimally retouched chert blank (E2992:062:001; Appendix 11).

A number of features were located in relatively close proximity to these prehistoric pits and were probable related. One of these was also found to be sealed by the deposit of dark brown charcoal-rich silty sand (063) (Plate 2). This feature (064) (Figure 4), a probable posthole, was located approximately 1 m south of the large shallow pit (026) and was sub-circular in plan with convex sides and a flat base. It measured 0.36 m in length, 0.34 m in width and 0.43 m in depth and contained a single fill of dark yellow brown charcoal-rich silty sand (065).

A possible posthole was located immediately northwest of (063). This (022) was sub-oval in plan with concave sides and an irregular to flat base. It measured 0.42 m in length, 0.35 m in width and 0.21 m in depth and was filled by brown black charcoal-rich stony silty sand (023).

A probable stakehole (059), located immediately west of deposit (063) was circular in plan with vertical sides and a concave base. It measured 0.3 m in diameter and 0.2 m in depth and contained a fill (060) composed of grey brown sandy silt with infrequent charcoal.

A possible pit (046) was found 1.48 m southeast of this stakehole and also immediately outside deposit (063). This was irregular in plan with gradually sloping sides and an irregular base. It measured 0.33 m in length, 0.26 m in width and 0.05 m in depth and was filled by (047) black brown sandy silt with infrequent charcoal inclusions. Approximately 0.7 m further southeast a shallow pit (044) was uncovered. This was irregularly shaped in plan with gradually sloping sides and an irregular base. It measured 0.82 m in length, 0.53 m in width and 0.1 m in depth and contained one fill. This fill (045) was composed of black brown sandy silt with infrequent charcoal. Another possible pit (052) was located 1.8 m east of this and was oval in plan with concave sides and a flat base. It measured 0.52 m in length, 0.22 m in width and 0.19 m in depth and was filled by mid-brown sandy silt (053) with infrequent charcoal.

A possible posthole (034) was located approximately 5.25 m north of the southern limit of excavation. This was oval in plan with steep sides and a tapered round point at the base. It measured 0.43 m in length, 0.18 m in width and 0.2 m in depth. It contained a single fill (033) of mid-brown sandy clay.

A linear feature (038) was located approximately 3.5 m northwest of both the shallow irregular pit (026) and deposit (063). This had steep sides and a concave base and was 6.72 m in length 0.46 m in width and 0.2 m in depth and contained one fill. This fill (039) was composed of black brown sandy silt with infrequent charcoal.

An isolated possible posthole (035) was located 8 m east of the shallow irregular pit (026) and deposit (063). This was oval in plan with steep sides and an irregular base and measured 0.42 m in length, 0.33 m in width and 0.24 m in depth. It contained a basal fill (037) composed of yellow sand with frequent charcoal and an upper fill (036) composed of yellow sand with frequent charcoal.

Phase II – Early Bronze Age funerary activity (Figure 3)

Approximately 42 m west of the shallow irregular pit (026) and deposit (063) was a sub-oval pit (009) with gently sloping sides and a concave base (Figure 7). This measured 0.44 m in length, 0.34 m in width and 0.11 m in depth. This feature was excavated in two spits as it resembled a cremation pit. Its fill (010), was composed of mid-orange brown sandy silt with infrequent charcoal and was found to contain 320 fragments of burnt bone, none of which were identifiable as human or animal (Sample E2992:002; Appendix 8). A radiocarbon date range of 1740-1520 cal BC (2 σ) (SUERC-26396) (Appendix 9) was obtained from hazel charcoal recovered from this deposit dating it to the Early Bronze Age.

A posthole (007) was located approximately 2.5 m northeast of the cremation pit. This was circular in plan with steep sides and a tapered round point at the base. It measured 0.27 m in length, 0.25 m in width and 0.15 m in depth. It was filled by mid-orange brown sandy clay (008) with frequent stones and occasional charcoal.

Phase III -Undated features (Figure 3)

Three linear features continuing beyond the CPO area were recorded on the present site along with a number of miscellaneous features all of which were undated.

The first of these linears (042) (Plate 4) may have represented a field boundary and was located at the southwestern corner of the site. This was exposed for a length of 27 m within the site was orientated northwest/southeast. It measured 1.26 m in width and 0.3 m in depth and was filled by mid-brown sandy clay (043) with infrequent stones and occasional snail shell.

The second linear feature (021) (Figure 8; Plate 5) was east/west in orientation and excavated for 87.5 m of its length. It had irregular, gently sloping sides and an irregular base, and measured from 0.8-1.6 m in width and 0.34-0.67 m in depth. It contained one fill (030) composed of dark brown silty clay

with frequent pebbles, infrequent charcoal, and occasional animal bone consisting of five cattle bones, a horse metacarpal, large and medium mammal bones as well as unidentified fragments of bone (Samples E2992:001,004,005,007; Appendix 8).

The third linear feature (025) was perpendicular to (021) and truncated it. Approximately 8.5 m of this linear was excavated within the CPO zone with its southern end continuing beyond the southern baulk. This feature had gradually sloping sides and an uneven to concave base and measured 0.85 m in width and 0.34 m in depth. It was filled by mid-brown silty sand (024).

An isolated pit was also recorded towards the southwest corner of the site and two pits were recorded near the northwest corner of the site (Figure 3). These did not offer any information as to their purpose or function based on on-site evidence.

The isolated pit (066) located towards the southwest corner of the site was sub-circular in plan with gently sloping sides and a concave base. It measured 0.68 m in length, 0.62 m in width and 0.3 m in depth and was filled by dark brown silty clay (067).

The first of the two pits located near the northwest corner of the site (048) was circular in plan with vertical sides and a concave base. It measured 0.4 m in diameter and 0.14 m in depth and was filled by dark brown silt with frequent stones (049). The second (050) was located to the north of the first and was oval in plan with gradually sloping sides and an irregular base. It measured 0.67 m in length, 0.64 m in width and 0.21 m in depth and was filled by mid-brown silty clay (051).

Phase IV– Medieval/post-medieval activity

What appeared to be a slightly key-hole shaped kiln (017) (Figure 9; Plate 6 and 7) also truncated linear features (021) and (025) at the junction of these two. This kiln displayed an increase in width at either end which had the effect of giving it a slightly key-hole shaped.

The kiln (017) was orientated east/west and had concave to irregular sides and an irregular to flat base and measured 8 m in length, 1.38 m in maximum width and 0.34 m in maximum depth. Several medium-sized sub-circular and sub-angular stones (068) measuring 0.2-0.4 m in length and 0.1-0.2 m in width were noted at the junction point of the firespot and flue and most likely represented baffle stones. Seven fills, other than these possible baffle stones, were recorded in this kiln with four in the western end. The basal fill, stratigraphically above the possible baffle stones in the western end (016), was composed of light yellow brown clayey sand and was below (015) grey clayey sand with infrequent charcoal and pebbles containing a burnt mouse humerus, possibly contemporary, and six burnt fragments of unidentifiable bone. Above this was brownish black charcoal-rich clayey sand (014) with occasional animal bone (Bone Samples 2 and 6). The upper fill (013) was composed of light brownish grey sandy clay with infrequent charcoal and pebbles.

The basal fill in the flue and bowl or eastern end (020) was composed of light yellow brown clayey sand and was the same as the second fill (016) in the western end. It contained a single unburnt mouse incisor, possibly intrusive (Sample E2992:011, 019; Appendix 8). The middle fill (019) was composed of brownish black charcoal-rich clayey sand and was the same as the third fill (014) in the western end. It was found to contain an unburnt large mammal bone, a sheep/goat tooth fragment, large mammal and unidentifiable bone as well as six burnt small mammal and unidentifiable bones (Sample E2992:003; Appendix 8). The upper fill (018) was found to be the same as the upper fill in the western end (013) and was also composed of light brownish grey sand with occasional charcoal and one unburnt large mammal bone (Sample E2992:009, 013; Appendix 8).

Five features were located to the south of the kiln (017) (Figure 3). The first of the five features was located 0.2 m north of the southern baulk. This posthole (005) was circular in plan with steep to vertical sides and a concave base. It measured 0.22 m in diameter and 0.17 m in depth and was filled by mid-brown silty sand (006) with occasional charcoal.

Approximately 3.4 m west of this was a possible posthole (031) that was circular in plan with vertical sides and a concave base. It measured 0.33 m in length, 0.27 m in width and 0.28 m in depth and was filled by mid-brown silty sand (032) with occasional charcoal.

Approximately 3.7 m north of the first probable posthole (005) was a small pit (011) that was sub-circular in plan with steep sides and a concave base. It measured 0.35 m in length, 0.28 m in width and 0.13 m in depth and was filled by (012) mid-grey brown sandy silt with infrequent charcoal and occasional stones.

A possible posthole (004) was located 0.12 m northeast of this and was circular in plan with steep to vertical sides and an irregular base. It measured 0.31 m in diameter and 0.17 m in depth and was filled by mid-brown sandy silt (003) with frequent stones.

Approximately 4 m west of this possible posthole (004) and pit (011) was another possible posthole. This (040) was sub-circular in plan with steep sides and a concave base and measured 0.34 m in length, 0.27 m in width and 0.12 m in depth and was filled by mid-brown sandy silt (041) with frequent stones, occasional charcoal, and a single unburnt animal tooth fragment.

Phase V – Post-medieval feature

What appeared to be the terminus of a linear feature (054) was uncovered 6 m west of the shallow irregular pit (026) and deposit (063). This had vertical sides and a flat to concave base and measured 1 m (within the site) in length, 0.75 m in width and 0.2 m in depth. The single fill (058) of this feature was composed of mid-orange brown silty clay. Sherds of modern pottery were also noted from within this fill indicating that this feature may be modern and unrelated to the others in the area.

5 Discussion

The results of the excavation at Burtown Big are discussed here following stratigraphic, environmental, dating and artefactual analysis. The site is then discussed on a local level and related to other sites known in the vicinity (including those discovered on the current scheme). Finally the site is discussed on a national level in an attempt to place it in context and assess how it contributes to the archaeological record in general.

Phase I – Early Bronze Age ritual activity

The grouping of features in the mid-east portion of the site consisting of a number of pits and possible postholes has been radiocarbon dated using hazel charcoal retrieved from the pit (055) to the Early Bronze Age, 2280-2030 cal BC (2σ) (SUERC-26397). The contents of these features, the absence of hearths or other traces of habitation, and the placing of the encrusted urns within the pits indicate a symbolic and ritual deposit. Both food vessels and encrusted urns show a geographical concentration in the north and east of the country (Waddell 2000, 142), a distribution into which the present site fits comfortably. Sherds of bowl vessels and encrusted urns have on occasion been found on habitation sites, but predominantly are found with burials. No human remains were identified in association with these vessels at Burtown Big. While these two vessel types have previously been found within the same cemetery type, the location of the two within the same pit is unparalleled. Evidence for a similar Early Bronze Age ritual activity was uncovered at Mitchelstown Co. Cork, where three Early Bronze Age pottery vessels were uncovered within a single pit, with two distinct phases of deposition taking place over a short time-frame. Here too an absence of human remains was notable in a location with ample evidence for Bronze Age burials in the surrounding landscape (Kiely and Sutton 2007).

Phase II – Early Bronze Age funerary activity

This phase of activity consisted of an isolated cremation burial and a single posthole located 2.5 m to its northeast; hazel charcoal from the cremation burial was radiocarbon dated to 1740-1520 cal BC (2σ) (SUERC-26396) placing it in the Late Bronze Age and on the cusp of transition from the Middle Bronze Age. The bone within the cremation could not be positively identified as human or animal, but given the date and context of the bone, the presence of a cremation or token burial cannot be ruled out (Appendix 8). Token burials are cremations that have been described as consisting of small, minute or token quantities. The Bronze Age in Ireland saw a move away from the monumental and megalithic burial structures of the Neolithic period with a shift towards simpler burials regardless of the stature of the individual. The Middle Bronze Age includes the burial traditions of token cremation burials within isolated pit cremations, enclosed and unenclosed pit cemeteries, barrows, ring-ditches and mounds (Cooney and Grogan 1999, 126).

Given the distance of 2.5 m between the cremation burial and the posthole it can only tentatively be interpreted as a grave marker. Such grave markers in association with cremation burials have been recorded at Hermitage on the banks of the River Shannon in Co. Limerick (Collins 2001), and at Killoran Co. Tipperary (Stevens 1997).

The Bronze Age activity identified associated with Phases I and II is not unique within the surrounding locality with six Middle Bronze Age cremations were excavated in association with a ring-ditch, and adjacent to an Early Bronze Age house, at Mullamast Site E2857 located 2.3 km to the east (O'Neill 2009). Cremations were also revealed within an urn, and in association with an inhumation burial in the Bronze Age cemetery at Moone, Site E2980, 3.7 km to the east (Hackett 2009).

Phase III - Undated features

Three linear features, all implicative of field boundaries were identified extending across and beyond the site. Two of these predated the cereal drying kiln which truncated their point of intersection, the third had no stratigraphic relationship with other features. The longest of these, extending east/east was visible as a crop mark in the surrounding field. None of these features are represented on the 1st Edition Ordnance Survey 6" map no. KE035 of 1839. Other boundaries represented in adjoining area have however been subsequently been removed reflecting the ephemeral nature of these land divisions given continued agricultural landscape change and maintenance through the construction and subsequent removal of field boundaries from post-medieval times through to the modern day.

A number of miscellaneous features were located across the site. However, due to their isolation, lack of diagnostic evidence, or association with any specific activity, these features could not be attributed to any timeframe or function. Due to the unsuitability of the samples retrieved, no further information can be extrapolated from the remaining features.

Phase IV – Medieval/post-medieval Activity

The cereal drying kiln on the present site was kiln was earth-cut with a lower scorched fire-pit connected by a flue to a higher drying chamber. No structural evidence such as post holes or wind breaks was detected. It truncated linear features (021) and (025) at the junction of these two.

Such features would have played a crucial role in the processing of cereal grains, avoiding the possible rotting of the cereal crop in the damp Irish climate and ensuring the survival of grain seed for the following year. The drying process would have been carried out throughout the year as required, with a concentration in late autumn/early autumn in preparation for winter storage or immediate use after harvesting. Cereal-drying kilns are classified according to their shape in plan with the five main categories being; keyhole-shaped, L-shaped, figure-of-eight shaped, dumb-bell shaped, and irregular (Monk and Kelleher 2005, 79). The figure-of-eight and dumb-bell shaped examples are seen as being precursors to the keyhole shaped kilns. A fire lit in the fire bowl would provide the necessary heat required for the drying process. This was evidenced by fire reddened or oxidised clay at this end as well as possible baffle stones (Plate 6) as noted by the excavator. This fire reddening is testament to the high temperatures achieved as oxidization of the subsoil only occurs at temperatures in excess of 600°C (Ketterings and Bigham 2000). Recently harvested cereals would have been placed on a wooden rack or straw bed and the heat from the fire would travel through the flue to the drying chamber which would have been covered by a roof of clay or thatch. The presence of sedge nutlets in significant quantities from the kiln samples suggests turf may have been used in the kiln either as fuel or roofing (Appendix 7). Evidence for such a thatching was recovered in association with a kiln at site E2996 in Ballyvaas Co. Kildare (Doyle 2009). Alternatively, Edwards suggests peat would have been a likely source, its propensity not to spark being advantageous in reducing the threat of fire (1996, 62-63), though charcoal may also have been conveniently available and utilised.

The grain assemblage was dominated by barley and oats with lesser amounts of wheat (bread/club and spelt species) present. This is comparable to the grain assemblages from kilns on the nearby sites E2972, E2973, E2980 and E2989 as well as being broadly comparable with the assemblages from kiln sites nationally (Appendix 7). As no weed seeds or chaff fragments were identified within the assemblage it would appear that it was a clean crop that was being dried with all traces of weed seeds having been previously removed.

Historical texts record that a variety of grain was grown in medieval times and with each type having its own value, a legal text *Bretha Déin Chécht* outlines how a grain of wheat is associated with a supreme king, bishop and a master poet while a grain of oats is associated with the *bóaire* or strong farmer. This indicates the higher relative value of the wheat crop and supports its association with

wealthy or high status settlement. Generally cereals were prepared in the form of bread, porridge and animal feeds, but barley was also used as the main ingredient for making beer (Edwards 1996, 60). Cereal-drying kilns would also have been used as part of the malting process, to prepare the barley for brewing beer. The majority of farms or small group of farms would have had their own cereal-drying kiln.

Experiments undertaken by Monk and Kelleher (2005) have shown that the siting of the kiln and the length of its flue were key elements in the construction and subsequent operational efficiency of any kiln. A kiln which availed of a prevailing wind and was situated on an open slope would prove the most efficient in terms of drying and the time required. The temperature of the air reaching the drying chamber was vital to the success of the enterprise and an increased airflow velocity would result in less heat being lost in the flue. A narrowing flue, rising slightly upwards would further increase the wind speed and resulting temperature in the drying chamber. Conversely the flue needed to be of sufficient length to ensure sparks from the fire-pit were unable to reach the drying chamber with the prospect of fire destroying the cereal crop.

All these factors were visible at Burtown Little (E2992). The fire-pit was situated at the west end of the kiln allowing the features to utilise the prevailing southwesterly winds to which the site was exposed while a slight incline was noted along the flue between the fire-pit and drying chamber. Baffle stones were also present adjacent to the beginning of the flue which would have offered further protection against any sparks reaching the drying chamber. The placing of the kiln within a former field boundary is replicated at Brehon's Chair, Co. Dublin, and Kilmacredock Upper Co. Kildare (Monk and Kelleher 2005, 84).

The bowl end of the Burton Little kiln had a small amount of fire reddening at the extreme southeastern end. A fire in the kiln bowl would not have been related to the corn-drying process. Although this example had a relatively long flue as well as possible baffle stones to prevent sparks travelling to the bowl, it appears as though fire did break out in the bowl end. The large numbers of grains and wild taxa recorded in the middle and upper fills of the kiln is also likely to represent an accidental fire episode (Appendix 7).

Large quantities of oat and barley were retrieved from the four postholes located immediately south of the kiln suggesting these features were contemporary with the processing of the cereal grain. There was no evidence for a hearth or any other traces of habitation, and given the size of the area contained they most likely represent a form of shelter adjacent to the kiln.

Conclusions

The excavations at site E2992 have uncovered for ritual and funerary activity dating to the Early Bronze Age, including the, thus far, unparalleled deposition of [put in the two kinds of pottery] in the same pit. Following on from this there was evidence for medieval to post-medieval agrarian activity in the form of possible field system and a cereal-drying kiln.

All the archaeology related to this site within the CPO has been resolved.

6 Archive quantities

The site archive is comprised of the following materials:

Item	Quantity
Context Sheets	67
Plans	26
Sections	51
Photographs	205
Registers	5
Notebooks	0

The archive material is contained within 1 box.

Storage of the archive in a suitable format and location is required in order to provide for any future archaeological research. It is proposed that in addition to the paper archive a digital copy is prepared. The archive is currently stored in the offices of Headland Archaeology (Ireland) Ltd., Unit 1, Wallingstown Business Park, Little Island, Co. Cork. It is proposed that following completion of post-excavation analysis, the archive is appropriately deposited in consultation with the National Museum of Ireland.

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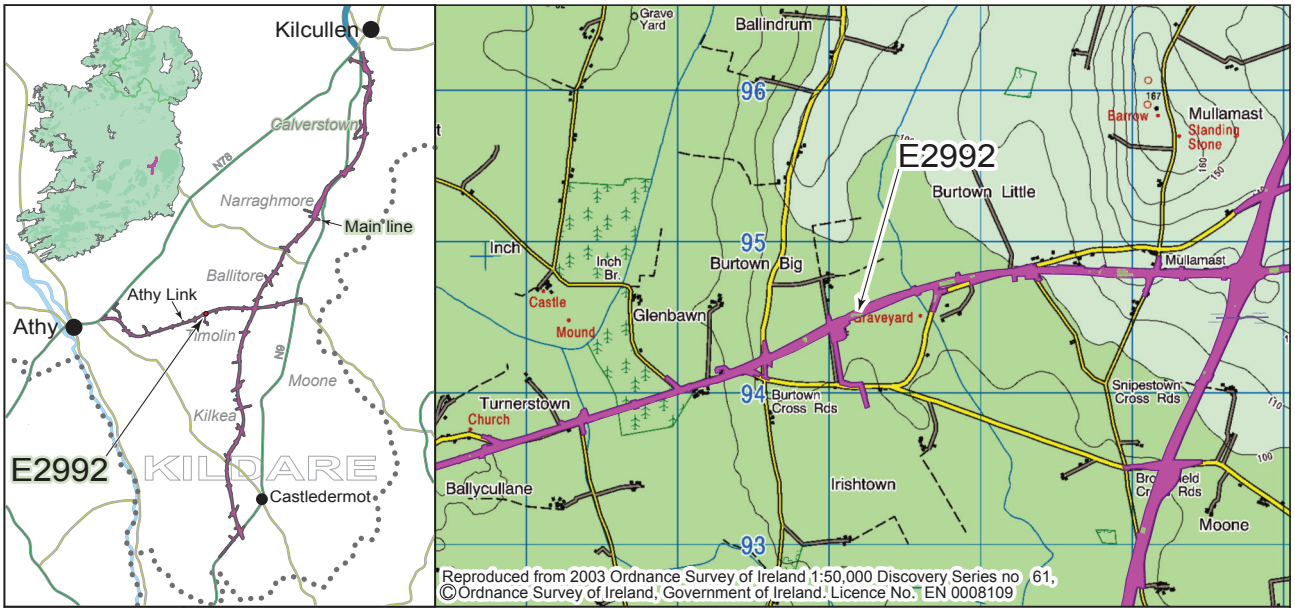
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- Graphics department, Headland Archaeology (Ireland) Ltd.
- Nóirín Teehan, Site Supervisor, Headland Archaeology (Ireland) Ltd.
- The excavation team.



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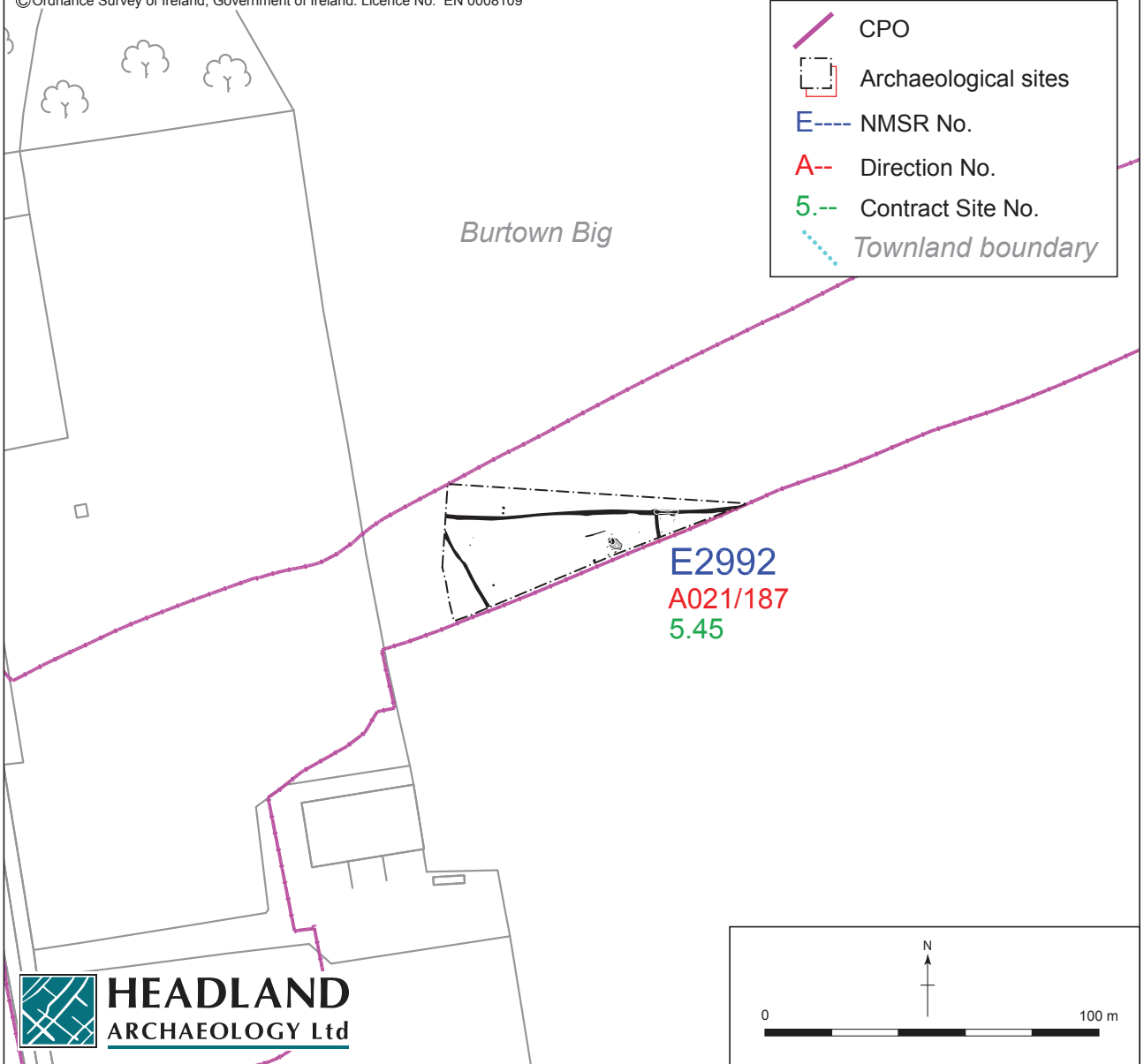


Figure 1 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Site location.

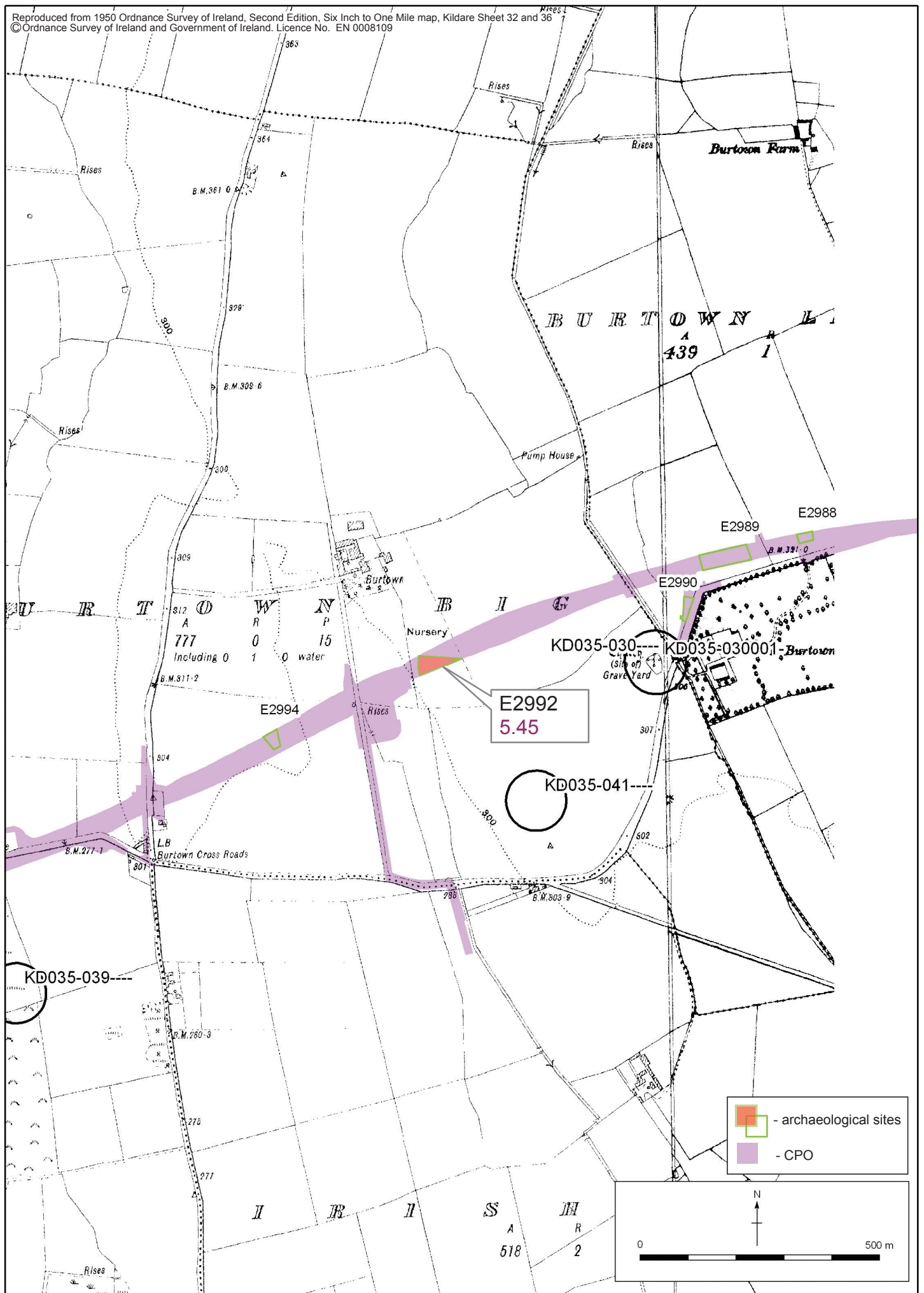


Figure 2 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992 extract from RMP.

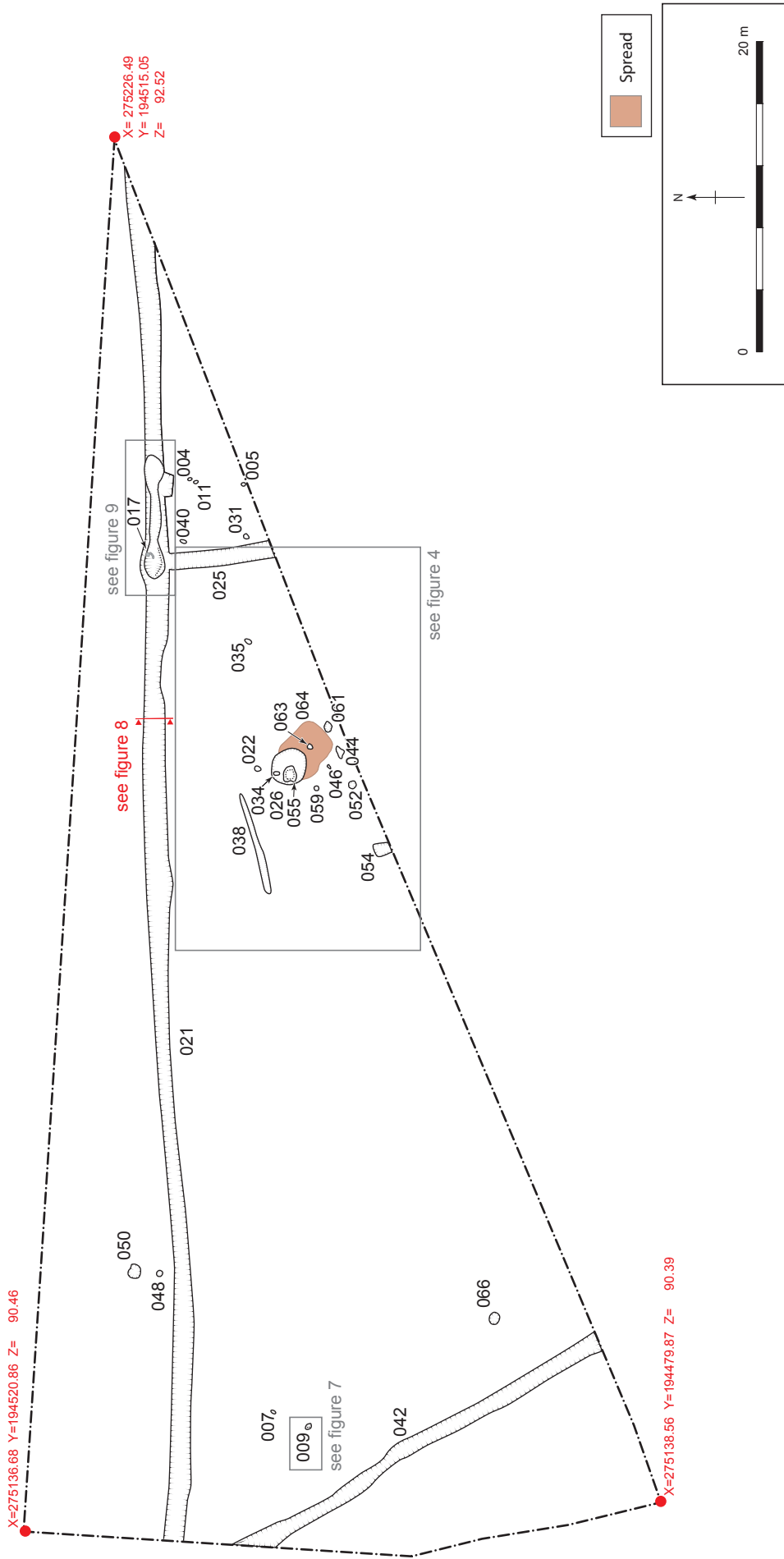


Figure 3 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Site layout.

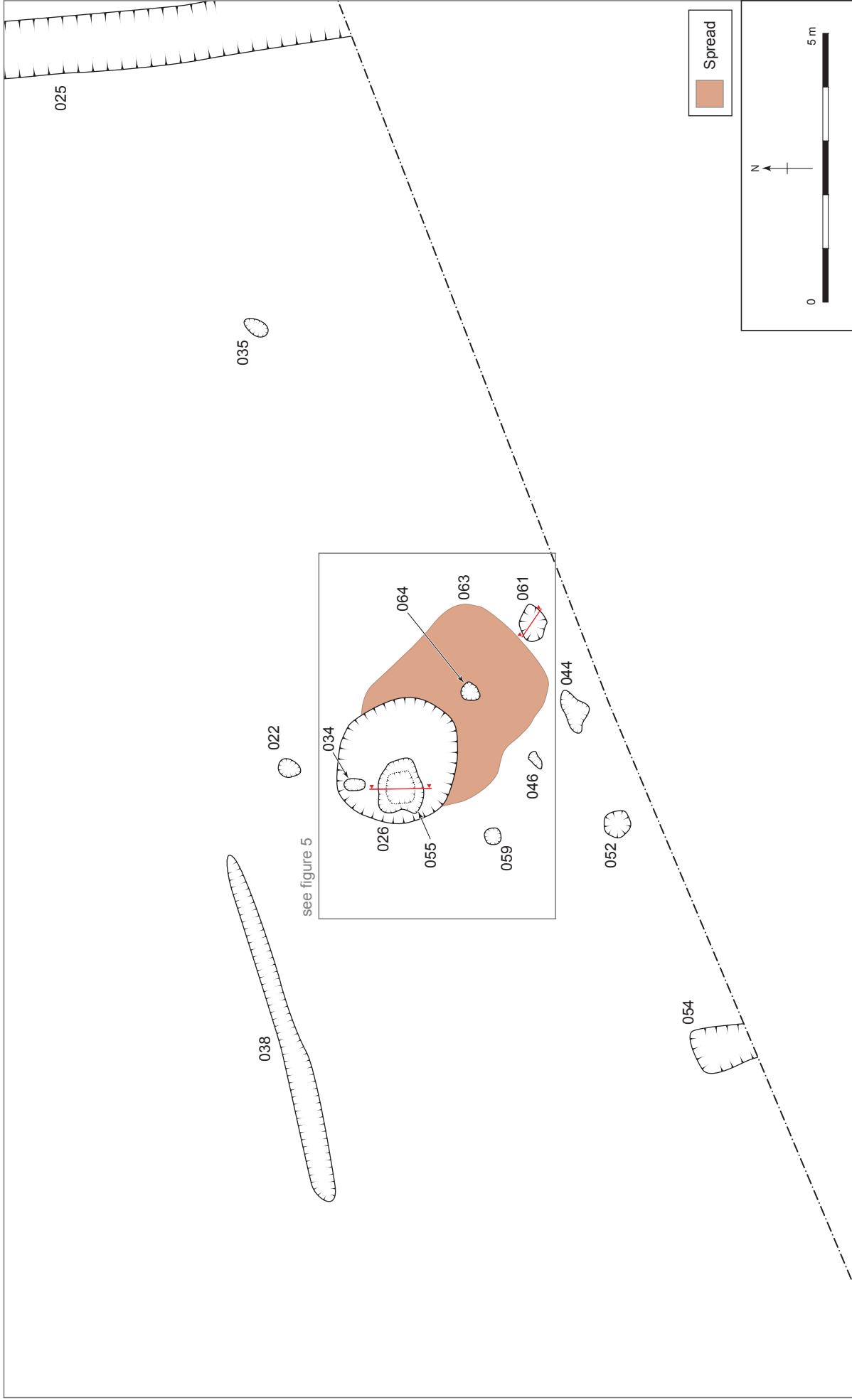


Figure 4 - N9/N10 Kicullen to Waterford Scheme: Phase 3, Kicullen to Carlow.
 Archaeological Services Contract No. 5 - Resolution, Kicullen to Moone and Athy Link Road.
 E2992, Detail of features in mid-east portion of site.

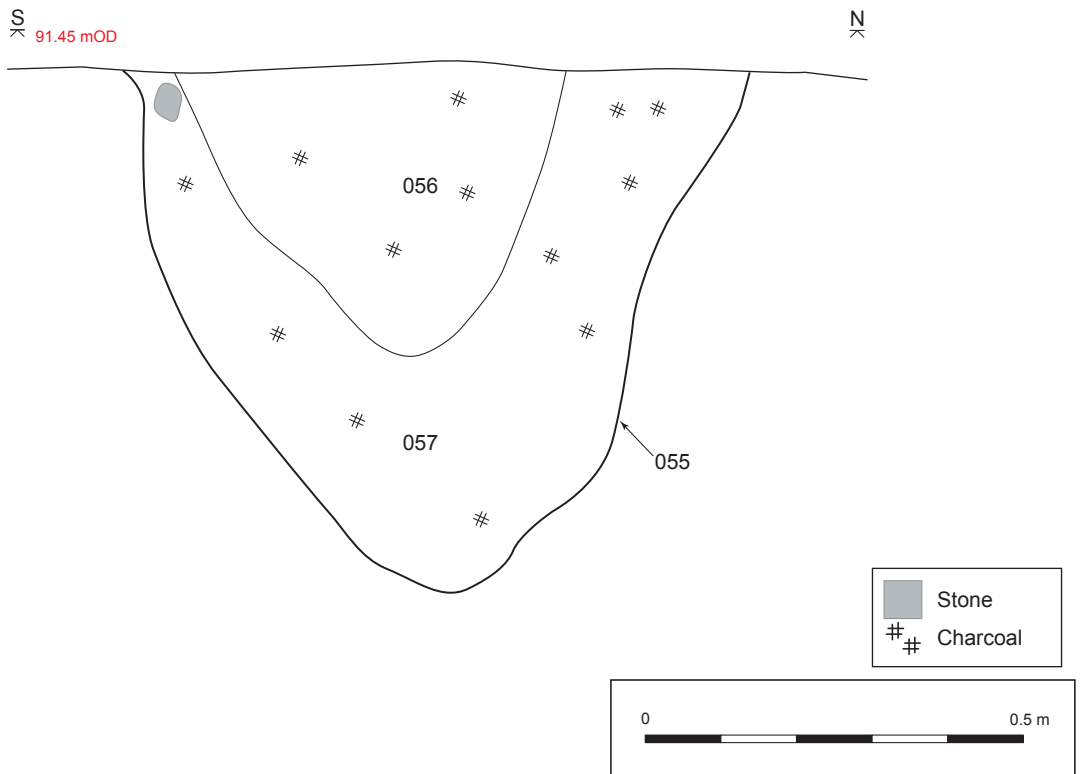
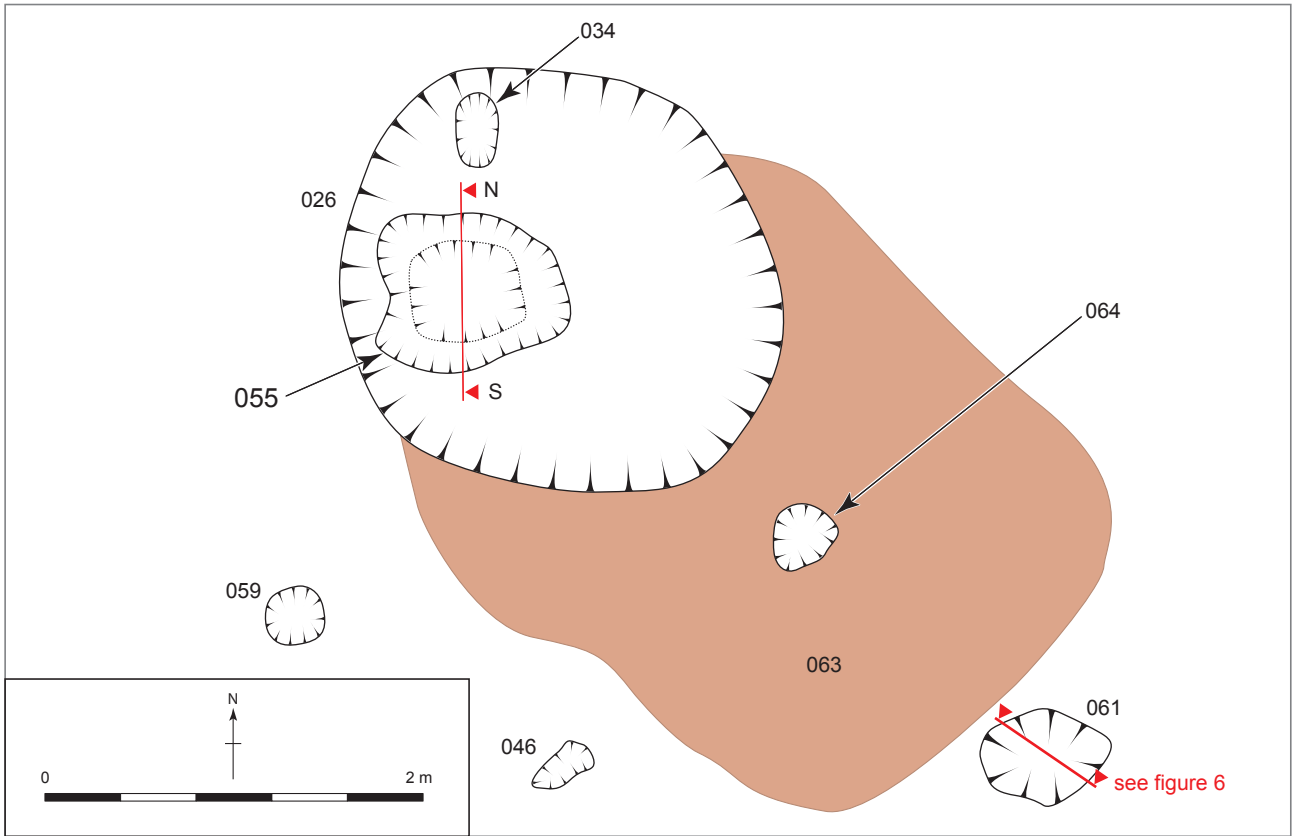


Figure 5 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Plan of and east-facing section through pit (055).

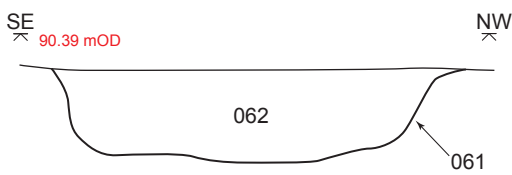
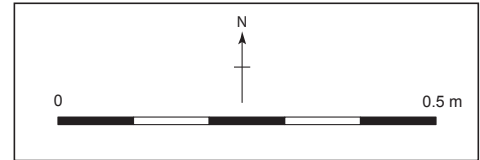
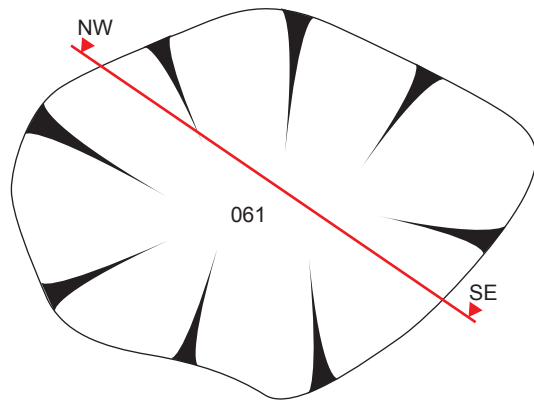


Figure 6 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Plan of and northeast-facing section through pit (061).

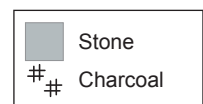
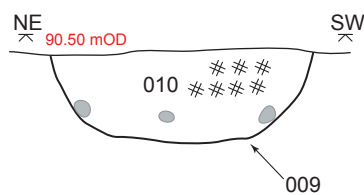
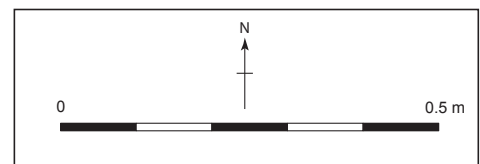
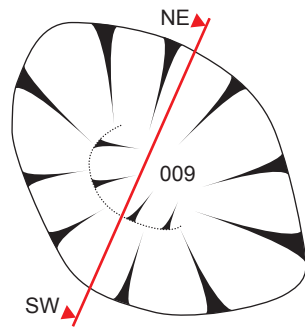


Figure 7 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Plan of and northeast-facing section through cremation pit (009).

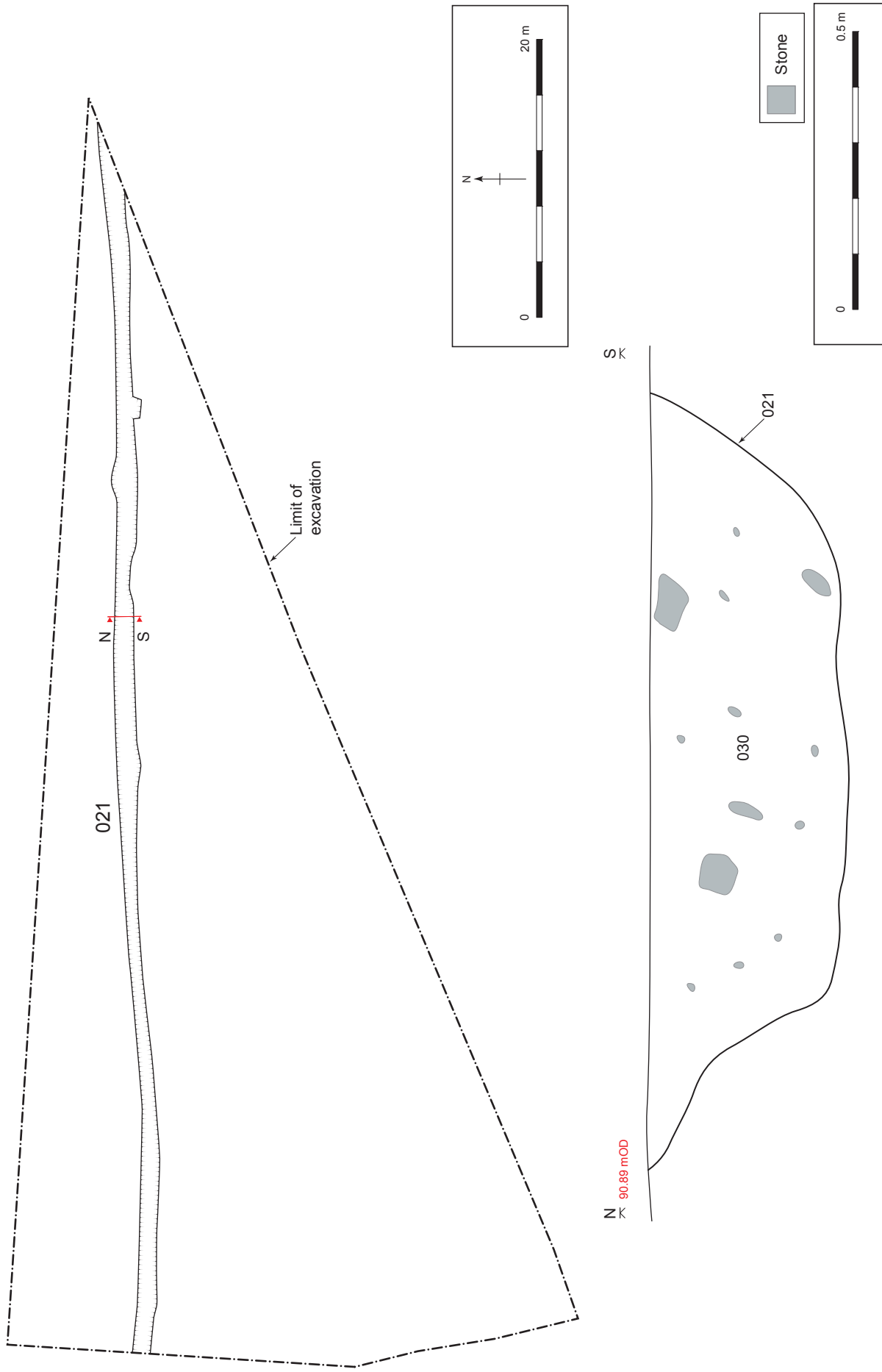


Figure 8 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Plan of and west-facing section through linear ditch (021).

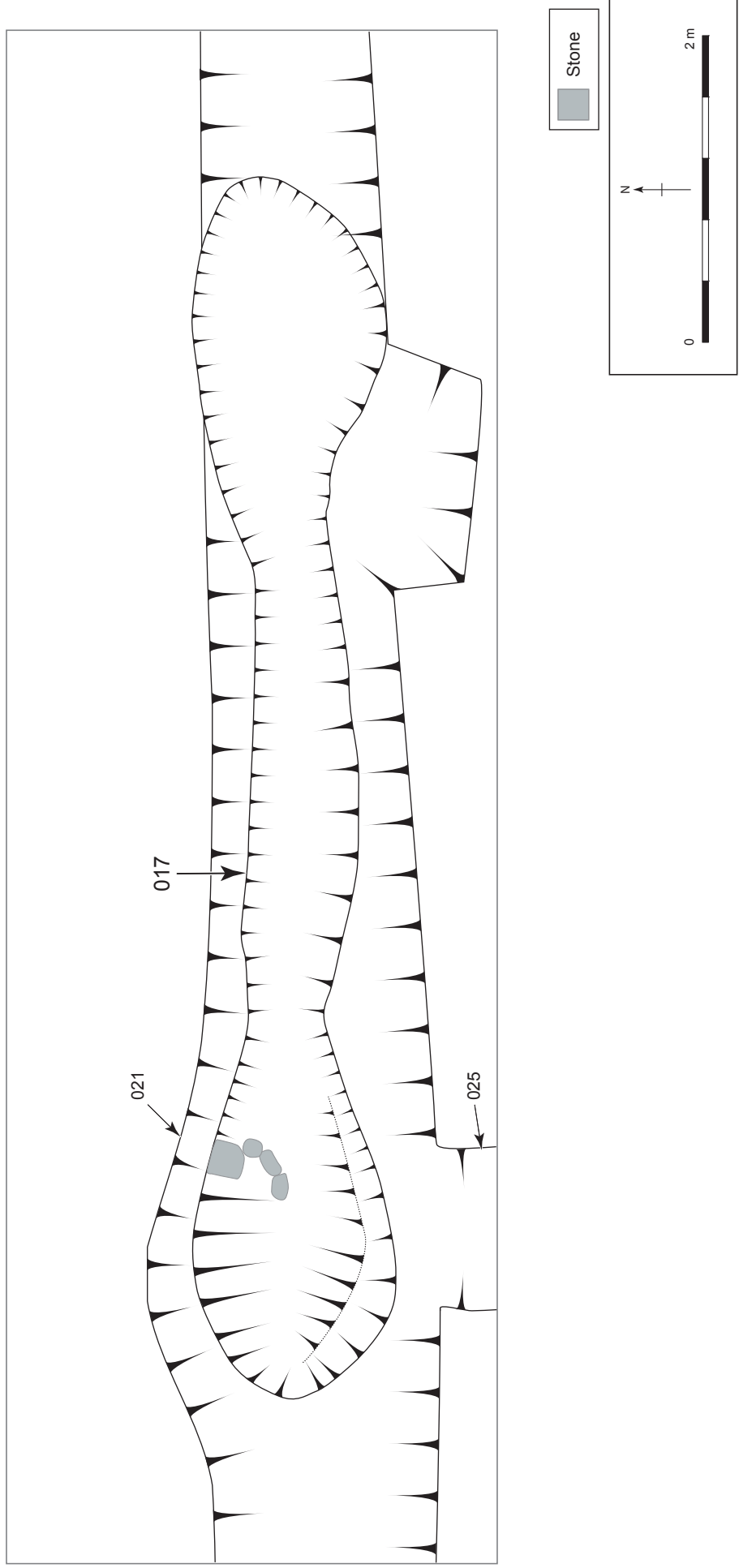
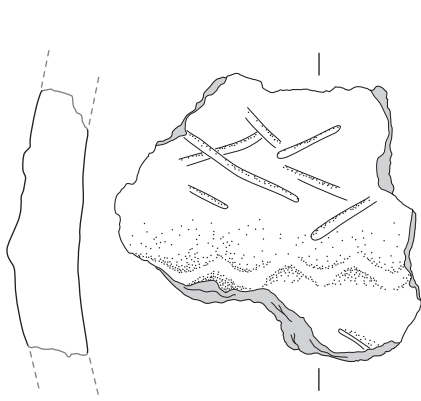
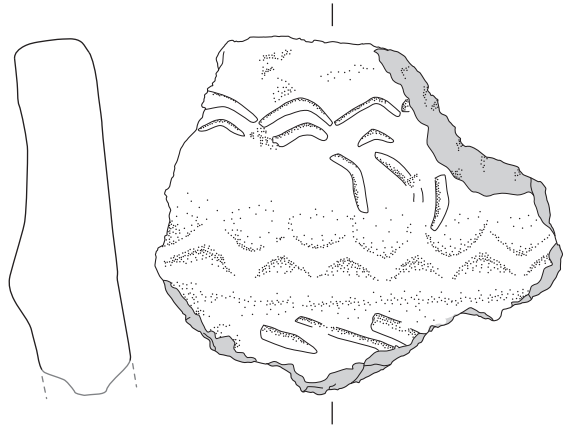


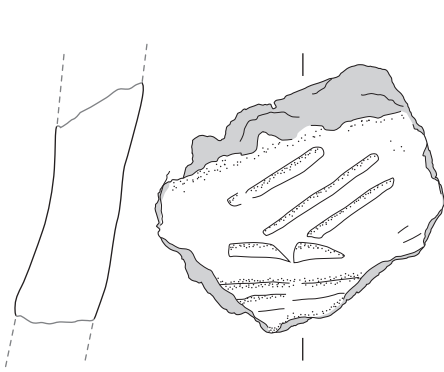
Figure 9 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road. E2992, Plan of keyhole shaped kiln (017).



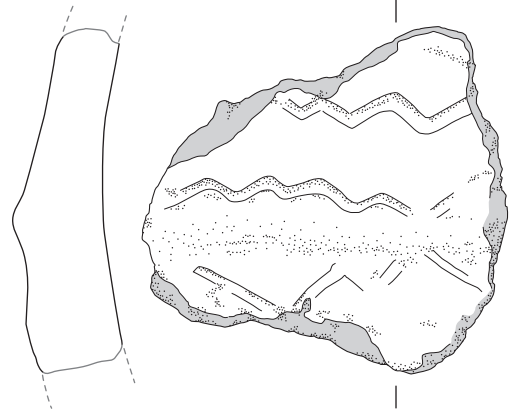
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prehistoric pottery



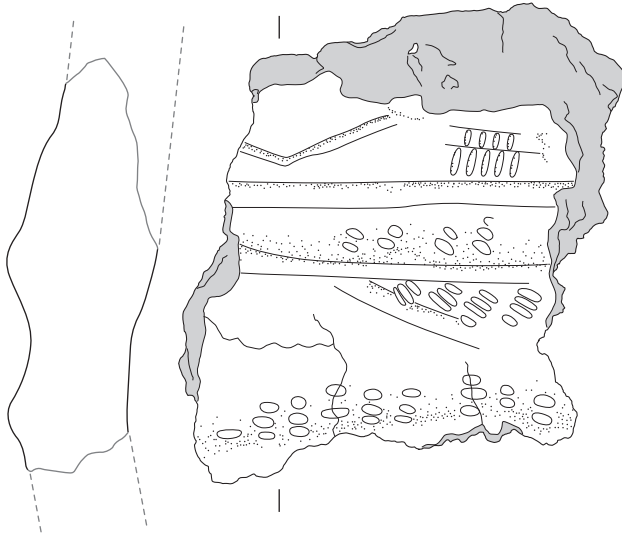
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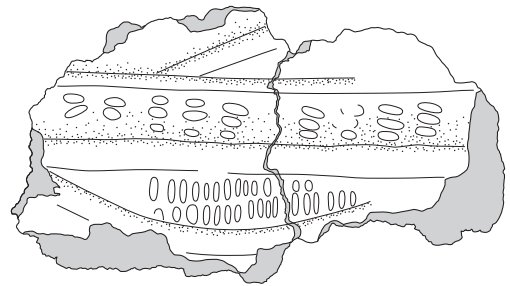
E2992:028:007
prehistoric pottery



E2992:057:001
prehistoric pottery



E2992:028:018
prehistoric pottery

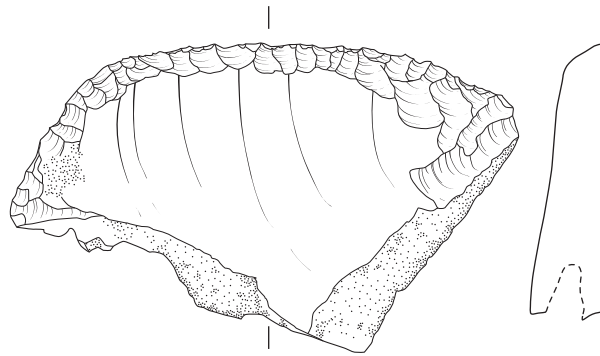


E2992:028:009
prehistoric pottery



Drawn by: Sara Nylund

Figure 10 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road: E2992, Bowl food vessel (E2992:028:004, E2992:028:005, E2992:028:007, and E2992:057:001) & encrusted urn (E2992:028:009 and E2992:028:018).



E2992:028:014
Flint convex side scraper

0 3 cm

Drawn by: Sara Nylund

Figure 11 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
Archaeological Services Contract No. 5 - Resolution, Kilcullen to Moone and Athy Link Road:
E2992, Flint convex side scraper (E2992:028:014).



Plate 1 - Working shot of site, facing west.

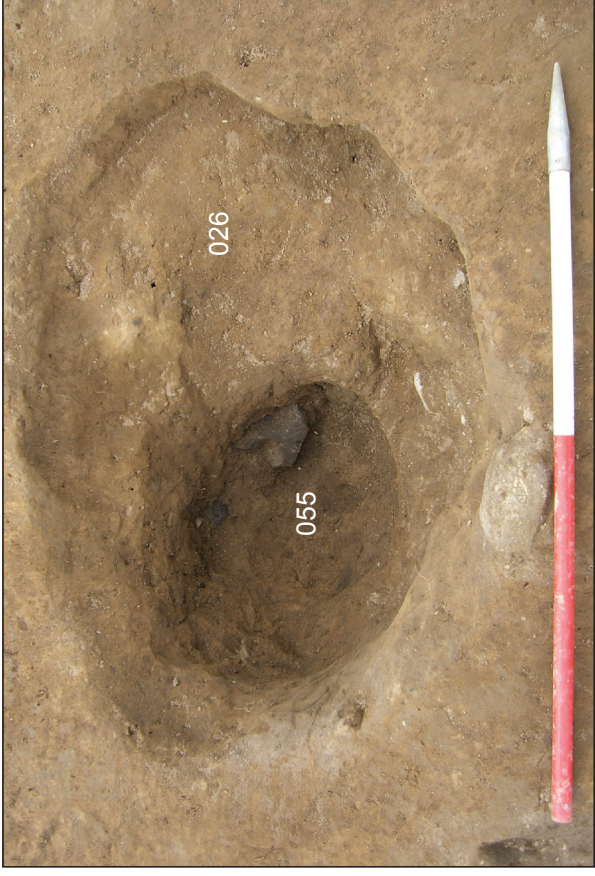


Plate 3 - Post-excavation shot of pits (026) and (055), facing west.



Plate 2 - Post-excavation shot of spread (063), facing northwest.



Plate 4 - Mid-excavation section of linear ditch (042), facing southeast.



Plate 5 - Post-excavation shot of linear ditch (021), facing east.



Plate 6 - Post-excavation shot of cereal drying kiln (017), facing north.



Plate 7 - Baffle stones (068) in cereal drying kiln (017), facing northwest.



Plate 8 - Lithics from E2992, (E2992.028.014), (E2992.029.001), (E2992.001.002), (E2992.062.001) and (E2992.057.002).

Appendix 1 –Context Register for Site E2992

Context no.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
(001)	Deposit	-	-	Site-wide	Site-wide	0.3-0.5	Mid-brown sandy silty clay	Topsoil
(002)	Deposit	-	-	Site-wide	Site-wide	N/A	Mid-orange brown clayey silt	Subsoil
(003)	Deposit	(004)	-	0.31	0.31	0.17	Mid-brown sandy silt with frequent stones	Fill of possible posthole (004)
(004)	Cut	-	(003)	0.31	0.31	0.17	Circular in plan with steep to vertical sides and an irregular base	Cut of possible posthole
(005)	Cut	-	(006)	0.22	0.22	0.17	Circular in plan with steep to vertical sides and a concave base	Cut of posthole
(006)	Deposit	(005)	-	0.22	0.22	0.17	Mid-brown silty sand with occasional charcoal	Fill of posthole (005)
(007)	Cut	-	(008)	0.27	0.25	0.15	Circular in plan with steep sides and a tapered round point at the base	Cut of posthole
(008)	Deposit	(007)	-	0.27	0.25	0.15	Mid-orange brown sandy clay with frequent stones and occasional charcoal	Fill of posthole (007)
(009)	Cut	-	(010)	0.44	0.34	0.11	Sub-oval pit with gently sloping sides and a concave base	Cut of possible cremation pit
(010)	Deposit	(009)	-	0.44	0.34	0.11	Mid-orange brown sandy silt with infrequent charcoal and occasional burnt bone	Fill of possible cremation pit (009)
(011)	Cut	-	(012)	0.35	0.28	0.13	Sub-circular in plan with steep sides and a concave base	Cut of pit
(012)	Deposit	(011)	-	0.35	0.28	0.13	Mid-grey brown sandy silt with infrequent charcoal and occasional stones	Fill of a pit (011)
(013)	Deposit	(017)	-	1.5	0.8	0.26	Light brownish grey sandy clay with infrequent charcoal and small pebbles	Upper fill of kiln (017) (same as 18)
(014)	Deposit	(017)	-	2.3	0.8	0.3	Brownish black charcoal-rich clayey sand with animal bone	Fill of (017) kiln (same as 19)
(015)	Deposit	(017)	-	0.82	0.8	0.11	Grey clayey sand with infrequent charcoal	Basal fill of kiln (017)

Context no.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
(016)	Deposit	(017)	-	0.3	0.25	0.14	and small pebbles Light yellow brown clayey sand	Basal fill of kiln (017) (same as 20)
(017)	Cut	-	(013), (014), (015), (016), (018), (019), (020)	8	0.4 - 1.38	0.34	Key-hole shaped in plan with concave to irregular sides and an irregular to flat base	Cut of kiln
(018)	Deposit	(017)	-	4.5	0.8	0.29	Light brownish grey sand with occasional charcoal and animal bone	Upper fill of kiln (017) (same as 13)
(019)	Deposit	(017)	-	2.8	0.6	0.05	Brownish black charcoal-rich clayey sand with animal bone	Fill of kiln (017) (same as 14)
(020)	Deposit	(017)	-	6.42	1	0.4	Light yellow brown clayey sand with snail shell	Basal fill of kiln (017) (same as 16)
(021)	Cut	-	(030)	87.5 (within CPO)	0.8-1.6	0.34- 0.67	Linear in plan with irregular gently sloping sides and an irregular base	Cut of linear feature
(022)	Cut	-	(023)	0.42	0.35	0.21	Sub-oval in plan with concave sides and an irregular to flat base	Cut of possible posthole
(023)	Deposit	(022)	-	0.42	0.35	0.21	Brown black charcoal-rich stony silty sand	Fill of possible posthole (022)
(024)	Deposit	(025)	-	8.5 (within CPO)	0.85	0.24	Mid-brown silty sand	Fill of a linear feature (025)
(025)	Cut	-	(024)	8.5 (within CPO)	0.85	0.24	Linear in plan with gradually sloping sides and an uneven to concave base	Cut of linear feature
(026)	Cut	-	(027), (028),	2.37	2.25	0.3	Irregular shape in plan with steep to vertical sides and an uneven base	Cut of shallow irregular pit

Context no.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
(027)	Deposit	(026)	- (029)	1.73	1	0.08	Light to medium brown sand with occasional stones and charcoal	Basal fill of a pit (026)
(028)	Deposit	(026)	-	2.37	2.25	0.11	Dark brown clayey sand with infrequent charcoal and occasional stones.	Upper fill of a pit (026)
(029)	Deposit	(026)	-	0.72	0.49	0.22	Dark brown clayey sand with frequent charcoal and frequent small to large stones	Middle fill of a pit (026)
(030)	Deposit	(021)	-	87.5 (within CPO)	0.8-1.6	0.34-0.67	Dark brown silty clay with frequent pebbles, infrequent charcoal and animal bone	Fill of a linear feature (021)
(031)	Cut	-	(032)	0.33	0.27	0.28	Circular in plan with vertical sides and a concave base	Cut of possible posthole
(032)	Deposit	(031)	-	0.33	0.27	0.28	Mid-brown silty sand with occasional charcoal	Fill of possible posthole (031)
(033)	Deposit	(034)	-	0.2	0.18	0.43	Mid-brown sandy clay	Fill of possible posthole (034)
(034)	Cut	-	(033)	0.2	0.18	0.43	Oval in plan with steep sides and a tapered round point at the base	Cut of possible posthole
(035)	Cut	-	(036), (037)	0.42	0.33	0.24	Oval in plan with steep sides and an irregular base	Cut of possible posthole
(036)	Deposit	(035)	-	0.42	0.33	0.12	Mid-brown sandy clay with frequent charcoal	Upper fill of possible posthole (035)
(037)	Deposit	(035)	-	0.4	0.33	0.16	Yellow sand with frequent charcoal	Basal fill of possible posthole (035)
(038)	Cut	-	(039)	6.72	0.46	0.2	Linear in plan with steep sides and a concave base	Cut of linear feature, possibly a plough furrow
(039)	Deposit	(038)	-	6.72	0.46	0.2	Black brown sandy silt with infrequent charcoal	Fill of possible plough furrow (038)
(040)	Cut	-	(041)	0.34	0.27	0.12	Sub-circular in plan with steep sides and a flat to concave base	Cut of possible posthole
(041)	Deposit	(040)	-	0.34	0.27	0.12	Mid-brown sandy silt with frequent stones	Fill of possible posthole (040)

Context no.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
(042)	Cut	-	(043)	27 within CPO	1.26	0.3	Linear in plan with gently sloping sides and a concave to irregular base and occasional charcoal	Cut of linear feature
(043)	Deposit	(042)	-	27 within CPO	1.26	0.3	Mid-brown sandy clay with infrequent stones and occasional snail shell	Fill of linear feature (042)
(044)	Cut	-	(045)	0.82	0.53	0.1	Irregular shape in plan with gradually sloping sides and an irregular base	Cut of possible shallow pit
(045)	Deposit	(044)	-	0.82	0.53	0.1	Black brown sandy silt with infrequent charcoal	Fill of possible pit (044)
(046)	Cut	-	(047)	0.33	0.26	0.05	Irregular in plan with gradual sides and an irregular base	Cut of probable pit
(047)	Deposit	(046)	-	0.33	0.26	0.05	Black brown sandy silt with infrequent charcoal	Fill of possible pit (046)
(048)	Cut	-	(049)	0.4	0.4	0.14	Circular in plan with vertical sides and a concave base	Cut of probable pit
(049)	Deposit	(048)	-	0.4	0.4	0.14	Dark brown silt with frequent stones	Fill of probable pit (048)
(050)	Cut	-	(051)	0.67	0.64	0.21	Oval in plan with gradual sides and an irregular base	Cut of possible pit
(051)	Deposit	(050)	-	0.67	0.64	0.21	Mid-brown silty clay	Fill of possible pit (050)
(052)	Cut	-	(053)	0.52	0.22	0.19	Oval in plan with concave sides and a flat base	Cut of possible pit
(053)	Deposit	(052)	-	0.52	0.22	0.19	Mid-brown sandy silt with infrequent charcoal	Fill of possible pit (052)
(054)	Cut	-	(058)	1 approx.	0.75	0.2	Linear in plan with vertical sides and a concave to flat base	Cut of linear feature
(055)	Cut	-	(056), (057)	0.82	0.75	0.7	Sub-oval in plan with irregular sides and an irregular base	Cut of pit
(056)	Deposit	(055)	-	0.7	0.62	0.38	Dark yellow orange sand with occasional	Upper fill of pit (055)

Context no.	Type	Fill of:	Filled by:	Length (m)	Width (m)	Depth (m)	Description	Interpretation
(057)	Deposit	(055)	-	0.82	0.75	0.6	Dark grey brown silt and sand with frequent charcoal	Basal fill of pit (055)
(058)	Deposit	(054)	-	1 approx.	0.75	0.2	Mid-orange brown silty clay	Fill of linear feature (054)
(059)	Cut	-	(060)	0.3	0.11	0.2	Circular in plan with vertical sides and a concave base	Cut of probable stakehole
(060)	Deposit	(059)	-	0.3	0.11	0.2	Grey brown sandy silt with infrequent charcoal	Fill of probable stakehole (059)
(061)	Cut	-	(062)	0.69	0.51	0.11	Oval in plan with concave sides and a flat base	Cut of probable pit
(062)	Deposit	(061)	-	0.69	0.51	0.11	Yellow brown sandy silt with occasional charcoal	Fill of probable pit (061)
(063)	Deposit	-	-	3.41	2.38	0.22	Dark brown charcoal-rich silty sand	Spread
(064)	Cut	-	(065)	0.36	0.34	0.43	Sub-circular in plan with convex sides and a flat base	Cut of probable posthole
(065)	Deposit	(064)	-	0.36	0.34	0.43	Dark yellow brown charcoal-rich silty sand	Fill of probable posthole (064)
(066)	Cut	-	(067)	0.68	0.62	0.3	Sub-circular in plan with gently sloping sides and a concave base	Cut of possible pit
(067)	Deposit	(066)	-	0.68	0.62	0.3	Dark brown silty clay	Fill of possible pit (066)
(068)	Structure	(017)	-	-	0.1-0.2	0.2-0.4	Sub-circular and sub-angular medium sized stones	Probable baffle stones in kiln (017)

Appendix 2 – Finds Register for Site E2992

Find no.	Material	Type	Identification	Description
E2992:001:001	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd
E2992:028:001	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn necksherd, decorated
E2992:028:002	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd, decorated
E2992:028:003	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd, decorated
E2992:028:004	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd, decorated
E2992:028:005	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel rimsherd, decorated
E2992:028:006	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn rimsherd, decorated
E2992:028:007	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd
E2992:028:008	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bodysherd
E2992:028:009	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn rimsherd
E2992:028:010	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd, decorated
E2992:028:011	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:028:012	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:028:013	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:028:014	Stone	Flint	Early Bronze Age	Convex side scraper
E2992:028:015	Ceramic	Pottery crumb	Early Bronze Age	Pottery crumbs (40), related to E2992: 028:020-032
E2992:028:016	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn necksherd, decorated
E2992:028:017	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd
E2992:028:018	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn necksherd, decorated
E2992:028:019	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn rimsherd, decorated
E2992:028:020	Ceramic	Pottery sherd	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:021	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:022	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:023	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:024	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:025	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:026	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:027	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:028	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:029	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:030	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015

Find no.	Material	Type	Identification	Description
E2992:028:031	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:032	Ceramic	Pottery fragment	Early Bronze Age	Encrusted urn fragment, related to E2992:028:015
E2992:028:033	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:034	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:035	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:036	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:037	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:038	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:039	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:040	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:041	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:042	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:043	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:044	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:045	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:046	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:047	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:048	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:049	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:050	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:051	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:052	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:053	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:054	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:055	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:056	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:057	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:058	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:059	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:060	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:061	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:062	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:063	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:064	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:065	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:066	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:067	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:068	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:069	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:070	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:071	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:072	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)

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Find no.	Material	Type	Identification	Description
E2992:028:073	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:074	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:075	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:076	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:077	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:078	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:079	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:080	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:081	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:082	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:083	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:084	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:085	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:086	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:087	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:088	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:089	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:090	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:091	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:092	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:093	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:094	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:095	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:096	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:097	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:098	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:099	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:100	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:101	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:102	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:103	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:104	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:105	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:106	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:107	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:108	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:109	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:110	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:111	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:112	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:113	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:114	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:115	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:116	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)

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Find no.	Material	Type	Identification	Description
E2992:028:117	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:118	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:119	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:120	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:121	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:122	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:123	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:124	Ceramic	Pottery crumb	Early Bronze Age	Encrusted urn crumbs(from retent)
E2992:028:125	Stone	Flint	Early Bronze Age	Debitage
E2992:029:001	Stone	Flint	Early Bronze Age	Debitage
E2992:057:001	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:057:002	Stone	Chert	Early Bronze Age	Debitage
E2992:057:003	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd
E2992:057:004	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd
E2992:057:005	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel bellysherd
E2992:057:006	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:057:007	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:057:008	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel necksherd
E2992:057:009	Ceramic	Pottery sherd	Early Bronze Age	Bowl vessel fragment
E2992:057:010	Stone	Flint	Early Bronze Age	Debitage
E2992:062:001	Stone	Chert	Early Bronze Age	Debitage

Appendix 3 – Sample Register for Site E2992

Soil Samples

Sample no.	Context no.	Description
E2992:001	(009)	Mid-brown sandy silt with charcoal
E2992:002	(010)	Mid-orange brown sandy silt with charcoal and burnt bone
E2992:003	(003)	Mid-brown sandy silt
E2992:004	(028)	Dark brown sandy silt with charcoal
E2992:005	(012)	Mid-grey brown sandy silt
E2992:006	(029)	Dark brown sandy silt
E2992:007	(033)	Brown sandy silt
E2992:008	(023)	Charcoal-rich sandy silt
E2992:009	(018)	Light brown grey sand
E2992:010	(019)	Blackish brown charcoal-rich clayey sand
E2992:011	(020)	Light yellow brown clayey sand
E2992:012	(032)	Mid-brown silty sand
E2992:013	(030)	Brown clay
E2992:014	(030)	Brown clay
E2992:015	(030)	Brown clay
E2992:016	(013)	Light brown grey sand
E2992:017	(014)	Brownish black charcoal-rich clayey sand
E2992:018	(015)	Grey sand
E2992:019	(016)	Light yellow brown clayey sand
E2992:020	(036)	Mid-brown silty sand with charcoal
E2992:021	Void	Void
E2992:022	(030)	Mid-brown silty clay
E2992:023	(014)	Brownish black charcoal-rich clayey sand
E2992:024	(041)	Mid-brown silty sand
E2992:025	(051)	Mid-brown silty clay
E2992:026	(045)	Dark brown sandy silt
E2992:027	(047)	Black brown sandy silt with charcoal
E2992:028	(049)	Dark brown silty clay
E2992:029	(053)	Mid-brown silty sand with charcoal
E2992:030	(060)	Grey brown sandy silt
E2992:031	(062)	Yellow brown sandy silt
E2992:032	(063)	Dark brown silty sand
E2992:033	(065)	Dark yellow brown charcoal-rich silty sand
E2992:034	(056)	Dark yellow orange sand with charcoal
E2992:035	(057)	Dark brown and grey silty sand
E2992:036	(057)	Dark grey brown silt and sand with charcoal

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Bone Samples

Sample no.	Context no.	Description
E2992:001	(030)	Animal bone
E2992:002	(014)	Animal bone
E2992:003	(018)	Animal bone
E2992:004	(030)	Animal bone
E2992:005	(030)	Animal bone and teeth
E2992:006	(014)	Animal bone
E2992:007	(030)	Burnt bone

Appendix 4 – Photo Register for Site E2992*Camera 4*

Shot No.	Direction Facing	Description
E2992:4:090	South	Pre-excavation shot of (017)
E2992:4:091	South	Pre-excavation shot of (017)
E2992:4:092	South	Pre-excavation shot of (017)
E2992:4:093	Northeast	Pre-excavation shot of (009)
E2992:4:094	East	Pre-excavation shot of (007)
E2992:4:095	South	Pre-excavation shot of (026)
E2992:4:096	South	Pre-excavation shot of (005)
E2992:4:097	East	E-facing section of (004)
E2992:4:098	East	W-facing section of (007)
E2992:4:099	Northeast	Mid-excavation shot of cremation pit (009), spit 1
E2992:4:100	North	S-facing section of (005)
E2992:4:101	East	Post-excavation shot of (007)
E2992:4:102	South	Post-excavation shot of (005)
E2992:4:103		Misfire
E2992:4:104	Northwest	Mid-excavation shot of (026) showing fragments of pottery
E2992:4:105	Northwest	Mid-excavation shot of (026) showing fragments of pottery
E2992:4:106	Northwest	Mid-excavation shot of (026) showing fragments of pottery
E2992:4:107	East	Post-excavation shot of (004)
E2992:4:108	North	Pre-excavation shot of (004)
E2992:4:109	Northeast	Mid-excavation shot of cremation pit (009), spit 2
E2992:4:110	Northeast	Post-excavation shot of cremation pit (009)
E2992:4:111	Northwest	Mid-excavation shot of (011) with post-excavation shot of (004)
E2992:4:112	Northwest	Mid-excavation shot of (011)
E2992:4:113	East	Pre-excavation shot of furnace (017) in ditch (021)
E2992:4:114	East	Pre-excavation shot of furnace (017) in ditch (021)
E2992:4:115	West	Pre-excavation shot of furnace (017) in ditch (021)
E2992:4:116	West	Pre-excavation shot of furnace (017)
E2992:4:117	West	Pre-excavation shot of furnace (017) in ditch (021)
E2992:4:118	South	Pre-excavation shot of furnace (017) in ditch(021)
E2992:4:119	West	S-facing section of furnace (017) in ditch (021)
E2992:4:120	West	S-facing section of furnace (017) in ditch (021)
E2992:4:121	East	W-facing section of furnace (017) in ditch (021)
E2992:4:122	East	W-facing section of furnace (017) in ditch (021)
E2992:4:123	South	Mid-excavation shot of (026) showing stones
E2992:4:124	Northwest	SE-facing section of (022)
E2992:4:125	Northwest	SE-facing section of (022)
E2992:4:126	South	N-facing section of (024)
E2992:4:127	South	N-facing section of (026)
E2992:4:128	South	N-facing section of (026)
E2992:4:129	Northwest	Post-excavation shot of (022)

Shot No.	Direction Facing	Description
E2992:4:130	Northwest	Post-excavation shot of (022)
E2992:4:131	Northwest	Post-excavation shot of (011) and (004)
E2992:4:132	Northwest	Post-excavation shot of (011) and (004)
E2992:4:133	West	E-facing section of ditch (021), slot 1
E2992:4:134	East	W-facing section of ditch (021), slot 1
E2992:4:135	West	E-facing section of ditch (021), slot 2
E2992:4:136	East	W-facing section of ditch (021), slot 2
E2992:4:137	North	S-facing section A-B of furnace (017) in ditch (021)
E2992:4:138	North	S-facing section C-D of furnace (017) in ditch (021)
E2992:4:139	North	S-facing section D-E of furnace (017) in ditch (021)
E2992:4:140	North	S-facing section E-F of furnace (017) in ditch (021)
E2992:4:141	North	S-facing section F-G of furnace (017) in ditch (021)
E2992:4:142	North	S-facing section G-H of furnace (017) in ditch (021)
E2992:4:143	West	E-facing section of (021), slot 4
E2992:4:144	East	W-facing section of (021), slot 4
E2992:4:145	West	E-facing section of (021), slot 6
E2992:4:146	West	E-facing section of (021), slot 6
E2992:4:147	East	W-facing section of (021), slot 6
E2992:4:148	West	E-facing section of (021), slot 6
E2992:4:149	North	Pre-excavation shot of (031)
E2992:4:150	West	E-facing section of (021), slot 7
E2992:4:151	West	E-facing section of (021), slot 7
E2992:4:152	East	W-facing section of (021), slot 7
E2992:4:153	East	W-facing section of (021), slot 7
E2992:4:154	East	W-facing section of (021), slot 10
E2992:4:155	West	E-facing section of (021), slot 10
E2992:4:156	North	Post-excavation shot of (026)
E2992:4:157	West	E-facing section of (021), slot 5
E2992:4:158	East	W-facing section of (021), slot 5
E2992:4:159	East	W-facing section of (031)
E2992:4:160	East	Post-excavation shot of (031)
E2992:4:161	North	Post-excavation shot of (017) A-B
E2992:4:162	North	Post-excavation shot of (017) B-C
E2992:4:163	North	Post-excavation shot of (017) C-D
E2992:4:164	North	Post-excavation shot of (017) D-E
E2992:4:165	North	Post-excavation shot of (017) E-F
E2992:4:166	North	Post-excavation shot of (017) F-H
E2992:4:167	East	Post-excavation shot of (017)
E2992:4:168	West	Post-excavation shot of (017)
E2992:4:169	South	W-facing section of (035)
E2992:4:170	Southwest	NE-facing section through (038) and plough furrow
E2992:4:171	Southwest	NE-facing section through (038) and plough furrow
E2992:4:172	Northwest	SE-facing section through (038) and plough furrow

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Shot No.	Direction Facing	Description
E2992:4:173	Northwest	SE-facing section through (038) and plough furrow
E2992:4:174	East	Post-excavation shot of (017)
E2992:4:175	Southwest	Mid-excavation shot of (038)
E2992:4:176	Southwest	Mid-excavation shot of (038)
E2992:4:177	-	Void
E2992:4:178	Southwest	Mid-excavation shot of (038)
E2992:4:179	Southwest	Mid-excavation shot of (038), showing (026)
E2992:4:180	Southwest	Mid-excavation shot of (038), showing (026)
E2992:4:181	East	Post-excavation shot of (017)
E2992:4:182	West	Post-excavation shot of (017)
E2992:4:183	North	Post-excavation shot of (017) A-B
E2992:4:184	North	Post-excavation shot of (017) B-C
E2992:4:185	North	Post-excavation shot of (017) C-D
E2992:4:186	North	Post-excavation shot of (017) D-E
E2992:4:187	North	Post-excavation shot of (017) E-F
E2992:4:188	North	Post-excavation shot of (017) F-H
E2992:4:189	Southwest	Post-excavation shot of (038), showing (026)
E2992:4:190	Southwest	Post-excavation shot of (038)
E2992:4:191	Southwest	Post-excavation shot of (038) and (026)
E2992:4:192	Southwest	Post-excavation shot of (038) and (026)
E2992:4:193	Southwest	Post-excavation shot of (038, showing (026)
E2992:4:194	Southwest	Post-excavation shot of (038) and (026)
E2992:4:195	Southwest	Post-excavation shot of (038) and (026)
E2992:4:196	Southwest	Post-excavation shot of (038) and (026)
E2992:4:197	Southwest	Post-excavation shot of (038) and (026)
E2992:4:198		Working shot
E2992:4:199		Working shot
E2992:4:200		Working shot

Camera 5

E2992:5:001	North	Post-excavation shot of (035)
E2992:5:002	Northwest	Shot showing stones at the bottom in the northern part of (017)
E2992:5:003	Northwest	Shot showing stones at the bottom in the northern part of (017)
E2992:5:004	North	Oxidised sandy clay present below stones in the northern part of (017)
E2992:5:005	Northeast	Oxidised sandy clay present below stones in the northern part of (017)
E2992:5:006	East	Oxidised sandy clay present below stones in the northern part of (017)
E2992:5:007	East	W-facing section of (040)
E2992:5:008	East	Post-excavation shot of (040)
E2992:5:009	East	Post-excavation shot of (040)
E2992:5:010	Northwest	SE-facing section of ditch (042), slot 2
E2992:5:011	Northwest	SE-facing section of ditch (042), slot 2
E2992:5:012	Southeast	NW-facing section of ditch (042), slot 4
E2992:5:013	East	Working shot of post-excavation of (021)

Shot No.	Direction Facing	Description
E2992:5:014	East	Working shot of post-excavation of (021)
E2992:5:015	East	Working shot of post-excavation of (021)
E2992:5:016	West	Working shot of post-excavation of (021)
E2992:5:017	West	Working shot of post-excavation of (021)
E2992:5:018	East	Working shot of post-excavation of (021)
E2992:5:019	East	Working shot of post-excavation of (021)
E2992:5:020	East	Working shot of post-excavation of (021)
E2992:5:021		Working shot
E2992:5:022	South	Post-excavation shot of ditch (025)
E2992:5:023	South	Post-excavation shot of ditch (025)
E2992:5:024	North	Post-excavation shot of ditch (025)
E2992:5:025	North	Post-excavation shot of ditch (025)
E2992:5:026	Southeast	Post-excavation shot of ditch (025)
E2992:5:027	South	Post-excavation shot of ditch (025)
E2992:5:028	East	W-facing section through non-archaeological activity
E2992:5:029	Northwest	SE-facing section of (042), slot 5
E2992:5:030	Southeast	NW-facing section of (042), slot 5
E2992:5:031	Southeast	NW-facing section of (042), slot 7
E2992:5:032	Northwest	SE-facing section of (042), slot 7
E2992:5:033	West	Mid-excavation shot of non-archaeological activity
E2992:5:034	Southeast	NW-facing section of (042), slot 6
E2992:5:035	Northwest	SE-facing section of (042), slot 6
E2992:5:036	Southwest	NE-facing section of (044)
E2992:5:037	South	N-facing section of (046)
E2992:5:038	East	Pre-excavation shot of spread area
E2992:5:039	Northwest	Pre-excavation shot of spread area
E2992:5:040	Southwest	NE-facing section of (052)
E2992:5:041	East	Working shot of linear feature (021)
E2992:5:042	East	Working shot of linear feature (021)
E2992:5:043	East	Working shot of linear feature (021)
E2992:5:044	East	Working shot of linear feature (039)
E2992:5:045	East	Working shot of linear feature (021) and kiln (017)
E2992:5:046	East	Working shot of linear feature (021) and kiln (017)
E2992:5:047	South	Post-excavation shot of (046)
E2992:5:048	South	Post-excavation shot of (044)
E2992:5:049	East	Post-excavation shot of eastern end of linear feature (021)
E2992:5:050	East	Post-excavation shot of eastern end of linear feature (021)
E2992:5:051	West	Post-excavation shot of eastern end of linear feature (021)
E2992:5:052	West	Working shot of site
E2992:5:053	West	Post-excavation shot of eastern end of linear feature (021)
E2992:5:054	West	Working shot of site
E2992:5:055	South	Working shot of site
E2992:5:056	East	Working shot of linear (021)

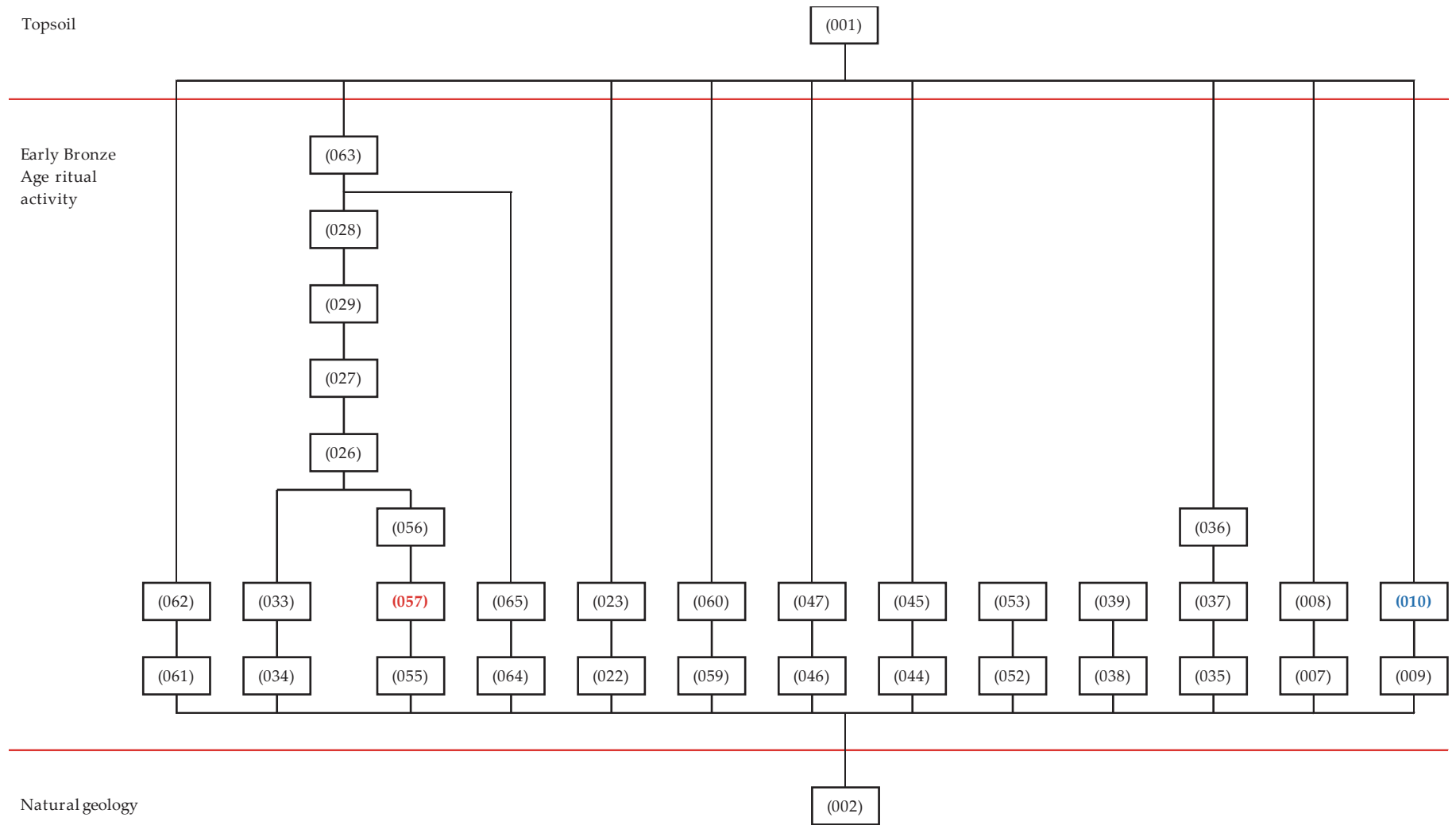
Shot No.	Direction Facing	Description
E2992:5:057	Southwest	Working shot of site
E2992:5:058	East	Working shot of site
E2992:5:059	North	Working shot of liner (021)
E2992:5:060	Northeast	Working shot of site
E2992:5:061	East	Working shot of site
E2992:5:062	East	Post-excavation shot of (052)
E2992:5:063	South	Working shot of site
E2992:5:064	South	Working shot of site
E2992:5:065	West	Mid-excavation shot of (055)
E2992:5:066	South	Mid-excavation shot of spread area
E2992:5:067	South	Mid-excavation shot of spread area
E2992:5:068	Southeast	Post-excavation shot of (042)
E2992:5:069	Southeast	Post-excavation shot of (042)
E2992:5:070	Northwest	Post-excavation shot of (042)
E2992:5:071	South	Post-excavation shot of (042) and (021)
E2992:5:072	South	Post-excavation shot of (042) and (021)
E2992:5:073	South	Post-excavation shot of (042) and (021)
E2992:5:074	South	Post-excavation shot of (042) and (021)
E2992:5:075	West	Post-excavation shot of the site, showing (021)
E2992:5:076	South	Post-excavation shot of the site, showing (021)
E2992:5:077	South	Post-excavation shot of the site, showing (021)
E2992:5:078	South	Post-excavation shot of the site, showing (021)
E2992:5:079	South	Post-excavation shot of the site, showing (021)
E2992:5:080	South	Post-excavation shot of the site, showing (021)
E2992:5:081	South	Post-excavation shot of the site, showing (021)
E2992:5:082	South	Post-excavation shot of the site, showing (021)
E2992:5:083	South	Post-excavation shot of the site, showing (021)
E2992:5:084	South	Post-excavation shot of the site, showing (021)
E2992:5:085	East	Post-excavation shot of (021)
E2992:5:086	Southeast	Post-excavation shot of (021) and (042)
E2992:5:087	South	N-facing section of (059)
E2992:5:088	Southwest	NE-facing section of (061)
E2992:5:089	South	N-facing section of (064)
E2992:5:090	South	Post-excavation shot of (059)
E2992:5:091	West	Post-excavation shot of (055)
E2992:5:092	South	Post-excavation shot of (064)
E2992:5:093	Southwest	Post-excavation shot of (061)
E2992:5:094	North	Post-excavation shot of spread area (026), (061), (064)
E2992:5:095	North	Post-excavation shot of spread area (055), (059)
E2992:5:096	South	Post-excavation shot of spread area (026), (044), (055), (059), (061), (064)

Appendix 5 – Drawing Register for Site E2992

Drawing No.	Scale	Type	Description
001	1:20	Plan	Pre-ex plan of posthole (005)
002	1:10	Plan	Pre-ex plan of kiln (017) and linear (021)
003	1:10	Section	Mid-ex of possible posthole (004)
004	1:10	Section	Mid-ex section of posthole (005)
005	1:10	Section	Mid-ex section of possible cremation pit (009)
006	1:10	Section	Mid-ex section of posthole (007)
007	1:20	Plan	Post-ex plan of posthole (007)
008	1:20	Plan	Post-ex plan of posthole (005)
009	1:20	Plan	Post-ex plan of possible cremation pit (009)
010	1:20	Plan	Post-ex plan of possible posthole (004)
011	1:10	Section	Mid-ex section of kiln (017) and linear (021)
012	1:10	Section	Mid-ex section of pit (011)
013	1:10	Plan	Post-ex plan of pit (011)
014	1:10	Section	Mid-ex section of possible posthole (022)
015	1:10	Section	Mid-ex section of linear feature (025)
016	1:10	Section	Mid-ex section of linear feature (025)
017	1:10	Section	Mid-ex section of pit (026)
018	1:10	Plan	Post-ex plan of possible posthole (022)
019	1:10	Section	Mid-ex section of linear (021)
020	1:10	Section	Mid-ex section of linear (021)
021	1:10	Section	Mid-ex section of linear (021)
022	1:10	Section	Mid-ex section of linear (021)
023	1:10	Section	Mid-ex section of linear (021)
024	1:10	Section	Mid-ex section of linear (021)
025	1:10	Section	Mid-ex section of linear (021)
026	1:10	Section	Mid-ex section of linear (021)
027	1:20	Plan	Pre-ex plan of possible posthole (031)
028	1:10	Section	Mid-ex section of kiln (017)
029	1:10	Section	Mid-ex section of linear (021)
030	1:10	Section	Mid-ex section of linear (021)
031	1:10	Section	Mid-ex section of linear (021)
032	1:10	Section	Mid-ex section of linear (021)
033	1:10	Section	Mid-ex section of linear (021)
034	1:10	Section	Mid-ex section of linear (021)
035	1:20	Plan	Post-ex plan of linear (026)
036	1:10	Plan	Post-ex plan of pit (026) and possible posthole(034)
037	1:10	Plan	Post-ex plan of possible posthole (031)
038	1:10	Section	Mid-ex section of linear (021)
039	1:50	Plan	Post-ex plan of kiln (017)
040	1:10	Section	Mid-ex section of kiln (017)
041	1:10	Section	Mid-ex section of possible posthole (035)
042	1:10	Section	Mid-ex section of furrow (038)

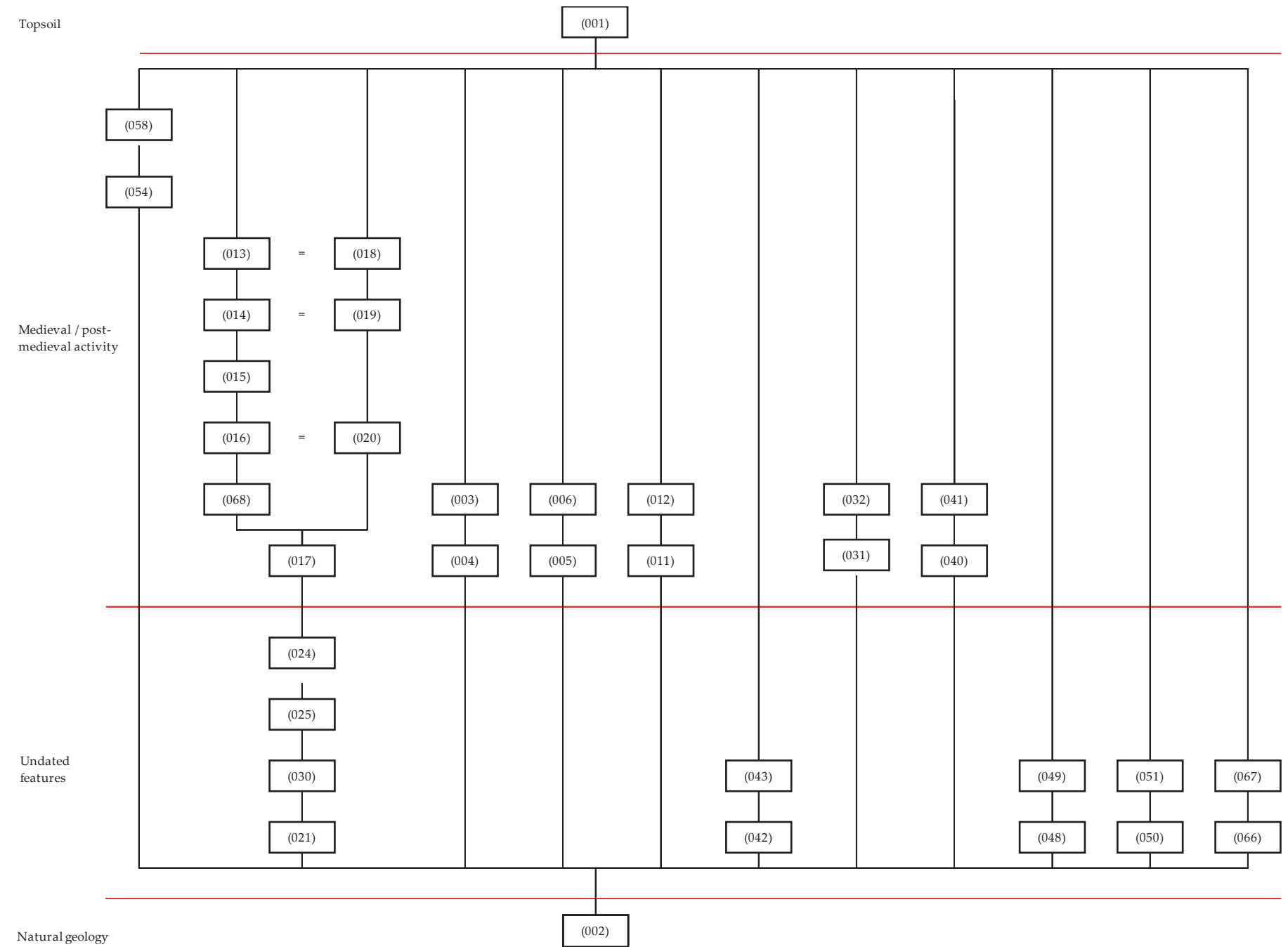
Drawing No.	Scale	Type	Description
043	1:10	Section	Mid-ex section of furrow (038)
044	1:20	Plan	Post-ex plan of furrow (038)
045	1:10	Plan	Post-ex of possible posthole (035)
046	1:20	Plan	Post-ex plan of kiln (017) and linear (021)
047	1:10	Section	Mid-ex section of possible posthole (040)
048	1:10	Plan	Post-ex plan of possible posthole (040)
049	1:10	Section	Mid-ex section of linear (042)
050	1:10	Section	Mid-ex section of linear (042)
051	1:10	Section	Mid-ex section of linear (042)
052	1:10	Section	Mid-ex section of linear (042)
053	1:10	Section	Mid-ex section of linear (042)
054	1:10	Section	Mid-ex section of linear (042)
055	1:10	Section	Mid-ex section of pit (048)
056	1:10	Section	Mid-ex section of pit (050)
057	1:10	Section	Mid-ex section of linear (042)
058	1:10	Section	Mid-ex section of linear (042)
059	1:10	Section	Mid-ex section of possible pit (044)
060	1:10	Section	Mid-ex section of pit (046)
061	1:10	Section	Mid-ex section of pit (050)
062	1:10	Section	Mid-ex section of linear(054)
063	1:10	Section	Mid-ex section of linear (021)
064	1:10	Plan	Post-ex plan of possible pit (044)
065	1:10	Plan	Post-ex plan of pit (046)
066	1:10	Plan	Post-ex plan of pit (052)
067	1:50	Plan	Post-ex plan of linear (021)
068	1:10	Section	Mid-ex section of stakehole (059)
069	1:10	Section	Mid-ex section of pit (061)
070	1:10	Section	Mid-ex section of spread (063)
071	1:10	Section	Mid-ex section of probable posthole(064)
072	1:10	Section	Mid-ex section of pit (055)
073	1:20	Plan	Post-ex plan of (055)
074	1:20	Plan	Post-ex of features (052), (055), (046), (061), (044), (059) and (064)
075	1:10	Plan	Post-ex plan of stakehole (059)
076	1:10	Plan	Post-ex plan of pit (061)
077	1:20	Plan	Post-ex plan of possible pit (066)

Appendix 6 – Site matrix



(057) = 2280 - 2030 cal BC (2σ) (SUERC-26397)

(010) = 1740 - 1520 cal BC (2σ) (SUERC-26396)



Appendix 7 – Palaeoenvironmental sample analysis for E2992

By: Abby Mynett and Dr. Scott Timpany

Abstract

Palaeoenvironmental analysis was undertaken on thirty-three samples from site E2992, located in the townland of Burtown Big, Co. Kildare. Thirty-six environmental samples were taken on site and analysis was undertaken on thirty-three of these that contained charred plant remains. The site is multi-period with radiocarbon dates of the Early Bronze Age and phasing to the medieval period. Features identified on site include a kiln, pits and postholes and a linear ditch. The analysis shows that there is a predominance in oat and 2-row barley cereals, with small numbers of wheat (bread/club and spelt species) and wild taxa that indicate poorly drained field systems.

Introduction

Thirty-six environmental samples were taken during the excavation of Burtown Big townland E2992, a site consisting of segmented linear ditch, kiln features, pits and postholes. All of the samples were processed to retrieve any palaeoenvironmental material that may aid in the interpretation of the site and function of the pits. Thirty-three samples were found to contain charred plant material in the form of cereal grain and wild taxa and were taken to analysis.

Methodology

Samples were processed in laboratory conditions using a standard flotation method (cf. Kenward *et al.*, 1980). This was then sorted by eye and any material of archaeological significance removed. All plant macrofossil samples were analysed using a stereomicroscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers *et al.* (2006). Two samples (017 and 018) were found to contain abundant quantities of grain and were sub-sampled using a riffle box. This allowed a more manageable sized sample to be analysed, given the abundance of grain in the samples. The percentage of sample analysed is given in Table 2.

Radiocarbon dating was undertaken at Scottish Universities Environmental Research Centre (SUERC), after Reimer *et al* (2004). Calibrated age ranges were calculated using radiocarbon calibration program CALIB REV5.0.2. All results quoted in the text are taken from the 2 σ calibrated age range

Results

The results are presented in Tables 1 (Radiocarbon dating results), Table 2 (plant macrofossil analysis results) and Table 3 (retent sample results). All plant material was preserved by charring. The results (and discussion) presented below focus on the charred cereal grains and wild taxa recovered from the samples, with those recovered in the retent samples (Table 3) included in the analysis table (Table 2).

Charred Plant Remains

The preservation of charred plant remains from samples at site E2992 was found to be generally good. Species identified included oat (*Avena* sp.), probable oat (cf. *Avena*), straight and twisted hulled barley (*Hordeum vulgare*), which may relate to 2-row and 6-row varieties, together with hulled barley where due to poor preservation it was not possible to differentiate between the two varieties. Wheat grains were also identified in the form of bread/club wheat (*Triticum-aestivoo-compactum*), spelt wheat (*Triticum-spelta*) and wheat (*Triticum* sp.) where again poor preservation made the species indeterminable. A high proportion of grains could not be identified to a family or species due to poor preservation and abrasion and as a result were classified as *Cerealia* indet. Together with the charred grain wild taxa were also found in the form of sedge nutlets (*Carex* sp.) and seeds of the goosefoot family (*Chenopodiaceae* sp.).

Discussion

Samples were taken from the fills of a number of different features in order to gain a representation of the site as a whole. Both prehistoric and medieval dated deposits were identified on site. A large proportion of cereal grains were identified as indeterminate grain; this is probably from the result of either the carbonisation process or subsequent depositional factors. Although their species cannot be established it is still viable to use them for interpretation to affirm the presence of agricultural and cultivation practices. The interpretation of features relating to the samples consists of a possible cremation pit, pits, postholes, kilns and a linear feature and will be discussed as such (O'Neill 2009).

Cremation pit; 1740-1520 cal BC

The possible cremation pit (009) located to the west of the excavation area was shallow in depth and contained burnt bone fragments. A radiocarbon date range from hazel (*Corylus avellana*) charcoal of 1740-1520 cal BC (2 σ) (SUERC-26396; 3350 \pm 35 BP) has been obtained from fill (010). Only two indeterminable cereal grains were identified in this deposit; these are likely to be naturally deposited by surface water runoff or wind-blown actions.

Pits; 2280-2030 cal BC

Five samples from pits (011), (026), (052), (055) and (061) were analysed from the pit fills and all of these contained sparse amounts of cereal grain and wild taxa. The small quantity of grain and wild taxa present within the pits (see Table 2) suggest they are unlikely to have been used for storage and it is more likely the grain has been accumulated within the fills accidentally, e.g. through secondary depositional factors such as windblown. The presence of cereals does suggest agricultural activity was taking place in the surrounding area. One of the pits (055) has produced a Bronze Age date range from hazel charcoal, which has been dated to 2280-2030 cal BC (2 σ) (SUERC-26397; 3740 \pm 35 BP). The other pits (excluding 011) have also been phased as belonging to this period. However, the presence of charred hulled barley and oat grain in the other pits, (011), (026), (052) and (061), suggests they may be of a later date, with the cultivation of oat largely beginning from the Iron Age period onwards (Monk 1985/86). The small number of grains, however, may also originate from contamination (e.g. by worm drag) or potential re-working of deposits (e.g. through plough action).

Postholes

Six posthole samples were analysed, three of which provided significant amounts of charred plant remains (001, 003 and 024). Samples 008, 012 and 033 were lacking in environmental evidence and provided less than eight cereal grains per litre and will thus not be discussed any further. Postholes (004)

and (040) contained relatively large numbers of oat, barley and indeterminate cereal grain. Posthole (005) contained over 300 cereals per litre which were identified as oat, barley and indeterminate grains and a single wheat grain. None of these samples have radiocarbon dating evidence; however the presence of large numbers of oat grain within posthole (005) would indicate a general medieval date for the features, with this period seeing a large increase in the cultivation of oat as a major crop in Ireland (Monk 1991). Rare numbers of wild taxa were also identified in samples 001, 003, 012 and 024 of the species sedge and goosefoot. The small quantities of wild taxa present would suggest they have become accidentally incorporated with the grain during processing. The presence of goosefoot, which grows on cultivated ground, and sedge, which grows on damp/wet ground (Clapham *et al* 1962; Stace 1997) would indicate that drainage of the fields may have been poor.

Kiln

Eight samples were analysed from the seven fills of kiln (017) (see Table 2) a key-hole shaped kiln; a type known to have been utilised from the early medieval period into the late nineteenth century (Monk and Kelleher 2005). All of the samples produced cereal grain and wild taxa remains. The basal fills, (016) and (020), in the junction point of the fire spot and flue and bowl areas produced the fewest charred grains with less than five grains per litre (see Table 2). The middle and upper fills of the kiln, (013), (014), (015), (018) and (019), had large numbers of grains and wild taxa recorded including oat, barley and bread/club and spelt wheat. The presence of these large frequencies is likely to represent an accidental fire episode. This theory is further strengthened by evidence from the excavation of a fire having broken out in the bowl area (O'Neill 2009). Kilns left unsupervised were liable to suffer fire episodes, particularly if the distance between the fire spot and bowl was short, such as for this kiln (Doyle 2009, 58).

The dominant cereal was barley, followed closely by oat grains; wheat was present (bread/club and spelt species) but in much fewer quantities (see Table 2). Wheat in the medieval period was associated with high status settlement, with oat and barley being more commonplace cultivated cereals associated with the settlements of those of lower social standing (Kelly 2000, 226). The large numbers of indeterminate grains present in fills (013), (014), (015), (017) and (018) are possibly leftover kiln waste from multiple burning episodes, hence their broken and abraded condition (see Table 2).

Wild taxa in the form of sedge nutlets and probable fat hen (*Chenopodium album*) species were identified in samples from the kiln feature these plants are commonly seen as arable weeds. The presence of sedges would again indicate damp/wet areas within the fields although the high numbers of sedge nutlets in some samples (see Table 2) may also indicate that turf was also being used *e.g.* as a fuel source or to cover the kiln.

Linear feature

Two samples (013 and 022) were taken from the fill (030) of linear ditch (021). The two samples revealed very few charred grains of hulled barley (see Table 2) and are likely deposited via secondary actions such as surface water run off or wind blown actions.

The environmental evidence from site E2992 demonstrates similarities to other Irish excavated sites in the vicinity. Trends of large assemblages of oat and barley grains are particularly paralleled to sites incorporating kiln features such as E2972, in the townland of Mullamast, Co. Kildare (O'Connell and Hackett 2009) and site E2989 in the townland of Burtown Little, Co. Kildare (Moloney 2009).

Conclusion

- The Bronze Age features at the site were found to contain small amounts of charred grain; however, the presence of oat within some of the pits (and hulled barley) would suggest the grain is a contaminant from later activity (e.g. medieval).
- The presence of the key-hole shaped kiln, along with charred plant remains of oat and hulled barley suggest the posthole and kiln relate to medieval activity.
- Barley (2-row) and oat were the predominant cereals cultivated during the later activity (probable medieval) at site E2992, with wheat present in much smaller quantities.
- The presence of sedge nutlets in significant quantities from the kiln samples suggests turf may have been used in the kiln either as fuel or roofing.

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Lab Code	Sample ID	Material	$\delta^{13}C$	Radiocarbon Age BP	Calibrated Age Ranges (1 σ)	Relative Probability	Calibrated Age Ranges (2 σ)	Relative Probability
SUERC-26397	sample 36, context 057	hazel charcoal	-27.6	3740 +/- 35	2210 - 2120 cal BC	47.8	2280 - 2240 cal BC	5.7
					2090 - 2040 cal BC	20.4	2230 - 2030 cal BC	89.7
SUERC-26396	sample 002, context 010	hazel charcoal	-25.6	3350 +/- 35	1690 - 1600 cal BC	61.8	1740 - 1710 cal BC	7.4
					1570 - 1560 cal BC	4.0		
					1550 - 1540 cal BC	2.4	1700 - 1520 cal BC	88.0

Table 1 – Radiocarbon dating results

Kilns

Latin Name	Plant Part	Common Name	Kiln (017)	Kiln (017)	Kiln (017)	Kiln (017)	Kiln (017)	Kiln (017)	Kiln (017)	Kiln (017)	
<i>Wild Taxa</i>											
Chenopodiaceae indet.	seed	fat hen family	21	8	29	17	-	7	3	-	
Carex sp. Indet.	nutlet	sedge	33	15	47	60	-	16	7	1	
<i>Cereals</i>											
Avena sp.	caryopsis	oat	143	94	229	140	6	57	49	6	
cf. Avena sp.	caryopsis	oat	85	30	140	54	1	8	13	1	
Hordeum vulgare (hulled)	caryopsis	hulled barley	95	80	137	56	1	25	34	1	
Hordeum vulgare L. (hulled - straight)	caryopsis	hulled barley	73	73	208	58	2	18	35	2	
Hordeum vulgare L. (hulled - twisted)	caryopsis	hulled barley	-	-	-	-	-	-	-	-	
Triticum sp.	caryopsis	wheat	3	34	12	2	-	6	-	-	
Triticum aestivo-compactum	caryopsis	bread/club wheat	-	8	9	1	-	-	-	-	
Triticum spelta L.	caryopsis	spelt wheat	3	14	12	2	-	-	-	-	
Cereal indet.	caryopsis	cereal indet.	196	268	401	264	9	132	87	9	
		Cereals (%)	92	98	94	91	100	94	97	95	
		Wild taxa (%)	8	2	6	9	0	6	3	5	
		Chaff fragments (%)	0	0	0	0	0	0	0	0	
		Wheat (%)	1.3	9.3	2.9	0.9	0.0	2.4	0.0	0.0	
		Barley (%)	36.1	25.5	30.1	19.8	15.8	17.5	31.7	15.8	
		Oat (%)	49.0	20.6	32.1	33.6	36.8	26.4	28.4	36.8	
		Indet (%)	42.2	44.6	34.9	45.8	47.4	53.7	39.9	47.4	
		Total no. of cereals per litre	77.5	200.3	###	577.0	4.8	82.0	54.5	3.2	

Postholes	Posthole (004)	Posthole (005)	Posthole (022)	Posthole (031)	Posthole (040)	Posthole (064)
Context	003	006	023	032	041	065
No						
Sample						
No	003	001	008	012	024	033
Orig. vol (litres)	0.5	2	2	2	1	2
% of sample analyzed	100	100	100	100	100	100
Latin Name	Plant Part	Common Name				
<i>Wild Taxa</i>						
Chenopodiaceae indet.	seed	fat hen family	-	-	-	-
Carex sp. Indet.	nutlet	sedge	-	1	3	-
Avena sp.	caryopsis	oat	-	9	26	-
cf. Avena sp.	caryopsis	oat	-	-	5	-
Hordeum vulgare (hulled)	caryopsis	hulled barley	1	3	20	-
Hordeum vulgare L. (hulled - straight)	caryopsis	hulled barley	-	-	12	-
Hordeum vulgare L. (hulled - twisted)	caryopsis	hulled barley	-	-	-	-
Triticum sp.	caryopsis	wheat	-	-	-	-
Triticum aestivo-compactum	caryopsis	bread/club wheat	-	-	-	-
		spelt				
Triticum spelta L.	caryopsis	wheat	-	-	-	-
Cereal indet.	caryopsis	cereal indet.	-	3	55	2
		Cereals				
		(%)				
		Wild taxa (%)				
		Chaff fragments (%)				
		Wheat (%)				
		Barley (%)				
		Oat (%)				
		Indet (%)				
		Total no.of cereals per litre				
			0.5	7.5	118.0	1.0

Pits
Pit (011) Pit (026) Pit (052) Pit (055) Pit (061)

Context No 012 029 053 056 062
Sample No 005 006 029 034 031
Orig. vol (litres) 0.5 3 4 1.5 2
% of sample analyzed 100 100 100 100 100

Latin Name	Plant Part	Common Name
<i>Wild Taxa</i>		
Chenopodiaceae indet.	seed	fat hen family
Carex sp. Indet.	nutlet	sedge
<i>Cereals</i>		
Avena sp.	caryopsis	oat
cf. Avena sp.	caryopsis	oat
Hordeum vulgare (hulled)	caryopsis	hulled barley
Hordeum vulgare L. (hulled - straight)	caryopsis	hulled barley
Hordeum vulgare L. (hulled - twisted)	caryopsis	hulled barley
Triticum sp.	caryopsis	wheat
Triticum aestivo-compactum	caryopsis	bread/club wheat
Triticum spelta L.	caryopsis	spelt wheat
Cereal indet.	caryopsis	cereal indet.
Cereals (%)		
Wild taxa (%)		
Chaff fragments (%)		
Wheat (%)		
Barley (%)		
Oat (%)		
Indet (%)		
Total no. of cereals per litre		

Linear features and cremation pit	Linear (021)	Linear (021)	Pit (009)
	030	030	010
Context No			
Sample No	013	022	002
Orig. vol (litres)	4	4	4
% of sample analyzed	100	100	100
Latin Name	Plant Part	Common Name	
<i>Wild Taxa</i>			
Chenopodiaceae indet.	seed	fat hen family	-
Carex sp. Indet.	nutlet	sedge	-
<i>Cereals</i>			
Avena sp.	caryopsis	oat	-
cf. Avena sp.	caryopsis	oat	-
Hordeum vulgare (hulled)	caryopsis	hulled barley	1
Hordeum vulgare L. (hulled - straight)	caryopsis	hulled barley	-
Hordeum vulgare L. (hulled - twisted)	caryopsis	hulled barley	-
Triticum sp.	caryopsis	wheat	-
Triticum aestivo-compactum	caryopsis	bread/club wheat	-
Triticum spelta L.	caryopsis	spelt wheat	-
Cereal indet.	caryopsis	cereal indet.	1
		Cereals (%)	100
		Wild taxa (%)	0
		Chaff fragments (%)	0
		Wheat (%)	0.0
		Barley (%)	0.0
		Oat (%)	0.0
		Indet (%)	100.0
		Total no. of cereals per litre	0.5
			1.3
			0.5

Table 2 - Plant macrofossil analysis results

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Nutshell	Shell	Industrial/ Metallic	Un/Worked Stone	Ceramic	Comments
				Qty	AMS	Burnt	Unburnt	Burnt	Unburnt						
6	1	2	Mid brown sandy silt with charcoal of (5)	+				+ Grain							Whole Retent Bagged- Grain in Flot
10	2	4	Mid orangey brown sandy silt of (4)	+		++									Whole Retent Bagged- Poss Grain in Flot
3	3	0.5	Mid brown sandy silt of (4)	+				+ Grain			+ Modern				Whole Retent Bagged- Grain in Flot
28	4	3	Dark brown sandy silt with charcoal of (26)	+++								+ Flint	++ Unglazed frags		Whole Retent Bagged- Poss Grain in Flot
12	5	0.5	Mid greyish brown sandy silt fill of (11)	+				+ Grain							Whole Retent Bagged- Poss Grain in Flot
29	6	3	Very dark brown sandy silt fill of (26)	++											
33	7	0.5	Brown sandy silt, prob post hole fill of (26)	+											
23	8	2	Charcoal rich sandy silt fill of poss Pit (22)	+											Whole Retent Bagged- Grain in Flot
18	9	3	Light brownish grey fine sand fill of (21)												Whole Retent Bagged- Poss Grain in Flot
19	10	4	Brownish black charcoal fill of (21)	+											Whole Retent Bagged- Poss Grain in Flot
20	11	6	Light yellowish brown clayey sand fill of (21)								+				Whole Retent Bagged- Poss Grain in Flot
32	12	2	Mid brown silty sandy of Posthole (31)	+									+		
30	13	4	Brown clay of (21) slot 7	+											
30	14	4	Brown clay of (21) slot 10	+											
30	15	4	Brown clay of (21) slot 6	+							+				Whole Retent Bagged- Grain in Flot
13	16	6	Light brownish grey fine sand fill of (17)												Whole Retent Bagged- Grain in Flot
14	17	8	Brownish black with charcoal fill of (17)	+++		+		+++ Grain	+			+ Poss Slag			Whole Retent Bagged- Grain in Flot

15	18	4	Grey friable find sand of (17)	+++															Whole Retent Bagged- Grain in Flot
16	19	4	Light yellowish brown clayey sand fill of (17)																Whole Retent Bagged- Poss Grain in Flot
36	20	1	Mid brown silty sand with charcoal of (35)	++															Whole Retent Bagged- Grain in Flot
30	22	4	Mid brown silty clay fill of (21) slot 2	+														+	Whole Retent Bagged- Grain in Flot
14	23	3	Black charcoal rich fill of (17) slot 7	+															Whole Retent Bagged- Grain in Flot
41	24	1	Mid brown silty sand fill of Posthole (40)	+															Whole Retent Bagged- Grain in Flot
51	25	2	Mid brown silty clay fill of Pit (50)	+															Whole Retent Bagged- Poss Grain in Flot
45	26	2	Dark brown sandy silt of (44)	++															
47	27	0.5	Brownish black sandy silt of (46)	+															
49	28	0.8	Dark brown silty clay of (48)																Archaeologically Sterile
53	29	4	Mid brown sandy silt with charcoal of (52)	+															Technician Error: Retent not bagged whole
60	30	1	Greyish brown sandy silt fill of (59)	++															
62	31	2	Yellowish brown sandy silt fill of (61)	+															Whole Retent Bagged- Grain in Flot
63	32	1.5	Dark brown silty sand fill	+++															Whole Retent Bagged- Grain in Flot
65	33	2	Dark yellowish brown fill of (64)	+++															Technician Error: Retent not bagged whole
56	34	1.5	Dark yellowish and orange sandy mix of (55)	+															Whole Retent Bagged- Poss Grain in Flot
57	35	1.5	Dark brown and grey silty sand of (55)	+															
57	36	0.5	Soil surrounding pottery of (55)	++															+ Flint

Table 3 – Composition of Retents

Appendix 8 – Final report on the faunal remains from Burtown Big (E2992), Co. Kildare

By: Albína Hulda Pálsdóttir MA

Introduction

This report discusses the results of the animal bone analysis from Burtown Big, Co. Kildare (E2992). The resolution of the site revealed two areas of probable prehistoric activity, one in the mid-east portion of the site, appearing domestic in nature and the second close to the western baulk, appearing to represent funerary activity. Three large linear features were also uncovered, however, their purpose and function was not apparent from on-site evidence. Two of these had a relatively long, slightly key-hole shaped kiln truncating their fills and appear to represent medieval activity on the site. Several amorphous features were also uncovered and will require post-excavation analysis of their fills to reveal their dating, purpose or function. (O'Neill 2009, 3). The animal bone specimens were recovered by hand-picking and from soil samples by sieving. The animal bones analysed for this report derive from a fill (010) of possible cremation pit (009), fill (014/019) of a kiln (017), basal deposit (015) of kiln (017), upper fill (018) of kiln (017), basal fill (020/016) of a kiln (017), fill (030) of linear feature (021) and fill (041) of possible posthole (040).

Methodology

During the analysis each specimen was identified and recorded according to species, skeletal element, age and sex where possible. The animal bone reference collection located in Headland Archaeology (Ireland) Ltd, Unit 1 Wallingstown Business Park, Little Island, Co. Cork was utilised. The York System bone database program was used for recording (Harland *et al.* 2003). The material was quantified by using the number of identified specimens (NISP). The categories "large mammal" (lm) and "medium mammal" (mm) were used for specimens (mainly ribs and vertebrae) which could not be assigned to a species. The specimens categorised as large mammal are likely to belong to either cattle or horse; red deer was absent in the assemblage. Medium mammal specimens are most likely to consist of sheep bones: however the presence of pig, goat and roe deer is possible.

In addition, during the analysis pathological changes, carnivore and rodent gnawing, signs of burning and butchery marks were recorded. All data is stored in digital and written form in Headland Archaeology (Ireland) Ltd, Unit 1 Wallingstown Business Park, Little Island, Co. Cork.

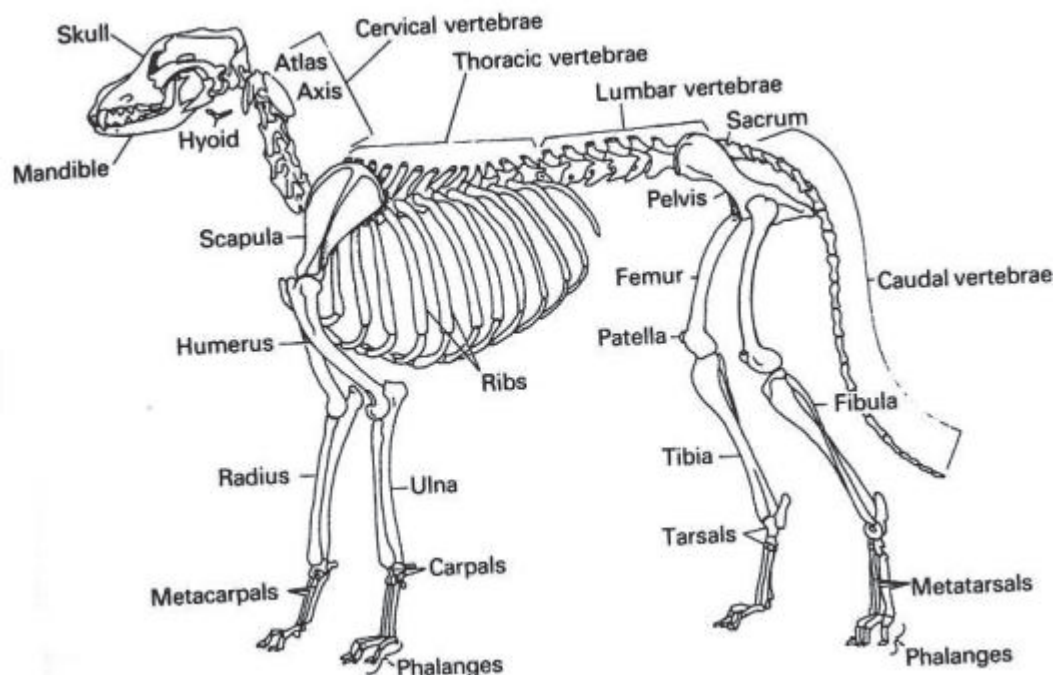


Figure 1 – Location on animal skeleton of terms referred to in text (Davis 1987, 54, in Reitz & Wing 1999)

Results

A total of 446 bone specimens were analysed from the site (Table 1). The material consists of both burnt and unburnt fragments. Identifiable animal bone was found in four contexts which are divided into four phases discussed in turn below. None of the bones from E2992 showed signs of gnawing, pathology or butchery.

Context	Cattle	Horse	Sheep/goat	Mouse	Lm	Mm	Unidentified	NISP
010							320	320
014			1		2	3	47	53
015				1		1	4	6
018					1			1
020				1				1
030	5	1			12	12	34	64
041						1		1
Total	5	1	1	2	15	17	405	446

Table 1 – Species representation of sample (NISP). Lm = large mammal, Mm = medium mammal

Possible cremation: The bones from fill (010) of possible cremation pit (009) could not be identified as human or animal (Carmelita Troy, pers. comm.). The bone was all burnt (Table 2). Charcoal from fill (010) of the possible cremation pit (009) returned a Middle Bronze Age date (1700-1520 cal. BC (2σ) SUERC-26396.).

Context	Unidentified	Total
010	320	320

Table 2 – Contexts that contained burnt bone that could not be identified as human or animal

Linear feature: Fill (030) of linear feature (021) is undated but predates the medieval kiln (017) and is therefore discussed separately. The fill contained 64 bones all unburnt. Five cattle bones, a horse metacarpal, large and medium mammal bones as well as unidentified fragments of bone were found (Table 3). The element distribution for cattle shows that elements of the head and limbs are present but the meat bearing elements of the trunk, the vertebra and ribs, are largely absent. The bone might reflect primary butchery waste but given the small size of the assemblage no firm conclusions can be drawn.

Element	Cattle	Horse	Large mammal	Medium mammal	Unidentified	NISP
Skull	1					1
Teeth	1		1			2
Rib				1		1
Metacarpal		1				1
Femur	1					1
Tibia	1		1			2
Metatarsal	1					1
Shaft			10	11	2	23
Unidentified					32	32
Total	5	1	12	12	34	64

Table 3 – The species and element distribution from fill (030) of linear feature (021) (NISP)

Medieval kiln: A total of 61 animal bones were recovered from fills (014, 015, 018, 020) of kiln (017) (Table 4). Fill (014/019) of a kiln (017) contained an unburnt large mammal bone, a sheep/goat tooth fragment, large mammal and unidentifiable bone as well as burnt small mammal and unidentifiable bone. The secondary deposit (015) of kiln (017) contained a burnt mouse humerus, possibly contemporary, and burnt fragments of unidentifiable bone. The upper fill (018) of kiln (017) contained one unburnt large mammal bone, the basal fill (020/016) of a kiln (017) contained an unburnt mouse incisor, possibly intrusive.

Context	Sheep/goat	Mouse	Large mammal	Medium mammal	Unidentified	Total
014	1		2	3	47	53
015		1		1	4	6
018			1			1
020		1				1
Total	1	2	3	4	51	61

Table 4 – Species present in the fills (014, 015, 018, 020) of kiln (017)

A total of 12 burnt bones were amongst those found in the kiln fills (Table 5). The ratio of burning in the bones from the kiln was 19.7%.

Context	Calcined	Charred	Unburnt	Total
014	3	3	47	53
015	5	1		6
018			1	1
020			1	1
Total	8	4	49	61

Table 5 – Burning in the kiln fills

Medieval material: A single unburnt tooth fragment was recovered from a sieved soil sample from fill (041) of possible posthole (040) (Table 6).

Context	Species	Element	NISP
041	Medium mammal	Tooth fragment	1

Table 6 – Bone from medieval contexts at Burtown Big

Discussion

The bone material from this site E2992 is too small for conclusive comparison against other assemblages. However, some general observations can be made.

The burnt unidentifiable bone from fill (010) of possible cremation pit (009) was dated to the Middle Bronze Age. The material was highly fragmented and could not be identified as human or animal. Given the date and context of the bone the presence of a cremation or token burial cannot be ruled out (Murray and McCormick 2007, 23-31). Token burials are cremations that have been described as consisting of small, minute or token quantities. The Middle Bronze Age in Ireland includes the burial traditions of token cremation burials within isolated pit cremations, enclosed and unenclosed pit cemeteries, barrows, ring-ditches and mounds (Cooney and Grogan 1999, 126). The token cremation burial and ring-ditches first make their appearance in the Middle Bronze Age and ring-ditches formed the principal markers of formal burial in this period (Cooney and Grogan 1999, 129).

The animal bone from the undated linear (021) possibly reflects primary butchery waste but the small size of the assemblage makes it impossible to draw firm conclusions.

Animal bone is occasionally recovered from the fills of kilns such as in Ballybar Lower, Co. Carlow (E2622), Gorteen, Co. Limerick (08E0174) and Narraghmore, Co. Kildare (E2854) (Tourunen 2009a, b and c), and it is likely to relate to other activities practiced on the vicinity of the kiln than to the kiln use itself.

The tooth fragment from the fill of possible posthole (040) cannot give any further information about site date or function.

Context	Sample	Species	Element	NISP	Side	Gt50	Distffus	Admin	Notes	Texture	Burning	Recovery
010	002	unid	ui	37							cal	1
010	002	unid	ui	282					2,3gr sample taken for C14 AT		cal	1
010	002	unid	ui	1							char	1
014	017	mm1	rib	3							cal	1
014	017	unid	ui	3						3		1
014	017	unid	ui	1						3		1
014	017	lm	sha	1						3		1
014	017	unid	ui	3							char	1
014	002	lm	sha	1						4		hc
014	002	unid	ui	40								hc
014	002	sh/g	isoteeth	1					M mand			hc
015	018	mm1	rib	1							cal	1
015	018	mouse	hum	1		f				2	char	1
015	018	unid	ui	4							cal	1
018	003	lm	sha	1						4		hc
020	011	mouse	isoteeth	1					Incisor			1
030	004	lm	sha	4						4		hc
030	004	mm1	sha	9						4		hc
030	004	mm1	rib	1						4		hc
030	004	unid	ui	28						4		hc
030	004	horse	m/c	1	r	3478	f	fb	Broken into 5 pieces, fresh break	4		hc
030	005	cow	isoteeth	1					M maxil			hc
030	004	lm	isoteeth	1					M probably cow			hc
030	005	mm1	sha	2						4		hc
030	005	lm	sha	5						4		hc
030	005	unid	sha	2						4		hc
030	005	unid	ui	4						4		hc

Context	Sample	Species	Element	NISP	Side	Gt50	Distfus	Admin	Notes	Texture	Burning	Recovery
030	005	cow	tib	1	l	8			Broken into 2 pieces, fresh break	4		hc
030	005	lm	tib	1						4		hc
030	005	cow	fem	1	l	7				4		hc
030	005	cow	m/t	1	r	56				4		hc
030	005	cow	skull	1	r				Condyle fragment	4		hc
030	001	lm	sha	1						4		hc
041	024	mm1	isoteeth	1					Tooth fragment			1

Table 7 – Complete list of animal bones

Key to complete list of animal bones:

Species

cow = cattle

lm = large mammal

mm1 = medium mammal (sheep, goat, pig)

unid = unidentified

Elements

Mammals:

fem = femur

hum = humerus

isoteeth = isolated teeth

m/c = metacarpal

m/t = metatarsal

sha = shaft

tib = tibia

ui = unidentified mammal

Side

r = right

l = left

b = both

GT50

For mammal and bird diagnostic zones, the York System (Harland et al. 2003) follows the Environmental Archaeology Unit's (EAU) recording protocol (Dobney, Jaques and Johnstone 1999) with minor re-coding. All fish diagnostic zones are taken from Barrett's fish recording system (2001).

Fusing proximal and distal

f = fused

Texture

1 = excellent

2 = good

3 = fair

4 = poor

Burning

cal = calcified

char = charred

Recovery

hc = hand-picked

1 = sieved with 1 mm sieve

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Appendix 9 – Radiocarbon dates and certificates

E-Number	Lab code	Sample ID	Material	$\delta^{13}C$	Radiocarbon age BP	Calibrated Age Ranges (1 σ)	Relative probability	Calibrated Age Ranges (2 σ)	Relative probability
E2992	SUERC-26396	context 10, sample 2	Hazel charcoal	-25.6	3350 +/-35	1690 – 1600 cal BC	61	1740 – 1710 cal BC	7.4
						1570 – 1560 cal BC	4	1700 – 1520 cal BC	88
						1550 – 1540 cal BC	2.4		
E2992	SUERC-26397	context 57, sample 36	Hazel charcoal	-27.6	3740 +/- 35	2210 – 2120 cal BC	47.8	2280 – 2240 cal BC	5.7
						2090 – 2040 cal BC	20.4	2230 – 2030 cal BC	89.7



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RADIOCARBON DATING CERTIFICATE

18 November 2009

Laboratory Code	SUERC-26396 (GU-19866)
Submitter	Karen Stewart Headland Archaeology (Ireland) Ltd. Unit 1 Wallingstown Business Park Little Island Co. Cork, Ireland.
Site Reference	KCK06 E2992
Context Reference	10
Sample Reference	2
Material	charcoal : hazel
$\delta^{13}\text{C}$ relative to VPDB	-25.6 ‰
Radiocarbon Age BP	3350 \pm 35

- N.B.**
1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.
 2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
 3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

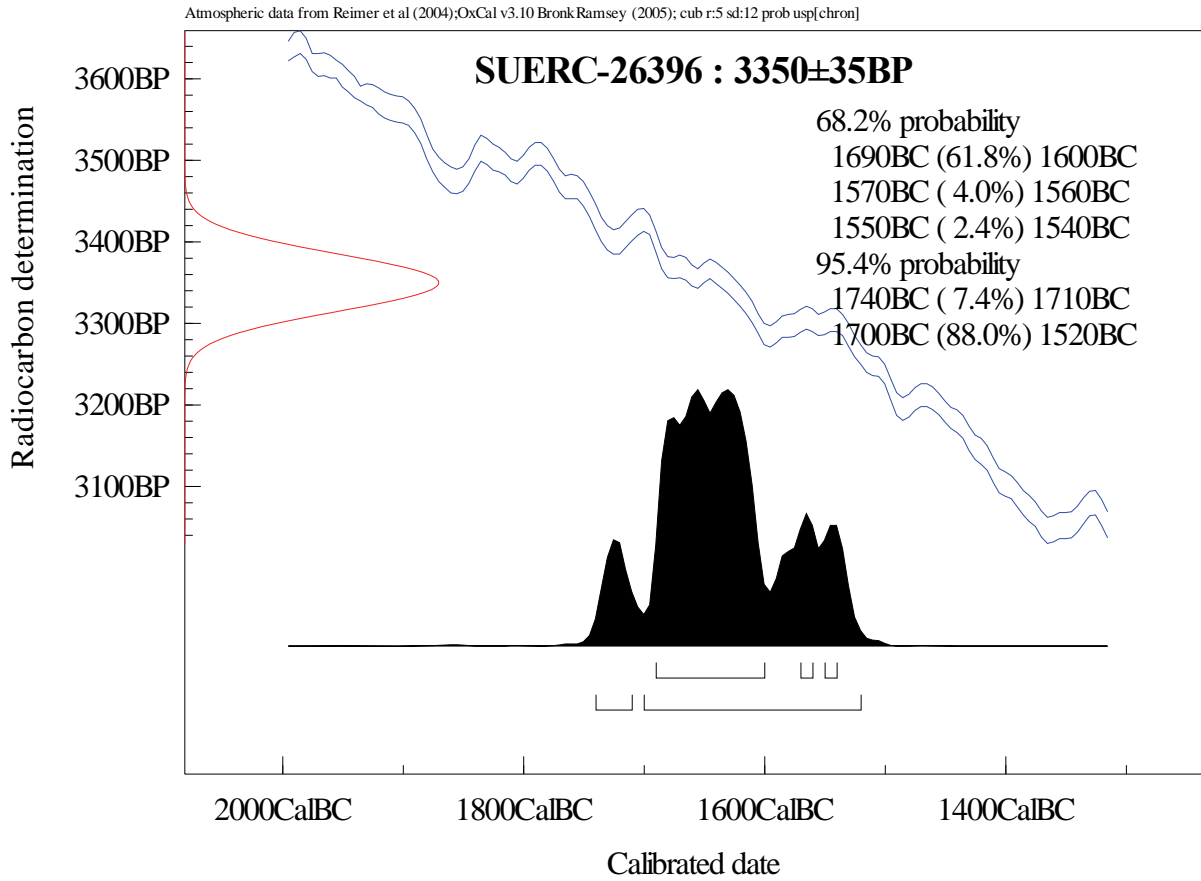


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Calibration Plot





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RADIOCARBON DATING CERTIFICATE

18 November 2009

Laboratory Code	SUERC-26397 (GU-19867)
Submitter	Karen Stewart Headland Archaeology (Ireland) Ltd. Unit 1 Wallingstown Business Park Little Island Co. Cork, Ireland.
Site Reference	KCK06 E2992
Context Reference	57
Sample Reference	36
Material	charcoal : hazel
$\delta^{13}\text{C}$ relative to VPDB	-27.6 ‰
Radiocarbon Age BP	3740 \pm 35

- N.B.**
1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.
 2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
 3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

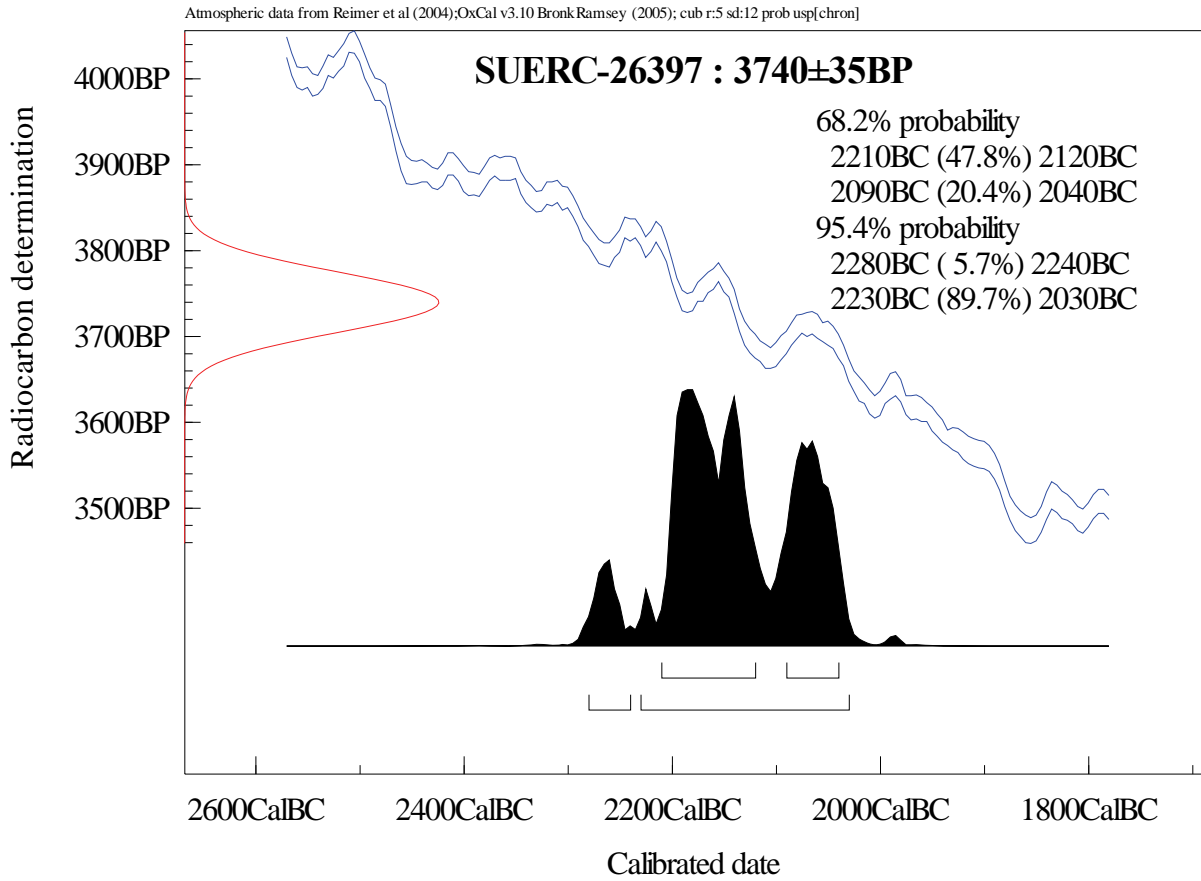


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Calibration Plot



Appendix 10 – The prehistoric pottery assemblage from Burtown Big, Co. Kildare (E2992)

By: Eoin Grogan and Helen Roche

Summary

The site at Burtown Big E2992 produced an assemblage of 25 sherds (plus 18 fragments and 159 crumbs, weight: 443g) representing a bowl food vessel and an encrusted urn of the Early Bronze Age. Both vessels had been disturbed but appear to represent successive deposits with the bowl coming from the earliest deposit. The site is an important addition to the local and regional pattern of Bronze Age activity.

Introduction

The site produced 25 sherds (five rim-, 14 neck-, five belly- and a single bodysherd, plus 18 fragments and 159 crumbs, weight: 443g). These come from the primary fill (57) of pit 55 and the upper fill (28) of pit 26 that cuts 55 (Cagney and O'Neill 2009). The pottery represents two Early Bronze Age vessels – a bowl and an encrusted urn – with the majority of the bowl sherds coming from the earlier pit. A single sherd came from the topsoil; this may be from the bowl.

The bowl food vessel

This is represented by 16 sherds (plus a single fragment, weight: 136g) mostly from the upper part of the vessel. This is a ribbed tripartite bowl (Ó Ríordáin and Waddell 1993, 10–15) divided by three low pinched-up horizontal cordons and with a rim diameter of c. 136mm. Decoration is sparse and consists of scored or impressed lines and triangular and arc-shaped impressions that are used, along the upper edge of the topmost cordon, to form a band of false relief. There are no precise parallels for the decorative layout although the principal motifs are well represented in the bowl series.

Bowls, and especially tripartite and ribbed examples, are well represented in this part of north Leinster (Table 1; Ó Ríordáin and Waddell 1993, figs 5 and 7). The most relevant site in the immediate area is the large cemetery at Moone; this produced seven bowls of which five were ribbed tripartite examples (E2980, Table 2; Hackett 2009; Grogan and Roche 2009a). Amongst the clustered distribution of early Bronze Age burials in this area the record is dominated by bowl associations (Table 1) including cemeteries at Graney West, Halverstown, Ploopluck and another in Moone townland which also contain unaccompanied crouch inhumations (Mount 1998; Ó Ríordáin 2002). Pottery, including sherds from two bipartite bowls and five vase urns, came from apparently domestic contexts at Ballymount (McCarthy 2009; Grogan and Roche 2009b).

The encrusted urn

This is represented by nine sherds (plus 17 fragments and 159 crumbs, weight: 307g) mostly from the upper part of the vessel. This is an unusual vessel with horizontally arranged applied ornament, ribs and rectangular bosses, and crescentic motifs filled with impressed whipped cord. The overall form, with a simple rim leading directly to the upright neck and a slightly angular belly, may be similar to an example from Slaghtaverty, Co. Derry (Kavanagh 1973, fig. 10: 24; Brindley 2007, fig. 65: a). The use of rectangular bosses is an occasional feature of this ceramic type and occurs, for example, at Castleboyo, Tara, Co. Meath (O'Sullivan 2005; Kavanagh 1973, fig. 27: 61). The Burtown Big E2992

vessel probably belongs to Brindley's (2007, 194–95, 268–70, fig. 65, table 43) Stage 1 which is dated to c. 2000–1920 BC.

There are relatively few Vase Tradition vessels in this area (Table 1) although there are encrusted urns from Maganey Lower and Mullaghreelan (Kavanagh 1973, nos. 43–44; Waddell 1990, 99). Vase burials occur at Gorteen (Waddell 1990, 96) and Timolin (Breen 2000) while a vase urn burial occurred at Moone (E2980, Hackett 2009; Grogan and Roche 2009a). Encrusted urns have not been reported from domestic contexts and the Burtown Little vessel, although handsomely finished, does not appear to be robust enough for this type of usage.

Conclusions

The discovery of a bowl and encrusted urn at Burtown Big E2992 is particularly interesting as these types have not previously been recorded in such close association although they do occur in separate graves within the same cemetery as at Brownstown, Co. Kildare, and Castleboy, Tara, Co. Meath (Mount 1998; O'Sullivan 2005). The stratigraphic and ceramic evidence at this site E2992 indicate that the vessels represent successive deposits with the bowl in pit 57 being disturbed by the insertion of the urn into the intrusive pit 26. Both suffered further disturbance probably due to later agricultural activity and it is possible that both were originally deposited intact.

As noted above encrusted urns are exclusively associated with burial and there are no convincing examples from domestic contexts. Bowl sherds have very occasionally come from settlement sites, such as Site 10, Lough Gur, Co. Limerick (Grogan and Eogan 1987, 461), and Fermoy, Co. Cork (Murphy 2006; Roche and Grogan 2006). Neither of the Burtown Big E2992 vessels retained evidence, in the form of sooting of burnt accretions, for domestic use. While there is a strong possibility that these vessels represent burials there does not appear to have been any associated evidence for human bone. This may have become thoroughly dispersed as a result of later disturbance. However, it is also possible that they represent non-funerary votive deposits of the type identified at Mitchelstown, Co. Cork (Grogan and Roche 2006; Kiely and Sutton 2007).

Burtown Big is an important addition to the growing number of Early Bronze Age sites, both domestic and funerary, in the area. These include two cemeteries in Moone and others at Graney West and Timolin (Mount 1998; Breen 2000; Ó Ríordáin 2002; Hackett 2009), and single graves at, for example, Timolin (O Floinn 1989/90; O'Connor 1989/90), Magney Lower (Waddell 1990) and Graney West (Ó Ríordáin and Waddell 1993, 114). Domestic activity occurs at Moone (E2982), Burtown Little (E2988), Mullamast (E2856), Ballymount (E2873) and Foxhill (E2985) (Dennehy and Mallia-Guest 2009; Gleeson and Moloney 2009; Stephenson 2009; McCarthy 2009; Cagney and Kozłowska 2009; Grogan and Roche 2009c; 2009d; 2009e; 2009f; 2009g). The combination of evidence demonstrates intense settlement in south Kildare during the Early Bronze Age; this pattern extends into north Carlow and is concentrated along the River Barrow and its principal tributaries in the area - the Greese, Lerr and Burren Rivers.

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Site	No.	Site type	Grave	Rite	Pot type	Position ¹	Burial ²	Other	Reference
Blackhill		Single grave	Cist	cIn h	b	?	ch		W 96. ORW 112
Ballyhade	07	Flat cemetery	Pit	Cr	•	↓	A		MacSween 2009c
Ballyhade	08	Flat cemetery	Pit	Cr	-	-	A		
Brownstown	1	Flat cemetery	Pit	Cr	⊙	↓	?	◆	Mount 1998
	2		Pit	Cr	⊙	↑	?	av, on slab	
	3		Pit	Inh	b	?	?		
	4		Pit	Inh	b	?	?		
Calverstown		Single grave	Cist	cIn h	b	?	?	W 96	
Gorteen		Single grave	Cist	Cr	v	?	?	Another pot	W 96
Graney West	1	Flat cemetery	Prot	cIn h	b b	??	A♂ A♂	bsh	Mount 1998
	2		Cist P	Cr	b	?	?	2 pendants (stone, bone)	
	3		Pit	cIn h	sh	?	?		
Graney West		Single grave	Pit	CIn h?	sh	?	?	ORW 114	
Halfmiletown		Single grave	Cist	Cr	-	-		W 98	
Halverstown 1		Single grave	Cist	Cr	-	-	A, inf, fe	W 98	
Halverstown 2	1	Flat cemetery	Pit	cIn h	-	-	A♀ 25-40	Organic material?	W 96
	2		Pit	cIn h	-	-	A♂	Ox femur	
	3		Pit	cIn h	b	↑	A♂		
Hartwell Upper		Single grave	Pit	Cr	b	?	?	'copper spoon' (knife?)	ORW 114
Hempstown Commons 1		Single grave	Cist	cIn h	-	-	?	Pot?	W 98
Hempstown Commons 2		Single grave	Cist	cIn h	-	-	A♂	Capstone pocked	W 98
Kilrainey		Single grave	Cist	Inh	b	↑?	?		ORW 114
Maganey Lower		Single Grave	Cist P	Cr	⊙	↓	A♀	on slab	K 43, W 99
Moone	1	Flat cemetery	Cist	cIn h	b	↑	?		Ó Ríordáin 2002

Site	No.	Site type	Grave	Rite	Pot type	Position ¹	Burial ²	Other	Reference
	2		Pit	Inh	-	-	?		
	3		Pit	cIn h	-	-	?		
	4a		Pit	Inh	-	-	inf		
	4b		Pit	cIn h	-	-	A♀	2 tusks, fl flakes, Br frags	
	5		Pit	cIn h	b	↑?	?		
	6		Pit	Cr	-	-	?	fl	
	7		Pit	cIn h	b	↑?	?	▼	
Mullaghreelan		Single grave	Pit	Cr	©	↓	?	on slab	K 44, W 99
Newtownmacab e		Single grave	Cist	Inh	b	?	?		ORW 114
Nurney Demesne		Flat cemetery?	?	?	b	?	?		ORW 114
Oldtown (Connell)	1	Flat cemetery	Pit	cIn h	bsh	?	?		Mount 1998
	2		Pit	cIn h	b	?	?	Cr also	
	3		Pit	Inh	©sh	↓	?	vsh	
Ploopluck	1	Flat cemetery	Pit	Inh	-	-	?		Mount 1998
	2		Pit	Inh	b	?	?		
	3		Pit	cIn h	b	?	?		
	4		Pit	Inh	b	?	?		
Timolin	F6	Mound	Pit	Inh	-	-	ch 5-7		Breen 2000
	F8		Pit	Cr	-	-	-	Disturbed	
	F7		Cist	cIn h	-	-	A♀ 25-35		
	F9		Cist	Cr	v	↑	2A, ch	↓plain vessel	
Timolin		Single grave	Cist	Inh	b vsh	↑?	A♂	Disturbed	O Floinn 1989/90
Timolin		Single grave	Cist	Inh	-	-	?	Disturbed	O'Connor 1989/90

No. grave number

1. position of pottery vessel identification **sh**vessel represented by sherds

fl flint

© Vase urn © Encrusted urn © Collared urn

miniature vase ◆ plano-convex flint knife

● plain domestic vessel ▲ accessory vessel

arrowhead

2. Burial

v vase **mv**

▼ flint

Table 1. Bronze Age burials from county Kildare (not including the present site; sources: Waddell 1990 [W]; Kavanagh 1973 [K]; Ó Ríordáin and Waddell 1993 [ORW], Mount 1998; MacSween 2009; Breen 2000; O Floinn 1989/90; O'Connor 1989/90, with additions).

Site	No.	Site type	Grave	Rite	Pot type	Position ¹	Burial ²	Other	Reference
Moone E2980	13	Cemetery	Pit	cIn	●p	↑	J	Cr (NI)	H 2009; G+R 1
	2			h					
	11			cIn	b	↑	A	Copper artefact,	H 2009; G+R 2
	7			h				fl	
	69			cIn	b	↑	Ad	fl	H 2009; G+R 3
				h					
	60			cIn	b	↑	A		H 2009; G+R 4
				h					
	14			cIn	b	↑	ch	Perforated shell	H 2009; G+R
	4			h	bsh			5, II	
	87			cIn	b	↑	A		H 2009; G+R 6
				h					
	31			cIn	b	↑	A		H 2009; G+R 7
				h					
	23			Pit	Cr	©	↓	NI	
4									
05	Pit	cIn			A ch		H 2009		
		h							
25	Cist	cIn			J		H 2009		
		h							
16	Pit	cIn			A ch		H 2009		
6		h							
67	Pit	cIn			ch		H 2009		
		h							
21	Pit	fln			ch		H 2009		
1		h							
75	Pit	cIn			ch A	Flint scraper	H 2009		
		h							
19	Pit	-		b		Disturbed	H 2009; G+R		
9						burial?	Gp VI		
Burtown E2992	Big	Cemeter y?	Pit	?	bsh				This report
			Pit	?	©sh				This report

No. grave number

1. position of pottery vessel

2.

Burial

identification sh vessel represented by sherds

fl flint

b bowl

© vase urn

© encrusted urn

● plain vessel

cInh crouched inhumation

flnh flexed inhumation

cr cremation

NI

cremation

not yet

identified

H 2009 = Hackett 2009 G+R Grogan and Roche 2009a

Table 2. Bronze Age funerary vessels from Moone (E2980) and Burtown Big, Co. Kildare.

Catalogue

The excavation number E2992 is omitted throughout: only the context number, in **bold**, followed by the find number is included (e.g. **57:5**). The thickness refers to an average dimension; where relevant a thickness range is indicated. Vessel numbers have been allocated to pottery where some estimation of the form of the pot is possible, or where the detailed evidence of featured sherds (e.g. rims, shoulders), decoration or fabric indicates separate pots. Group numbers (Roman numerals) refer to sherds of distinctive fabric from a vessel where the overall form is not identifiable principally due to the absence of sufficient feature (rim/ neck/ shoulder) sherds. Individual sherds that could not be definitely ascribed to either category are described separately; these may come from further pots that are not, however, included in the calculations of minimum and maximum numbers of vessels. The inclusions were examined using simple magnification and in some cases attribution reflects probable, rather than certain, identification. Fragments are small sherds (generally less than 10mm square) where only one surface has survived while crumbs are very small pieces ($\leq 5 \times 5$ mm) generally without surviving surfaces. The inclusions were examined using simple magnification and in some cases attribution reflects probable, rather than certain, identification.

Worn: some wear damage to surfaces and edge breaks Much worn: considerable wear damage

Abraded: very considerable wear resulting in loss of surfaces

Inclusions: low content: less than 15%, medium: 15-25%, high: more than 25%

R. rimsherd N. necksherd Be. bellysherd Ba. base-anglesherd N/A measurement not possible

Early Bronze Age pottery

Bowl food vessel

Basal fill 57 of pit 55

Vessel 1. This is represented by 16 sherds (1 rimsherd: **28:5**; 9 necksherds: **57:1**, 6-8, **28:3-4**, 11-13; 5 bellysherds: **57:3**, 5], 4, **28:2**, 7, 17; 1 bodysherd: **28:8**; 1 fragment: **57:9**) from a vessel with a simple, rounded, upright rim, a gently concave neck and belly from which the body tapers sharply to the base. The junctions between the neck and belly, and the belly and body are delineated by low, narrow, pointed horizontal ribs. The brown-buff fabric is smooth with a dark grey core. There is a low content of dolerite and quartzite inclusions ($\leq 3.94 \times 2.92$ mm, up to 4.03×3.7 mm). Neck thickness: 8.4-9.01mm; belly: 10.28mm; body: 9.81mm; weight: 136g. Maximum external rim diameter: c. 136mm.

Decoration A continuous row of V-shaped impressions occurs high up on the neck; in places there are two closely set rows and, occasionally, short bands of similar vertically arranged impressions. On the upper edge of the first rib alternating V-shaped impressions create a raised running chevron. Below, on the upper side of the belly, is a panel of oblique scores. Beneath this is another row of V-shaped impressions.

Encrusted urn

Upper fill 28 of pit 26 that cuts pit 55

Vessel 2. This is represented by 9 sherds (4 rimsherds: **28:6**, 9, 19 (2 conjoined sherds); 5 necksherds: **28:18** (3), 1, 16; 13 fragments: **28:20-32**; 132 crumbs: **28:33-124**, 15 (40); 4 fragments and 27 crumbs: all also **28:19**) from medium-sized vessel with a round-topped, internally bevelled rim, an upright neck and upper body that probably tapers to a narrow flat base. The neck is divided by three ribs: the upper and lower examples are flat-topped and accentuated by deep horizontal grooves; these were impressed and pinched together to form the ribs. The brown-buff buff fabric is smooth and was finished with fine slurry; the core is dark grey. There is a low content of angular dolerite inclusions (\leq

7.14 x 6.7mm, up to 12.07 x 7.98mm). Neck thickness: 15.47–16.56mm; weight: 307g. Maximum external rim diameter: c. 270mm.

Decoration The applied decoration is all arranged horizontally. There is a widely-spaced row of prominent, horizontally arranged, applied rectangular bosses (39.58 x 19.27 x 8.58mm) on the neck; there is a central dip, possibly created by pressing the thumb onto the boss, in the centre. Pendant crescentic motifs, delineated by broad scored lines and filled with two broad whipped cord lines, occur immediately beneath the rim and are arranged between the bosses. Similar, but opposed, crescents occur above and again beneath the upper and lower of the three ribs. The central rib is simply pinched up without defining grooves. The outer faces of the three ribs have closely spaced vertical impressions made with a broad denticulated comb.

Other

A single bellysherd (001:1) came from a disturbed context. This is probably from No. 1 or a similar vessel; weight: 7g.

Vessel No.	Context/feature	Number of sherds	Rimsherds	Necksherds	Base-	Bellysherds	Bodysherds	Fragments	Crumbs	Inclusions	Vessel size , rim (mm)	Weight (g)	Pottery type	Burnished/ decorated
1	57/28	16	1	9	0	5	1	1	0	D Q	136	136	Bowl food vessel	- ■
2	57/28	9	4	5	0	0	0	17	15 9	D	270	307	Encrusted urn	- ■
Other	001	0	0	0	0	1	0	0	0	D	-	7	From Vessel 1?	- -
Total	57/28	26	5	14	0	6	1	18	15 9			450		

D dolerite Q quartzite ■ decorated

Table 3. Details of pottery including individual vessels from Burtown Big (E2992), Co. Kildare.

Appendix 11 – The lithic assemblage from Burtown Big, Co. Kildare (E2992)

By: Maria Soledad Mallia-Guest

Introduction

A total of seven artefacts were recovered during archaeological excavation and environmental processing of the soil samples retrieved at Site E2992 in the townland of Burtown Big (Co. Kildare). The site comprised two areas which initially appeared to represent both domestic and funerary prehistoric activity. A number of possible structural features such as post/stakeholes as well as pits were recorded, with later medieval activity suggested by the presence of a key-hole drying kiln and a number of linear features (O’Neill 2009)

Methodology

A macroscopic analysis of the components was carried out based upon a techno-typological approach following categories developed by Inizan *et al.* (1999). Further contextual background is provided by Woodman *et al.* (2006).

The artefacts were visually examined with the aid of an 8x hand lens, recorded and catalogued using Microsoft Excel 2003. No minimum size criterion was applied for artefact discard; therefore, any other lithic material that may have been retrieved during sample processing was incorporated to contribute to the assemblage integrity. The variables recorded include overall metric attributes (length, width and thickness), type of raw material, fragmentation, and artefact condition to determine if post-depositional, manufacture or use-damage was present.

The Assemblage

The knapped assemblage recovered at Site E2992 (Burtown Big, Co. Kildare) consists of seven lithic artefacts (Table 1) retrieved from five features including three pits (055), (026) and (061) and two postholes (034) and (031). All of these features only included single pieces with the exception of pit (055) and the shallow pit (026) which incorporated two lithic finds apiece. The assemblage, which is in relatively fair to poor condition, is dominated by light buff and grey flint with two examples of local black chert identified. The finds can be further classified into two categories including formally retouched artefacts, and debitage pieces or knapping by-products (Figure 1)

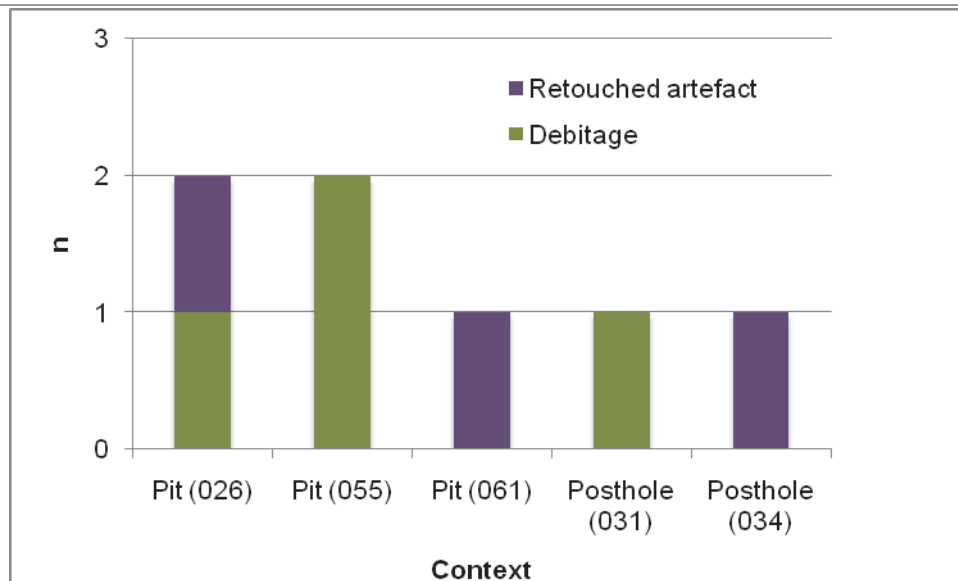


Figure 1 – Distribution of the lithic assemblage from Burtown Big, Co. Kildare (E2992)

None of the artefacts exceed more than 55 mm in length, with three retent finds measuring less than 20 mm (Figure 2).

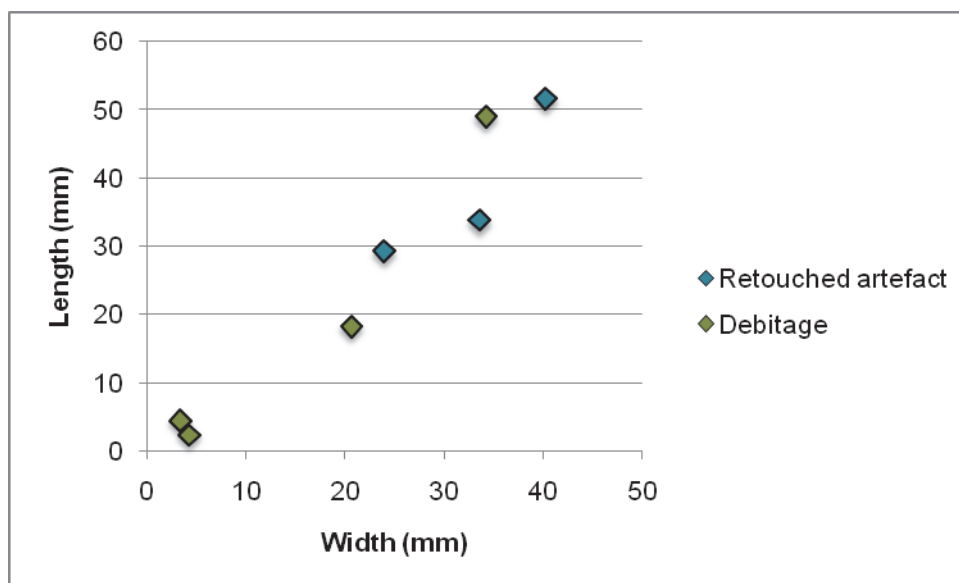


Figure 2 – Width/Length ratios of the knapped assemblage from Burtown Big, Co. Kildare (E2992)

Retouched Artefacts

This category comprises three two formally retouched flint artefacts (E2992:028:014 and E2992:033:001) and a chert example (E2992:062:001) consisting of a medium-large fragmented convex side fragmented scraper and two minimally retouched flakes.

The convex side scraper E2992:028:014 was recovered from the dark brown clayey sand upper deposit (028) within a large shallow irregular pit (026) from which a number of prehistoric pottery sherds were also retrieved (Appendix 10). The find appears to have been manufactured on a naturally backed fine large flake presenting cortical platform. It displays a lustered surface, longitudinal concave fracture on its left edge and a right convex retouched edge. Some evidence of abrasion is present on this fracture, while the right convex edge shows an original series of semi-invasive and

semi-abrupt direct unifacial retouch. The series is relatively weathered and lustered presenting micro-retouch, blunting and some scattered notching by use. The distal portion, however, exhibits a lower angled working edge. All in all, the artefact does not appear exhausted and displays potential for further use.

The minimally retouched flint find (E2992:033:001) was recovered from the single mid-brown sandy clay fill (033) of an oval posthole (034) which was truncated by the above mentioned pit (026). The artefact measures less than 35 mm in length and width and appears to be a modified core waste flake. It presents a rather irregular stepped dorsal surface with cortex remnant at its distal end. The find is patinated and lustered displaying a fracture at its proximal end. The blank shows a very brief series of short direct unifacial retouch on its right edge, which is abrupt (70°) and appears fractured. This edge shows mostly blunting as macroscopic use-damage, however no micro-polish was identified. This find is likely an expediently modified notch.

Finally, a fine rather symmetrical squat black chert artefact (E2992:062:001) was recovered from the single yellow brown sandy silt fill (062) of an oval pit (061). It measures less than 30 mm in both width and length only presenting a slight lustered surface. The find is a finely detached inner angular flake presenting a plain lipped platform prepared by retouched and possibly detached by soft-hammer. It shows straight regular edges both in plan and median view, which display uniform micro-retouch and rounding by use. Two isolated flake scars are visible in distal position which also appear blunted and with micro-retouch. The regular indentations and the rounding visible on the left edge indicates that this was the more intensively utilised edge possibly following a longitudinal motion given its rather low to semi-abrupt working angle (57°-60°). On the other hand, its right edge only shows abrasion and a slight more abrupt working angle. So far the damage observed on the working edge appears to have originated mostly from use rather than formal retouch, however the prepared platform appears to have been further retouched after detachment.

Debitage

Four finds (E2992:057:002, 010, E2992:032:001, E2992:028:125) within the knapping by-product category (Table 1) and includes three small light grey/greyish buff flint pieces measuring less than 20 mm in length and a medium-sized chert example of good knapping quality. With the exception of this chert flake, none of the other by-products are considered suitable blanks for further modification.

The chert example (E2992:057:002) is a dark greyish fine banded cortical flake exhibiting 80% of grey weathered cortex remnant on its dorsal face. It shows a plain unprepared but lipped platform and displays a straight regular edge with potential for trimming. No macroscopic use damage was identified.

The flint debitage consists of a small cortex-backed flake (E2992:057:010), an inner angular flake (E2992:028:125) and an indeterminate chunk (E2992:032:001). All of these were recovered following post-excavation processing of the soil samples.

The small backed flake (E2992:057:010) is a complete example displaying a rather sugary weathered texture and discolouration as well as cortex remnant (20%). Given the abrupt ripples of percussion and the non-differentiated platform it is possible that this find was obtained by the application of bipolar technique, however this remains inconclusive given its isolated nature.

A small heavily patinated and lustered chunk (E2992:029:001) was retrieved from deposit (029) within the large shallow irregular pit (026). The piece shows some faint ripples of percussion, however no further technological attributes are present, indicating that this find is an indeterminate chunk.

The very small flake E2992:028:128 measures less than 5 mm in length and can be classified as a fragmented example of an inner angular flake, presenting a weathered surface and a distal fracture. No other diagnostic attribute were recorded for this find.

Discussion

The knapped assemblage recovered at Site E2992 (Burtown Big, Co. Kildare) comprise a small number of retouched artefacts, mostly minimally modified, as well as undiagnostic knapping by-products.

As no evidence of intense knapping occurring *in situ* is present, it is plausible that the majority of these knapping by-products are residual or accidental inclusions, derived for instance from surface clearance.

From a technological point of view, the assemblage appears to be dominated by platform technology products rather than bipolar pieces. The former is usually associated with earlier prehistoric lithic assemblages while bipolar technique, which requires the use of an anvil on which the nodule to split is placed, has usually been associated with late prehistoric *ad hoc* lithic reduction and it is particularly dominant in Bronze Age assemblages (O'Hare 2005).

Given the undersized nature of this assemblage it is difficult to provide a relative timeframe for the manufacture and use of the lithics. It would appear that forms were more expediently used or underused as in the case of the cortical chert blank. In this regard, it has been noted by Nelis (2004, 171) that from the Middle Neolithic onwards there is a trend towards more minimalist retouch methods. Furthermore, the presence of a large convex side scraper may also shed light on the broad timeframe for the lithic assemblage recovered at Burtown Big (Co. Kildare). A trend towards smaller and more standardised convex scraper forms through time has been proposed, with small sub-circular forms such as thumbnail and disc-shaped varieties dominating from the Early Bronze Age onwards (Nelis 2004, O'Hare 2005, Woodman *et al.* 2006). This would appear to indicate that the form of convex scrapers may have begun to change some time in the Final Neolithic (Woodman *et al.* 2006, O'Hare 2005). If so, it is tentatively considered that the assemblage recovered at Site E2992 (Burtown Big, Co. Kildare) falls within these trends and may not be later than Final Neolithic/Early Bronze Age in date.

A number of sub-circular convex scrapers including the 'disc-shaped and thumbnail' varieties were recovered at the nearby site E2991 (Bray Upper, Co. Kildare), however none of these exceed more than 30 mm in length and appear to broadly fall within a Late Neolithic/Early Bronze Age technological trend, given the presence of some small convex end of flake/blade examples.

In addition, some assemblages along the N9/N10 road stretch, however, have yielded a combination of larger examples of sub-circular scrapers along with a number of platform reduction by-products, such is the case at Baronsland, Co. Kildare (E2878) or Ballymount, Co. Kildare (E2873) (Mallia-Guest 2009) both returning Early Bronze Age radiocarbon determinations.

Convex scrapers appear to have been selected on their size, to be included in specific hoards such as those from Tullynahinion and Beggarstown (Co. Antrim) with long and wide examples being more frequent (Bamforth and Woodman 2004, 25). It has also been pointed out, that size variation among the convex scrapers is likely to suggest multifunctional examples, particularly in relation to those tasks that can be performed by handheld tools versus those requiring hafting arrangements. In many cases, size reduction of convex scrapers would have been the result of the modification and

resharpening of the edges after becoming dulled, with many of these convex examples exhibiting traces of having been shifted from the use as hide scrapers into wood scrapers as they became small (*ibid*, 35).

It is likely that given the size of the flint scraper, this was reduced from a flint beach cobble. This secondary source of raw material is readily available in coastal localities and alternatively in glacial deposits such as till (Woodman et al 2006). Chert on the other hand, is a rather ubiquitous raw material particularly occurring in limestones deposits such as the underlying bedrock in the area (Geological Survey of Ireland 2007). A variety of silicified limestone known as festooned chert was also identified in a number of sites along the N9/N10 stretch. This variety can particularly be sourced in the Lough Derravaragh (Co Westmeath) area, an earlier prehistoric network node where chert would have certainly been circulating as blanks (Mitchell 1972, Little 2008).

Further recommendations

It is envisaged that an illustration of the large convex side scraper E2992:028:014 will suffice as a complement to this report.

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NMI Number	Raw Material	Type	Category	Length (mm)	Width (mm)	Thickness (mm)	State	Condition	Others	Cortex	Position of Retouch	Type of Retouch	Extension of Retouch	Type of use damage	Type of Platform	Preparation	Lip	Colour
E2992:057:002	Chert	Cortical (secondary) flake	Debitage	49.1	34.2	12.8	C	Fair	Ct	80%					Pl	No	Yes	Dark greyish black
E2992:033:001	Flint	Minimally retouched core waste flake	Retouched artefact	33.8	33.5	10.5	F	Fair	Lt, Disc, Ct, Pt	20%	DU	Abrupt 70°	Brief mesial portion right fractured,	Bt	N/A	N/A	N/A	Buff
E2992:028:014	Flint	Convex side scraper on cortex backed flake	Retouched artefact	51.6	40.2	10.2	F	Fair	Pt, Lt	15%	DU	Semi-abrupt 66°	Semi-invasive, extended	Mr, Bt	Cort.	No	No	Light grey
E2992:062:001	Chert	Minimally retouched blank (inner angular flake)	Retouched artefact	29.3	23.9	6.5	C	Fair	Lt	No	DU	Semi-abrupt 68°	short marginal, proximal	L-ABt, Mr, Rd; Ab, Rd right S-A	Pl	Rt	Yes	Black
E2992:057:010	Flint	Cortex backed flake	Debitage	18.3	20.6	7.7	C	Fair	Disc, Pt, Wt	20%					ND	No	No	Light buffish grey
E2992:029:001	Flint	Indet. Chunk	Debitage	4.5	3.3	0.5	F	Poor	Lt, Pt	50%					N/A	N/A	N/A	Light grey transl.
E2992:028:125	Flint	Inner angular flake	Debitage	2.4	4.2	0.1	F	Poor	Wt, Pt	No					ND	No	No	Light grey

Key: Indet: indeterminate; Disc: discoloured, Pt: patinated; Wt: weathered; Lt: lusted; Ct: corticated; DU: direct unifacial; S-A: semi-abrupt; L-A: low-angled; Mr: micro-retouch; Rd: rounding; Ab: abraded; Bt: blunted; Rt: retouched; Pl: Plain; Cort: cortical; ND: non-differentiated.

C: complete; P: pronounced; D: diffuse

Table 1 – Lithic assemblage from Burtown Big, Co. Kildare (E2992)

Appendix 12 – Assessment of metallurgical remains from Burtown Big, E2992 based on visual examination

By Barry Cosham BSc

Introduction

The excavation at E2992 revealed two areas of probable prehistoric activity, one in the mid-east portion of the site, appearing domestic in nature and the second close to the western baulk, appearing to represent funerary activity. A corn-drying kiln of probable medieval date were also recorded (O'Neill 2009). A small quantity of possible metallurgical waste residues was recovered from environmental samples during post-excavation work. The aim of this report is to determine the nature and quantity of these residues and recommend what, if any, further analyses should be undertaken.

Methods

Three samples were recovered during the processing of environmental samples. The remains were quantified and a detailed description compiled, allowing categorisation and identification with reference to Bachmann (1982) and Bayley *et al* (2001). The results and discussion are presented below.

Results

The following table presents the results of the visual assessment.

Sample no.	Context no.	Weight (g)	Description	Interpretation
11	20	<1	Single piece of shiny stone, possible iron stone	Geological
17	14	<1	Several tiny fragments, black colour, very shiny, vesicular, possibly coal/cinders	Geological?
22	30	2	Single piece of shiny stone, possible iron stone	Geological
	Total:	2		

Table 1 – Visual assessment of the possible metallurgical material

None of the examined material was of metallurgical origin.

Discussion

As none of the examined material was of metallurgical origin, no further comment on the assemblage can be made.

Recommendations

It is recommended that no further analyses be undertaken on the material from this site as none of it is of metallurgical origin.

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