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National Roads Authority
Archaeology



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

**N9/N10 Kilcullen to Waterford Scheme Phase 3: Kilcullen to Carlow.
Archaeological Services Contract No. 6 – Resolution, Moone to
Prumplestown.
Final Report on archaeological investigations at Site E2942, in the
townland of Hallahoise, Co. Kildare.**

By: Tara Doyle
National Monuments Registration Number: E2942
Director: Tara Doyle
NGR: Area 1: 2762292/186617, Area 2: 276272/186635

Report Status: Final



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Executive summary

This final report presents the results of archaeological investigations carried out on behalf of Kildare County Council and the National Roads Authority as part of the Archaeological Services Contract No. 6 - Resolution Moone to Prumplestown. The works were undertaken prior to the commencement of construction on this section of the N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. The Minister for the Environment, Heritage and 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 road development. The National Monuments Section Registration Number, E2942 was allocated by the Department for the excavation of the site in Hallahoise townland under the directorship of Tara Doyle 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 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 with 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 on in May 2005 by CRDS Ltd under 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 A021/130 and A021/137 on this site in 2005 identified patches of burnt material and the possible remains of a post medieval structure, two slot trenches and a metallised surface.

Full archaeological resolution was conducted on this site between 14 May 2007 and 15 June 2007. Area 1 revealed: three Early Bronze Age truncated burnt mounds along with associated trough and pits. Three early medieval wells (048), (012) and (020) along with probable associated metallised surface (118); a curvilinear drain (054); numerous pits and linear features which dated from the medieval period through to the modern period were also excavated.

Area 2 also contained evidence of Early Bronze Age activity, (although this was to a lesser degree in comparison with Area 1), with the majority of features here on Area 2 representing medieval and later post-medieval/modern activity. The Early Bronze Age features included a truncated trough (133) along with two pits; (084) and (140), which were interpreted as being contemporary with this trough. Medieval activity was represented by three wells (106), (143) and (087); medieval and later activity was represented by a metallised surface (118), a curvilinear ditch (054), a linear ditch (051) and five pits (062), (113), (122), (126), (136). Similar to Area 1, several modern agricultural drains (009, 021, 023, 028, 088, 119 and 124) traversed this area also.

Two small areas to the immediate northeast and northwest of site E2942 was archaeologically tested prior to archaeological resolution on the main part of the site. This was known as Testing Area 6.b. Five trenches were excavated in this area and no archaeology or artefacts were encountered.

A preliminary report of works on the site was completed and submitted by Headland Archaeology (Ireland) Ltd in May 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 with 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 Ltd between June and August 2005 (Archaeological Services Contract 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 Ltd between January and August 2006 (Archaeological Services Contract 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 1 and 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 Ltd between March and December 2007 (Archaeological Services Contracts 5 and 6). This report details the results of one of those excavations, undertaken under NMSR Number E2942.

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 E2942 was situated in the townland of Hallahoise, parish of Killelan, barony of Kilkea and Moone and was located 2 km northwest of Castledermot, Co. Kildare, National Grid Reference: Area 1: 2762292/186617, and Area 2: 276272/186635 (Figure 1). There is very little information about the townland name itself. The Placenames Database of Ireland suggests it derives from an old English name. The site was located on low lying basin-like pasture, with no rivers or streams in the immediate vicinity. The field was bounded by hedgerows on all four sides. Testing by CRDS revealed two separate areas (A021/0130 and A021/137) of archaeology; these were incorporated into one site (E2942) and during resolution were identified as Area 1 and Area 2.

An earthwork (RMP KD038-044) and a ringfort (RMP KD038-042) are located 700 m and 600 m to the southeast and south-southeast of site E2942 (Figure 2). An enclosure site (RMP KD038-043) is situated 750 m to the south-southeast, while a further enclosure site is located 700 m to the southwest (RMP KD037-051). Approximately 1 km to the northwest and northeast of site E2942 were a further four monuments. A miscellaneous site (RMP KD038-062) and a possible ringfort, rath or cashel (RMP KD038-036) were situated to the north-northeast of the site. To the north-northwest was a ringfort (RMP KD038-035) and an urn burial site (RMP KD037-024).

Many sites were excavated as part of this road scheme within 1 km of site E2942. Situated approximately 200 m north-northeast of Site E2942 was Site E2941. This site contained a small early medieval bowl-shaped kiln (T. Doyle 2010a). Located 550 m to the north-northeast of E2942 was a prehistoric burnt mound site E2940 (T. Doyle 2010b). Located over 1 km north-northeast of Site E2942 was a further burnt mound. This was located on Site E2995 (T. Doyle 2010c). A previously unknown ringfort, Site E2996 was also located over 1 km to the north-northeast of Site E2942. Approximately 75% of the enclosure ditch lay within the road corridor (T. Doyle 2010d). An early medieval date was returned from a lower ditch enclosure deposit.

To the south of site E2942 several further sites were identified on this road scheme. In an adjacent field to the south was site E2943. Here, two phases of activity was identified. A burnt mound returned an Early Bronze Age date, while a well, situated to the south of the site returned a medieval date. (T. Doyle 2010e). Site E2948 was situated approximately 500 m to the south of Site E2942. Here, four Iron Age pits and several post medieval features were identified (L. Doyle 2010a). Located approximately 800 m to the south of Site E2942 was site E2949. The majority of activity on this site dated to the early medieval period and comprised pits, charcoal production pits and evidence of metal working (L. Doyle 2010b). Two small Neolithic pits and further evidence of medieval metal working activity was identified on site E2951 (L. Doyle 2010c). This site was situated over 1 km southeast of E2942.

3 Aims and methodology

The objective of the work was the preservation by record of any threatened archaeological features or deposits in advance of the proposed road construction.

Topsoil stripping of the site was conducted using a 360° tracked machine fitted with a 1.9 m wide ditching (toothless) bucket under archaeological supervision. A proposed area of 534 m² was extended slightly to the northwest to remove a hedge, increasing the site to a total area of 685 m². 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 were drawn at scale of 1:50 and 1:20, and sections at 1:20 and 1:10. Registers are provided in the appendices (Appendices 1-7).

Ordinance Datum levels and feature locations were recorded using Penmap and a total station theodolite.

Environmental samples and 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. Four wood samples were recovered from fills within two of the wells (087) and (106). These were analysed for species identification and any tool markings by Simon Gannon (Appendix 9).

A loop-headed ring pin (E2942:042:001) was recovered from a slump deposit in one of the wells (143). This was immediately sent to conservator Claudia Koehler and has since returned conserved. A large pit produced a flat headed nail (E2942:068:001) and a piece of wood with a nail or tack (E2942:068:002) on one side. All artefacts recovered during the excavation were assigned a unique number and treated in accordance with National Museum of Ireland guidelines. A total of 76 soil samples taken during the excavation were selected for processing and environmental assessment/analysis (Appendix 8).

Full archaeological resolution was conducted on this site between 14 May 2007 and 15 June 2007. The crew on site E2942 consisted of 1 director, 2 supervisors and 12 site assistants.

Following excavation, palaeoenvironmental remains, waterlogged wood, faunal remains, ferrous artefacts and a knapped stone assemblage were analysed by the appropriate specialists and reports produced on the findings for incorporation into this report (see Appendices 8-13).

4 Excavation results

Two distinct and localized areas with archaeological features were identified at the site (Figure 3, Plate 1). Area 1, measuring approximately 1,700 m², was located within the southern portion of the site; Area 2, measuring approximately 1,000 m², was located within the northern portion of the site.

Area 1 was dominated by Early Bronze Age activity, represented by three burnt mounds (BM1, BM2 and BM3), and a series of seven pits (017), (033), (040), (056), (065), (073), (075) and (077) along with one linear pit (033). Later activity dating to the medieval period was also identified and was represented by two pits; (043) and (067). Additionally, several modern agricultural drains; (003), (005), (007), (009), (019), (021), (028), (029), (060) and (088) traversed this area.

Area 2 also contained evidence of Early Bronze Age activity, (although this was to a lesser degree in comparison with Area 1), with the majority of features here on Area 2 representing medieval and later post-medieval/modern activity. The Early Bronze Age features included a truncated trough (133) along with two pits; (084) and (140), which were interpreted as being contemporary with this trough. Medieval activity was represented by three wells (106), (143) and (087); medieval and later activity was represented by a metallised surface (118), a curvilinear ditch (054), a linear ditch (051) and five pits (062), (113), (122), (126), (136). Similar to Area 1, several modern agricultural drains (009, 021, 023, 028, 088, 119 and 124) traversed this area also.

There was frequent ground disturbance across the site. This was due to a concentration of modern agricultural drainage systems that traversed the both areas, truncating many archaeological features.

Prehistoric activity

The remains of three burnt mounds (BM1, BM2 and BM3) were identified in Area 1. These potentially represented the earliest phase of archaeological activity at site E2942.

Burnt Mound 1 (BM1): The first and largest of three burnt mounds (BM1, Figure 4) was identified in the southwest part of the site. A pit (075) represented the earliest archaeological feature under the mound. This was a small circular pit with a sharp break of slope at the top, concave sides leading into a concave base. It measured 0.60 m in diameter and 0.18 m deep. It contained a single fill of loose brown peat (076) with charcoal inclusions (E2942:036; Appendix 8). A sub-circular shaped pit (065) was identified approximately 0.10 m northeast of Burnt Mound 1. It had a gradual break of slope at the top, concave sides leading into a concave base. It measured 1.55 m long by 0.86 m wide and 0.24 m deep. It contained a single fill of loose dark grey silty clay (066) with occasional charcoal, sub-angular stones and a moderate amount of sandstones inclusions.

Over the pit was a deposit (049) that consisted of firm medium grey clay. It measured 14.55 m long by 10.72 m wide and 0.10–0.16 m deep and possibly represented the original topsoil horizon. Directly over this was moderately compact black silt clay (048) with inclusions of charcoal and heat shattered sandstones (E2942:014, 015, 016, 017, Appendix 8). It measured 5.66 m long by 4.06 m wide and 0.05–0.10 m deep. Alder charcoal recovered from soil retent (E2942:017; Appendix 8) was suitable for radiocarbon dating. This returned a date range of 2140-1770 cal BC (2 σ) (SUERC- 25409; Appendix 11). This represented the main burnt mound deposit. A single flake of grey flint (E2942:048:001; Appendix 13) was also recovered from this deposit.

The uppermost fill (050) of the burnt mound comprised loose brown peat and measured 2 m long by 1.85 m wide and 0.08 m deep. In total, Burnt Mound 1 measured 16 m long by 11 m wide with a maximum depth of 0.16 m.

A small pit (073) truncated Burnt Mound 1. It was oval in shape, with a sharp break of slope at the top, concave sides leading to a concave base. It measured 1.35 m long by 0.94 m wide and 0.19 m deep. It was filled with loose black clayey sand (074) with inclusions of heat-shattered sandstone and charcoal (E2942:035; Appendix 8).

Two pits were identified less than 1 m northwest of Burnt Mound 1 (Figure 5). The first and larger of the two (056) was an oval shaped pit orientated in a northwest-southeast direction. It measured 1.72 m long by 1.10 m wide and 0.16 m deep. It had rounded corners, a gradual break of slope at the top, steep concave sides, leading to a flat base. Its basal fill (058) consisted of firm charcoal-rich black silty clay (E2942:019; Appendix 8). It measured 0.41 m long by 0.35 m wide and 0.03-0.06 m deep. Above this (058) was loose grey silty sandy clay (059). It measured 0.27 m long by 0.20 m wide and 0.03 m deep. Directly over this (059) was loose medium orange yellow sand (057) that measured 1.33 m long by 0.80 m wide and 0.05-0.12 m deep. The uppermost fill (103) consisted of moderately compact silty sand clay. This measured 0.55 m long by 0.44 m wide and had a maximum thickness of 0.07 m. This pit was truncated by a modern agricultural drain (060). A second pit (077) was situated to the immediate northwest. It was circular in plan with a sharp break of slope at the top to the north, west and east sides, a gradually sloping side to the south, leading into a concave base. It measured 1.19 m long by 1.05 m wide and 0.47 m deep. It contained four fills. The basal fill (078) consisted of moderately compact light grey silty clay with occasional stone and charcoal pieces. This measured 0.80 m long by 0.79 m wide and 0.14 m deep. Over this was moderately compact medium grey silty clay (079) with a moderate amount of medium sized stones and occasional charcoal flecking. It measured 0.51 m long by 0.38 m wide and had a maximum depth of 0.25 m. Directly over this lay loose dark grey silty clay (080) with frequent charcoal flecking. It measured 0.60 m long by 0.58 m wide and 0.19 m deep. The upper fill (081) in this pit (077) comprised of loose dark grey silty clay

with frequent charcoal flecking. It measured 0.71 m long by 0.60 m wide and had a maximum depth of 0.18 m. This pit was truncated by an agricultural drain (019). The area surrounding both pits described above (056) and (077) were disturbed. This was possibly due to a combination of factors including ground disturbance to the natural subsoil (002) and burnt mound deposit (048) by the construction of the two modern drainage ditches (060) and (019).

Burnt Mound 2 (BM2): A second burnt mound (BM 2, Figure 6) was located approximately 2 m northeast of Burnt Mound 1, and measured 9 m long by 8 m wide. No features were identified under the mound. The lowermost burnt mound deposit (032) consisted of firm grey silty clay (E2942:008; Appendix 8) and measured 7.90 m long by 4.60 m wide and 0.04–0.13 m deep. Similar to the lower deposit from Burnt Mound 1 (049), this deposit (032) probably represents the remains of the original surface. Directly above this deposit (032) was a deposit (012) (Plate 2) that comprised heat shattered sandstone in a matrix of firm black charcoal-rich silty clay (E2942:001; Appendix 8). It measured 4.45 m long by 2.35 m wide and 0.13 m deep. Above this again, was a deposit of firm grey brown silty clay (013). A small amount of unidentifiable seeds were recovered from a soil sample taken from this deposit (E2942:005; Appendix 8). It was situated to the south of the burnt mound and measured 2.10 m long by 2 m wide and 0.05 m deep. The upper deposit of Burnt Mound 2 comprised a natural build up of firmly compact medium brown silty clay (015). It measured 9 m long by 8 m wide and 0.03–0.05 m deep and covered the entire burnt mound. A modern agricultural linear drain (019) truncated the mound to the north, and a modern linear ditch (088) truncated BM2 to the northeast.

Burnt Mound 3 (BM3): The third burnt mound identified during testing was located towards the southeast corner of the site (Plate 3). This mound (020) consisted of a single deposit of heat shattered sandstone in a matrix of charcoal-rich black silty clay (020). A large quantity of charcoal was recovered from a soil sample taken from this fill (E2942:002; Appendix 8). The burnt mound was heavily truncated by modern linear ditches (028), (088) and (005). Tree root disturbance was evident throughout. It measured 2.20 m long by 1.50 m wide and was 0.10 m deep.

An irregular linear feature (033) was situated approximately 9 m northeast of Burnt Mound 3. It extended in a northwest/southeast direction and had a moderate break of slope at the top, concave sides leading to a tapered base. It measured 1.10 m long by 0.48 m wide and 0.20 m deep. It was filled with firm black clayey silt (034) with yellow flecking throughout and occasional stone inclusions. A moderate amount of charcoal and occasional moss and twigs were recovered from a soil sample taken from this fill (E2942:010; Appendix 8). An irregular sub-oval shaped pit (040) was identified immediately north of the linear feature (033) described above. It had a gradual break of slope at the top, concave sides leading to a rounded base to the southeast and a flat base to the north. It measured 3.20 m long by 1.50 m wide and 0.02 – 0.08 m deep. It contained a single fill that comprised firm grey yellow silty sand (041) with occasional small stone inclusions. A small amount of charcoal and shell was recovered from a soil sample taken from this fill (E2942:012; Appendix 8). Approximately 3 m southeast of the pit (040) and linear feature (033) described above was an irregular oval-shaped pit (017). It had a gradual break of slope at the top, concave sides leading to a flat base. It measured 1.10 m long by 0.95 m wide and varied between 0.04–0.13 m deep. It contained a single fill of firm dark grey clayey silt (016) with occasional small stone inclusions. A small amount of charcoal was recovered from a soil sample taken from this fill (E2942:009; Appendix 8).

Burnt mound activity in Area 2: Further evidence of burnt mound activity was identified in Area 2 to the north. The remains of a truncated trough (133) was situated approximately 22 m north-northwest of Burnt Mound 1. It was sub-rectangular in plan and orientated north-south direction. It had rounded corners, a gradual break of slope at the top, concave sides and a concave base. It measured 2.90 m long by 1.50 m wide and 0.20 m deep. It contained a single fill (134) of loose dark brown black silty sand with charcoal and heat shattered sandstone inclusions. An abundant amount of charcoal

was recovered from a soil sample taken from this fill. This was identified as *pomoidea* charcoal (E2942:073; Appendix 8). The charcoal was suitable for radiocarbon dating and returned a date range of 1750 – 1500 cal BC (2 σ) (SUERC- 25410; Appendix 11). This trough (133) was truncated to the south by a well (143).

A further two pits (Plate 4), potentially contemporary with the trough (133), were located approximately 3 m to the southeast. Pit (084) was irregular in plan and (140) was oval in shape in plan, both with a gradual break of slope at the top, concave sides leading to an irregular rounded base (Figure 7). The first pit (084) measured 2.20 m long by 1.86 m wide and had a maximum depth of 0.23 m. It contained a lower fill (086) that comprised firm dark grey black clay sand with frequent inclusions of small heat-shattered sandstone and measured 1.70 m long by 1.65 m wide and 0.20 m deep. Charcoal was recovered from a soil sample taken from this fills (E2942:043; Appendix 8). Animal bone from a large unidentifiable mammal was also recovered from this fill (E2942:049; Appendix 10). The upper fill (085) in this pit (084) comprised moderately compact dark brown grey silty sand with frequent inclusions of small and medium sized stones. It measured 1.46 m long by 0.60 m wide with a maximum depth of 0.08 m. Further charcoal was recovered from a soil sample taken from this fill (E2942:042; Appendix 8). A fragment of unidentifiable bone was also recovered from this soil sample (Appendix 10). This pit (084) was truncated by a modern agricultural ditch (021).

The second pit (140) was located 0.75 m to the northeast of pit (084). It measured 2 m long by 1.50 m wide and was 0.29 m deep. The lower fill in this pit also comprised firm dark grey black clay sand (142) with frequent inclusions of small heat shattered sandstone. It measured 1.58 m long by 1.40 m wide and was 0.18 m thick. The upper fill (141) in this pit (140) comprised moderately compact dark brown grey silty sand with frequent inclusions of small and medium sized stones. It measured 2 m long by 1.70 m wide and 0.11 m deep.

Medieval and later activity

The second phase of activity on Site E2942 occurred in historic times with the earliest features dating from the medieval period. In Area 2 one of three wells (106) (Plate 5, Figure 8) was located 0.50 m to the west of the prehistoric pits (084) and (140). This well was irregular sub-oval in plan and orientated northwest/southeast direction. It had a sharp break of slope at the top, irregular concave sides to the north and south and convex sides to the east with gently sloping side to the west, which fell vertically into a rounded base (Plate 6). It measured 3.50 m long by 2.05 m wide and 1.70 m deep. It contained four fills. The basal fill (114) consisted of loose light grey silty sand with occasional flecks of charcoal. This context measured 0.72 m long by 0.64 m wide and 0.32 m deep. A total of 52 fragments of animal bone were recovered from this fill (E2942:081; Appendix 10). The fragments of bone represented pig, sheep, goat and unidentifiable medium sized mammals. A rib bone from a sheep or goat was sent for radiocarbon dating and a date range of cal. AD 690-900 (2 σ) (SUERC- 25409; Appendix 11) was obtained.

Above this fill (114) was firm light grey yellow clayey sand (069). It measured 1.46 m long by 2.05 m wide and was 0.44 m thick. A nutlet of sedge (*Carex sp. Indet.*), charcoal, beetle and insect remains and (E2942:058; Appendix 8), fragments of wood (E2942:027; Appendix 9) and hazelnut shells (E2942:028; Appendix 8) were recovered from sample taken from this fill. Also recovered were burnt and unburnt bone from cattle, pig, sheep, sheep or goat and unidentifiable medium sized mammals (E2942:033; Appendix 10). Directly over this fill (069) was loose compact brown grey clayey sand (070) with occasional inclusions of medium sized stones. This fill measured 1.43 m long by 2.05 m wide and was 0.29 m thick. Charcoal and mollusc shell, hazelnut shell, and wood fragments were recovered from a soil sample taken from this fill (E2942:045, 055, Appendix 8). Plant remains were also identified within these samples and included hawthorn (*Crataegus monogyna*), meadow and creeping buttercup (*Ranunculus acris/repens*), nettle (*Urtica urens/dioica*), knotgrass (*Polygonum sp.*), daisies (*Asteraceae sp.*),

thistle (*Cirsium arvense*), common spike-rush (*Eleocharis* sp. Cf. *E. palustris*), bramble (*Rubus fruticosus*) and an abundant amount of indeterminate seeds. A large amount of animal bone was also recovered from this fill. The bone included pig, sheep, sheep or goat and unidentifiable medium sized mammals (E2942:029, 030, 034; Appendix 10). Two clusters/deposits of animal bone (071) and (072) were also identified above this deposit. Both bone clusters formed a small mound of bone and were identified as a sheep or goat. Directly above the bone clusters was a deposit of loose light grey brown silty sand (111) that measured 2.55 m long by 2.80 m wide and 0.28 m deep. This fill contained occasional small stones, charcoal unidentifiable bone, wood fragments and plant remains (E2942:059; Appendix 8). The plant remains included creeping buttercup (*Ranunculus acris*), fat hen (*Chenopodiaceae* indet.), violets (*Viola* sp.), sedge (*Carex* sp. Indet.), bramble (*Rubus fruticosus*) and indeterminate seeds. This well (106) was truncated by a further well (143).

A second well (143) truncated the well (106) and was roughly circular in plan with a sharp break of slope at the top, concave sides leading to a rounded base. It measured 5 m long by 3.20 m wide and 1.60 m deep. Its basal fill (027) consisted of loose brown grey silty sand with occasional sub-angular stone inclusions. It measured 0.50 m long by 0.40 m wide and was 0.20 m thick. Charcoal, burnt bone, hazelnut shell and plant remains were recovered from a soil sample taken from this fill (E2942:087, Appendix 8). The plant remains included hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), meadow buttercup (*Ranunculus acris*), docks (*Rumex* sp.), common spike-rush (*Eleocharis* sp. Cf. *E. palustris*), bramble (*Rubus fruticosus*) and numerous other indeterminate seeds. Directly over this fill (027) was a purple brown peat (110) with inclusions of sand, wooden twigs, charcoal, hazelnut shell, plant remains and medium to large sized stones (E2942:051, 086, Appendix 8). Plant remains included black elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), buttercup/crowfoot (*Ranunculus* sp.), meadow buttercup (*Ranunculus acris*), common spike-rush (*Eleocharis* sp. Cf. *E. palustris*), sedge (*Carex* sp. Indet.), bramble (*Rubus fruticosus*), raspberry (*Rubus ideaus*) and indeterminate seeds. Animal bone was also recovered and included cattle, sheep or goat, dog and unidentifiable bone fragments (E2942:079, Appendix 10). This fill (110) measured 3.17 m long by 2.80 m wide and had a maximum depth of 0.50 m. Directly over the peat was friable dark brown grey silty sand (042) with frequent sub-rounded stone, occasional flecks of charcoal and mollusc shell (E2942:052, Appendix 8). Animal bone recovered from this fill included cattle and horse (E2942:080, Appendix 10). A loop-headed ring pin (E2942:042:001, Appendix 12) was recovered from the base of this fill (Figure 9); pins of this type have been found to date to the 10th to 11th centuries AD (Appendix 12). This deposit (042) was located to the north of the well and measured approximately 3 m long by 2.18 m wide and 0.30 m deep. A further deposit (109) was located to the south of the well. This measured 2.08 m long by 2.05 m wide and 0.49 m deep. It comprised of moderately compact light grey silty sand with frequent inclusions of small stones, plant remains, charcoal lumps, mollusc shell and small fragments of unidentifiable burnt bone. (E2942:057; Appendix 8). The plant remains were identified as black elder (*Sambucus nigra*), sedge (*Carex* sp. Indet.), bramble (*Rubus fruticosus*) and indeterminate seeds. Situated above both deposits (042) and (109) was loose dark red brown clayey silt (107) with frequent inclusions of wooden twigs, plant remains, hazelnut shell and mollusc shell (E2942:053; Appendix 8). It measured 2.50 m long by 2.80 m wide and 0.26 m deep. Plant remains were identified as meadow buttercup (*Ranunculus acris*), dock (*Rumex* sp.), ribwort (*Plantago lanceolata* L.), common spike-rush (*Eleocharis* sp. Cf. *E. palustris*), bramble (*Rubus fruticosus*), raspberry (*Rubus ideaus*) and an abundant amount of indeterminate seeds. A thin layer of loose light grey brown silty sand (138) with inclusions of small stones overlay this fill (107) to the north and measured 2.80 m long by 1.16 m wide and 0.08 m deep.

Within the south of the well (143) was a further thinly spread deposit (108). It consisted of firm dark brown silty sand with occasional charcoal flecking, burnt bone, plant remains, fragments of wood and mollusc shell (E2942:050; Appendix 8). Few plant remains were identified within this fill and included black elder (*Sambucus nigra*), violets (*Viola* sp.), sedge (*Carex* sp. Indet.), bramble (*Rubus fruticosus*) and

indeterminate seeds. It measured 1.20 m long by 1.20 m wide and 0.15 m deep. The uppermost fill (026) in the well (143) comprised of moderately compact grey, red and dark brown silty sand with occasional stone inclusions (Samples E2942:013, 054). The plant remains included creeping buttercup (*Ranunculus repens*), sedge (*Carex sp. Indet.*), bramble (*Rubus fruticosus*), and some indeterminate seeds. It measured 4.90 m long by 2.80 m wide and varied in thickness from 0.35–0.40 m. Modern agricultural drains (021) and (023) truncated the upper three fills (026), (138) and (108) of the well (143).

A third well (087) (Figure 10, Plate 7) was located 4.50 m northeast of the two wells (106) and (143) described above. It was sub-circular in plan and orientated in a northwest-southeast direction. It had a rounded break of slope at the top, steeply sloping sides for over 1 m which fell into to a vertical drop for a further 1.10 m. The lower half of the well was circular, leading into a rounded base. The well (087) measured 3.58 m long by 3.05 m wide and 2.48 m deep. Two deposits were identified in the basal circular part of the well. The lowermost fill (145) consisted of loose medium grey silty sand with inclusions of small to medium sized stones, wooden fragments, plant remains and charcoal (E2942:089; Appendix 8). It measured 0.45 m long by 0.40 m wide and 0.80 m deep. The plant remains included meadow buttercup (*Ranunculus acris*) and an indeterminate amount of seeds. Above this was moderately compact grey black silty clay (144) with frequent charcoal, burnt bone and plant remains and medium sized sub-angular stone (E2942:088; Appendix 8). The plant remains identified included creeping buttercup (*Ranunculus repens*), and bramble (*Rubus fruticosus*). This fill (144) measured 0.60 m in diameter and 0.90 m deep. The stump or trunk of a tree was identified at the base of this fill.

The upper part of the well became wider and the sides less vertical. Here, several slump deposits were identified. Within the west of the well, a total of four slump deposits were recorded. The lowermost was a small deposit of charred wood (130). This was identified as oak and appeared to be a single timber broken into three pieces (Sample E2942:068; Appendix 9) with charring only occurring to the upper side. Each piece measured approximately 0.20 m long by 0.10 m wide and was 0.03 m thick. Above the wood (130) was firm black brown silty clay (090) with a moderate amount of heat shattered sandstone and charcoal inclusions (E2942:062; Appendix 8). Animal bone was also recovered from this fill and included fragments from cattle and unidentifiable large mammals (E2942:084; Appendix 10). Above this fill (090) was firm brown grey silt (091) with no inclusions (E2942:063; Appendix 8). It measured 1.20 m long by 1.65 m wide and 0.18 m deep. The final slump deposit on the western side of the well measured 1.65 m long by 0.75 m wide and was 0.19 m deep. It consisted of firm brown grey silty clay (095) with occasional charcoal and plant remains (E2942:061; Appendix 8). The plant remains included persicaria (*Presicaria sp.*) and indeterminate seeds. Cattle bone was also recovered from this fill (E2942:092; Appendix 10). Two slump deposits were located on the east side of the well, the lowermost comprised firm brown grey silty sand (092) with occasional stone inclusions. It measured 1.30 m long by 0.90 m wide and 0.22 m deep. Above this was firm brown grey silty clay (093) with occasional plant remains, charcoal, burnt bone and stone inclusions (E2942:070; Appendix 8). The plant remains comprised violets (*Viola sp.*), raspberry (*Rubus ideaus*) and a few indeterminate seeds. This fill (093) measured 1.70 m long by 0.80 m wide and 0.18 m deep.

A further six fills were identified in the well (087). The lower of the six (125) overlay two fills (095) and (093). This fill was represented by a cluster of wooden branch fragments (E2942:066; Appendix 9) with dimensions of 200-400 mm long and 50 mm wide. The branches were identified as oak (Appendix 9). Directly over the branches was firm dark brown clay (094) with charcoal and burnt plant remains (E2942:065; Appendix 8). It measured 1.40 m long by 1.30 m wide and 0.34 m deep. The plant remains included black elder (*Sambucus nigra*), creeping buttercup (*Ranunculus repens*), violets (*Viola sp.*), bugle (*Ajuga reptans*), bramble (*Rubus fruticosus*) and raspberry (*Rubus ideaus*). Burnt and unburnt animal bone was also recovered from this fill (094) and included cattle, pig and a quantity of

unidentifiable fragments (E2942:067; Appendix 10). Also recovered from this fill (094) were three fragments of unworked oak wood (E2942:078; Appendix 9). Directly over this fill (094) was dark brown grey silty clay (096) with charcoal, plant remains and burnt bone inclusions (E2942:064; Appendix 8). It measured 1.30 m long by 1.42 m wide with a maximum depth of 0.25 m. The plant remains included black elder (*Sambucus nigra*), bramble (*Rubus fruticosus*) and a moderate amount of indeterminate amount of seeds. A slump deposit (097) overlay this (096) to the east. It measured 1.95 m long by 0.95 m wide and 0.20 m deep and comprised firm brown grey silty clay. Directly above this slump deposit was a thin layer of loose brown black sandy silt (098) with charcoal and occasional plant remains (E2942:048; Appendix 8). The plant remains included persicaria (*Presicaria* sp.) and bramble (*Rubus fruticosus*). It measured 0.90 m long by 0.87 m wide and 0.04 m deep. The penultimate deposit within this well (087) comprised firm grey brown silty clay (099) with no inclusions. It measured 1.05 m long by 1.54 m wide and 0.07 m deep. The uppermost fill (100) consisted of firm light brown clayey silt with orange flecking throughout. It measured 1.50 m long by 1.90 m wide and 0.08 m deep.

An irregular circular pit (126) was located 0.80 m north of the well (087) described above. It had a gradual break of slope at the top, stepped concave sides to the north and vertical sides to the south, leading into a round base. It measured 2.10 m long by 1.52 m wide and 0.36 m deep. It contained four fills. The lowermost fill (127) comprised loose grey clayey sand with frequent charcoal inclusions (E2942:074; Appendix 8). Animal bone fragments from cattle, pig sheep or goat was also recovered (E2942:072; Appendix 10). Above this (127) was loose black clayey sand (131) with frequent charcoal inclusions (E2942:076; Appendix 8). This fill had a depth of 0.03 m. Directly above this was a fill that comprised moderately compact grey clay (039) with stone and root inclusions. This had a depth of 0.36 m. The uppermost fill (132) comprised loose grey black clayey sand with charcoal and burnt bone inclusions (E2942:075; Appendix 8). Animal bone was also recovered from this fill (E2942:085; Appendix 10) and included pig and several fragment of unidentifiable bone. This fill had a depth of 0.11 m.

A second pit (136) was identified 12 m to the south-southwest of the pit (126) described above (106). It was circular in shape with a sharp break of slope at the top, steep sides to the north and sloping sides to the south, the base was flat. It measured 0.92 m long by 0.89 m wide and 0.42 m deep. It contained three deposits. The lowermost fill (139) consisted of firm yellow grey silty clay and measured 0.52 m long by 0.29 m wide and 0.16 m deep. A deposit of packing stones (146) was placed over the soil described above (139) to the north of the pit. The stones appeared to slope into the fill (139) at its thinnest point, making a semi-circle shape. Directly over the stones was firm grey brown silty clay (137) with no inclusions. This varied in depth from 0.03–0.05 m and formed the upper fill in the feature.

A linear feature (051) and a pit (062) were located to the west of the pit (136). The linear feature (051) extended in a northwest/southeast direction and continued beyond the site into the adjacent field. It had a gradual break of slope at the top, concave sides leading to a flat base. It measured 6.10 m long with a maximum width of 1.25 m and varied in depth from 0.04 – 0.37 m. It was at its widest point to the extreme northwest. This linear (051) contained three fills. The first comprised dark grey silty sand (053) with frequent inclusions of charcoal, mollusk shell and small stone inclusions (E2942:021; Appendix 8). A moderate amount of unidentifiable animal bone was also recovered from this fill (E2942:082; Appendix 10). This fill (053) had a maximum depth of 0.17 m. The second fill consisted of firm light brown grey clay (063) with some charcoal and small stone inclusions (E2942:022; Appendix 8). This fill varied in depth from 0.04–0.25 m. The upper deposit in linear (051) had a maximum depth of 0.08 m and comprised loose dark brown black silty sand (052) with frequent charcoal, mollusc shell and occasional stone inclusions (E2942:020; Appendix 8). Situated to the immediate north of the linear feature (051) was a pit (062). It was circular in shape with a gradual break of slope at the top, concave

sides leading to a rounded base. It measured 1.20 m long by 1.07 m wide and 0.25 m deep. It was filled with loose dark brown silty sand (064) with occasional charcoal inclusions.

A curvilinear shallow ditch (054) was identified less than 2 m south of the linear feature (051) described above. This ditch (054) meandered across the site in an east/west direction and was truncated by a field boundary ditch (028) and several modern agricultural drainage ditches (023) (124), (119), (088), (060) and (009). It had a sharp break of slope at the top, concave sides leading into a concave base. Approximately half of the feature was stone lined with compact small pebbles (Plate 8). In total the ditch (054) measured 18.20 m long by 0.68–0.90 m wide and had a maximum depth of 0.11–0.29 m. A relationship between three lower fills within the ditch could not be determined; this was due to truncation of the ditch (054) by the agricultural activities mentioned above. The first fill comprised loose grey silty clay (117) with a maximum depth of 0.18 m. The second fill consisted of light grey clayey silt (055) with occasional small stone inclusions. This had a maximum depth of 0.08–0.20 m. The third fill comprised loose light brown clayey silt (101) with frequent inclusions of small stones and was 0.18 m deep. Directly over these three lower fills (117, 055, and 101) was loose medium brown silty sand (105) with frequent small stones and root inclusion. It had a maximum depth of 0.11 m.

Directly south of curvilinear ditch (154) and situated to the west of site, was a sub-rectangular shaped metal surface (118). Beneath the surface was moderately compact brown grey sandy silt (135) with frequent charcoal and occasional mollusk shell inclusions (E2942:077; Appendix 8). This deposit had a depth of 0.03–0.05 m and was possibly laid in preparation for the stone surface. The tightly packed pebbles and stones (118) were placed into the deposit (135) described above and in total measured 14.50 m long by 7.50 m wide and 0.10 m deep. Testing carried out by CRDS in 2005 recovered a post-medieval pottery sherd and an iron staple from the metal surface (Ó Drisceoil and Jennings 2006). A small pit (122) truncated the metal surface (118) to the north. This pit was oval in shape with a sharp break of slope at the top, concave sides leading to a flat base. It measured 1.15 m long by 1.05 m wide and 0.14 m deep. It contained a lower fill of loose dark brown clayey silt (121) with frequent charcoal and small stone inclusions (E2942:071, Appendix 8). It measured 0.55 m in diameter and 0.04 m deep. The upper fill (120) comprised loose medium brown clayey silt (120) with charcoal, stone and unburnt bone inclusions (E2942:069; Appendix 8). This fill had a depth of 0.10 m.

An isolated pit (113) was identified approximately 5.50 m southwest of the metal surface (118). It was oval in shape and orientated in a northwest/southeast direction. It had a vertical break of slope at the top, concave sides leading to a flat base. It measured 1.03 m long by 0.57 m wide and 0.35 m deep. It contained two fills. The lower fill comprised loose dark brown clayey silt (115) with charcoal and unburnt bone inclusions (E2942:060, Appendix 8). The upper fill consisted of loose brown clayey silt (112) with charcoal and stone inclusions.

A large pit or possible well (067) was located approximately 20 m directly southeast of the pit (113) described above. It was sub-oval in shape and orientated in a northwest/southeast direction. It had a gradual break of slope at the top, with irregular sloping sides that fell into a slightly concave base. It measured 4 m long by 2.70 m wide and 1.05 m deep. It contained a single fill (068) of moderately compact grey brown silty clay (068) with charcoal, plant remains and hazelnut shell inclusions (E2942:041; Appendix 8). Animal bone was also recovered from this fill and included cattle horse, sheep or goat and numerous unidentifiable fragments (E2942:031, 047; Appendix 10). A heavily corroded flat headed nail (E2942:068:001) and a long thin piece of worked wood with a tack/nail at one end (E2942:068:002) were also recovered from this fill. These have a date range from the medieval period to the 19th century (Appendix 12)

A smaller pit (043) (Plate 9) was identified 15 m southeast of pit or well (067) described above. This pit was sub-circular in shape and had a sharp break of slope at the top, gradually sloping sides leading to a concave, roughly square shaped base. It measured 1.24 m long by 1.10 m wide and 0.33 m deep. It contained four fills. The lowermost fill (044) comprised loose grey silty clay with stone inclusions and measured 1 m long by 0.90 m wide and 0.03–0.06 m deep. Above this (044) was loose medium brown silty clay (045) with charcoal, plant remains, occasional stone inclusions and burnt and unburnt bone (E2942:018; Appendix 8). The plant remains included mustards (*Brassica/Sinapis* sp.), pea family (*Fabaceae* sp. *Indet.*), broad bean (*Vicia faba*), field pea (*Pisium sativa*) and a quantity of indeterminate seeds. Also identified were some cereal grains including oat (*Avena* sp.), hulled barley (*Hordeum vulgare*), wheat (*Triticum* sp.) and club/bread wheat (*Triticum aestivo-compactum*). This fill (045) measured 0.82 m long by 0.75 m wide and 0.05 m deep. Directly over this was loose dark brown silty clay (046) with stone inclusions. It measured 1.24 m long by 1.10 m wide and had a maximum depth of 0.18 m. The uppermost fill (047) comprised loose dark brown grey silty clay with occasional stone inclusions. It measured 1.15 m long by 1.03 m wide and 0.13 m deep. This pit was truncated by a modern agricultural drain (007).

Loose grey silty clay (083) was identified in both Area 1 and Area 2. It filled every dip, natural depression and stone socket across the site.

Modern agricultural activity

Despite the fact that during excavation the site was dry with no indication of drainage issues, a total of 13 modern drainage ditches (029), (060), (019), (007), (005), (003), (119), (124), (021), (023), (009), (082) and (088) and one boundary ditch (028) (Figure 11) traversed the site at various angles. The majority of these truncated archaeological features. The amount of drainage suggests the site was, or is still prone to flooding during wetter months.

5 Testing results: Area 6.b (Figure 1)

Testing was carried out in two areas to the northwest and northeast of site E2942. Here, topsoil was removed from five test trenches to a depth where the natural subsoil was encountered. This was in order to expose any existing archaeological features. Two trenches (1 and 2) were located in the area to the northwest, with the remaining three (3, 4 and 5) were located to the northeast. No archaeological features were identified in the five trenches.

Northwest trenches

The first test trench, 1:6b (Plate 10), was orientated in a northwest/southeast direction. It measured 42.50 m long by 1.90 m wide. The natural subsoil was encountered at a depth of 0.27–0.30 m. The natural comprised grey yellow boulder clay with frequent angular stones. A sub-soil lay directly over the natural and comprised light yellow brown gritty silty clay that had an average depth of 0.07 m. The topsoil had a depth of 0.20 m and comprised medium brown silt clay. No archaeological features were identified in this trench.

The second trench, 2:6.b, was located to the immediate northeast of test trench 1:6.b. It was orientated in a northeast/southwest direction and measured 14.50 m long by 1.90 m wide and 0.25–0.28 m deep. The subsoil consisted of light brown yellow silty clay with a varied depth of 0.08–0.10 m. The topsoil comprised medium brown silty clay with a depth of 0.18–0.20 m. No archaeological features were identified in this trench

Northeast trenches

Test trench 3:6.b was orientated in northeast-southwest direction and measured 56 m long by 1.90 m wide. The natural subsoil was encountered at a depth of 0.29–0.35 m and comprised grey orange boulder clay with frequent angular stones. The subsoil consisted of light yellow brown silty clay with a depth of 0.05–0.09 m. The topsoil was medium brown silty clay with a depth of 0.24–0.26 m. No archaeological features were identified in this trench.

Test trench 4:6.b was located to the immediate northwest of test trench 3:6.b. It was orientated in a northwest-southeast direction and measured 3.50 m long by 1.90 m wide and 0.30–0.32 m deep. The subsoil consisted of light yellow brown silty clay that had a varied depth of 0.05–0.08 m. The topsoil comprised of medium brown silty clay that was 0.22–0.24 m deep. No archaeological features were identified in this trench.

Test trench 5:6.b was located to the immediate southeast of test trench 3:6.b. It was orientated in a northwest-southeast direction and measured 10 m long by 1.90 m wide and 0.30–0.35 m deep. The subsoil comprised light yellow brown silty clay with a depth of 0.07–0.10 m. The subsoil consisted of medium brown silty clay that was 0.23–0.25 m deep. No archaeological features were identified in this trench.

6 Discussion

The results of the excavation at Site E2942 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.

Dating and chronology

The archaeological material excavated on Site E2942 was attributed to two separate periods. The earliest activity occurred in the Early Bronze Age and included three burnt mounds (BM1, BM2 and BM3), 10 pits (017), (040), (056), (065), (073), (075), (077), (084) (133), and (140) and a linear feature (033). Two radiocarbon dates were obtained from features associated with burnt mound activity. The earliest date came from a lower fill (048) in Burnt Mound 1. Alder charcoal recovered from a soil sample (E2942:017, Appendix 8) returned a calibrated radiocarbon date range of 2140-1770 BC (2 σ) (SUERC- 25409; Appendix 11). A date was also obtained from a trough (133) situated to the northwest of site. Pomoidea charcoal returned a calibrated radiocarbon date range of 1750 – 1500 BC (2 σ) (SUERC- 25410; Appendix 11). Although the date obtained from the trough is slightly later, this still places the burnt mound activity at the site in the Early Bronze Age.

The second phase of activity dated to the medieval period and included three wells (106), (143) (087), a metalled surface (118), a curvilinear ditch (054), a linear ditch (051), six pits (126), (136), (062), (122), (113), (043) and a large pit or possible well (067). Many of these features were disturbed by later modern agricultural activity. A radiocarbon date was obtained from the lowermost fill (114) of well (106). A fragment of sheep/goat rib (bone) returned a calibrated radiocarbon date range of AD 690-900 (2 σ) (SUERC- 25295; Appendix 11), thus placing this well's (106) period of use in the early medieval period. As well (106) was truncated by well (143), it can be ascertained that the latter (143) dated to this period or later.

6.1 Early Bronze Age activity

The main focus of Early Bronze Age activity occurred to the south of site in Area 1. Here, the archaeological features encountered were relatively straight forward with no complex stratigraphy. Three burnt mounds were excavated. One pit (075) was identified beneath Burnt Mound 1 and one small pit (073) truncated it. No archaeological features were associated with Burnt Mound 2 or Burnt Mound 3. Burnt Mound 2 and Burnt Mound 3 were both heavily truncated by post-medieval agricultural features. A single flake of grey flint (E2942:048:001; Appendix 13) was recovered from a deposit (048) in Burnt Mound 1.

Early Bronze Age activity to the north of site, in Area 2 comprised two pits (084) and (140) and one trough (133). There was no evidence of a burnt mound in the immediate vicinity of the three features and it is feasible that a burnt mound may have been removed in antiquity or more recent times. This may have occurred during the construction of the wells during the medieval period or through subsequent agricultural activities like ploughing and drainage. Evidence of burnt mound activity was identified in a slump deposit (090) situated to the lower part of one of the wells (087). Here, the slump deposit (090) comprised firm charcoal rich black brown silty clay with a moderate amount of heat shattered sandstones. This well was located to the immediate northeast of the trough (133). This slump deposit may be all that remained of a further burnt mound in immediate the area.

Environmental evidence

A total of 17 soil samples were taken from Early Bronze Age features on Site E2942. These samples provided limited environmental evidence. A varied amount of charcoal was identified in all 17 samples. The remains of mollusc shell was identified in two soil samples taken from deposits (032) (041) in Burnt Mound 2 and a fill (074) in pit (073). Unidentifiable plant remains (E2942:005 and E2942:008; Appendix 8) were found in soil samples taken from burnt mound deposits (032) and (014). Moss and twigs (E2942:010; Appendix 8) were recovered from a soil sample taken from linear feature (033). One nutlet of sedge (*Carex sp. Indet.*) and an indeterminate seed was identified in a soil sample (E2942:073; Appendix 8) taken from the fill (134) in a trough (133) located to the northwest of site. The seed and nutlet are more than likely intrusive plant remains. No further environmental evidence was identified as belonging to this phase of activity.

Animal bone fragments were recovered from a pit (086) located to the northeast of site. Eight large mammal shaft fragments of animal bone (E2942:049; Appendix 10) were recovered from the basal fill (086) in pit (084). These fragments possibly derived from the same bone (Appendix 10). One unidentifiable charred bone fragment was recovered from a soil sample (E2942:042; Appendix 10) taken of the upper fill (085) in the same pit (*ibid.*). No further animal bone was recovered from features associated with burnt mound activity.

The technology associated with Burnt mounds/fulachtaí fiadh

The technology associated with burnt mounds is well known. Stones were heated in a nearby fire and placed in a water-filled trough or pit. The pit was sometimes lined with timber, stones, clay or reed matting. The heat from the stones would then bring the water to boil. Once cool, the stones were removed from the trough or pit and discarded, creating a characteristic burnt mound or spread of heat-shattered stones. How the boiled water was subsequently utilized, however, is more difficult to ascertain.

Grogan *et al.* have concluded from the quantities of heat-shattered stone forming most spreads and mounds that sites were likely used multiple times on separate occasions and that most sites would have had an extended, if periodic, use history (2007, 91). Using digital terrain modeling, they calculated that the average number of uses per site was approximately 250 (*ibid.*). They also noted that spoil was occasionally present on top of earlier mounds indicating that troughs had possibly been repositioned (*ibid.*).

Water was an essential component in the function of a burnt mound. The siting of this monument type is noteworthy as they are almost invariably located close to a water source (e.g. Ó Neill 2000). This was well demonstrated during the North Munster Project (Grogan 2005) where burnt mounds identified were located along the margins of wetland, small lakes, turloughs, bog and marsh as well as the edges of river estuaries and on the banks of rivers and streams. The burnt mounds at Site E2942 were located in a low-lying area where water would have naturally collected. Modern drainage across the site would indicate water may still accumulate quite easily, possibly indicating a high water table. Site E2942 was excavated during the summer, the site was very dry and no water was present in any of the features. Equally, any natural water course on site may have been altered to improve drainage of the land.

Burnt mounds in Ireland

In general burnt mounds or *fulachta fiadh* have been identified in almost every part of the country and are the most common prehistoric monument in Ireland (Waddell 2000, 174). The number of identified burnt mounds or *fulachta fiadh* in the country is constantly increasing and there are at least 7,000 currently known (Grogan *et al.* 2007, 81). In recent years large infrastructural projects have identified many more of these sites. They formed the majority of sites identified in advance of the gas pipeline

to the west (*ibid.*) A total of 75 sites were excavated in 2007 on the N7 Nenagh to Limerick HQDC, 41 of these found to have burnt mound or *fulacht fiadh* activity (Paul O'Keeffe pers. comm.). The occurrence of recently excavated burnt mounds on infrastructural projects to the east of the country appears to be less frequent. In advance of the N9/N10 Kilcullen to Waterford Road Scheme: Kilcullen to Powerstown, a total of 15 sites out of a total of 64 produced burnt mound activity. On this particular part of the same road scheme, N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow, 15 burnt mounds were excavated out of a total of 102 sites. Within Ireland the majority of dates returned from Burnt mounds range from Final Neolithic to the late Medieval period; however the majority of Burnt mounds were Bronze Age in date (Brindley and Lanting, 1990).

Burnt mounds excavated in the vicinity of E2942

It has been well documented that *fulachta fiadh* or burnt mounds can be densely concentrated in areas that were suitable for their construction. Ó Drisceoil (1988, 676) described that they are often found in groups, some up to 10 or more. Evidence of burnt mound clusters can be found within the immediate area of Site E2942. Located in the adjacent field to the south of this site (E2942) was site E2943; a burnt mound was identified to the north of site. In addition, two pits associated with burnt mound activity and a well were identified to the south (T. Doyle 2010e). A trough, identified beneath the burnt mound returned a radiocarbon date range of 1940-1680 cal BC (2σ) (SUERC- 25438). This date is similar to the date obtained for Burnt Mound 1 (E2942). On Site E2943, two phases of archaeological activity was also identified. The first occurred during the Early Bronze Age, the second during the medieval period.

A further burnt mound site, E2940, was located approximately 600 m to the northeast of Site E2942, in the townland of Coolane. Here, two separate burnt mounds, a burnt spread and several underlying and associated features were excavated (T. Doyle 2010b). The earlier of the two burnt mounds returned a radiocarbon date range of 1960-1690 cal BC (2σ) (SUERC- 25418) from hazel charcoal recovered from a pit beneath one of the burnt mounds. Again this date range is similar to the dates obtained from burnt mounds on Site E2942 and E2943. A later Bronze Age date range of 1400-1050 cal BC (2σ) (SUERC- 25416) was returned from alder charcoal recovered from a trough under a second burnt mound and the burnt spread returned a date range of 1440-1190 cal BC (2σ) (SUERC- 25416) (*ibid.*).

Approximately 1 km northeast of Site E2942 was a burnt mound site, E2995. Alder charcoal was recovered from a pit under the burnt mound deposit and a radiocarbon date range of 1630-1410 cal BC (2σ) (SUERC- 25414) was returned (T. Doyle 2010c). Many of the pits and troughs situated under the burnt mound on site E2995 contained the basal remains of stake-holes or postholes. The presence of stake-holes/postholes suggests the use of a possible wooden rack or spit. It is possible these stakes and posts at the base of pits/troughs may have been utilized as part of some small industrial or domestic activity (*ibid.*).

A fourth burnt mound was located approximately 1.5 km to the northeast of Site E2942 at Site E2939. Here, a heavily truncated burnt mound was excavated (T. Doyle 2010f). Some humified wood returned a radiocarbon date of 4550-4370 cal BC (2σ) (SUERC- 25323). The early date is possibly due to disturbance throughout the burnt mound deposits. All four sites (E2939, E2940, E2943 and E2995) described above were situated on low-lying land. A further burnt mound Site (99E0434) was situated in the immediate vicinity of Site E2995 in 1999 on the Ballyvass to Athy gas pipeline (N. Gregory 1999). Excavation revealed an Early Bronze Age *fulachta fiadh* with three shallow pits and two troughs. Two flint scrapers were recovered from the base of one of these pits (*ibid.*).

Historical reference to the function of burnt mounds/fulachta fiadh

References to these archaeological features can be found in early literature as well as in more recent folk memory. The earliest recorded reference to the term *fulacht* occurred in *Cormac's Glossary* from approximately AD 900 (Ó Drisceoil 1988, 673). The earliest description of burnt stone technology, where a basin of gruel is cooked with fire-heated stones, is from the medieval 'Latin Life of St. Munnu' and dates to before the 15th century (Ó Neill 2000, 79). In Geoffrey Keating's early 17th century *The history of Ireland (Foras feasa ar Éirinn)* detail is given as to how the 'Fian' would cook their quarry over pits of hot stones and in water filled pits, heated by hot stones. In this account the hunters would use a second pit of boiling water to bathe (ibid. 80).

The term *fulachta fiadh* itself is composed of two Irish words. The first means 'recess' or 'cavity' and by extension came to be associated with pits, pits specifically used for cooking, the act of cooking and sometimes even the food itself (Ó Drisceoil 1988, 673; Ó Drisceoil 1990, 158). The second word has two possible interpretations: *fiadh*, of the deer or of the wild, and *fian*, a roving band of hunters or warriors, occasionally 'of the *Fianna* or Fionn Mac Cumhail' in reference to a mystical army who hunted and lived outdoors (Ó Drisceoil 1988, 673).

The traditional interpretation of these monuments is that they were cooking sites, a view supported both by the early texts and folk memory (Ó Drisceoil 1988; Ó Drisceoil 1990) and experimentation (O'Kelly 1954). The texts presented above frequently give a dual function of cooking and bathing for the sites. However, other theories about their use have also been put forward. These include: bathing, brewing, leather working, and use as sweathouses or as multifunctional sites. It is most likely that burnt mounds were multifunctional or that different sites were used for different purposes

6.2 Medieval and later activity

The second phase of activity on Site E2942 occurred during the medieval period. This was mostly centered to the northwest of site in Area 2. Here, a well (106) was constructed to the immediate southwest of the Bronze Age trough (133) and pits (084) and (140). This well (106) was later re-opened as a second, much larger well (143). The opening of this second well (143) was possibly due to the silting of the first (106). A third separate well (087) was located approximately 4 m to the northeast.

The remaining features on Site E2942 were identified as early medieval or later in date. These features were mostly isolated with very little stratigraphy to phase them. These included pits (126), (062) (113) (043) and pit/possible well (067). One pit (036) truncated the upper fills of well (106) to the south. A pit (122) truncated the metalled surface (118) to the northwest. Many of these features were also truncated by modern drainage and included pits (126) (122) (043), linear (051), metalled surface (118) and curvilinear ditch (054). Two of the features mentioned above (067) and (043) were located to the south of site in Area 1.

Environmental evidence

Medieval activity on Site E2942 produced an abundant amount of environmental evidence.

Waterlogged samples were analysed from the fills of the three wells, (087), (106) and (143), within Area 2 and were found to contain a large assemblage of non-charred plant remains. A large range of wild taxa were found. These included: sedges (*Carex* sp.), bramble (*Rubus fruticosus*), blackthorn (*Prunus spinosa*), violets (*Viola*), black elder (*Sambucus nigra*), hazel (*Corylus avellana*), midlands hawthorn (*Crataegus monogyna*), fat hen family (*Chenipodium* sp.), thistle (*Cirsium arvense*), dock (*Rumex* sp.) and the common nettle (*Urtica dioica*), amongst others. Wood fragments were also

observed within the samples and uncharred hazel nutshell fragments were also present within Sample 041, the fill (068) of pit (067) (Appendix 8).

Overall, bramble (*Rubus fruticosus*) was the most dominant plant species within the three wells (106), (143) and (087). It can be found in woodland, hedgerows, scrubs, heaths, waste ground and river banks (Clapham, Tutin, Warburg 1962). Elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), dock (*Rumex sp.*), nettle (*Urtica urens/dioica*) daisies (*Asteraceae sp.*) thistle (*Cirsium arvense*) and fat hen (*Chenopodium sp.*), also prefer to grow in woodlands, hedgerows and waste ground, while creeping buttercup (*Ranunculus repens*) and ribwort (*Plantago lanceolata*) grows in wet pastures and fields. Violets (*Viola sp.*), inhabits damp areas such as fens, or on pastures that are occasionally grazed and tend to flood in winter (ibid.) Sedge (*Carex sp.*) tend to prefer wet lowland areas associated with flooding. Persicaria (*Persicaria sp.*) and knotgrass (*Polygonum sp.*) prefer areas near ponds or streams. Common spike-rush (*Eleocharis palustris*) grows in marshes and along stream banks, and in wet meadows and flood areas. Bugle (*Ajuga reptans*) prefers damp broadleaved woodlands, damp pastures and meadows (ibid.).

The presence of all of these taxa suggest that the immediate environment surrounding all three wells (106), (143) and (087) comprised of damp, wet disturbed ground that possibly was prone to flooding (Appendix 8). As evidenced from the number of damp-loving taxa (e.g. sedges and bramble) identified in the assemblage, it can be asserted that pooling of water seems to have taken place around the wells. This pooling is likely to have been a result of spilling of water around the wells during their lifetime together with water collecting around these features after they had gone out of use (Appendix 8). Evidence of arboreal taxa was identified by the presence of hazelnut shell, elder fruits and blackthorn fruit stones (ibid.) and suggests the presence of scrubby woodland (comprising of hawthorn. Hazel, blackthorn and elder trees) in the immediate vicinity rather than a mature woodland.

A pit (043) located to the south of site E2942 also contained plant remains. A soil sample (E2942:045; Appendix 8) taken from a middle fill produced mustard fruits (*Brassica/sinapis sp.*), field pea fruit (*Pisum sativa*), pea family fruit fragments and broad bean fruit (*Vicia faba*). Cereal grains were also identified within this soil sample club/bread wheat (*Triticum aestivo-compactum*), wheat (*Triticum*), hulled barley (*Hordeum vulgare*), oat (*Avena sp.*) and indeterminate cereal. The presence of 76 cereal grains and 96 plant remains would suggest plant and crop cultivation was taking place in the southern area of the site. These plant remains are much different to the seeds and fruits found within the wells (106), (143) and (087). The mix of legumes and grain possibly indicated this pit is later in date. Similar pits were excavated at a 15th century site on the N6 Ballinasloe to Athlone road scheme at Capppydonnell, Co. Offaly (Lyons 2009), thus suggesting a similar timeframe for the use of pit (043). As this pit assemblage also contained small quantities of charcoal fragments, burnt bone and unburnt bone, it is likely that it functioned as a domestic refuse pit.

Worked wood was recovered from two wells (106) and (087) on site E2942. Small fragments of whole roundwood alder (*Alnus*) was collected from a lower fill (069) in the well (106) described above. One of these fragments was possible hewn or torn at one end (Appendix 9). No tool marks were evident (ibid.). Three wood samples were recovered from a further well (087). All three were identified as oak (*Quercus*). No obvious tool marks were identified on all three pieces, yet one fragment (E2942:066; Appendix 9) had a possible angle truncation similar to an axe/adze cut (ibid.) A large tree stump was identified at the base of the well. There was no evidence of tool marks or alteration to the stump. There was also no evidence of alder or oak within the macro-plant assemblage detailed above in the previous paragraph. Alder prefers to be near water and as already noted, the presence of three wells and evidence of associated damp-loving taxa been recovered from within the well fills, the presence

of a water loving tree is not surprising. While the presence of oak which prefers drier ground, suggests that it may not have come from the immediate vicinity of the site (Appendix 9).

Site economy - faunal evidence

Apart from one pit (084) dating to the Bronze Age period all the animal bone on site came from medieval contexts with the majority coming from the three wells (106), (143) and (087). Examining the contents of these three wells produced an interesting assemblage of animal bones which gave insight to the early medieval economies. Overall it was evident that the general bone assemblage recovered represented slaughter waste rather than domestic refuse (Appendix 10). No definite butchery pattern was evident from the site and there seemed to be no particular age preference.

Firstly as already noted, the assemblage within well (106) was dominated by sheep and goat; this was followed by pig and a small number of cattle (Appendix 10). The bones represented by the dominant species here mostly came from the head and limbs regions of the animals; some with evident butcher marks while the analysis suggesting at least eight individuals (Appendix 10). This supports the interpretation of this been slaughter waste with the distal ends of the carcass been discarded. Although the majority of pig bone came from one fill (070) and represented the remains of one immature individual aged between 7 -11 months old, suggesting the possibility of sub-adult animals been used aswell.

Interestingly, cattle were not the dominant domesticated species present in the animal bone assemblage. Sheep or goat was the dominant species as evident with the material recovered from wells (106) and (143), while the third well (087) contained a smaller bone assemblage with only a small amount identifiable to cattle and pig. Other pits on site contained the bones of cattle, sheep, goat, pig, horse, dog and cat. The presence of goat bone in the assemblage on Site E2942 is rare in medieval rural sites in Ireland (McCormick and Murry 2007, 42). As stated already, this assemblage seemed to reflect butchery and carcass preparation rather than domestic refuse (Appendix 10). A possible area for the activity may have taken place to the south of the curvilinear ditch (054) on a small metal surface (118), although this cannot be proved for definite.

Artefacts

One ring pin (E2942:042:001; Appendix 12) (Figure 9) was recovered from a lower fill in well (143). The pin is made of iron and represents an example of a kidney-ringed, brambled polyhedral-headed pin with a saltire motif lozenge-shaped central panel (Appendix 12). According to Fanning (*ibid.*, 41) the kidney-ringed class of pin developed in Ireland out of the plain-ringed polyhedral-headed pin during the mid-late tenth century and was a style that was adapted by the Scandinavian population. The kidney-ringed variety then continued in use throughout the eleventh century with examples known from Dublin and Knowth (*ibid.*). A workshop for their manufacture was also found during excavations at High Street, Dublin. These pins were then re-exported into Irish society from the Hiberno-Norse settlements. Other finds of this type of pin are from secular sites such as Lagore and Omev Island, Co. Galway and it has been noted that finds of this type are increasing rare to the west of the Shannon.

A nail (E2942:068:001; Appendix 12) and a tack (E2942:068:002; Appendix 12) were recovered from a pit (067) to the south of burnt mound 1. Both artefacts have a date range between the early medieval period to the 19th century. These three artefacts demonstrate a continued presence on this site from the early medieval into the high medieval period.

Further artifacts were recovered during the initial testing phase of this project which was carried out by CRDS in 2005 which recovered a post-medieval pottery sherd and an iron staple (Ó Drisceoil and

Jennings 2006) from a metallised surface (118) located to the southeast of well (106). These were found on the surface itself and may have fallen from the topsoil while test excavations were taken place.

Medieval activity excavated in the vicinity of E2942

A well, similar to those at Site E2942 was excavated as part of this road scheme on the adjacent site, E2943, producing a date range of 1020-1220 cal BC (2 σ) (SUERC- 25439) (T. Doyle 2010e). Further evidence of medieval activity in the area was located at Site E2941 situated approximately 400 m to the northwest (T. Doyle 2010a), where a shallow hearth or kiln returned a date range of cal AD 610-770 (2 σ) (SUERC-26386). Situated less than 1 km to the northeast of Site E2942 was a ringfort, Site E2996 (Doyle, T 2010d); a basal fill of the ditch enclosure returned a date range of cal AD 670-770 (2 σ) (BETA-243988). This was a previously unknown ringfort that was excavated as part of this road scheme. The remains of a wooden kiln structure possibly dating to the 9th century (*ibid.*) were excavated within the ringfort. A further keyhole-shaped cereal-drying kiln was located immediately northeast of the ringfort at Site E2938 (T. Doyle 2010g). This kiln returned an earlier radiocarbon date range of cal AD 390-540 (2 σ) (SUERC-25415).

However, the main focus of historic activity occurred within 1 km to the south and southeast of Site E2942. A Late Iron Age charcoal production pit was excavated at site E2948 (L. Doyle 2010a), which was located approximately 500m south of Site E2942. Situated approximately 750m to the southeast of Site E2942 was Site E2949 which contained evidence of charcoal production and metal working activities that was dated from the late 9th to mid-11th centuries AD (L. Doyle 2010b). A similar site, Site E2951, was located approximately 1km southeast of Site E2942. Activity from this site (Site E2951) was generally dated to the 10th and 11th centuries AD (L. Doyle 2010c).

Evidence of rural medieval well sites in Ireland

There are very few comparisons in Ireland at present for medieval wells identified on sites with prehistoric burnt mound activity. Two wells were identified under burnt mounds excavated on the gas pipeline corridor to the west of Ireland. The first was found at Ballycorick, Co. Clare (02E1186: Halpin 2007, 171), where a large sub-circular pit or natural depression was identified. This measured 10.20 m long by 9 m wide with a depth of at least 1.85 m. This feature was vertical on all sides but one, where the slope was gradual. The author suggested the sloping side was intentional to provide easy to recovering the water. The well was purposely in-filled with wood debris from willow and hazel trees and a large alder tree stump was located near the base showing evidence of woodworking on both sides (*ibid.*). The second well was situated at Castlemungret, Co. Limerick (02E1736: Taylor 2007, 263-264). This well was interpreted as the earliest phase of activity at that site and measured 8-9 m in diameter and was 3.50 m deep. It was a sub-circular pit with stepped sides. This was suggested to aid access to the feature. A small platform and stake-holes were located to the south. Further stake-holes were identified at the top and base of the well; some were interpreted as the remains of possible hand rails. The well returned a date range of 1253-1007 cal BC (*ibid.*).

Other wells/springs have been identified dating to the post-medieval period. During excavations on the N7 Castletown to Nenagh road scheme eight burnt mounds found in Camlin townland all drew their water from wells sunk into a spring line. The main burnt mound was part of a spring/well marked on the 1835 Ordnance Survey map. A burnt mound recently excavated at Ballyglass West, Co. Galway (Kerrigan 2009) was situated at the base of a slope on a spring line. The same spring line attracted a post medieval well.

6.3 Conclusions

The dates achieved placed archaeological activity on Site E2942 to two separated time periods. The first occurred during the Early Bronze Age and is represented by Burnt mound activity (Area 1 and 2). The second occurred during the medieval period and associated primarily with a series of wells (Area 2). This site (E2942) and the immediate site to the north (E2943) clearly formed part of a larger complex of archaeological activity dating to the same periods.

The three burnt mounds excavated on Site E2942 did not reveal a great deal of environmental evidence and only one pit was identified beneath Burnt Mound 1. Similar to the majority of burnt mounds excavated as part of this road scheme and throughout the country, the exact function of the burnt mound activity on Site E2942 remains speculative. As burnt mounds are mostly located on wet ground, they are often truncated by modern drainage or ploughing. The burnt mounds on E2942 were no exception to this.

Both E2942 and E2943 revealed medieval well activity. This possibly suggests that during this period inhabitants in the Hallahoise area associated the distinctive black soil and heat-shattered sandstone with naturally occurring groundwater. This association would have saved them time and effort in identifying suitable water sources. Equally, the area may just have been very wet and the placement of wells here, entirely coincidental. A comparative study of environmental material from the well on site E2942 and other wells identified in the area also merits further investigation. This may provide a greater insight into land clearance, possible agricultural practices and in general the overall historic landscape not only within the local area or county, but possibly add to the growing mass of information emerging from similar sites across the entire country that have not yet been published.

Much of the information collected and analysed for the sites excavated as part of this road scheme including E2942 merits further study not only as individual sites in their own right, but collectively, representing a previously unknown prehistoric and historic landscape in County Kildare dating from the Neolithic to the Medieval period.

7 Archive

The site archive is comprised of the following materials:

Item	Quantity
Context Sheets	146
Plans	15
Sections	40
Photographs	205
Registers	6
Notebooks	1

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, Unit 1, Wallingstown Business Park, Little Island, Co. Cork. It is proposed that following completion of post-excavation the archive is deposited with Kildare County Council.

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- Graphics department, Headland Archaeology (Ireland) Ltd.
- Patrycja Walczak and Nial O'Neill, Site Supervisors, Headland Archaeology (Ireland) Ltd.
- The excavation team.

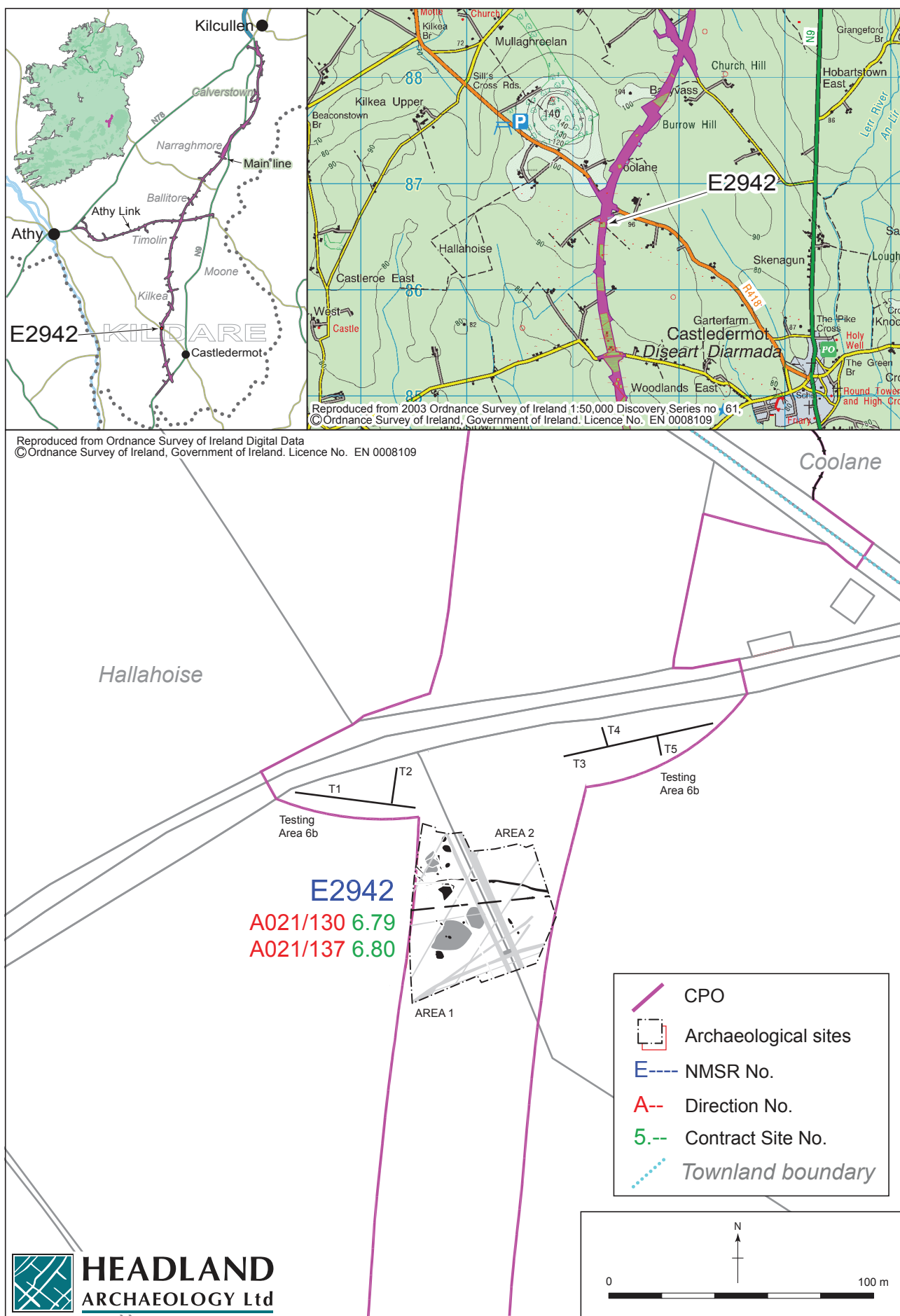
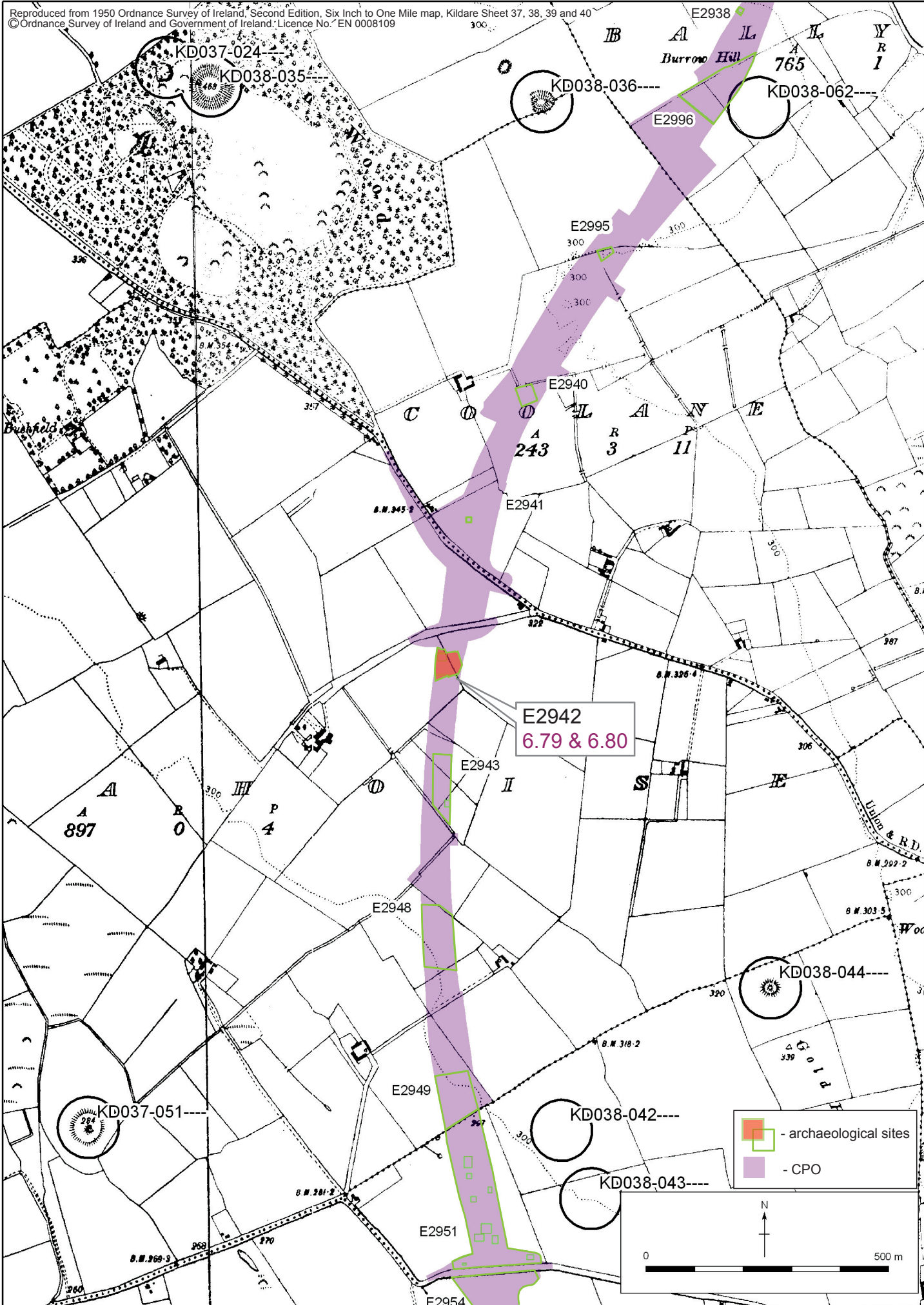


Figure 1 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown:
E2942, Site location.



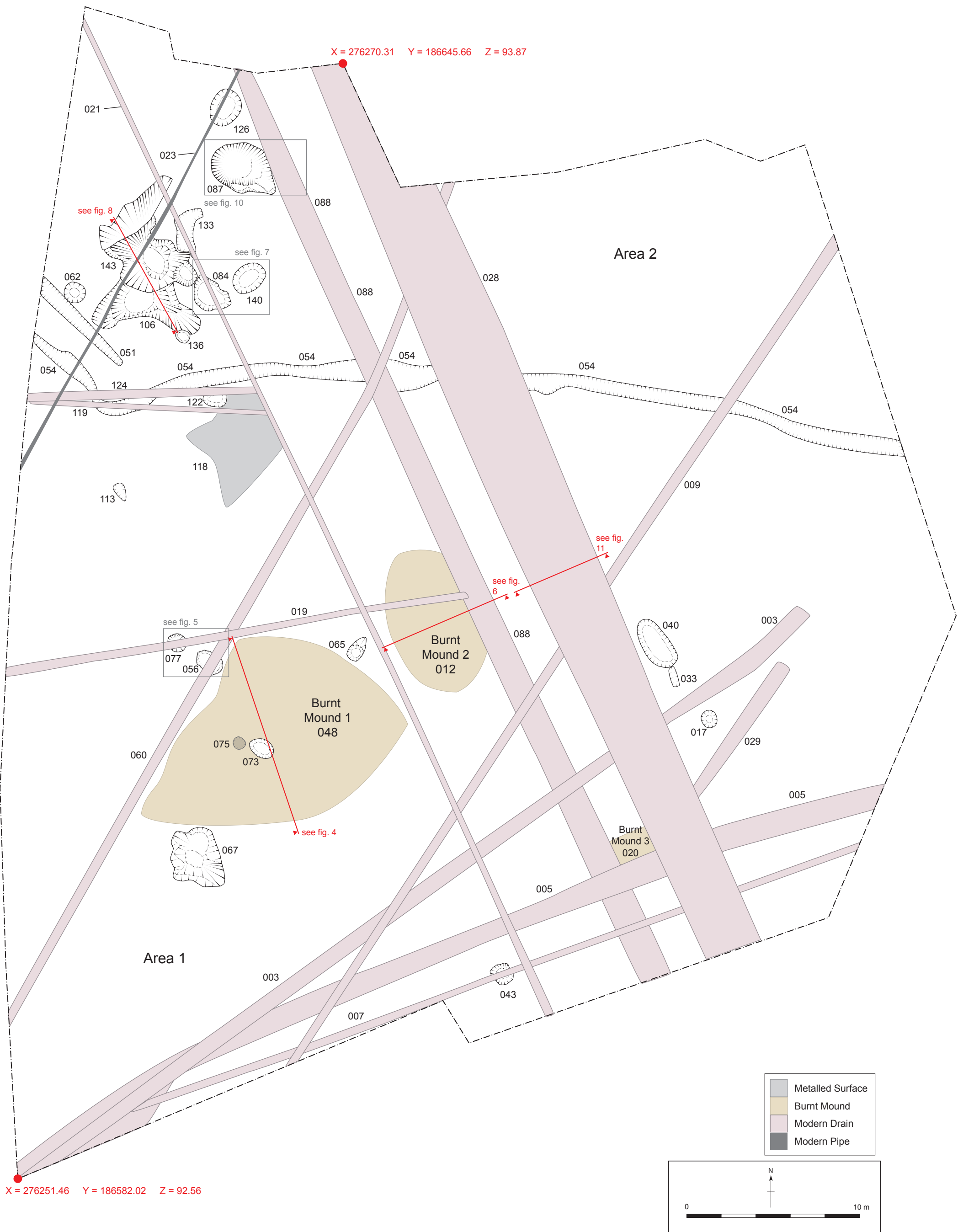
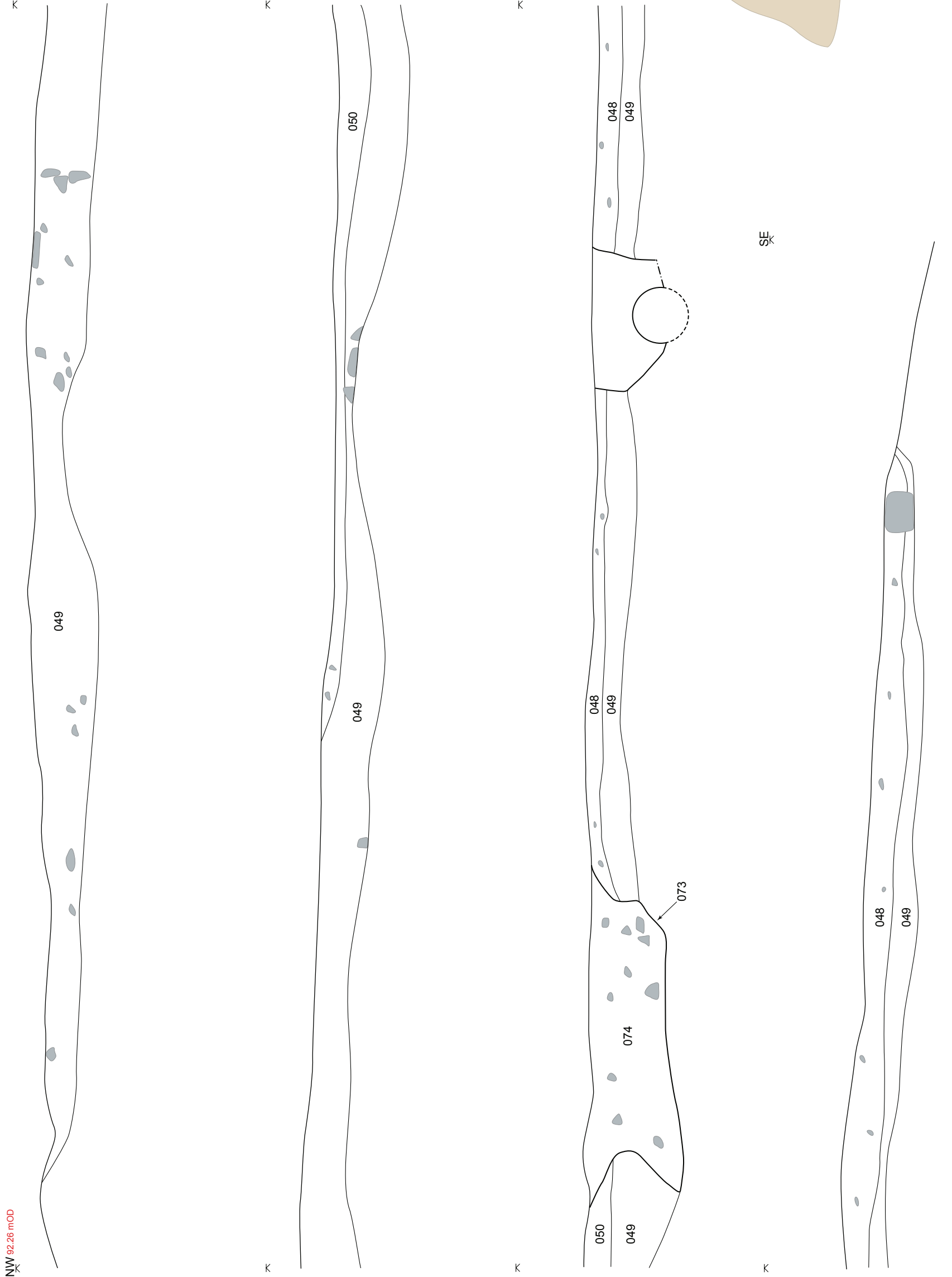


Figure 3 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown: E2942, Site layout.



Burnt mound
Stone

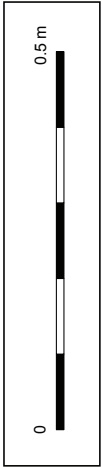


Figure 4 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown:
E2942, West-facing section through burnt mound (048).

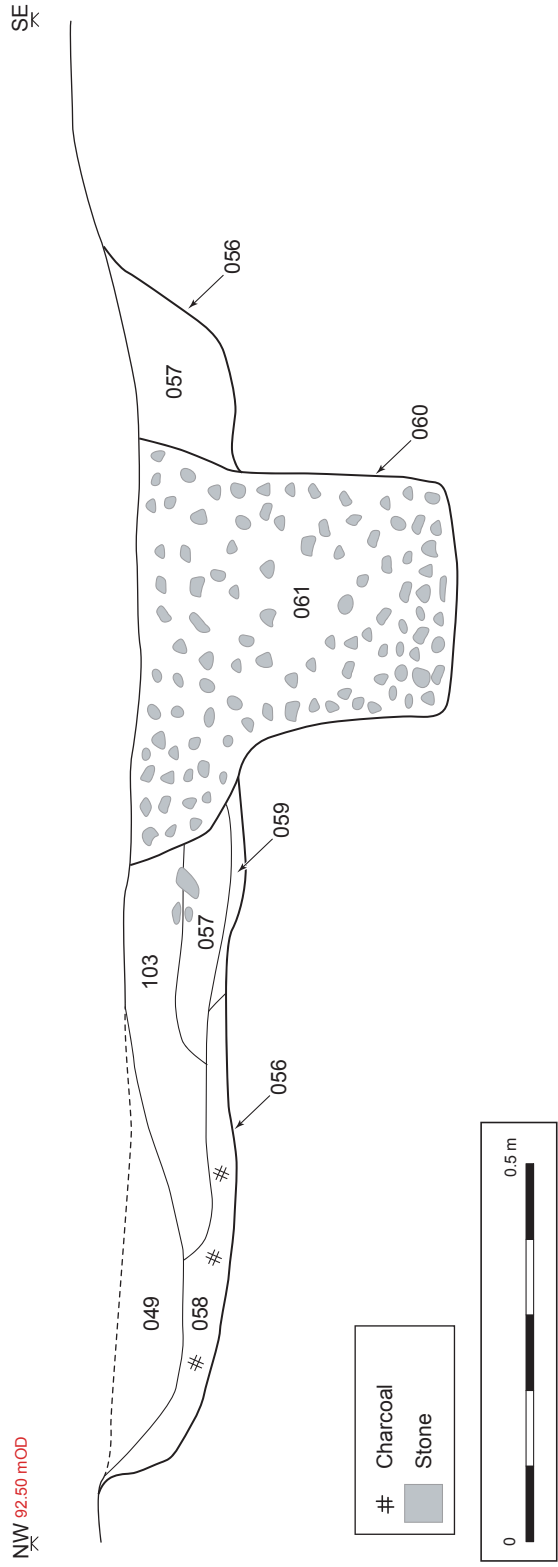
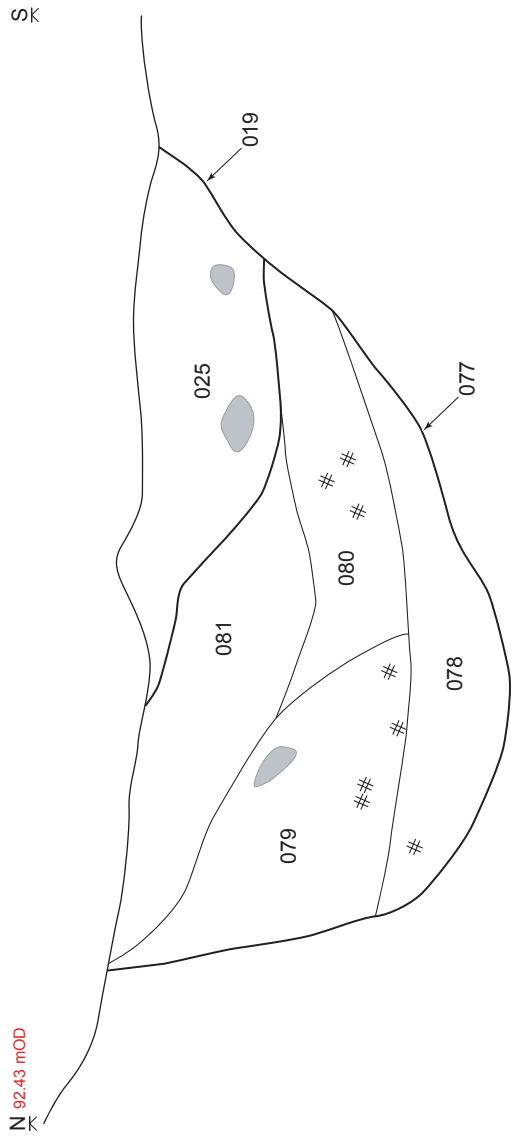
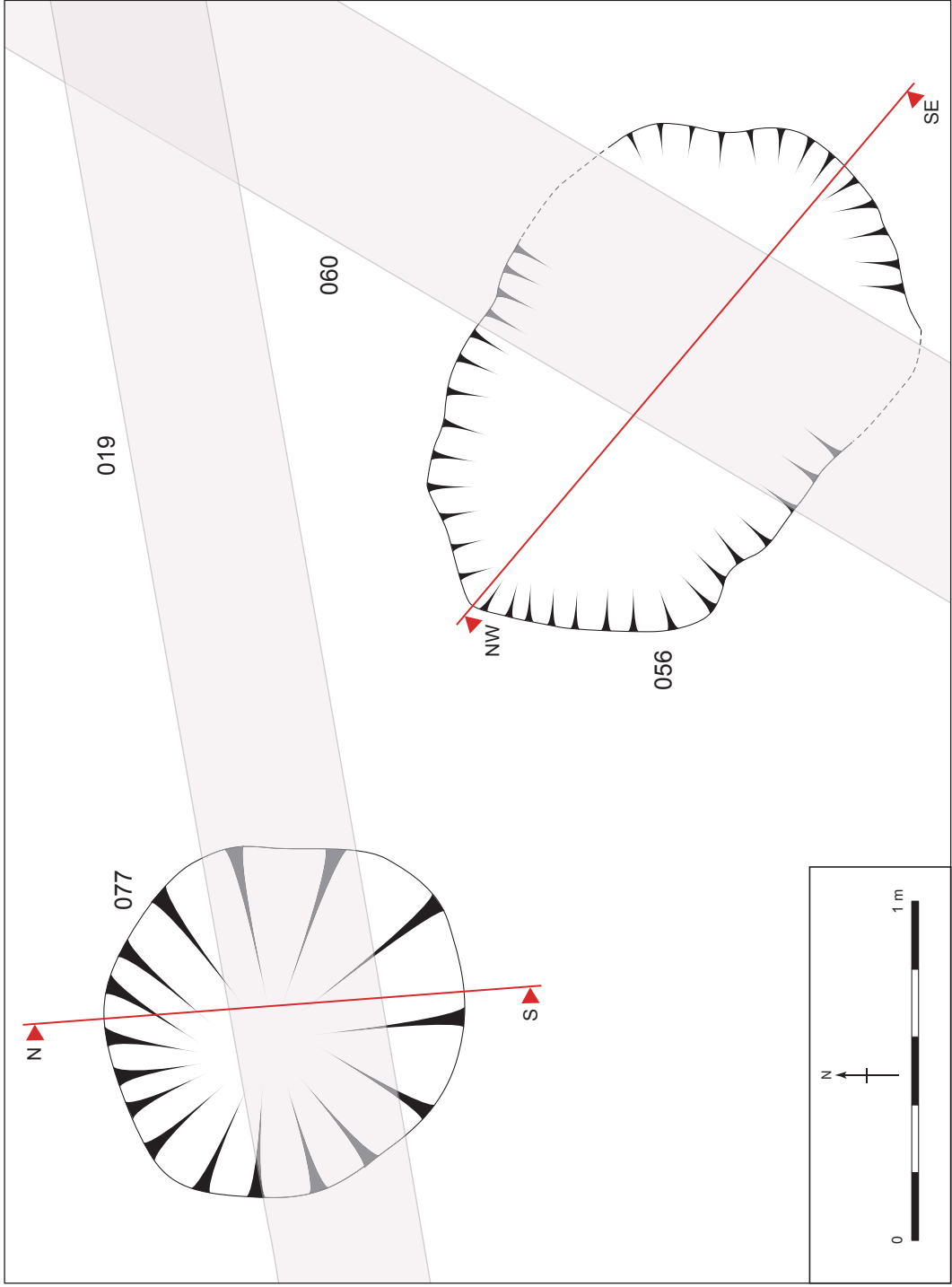


Figure 5 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown:
E2942, Northwest-facing section through pit (056) and west-facing section through pit (077).



SW 92.59 mOD



NE 92.59 mOD

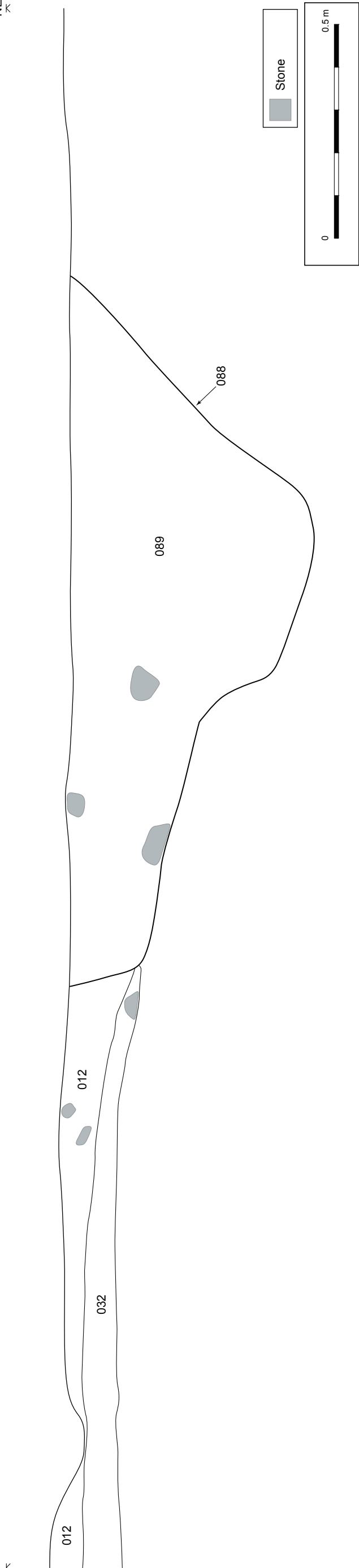


Figure 6 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown:
E2942, South-facing section through burnt mound 2 (012).

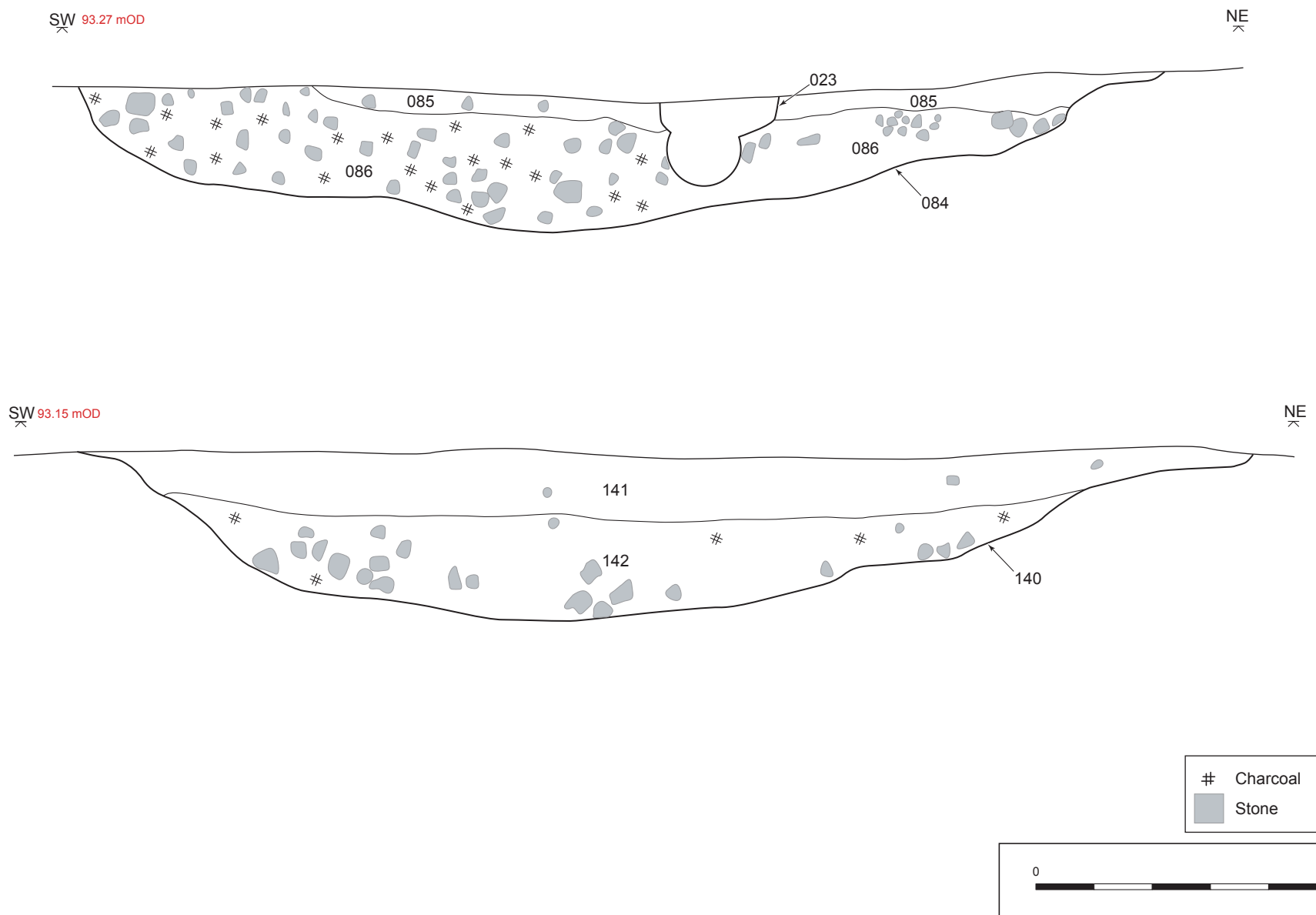
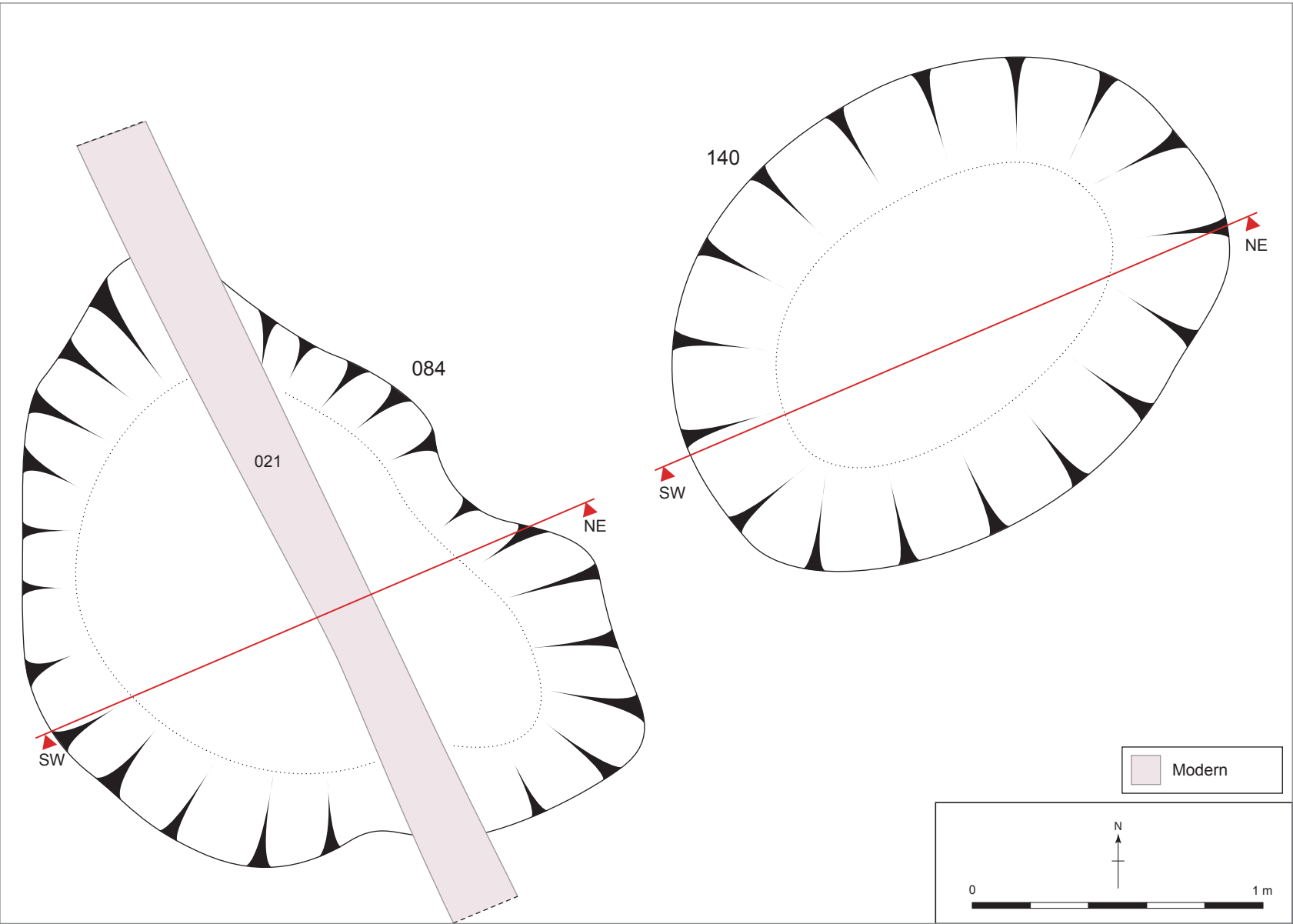
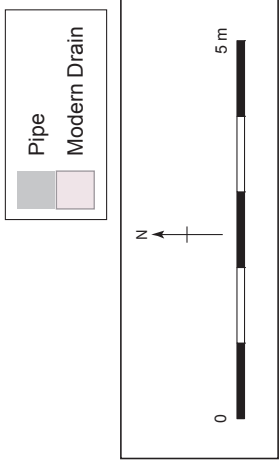
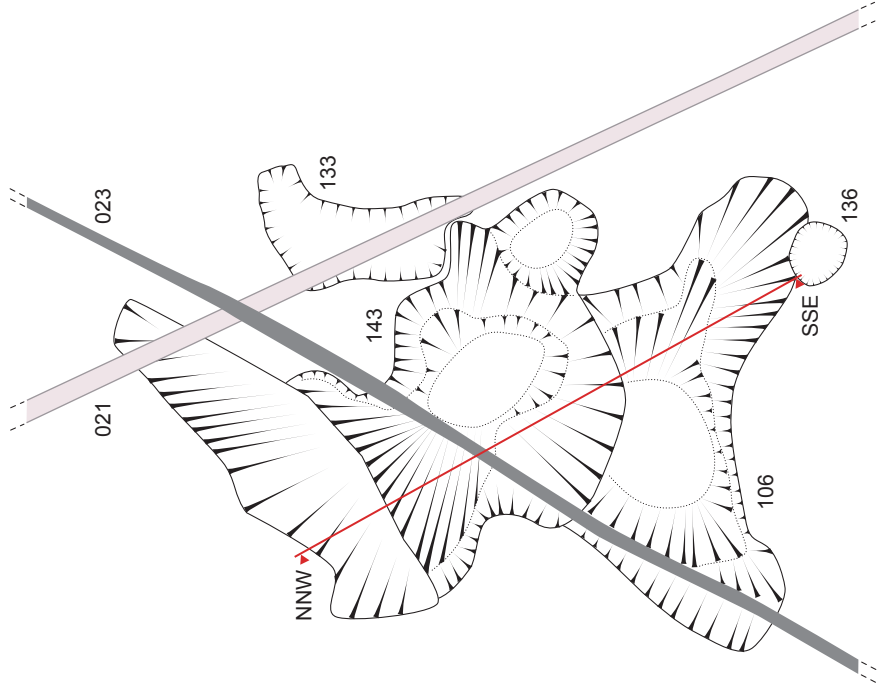


Figure 7 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown: E2942, Southeast-facing sections through pits (084) and (140).



NNW 93.46 mOD

SSE

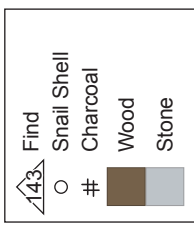
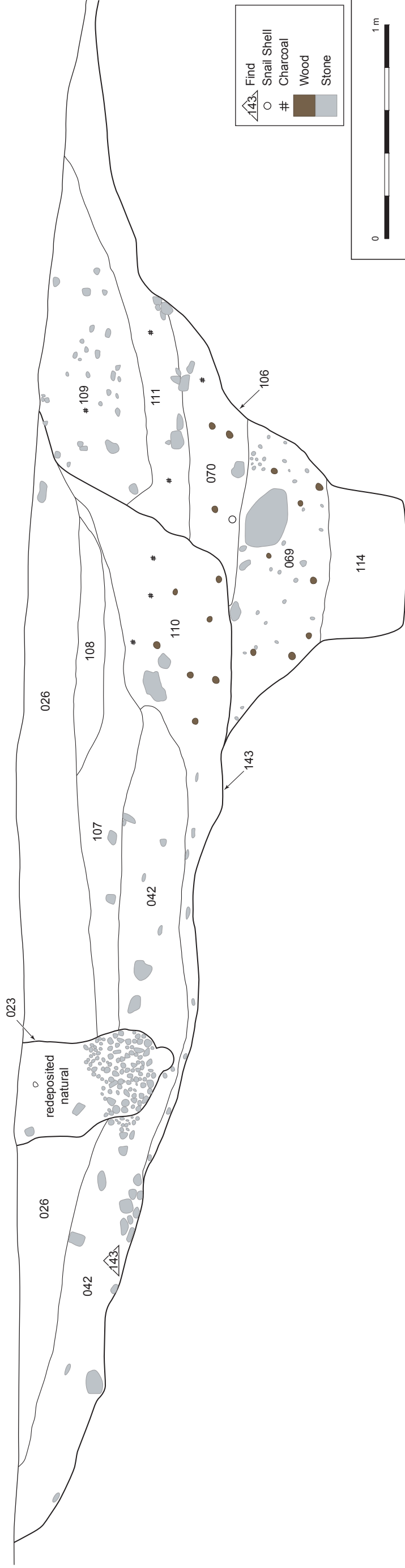
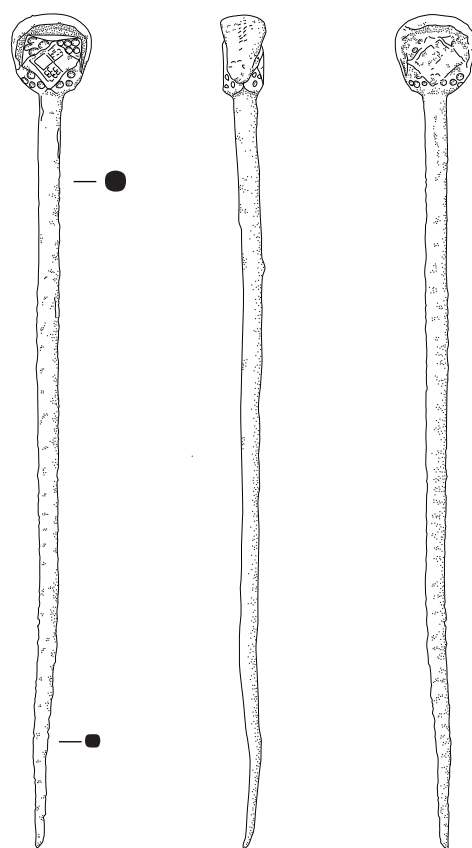


Figure 8 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown: E2942, West-southwest facing section through wells (106) and (143).

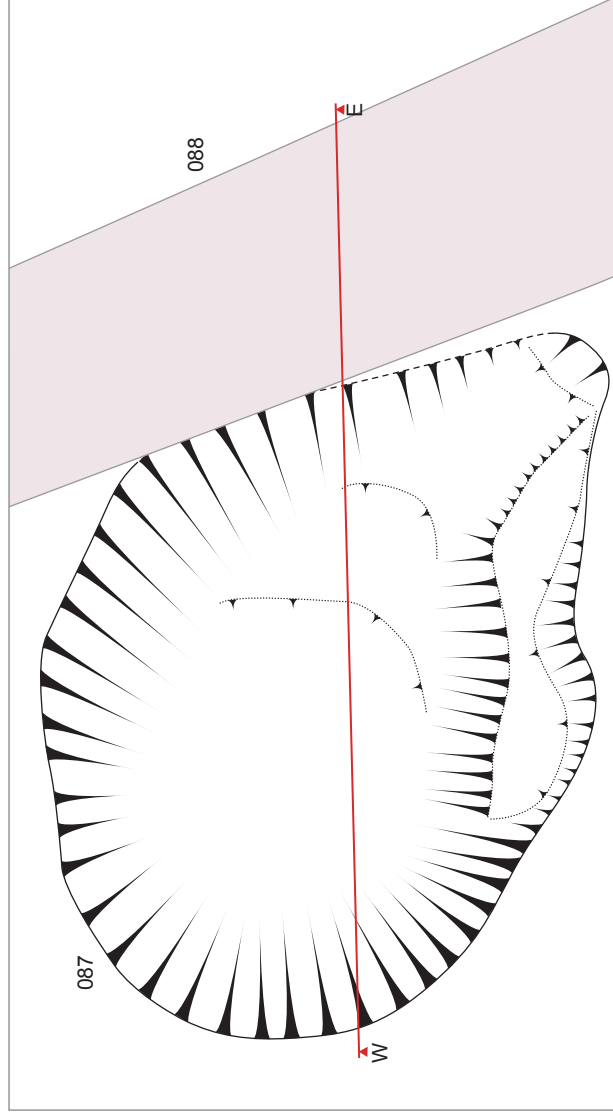


E2942:042:001
Ring Pin

0 3 cm

Drawn by: Sara Nylund

Figure 9 - N9/N10 Kilcullen to Waterford Scheme; Phase 3: Kilcullen to Carlow.
Archaeological Services Contract No. 6 - Moone to Prumplestown.
E2942, Ring pin.



W 93.62 mOD

E

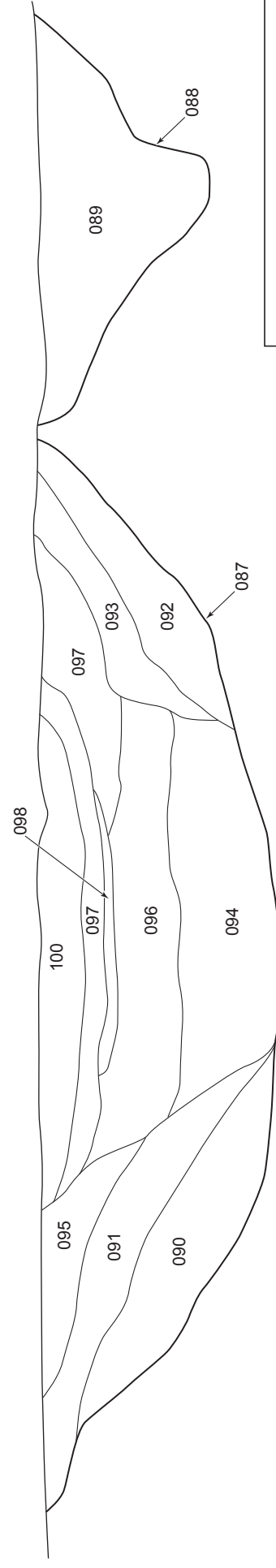


Figure 10 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow. Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown: E2942, South-facing section through well (087).

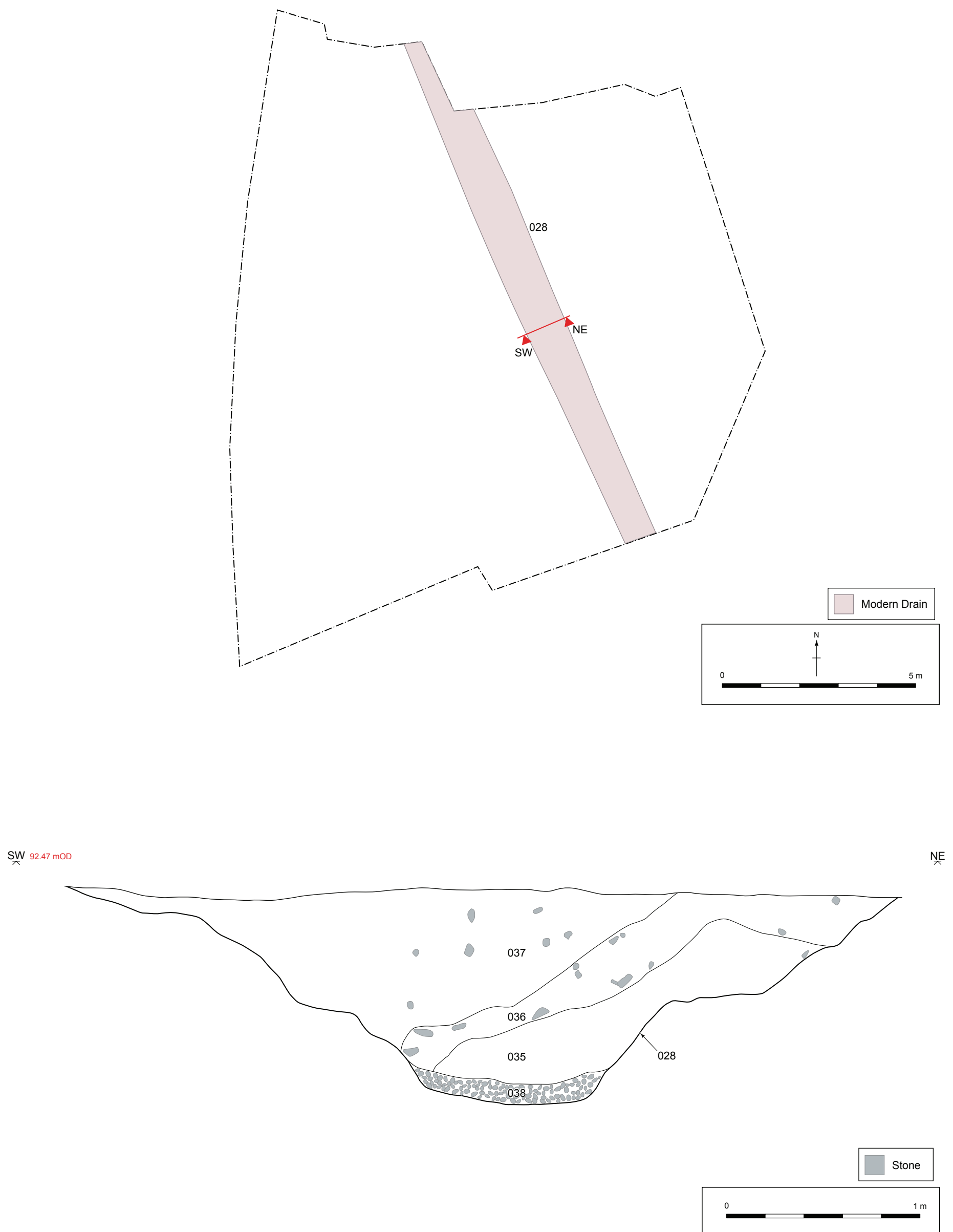


Figure 11 - N9/N10 Kilcullen to Waterford Scheme: Phase 3, Kilcullen to Carlow.
 Archaeological Services Contract No. 6 - Resolution, Moone to Prumplestown:
 E2942, South-east facing section through boundary ditch (028).



Plate 1 - Pre-excavation working shot of site E2942, south-facing.



Plate 2 - Mid-excavation section of burnt mound 2, (012), southeast-facing.



Plate 3 - Mid-excavation section of burnt mound 3, (020), south-southwest facing.



Plate 4 - Mid-excavation section of pits (084) and (140), north-northwest facing.



Plate 5 - Mid-excavation section of wells (106) and (143), north-northeast facing.



Plate 6 - Mid-excavation section of well of (106), west-facing.



Plate 7 - Mid-excavation section of well (087) and ditch (088), north-facing.



Plate 8 - Mid-excavation section of stone lined linear (054), southwest-facing.



Plate 9 - Mid-excavation section of pit (043), northwest-facing.



Plate 10 - Test trench 6b, west-facing.

Appendix 1 – Context Register for Site E2942

Context No	Type	Length	Width	Depth	Description	Interpretation
001	Deposit	N/A	N/A	0.25-0.37	Moderately compact, medium brown silty clay with frequent inclusions of rounded and sub-angular stones and occasional large stones.	Topsoil
002	Deposit	N/A	N/A	0.05 – 0.10	Firm yellow brown silty clay with small pockets of sand and occasional inclusions of rounded and sub-angular stones.	Subsoil
003	Cut	52.50	0.95	0.19-0.28	Linear in plan extending in a northeast-southwest direction. It had gradual break of slope at the top to the south, and sharp break of slope to the north. It had sloping concave sides leading to a concave uneven base.	Cut of modern drainage ditch
004	Fill	52.50	0.95	0.06-0.22	Firm grey brown sandy clay with inclusions of small stones.	Upper fill of modern drain ditch (003)
005	Cut	54.00	1.10-1.75	0.20	Linear in plan, extending in a northeast-southwest direction. It had sharp break of slope at the top, gradually sloping sides leading to a concave base.	Cut of modern drainage ditch
006	Fill	54.00	1.10-1.75	0.20	Firm grey brown sandy clay with inclusions of small stones.	Fill of modern drain ditch (005)
007	Cut	42.50	0.45	0.20	Linear in plan extending in a northeast-southwest direction. It had sharp break of slope at the top, vertical sides leading to flat base.	Cut of modern drainage ditch
008	Fill	42.50	0.45	0.20	Loose brown red silty clay with inclusions of well sorted cobbles.	Fill of modern drain ditch (007)
009	Cut	56.00	0.50	0.60	Linear in plan extending in a northeast- southwest direction. It had sharp break of slope at the top, vertical sides leading to flat base.	Cut of modern drainage ditch
010	Fill	56.00	0.50	0.60	Loose grey silty clay with stone inclusions.	Fill of modern drain ditch (009)
011	Fill	32.50	0.55-0.75	0.06-0.12	Firm brown grey clay with occasional stone inclusions.	Lowermost fill in modern drain ditch (003)
012	Deposit	4.45	2.35	0.14	Firm black silty clay with inclusions of charcoal and heat shattered sandstones.	Upper deposit in Burnt Mound 2. Same as (014)
013	Deposit	2.10	2.00	0.05	Firm grey brown silty clay. Natural deposit situated to the south of the burnt mound.	Upper deposit in burnt mound over (012)

Context No	Type	Length	Width	Depth	Description	Interpretation
014	Deposit	4.45	2.35	0.14	Firm black silty clay with inclusions of charcoal and heat shattered sandstone.	Upper deposit in burnt mound 2 (same deposit as (012))
015	Deposit	9.00	8.00	0.03-0.05	Firm medium brown silty clay.	Uppermost deposit over burnt mound 2
016	Fill	1.10	0.62-0.95	0.04-0.13	Firm dark grey clayey silt with occasional inclusions of small stones.	Fill in sub-oval feature (017)
017	Cut	1.10	0.95	0.04-0.13	Sub-oval in shape. It had gradual break of slope at the top, concave sides leading to flat base.	Cut of small irregular oval feature
018	Fill	20.00	0.75	0.10	Loose dark grey clayey silt with yellow flecking and a moderate amount of stone inclusions. Located to the northeast of the drain.	Lower fill of modern drainage ditch (003)
019	Cut	26.50	0.25-0.30	0.30-0.40	Linear in plan extending northeast-southwest direction. It had sharp break of slope at the top, sloping sides, leading to slightly rounded base.	Cut of modern drainage ditch
020	Fill	2.20	1.50	0.10	Loose black silty sand with inclusions of small stones and charcoal. It represents a heavy disturbed burnt mound deposit.	Heavily truncated remains of Burnt Mound 3
021	Cut	2.90	0.60-1.30	0.05	Linear in plan extending in a northwest-southeast direction. It had gradual break of slope at the top, vertical sides to the northwest and convex sides to the east. It had a convex base. It cut well (106)	Cut of small linear
022	Fill	2.90	0.60-1.30	0.05	Loose light brown red silty sand with occasional inclusions of small stones.	Fill of small linear (021)
023	Cut	24.00	0.60	0.80	Linear in plan extending in a northeast-southwest direction. It had sharp break of slope at the top, vertical sides leading to flat base. It cut well (106) and linear (051).	Cut of modern field drain
024	Fill	24.00	0.60	0.80	Loose brown silty clay with gravel, stones and a plastic pipe at the base.	Fill of modern drain (023)
025	Fill	26.50	0.25-0.30	0.30-0.40	Loose medium brown clay with inclusions of stones.	Fill of modern field drain (019)
026	Fill	4.90	2.80	0.35-0.40	Sub-circular in shape, mix of loose to compact dark brown, red silty sand with inclusions of medium stones. It was cut by modern drain (023).	Uppermost fill in well (143)

Context No	Type	Length	Width	Depth	Description	Interpretation
027	Fill	0.50	0.40	0.20	Loose brown grey silty sand with occasional inclusions of sub-angular stones.	Lowermost fill in well (143)
028	Cut	55.25	4.30	1.10	Linear in plan extending in a northwest-southeast direction. It had gradual break of slope at the top, gradually sloping sides leading to flat base. It contained four fills (035), (036), (037) and (039). It truncated Burnt Mound 3.	Cut of modern boundary ditch
029	Cut	10.00	0.75-0.92	0.37	Linear in plan extending in a northeast-southwest direction. It had gradual break of slope at the top, concave sides leading to rounded base. It contained two fills (030) and (031).	Cut of the modern drain
030	Fill	10.00	0.75-0.92	0.17	Firm brown grey silty sand with occasional inclusions of small stones and roots.	Uppermost fill in ditch (029)
031	Fill	10.00	0.58	0.20	Firm light brown clayey silt with frequent inclusions of angular and sub-angular stones.	Lowermost fill in ditch (029)
032	Fill	7.90	4.60	0.04-0.13	Firm grey silty clay.	Lowermost deposit in Burnt Mound 2
033	Cut	1.10	0.48	0.20	Linear in plan extending in a northeast-southwest direction. It had moderate break of slope at the top, concave sides leading to tapered base.	Cut of irregular linear
034	Fill	1.10	0.48	0.20	Firm black clayey silt with yellow flecking throughout. It contained occasional stone inclusions.	Fill of irregular linear (033)
035	Fill	55.25	2.05	0.35	Firm dark brown clayey silt with occasional inclusions of sub-angular stones.	Slump fill in modern boundary ditch (028)
036	Fill	55.25	2.55	0.10-0.25	Firm medium brown clayey silt with a moderate amount of sub-angular stone inclusions.	Slump fill in modern boundary ditch (028)
037	Fill	55.25	3.16	0.84	Firm light orange brown clayey silt with occasional inclusions of sub-angular stones.	Uppermost fill in modern boundary ditch (028)
038	Fill	55.25	1.05	0.10	Loose brown clayey silt with frequent inclusions of sub-angular stones.	Lowermost fill in modern boundary ditch (028)
039	Fill	2.10	1.52	0.36	Moderately compact grey clayey sand with inclusions of stones and roots.	Fill in oval shaped pit (126)
040	Cut	3.20	1.50	0.02-0.08	Sub-oval in shape, orientated in a northwest-southeast direction. It had	Cut of sub-oval shaped

Context No	Type	Length	Width	Depth	Description	Interpretation
					gradual break of the slope at the top, concave sides leading to rounded base to southeast and flat base to the north.	feature
041	Fill	3.20	1.50	0.02-0.08	Firmly compact light grey yellow silty sand with occasional inclusions of small stones.	Fill of sub-oval shaped feature (040)
042	Fill	3.00	2.18	0.30	Friable dark grey brown silty sand with frequent inclusions of large rounded stones and occasional small flecks of charcoal. This context represents fill of well (143). It was cut by modern drain (023). Loop headed ring pin (E2942:042:001) was recovered from the base of this fill.	Fill of well (143)
043	Cut	1.24	1.10	0.33	Sub-circular in shape. It had sharp break of slope at the top, gradually sloping sides leading to a concave, roughly square shaped base. It contained four fills (044), (045), (046) and (047).	Cut of a small pit
044	Deposit	1.00	0.90	0.03-0.06	Loose grey silty clay with inclusions of stones.	Lowermost fill of pit (043)
045	Fill	0.82	0.75	0.05	Loose medium brown silty clay with occasional inclusions of stones.	Fill of pit (043)
046	Fill	1.24	1.10	0.18	Loose dark brown silty clay with occasional inclusions of stones.	Fill of pit (043)
047	Fill	1.15	1.03	0.13	Loose dark brown grey silty clay with occasional stone inclusions.	Uppermost fill of pit (043)
048	Deposit	5.66	4.06	0.05-0.10	Sub-oval shaped deposit, orientated northeast-southwest. Consisted of moderately compact black silty clay with inclusions of charcoal and heat shattered sandstones.	Deposit in Burnt Mound 1, over (049)
049	Deposit	14.55	10.72	0.10-0.17	Sub-oval shaped deposit, orientated northeast-southwest. Comprised of firmly compact grey clay.	Lower deposit in Burnt Mound 1
050	Deposit	2.00	1.85	0.08	Loose brown peat.	Uppermost deposit in Burnt Mound 1
051	Cut	6.10	0.37-1.25	0.04-0.37	Linear in plan extending in a northwest-southeast direction. It had gradual break of slope at the top, concave sides leading to flat base. It contained three fills (052), (053) and (063). It was cut by drain (023)	Cut of shallow tapering linear.
052	Fill	3.20	0.75-0.82	0.08	Loose dark brown black silty sand with occasional inclusions of small stones and frequent inclusions of charcoal. Cut by drain (023)	Upper fill in linear (051)
053	Fill	3.20	0.78-1.73	0.17	Firm dark grey silty sand with frequent inclusions of small stones and few pieces of charcoal. Cut by drain (023)	Fill in linear (051)
054	Cut	22.00	0.66-	0.21	Curvilinear in plan extending in an east-west direction across the site. It	Cut of shallow ditch.

Context No	Type	Length	Width	Depth	Description	Interpretation
			0.75		was truncated by several ditches and drains. It had gradual break of slope at the top, concave sides leading to rounded base. It contained three fills (055), (104), (105).	Same as (116) and (128)
055	Fill	22.00	0.68	0.08-0.22	Loose light grey silt sand with occasional inclusions of small stones.	Lower fill of ditch (054). Same as (104).
056	Cut	1.72	1.10	0.16	Oval in shape and orientated in a northwest-southeast direction. It had gradual break of slope at the top, steep concave sides leading to flat base. It contained four fills (057), (058), (059) and (103). It was cut by a modern drain (060).	Cut of pit. Truncated by drain (060)
057	Fill	1.33	0.80	0.05-0.12	Loose orange yellow sand with inclusions of heat shattered sandstone. Cut by modern drain (060)	Fill in pit (056)
058	Fill	0.41	0.35	0.03-0.06	Firm black silty clay with frequent inclusions of charcoal. Cut by drain (060)	Fill in pit (056)
059	Fill	0.27	0.20	0.03	Loose grey silt sand clay. Cut by drain (060)	Lowermost fill in pit (056)
060	Cut	38.00	0.50	0.44	Linear in plan extending in northeast-southwest direction. It had slight break of slope at the top, vertical sides leading to flat base. It contained one fill (061).	Cut of modern drain ditch
061	Fill	38.00	0.50	0.44	Loose grey gravel with frequent inclusions of stones.	Fill of modern drain (060)
062	Cut	1.20	1.07	0.25	Circular in shape, it had gradual break of slope at the top, concave sides leading to rounded base.	Cut of shallow pit
063	Fill	2.00	0.37	0.04-0.25	Firm light brown grey clayey sand with occasional inclusions of small stones and frequent inclusions of snail shells.	Lower fill in linear (051)
064	Fill	1.20	1.07	0.25	Loose dark brown silty sand with small pieces of charcoal.	Fill of pit (062)
065	Cut	1.55	0.86	0.24	Sub-circular in shape. It had gradual break of slope at the top, concave sides leading to concave base. It contained one fill (066).	Cut of pit, northeast of Burnt Mound 1
066	Fill	1.55	0.86	0.24	Loose dark grey silty clay with occasional inclusions of charcoal, sub-angular stones and a moderate amount of sandstones.	Fill of possible shallow pit (065)
067	Cut	4.00	2.70	1.05	Sub-oval in shape, orientated in northwest-southeast direction. It had gradual break of slope at the top, irregular sloping sides that fell into a	Cut of a large pit

Context No	Type	Length	Width	Depth	Description	Interpretation
					slightly concave base.	
068	Fill	4.00	2.70	1.05	Moderately compact grey brown silty clay with frequent inclusions of sub-angular stones, wood, animal bone and unidentified organic material.	Fill of pit (067)
069	Fill	1.46	2.05	0.44	Firm light grey yellow clayey sand with occasional inclusions of medium size stones, animal bones and hazelnut shells.	Lower fill in well (106).
070	Fill	1.43	2.05	0.29	Loose grey brown clay sand with occasional inclusions of medium size stones, charcoal lumps and mollusc remains. This fill was truncated by (143).	Fill of well (106)
071	Deposit	N/A	N/A	N/A	Cluster of animal cranium bones at the base of (070). A similar cluster was identified approximately 0.80–1 m away.	Cluster of animal bone at the base of (070) in well (106)
072	Deposit	N/A	N/A	N/A	Cluster of animal cranium bones at the base of (070). A similar cluster was identified approximately 0.80 – 1 m away.	Cluster of animal bone at the base of (070) in well (106)
073	Cut	1.35	0.94	0.19	Oval in shape, it had sharp break of slope at the top, concave sides leading to a concave base.	Cut of shallow pit, truncated Burnt Mound 1
074	Fill	1.35	0.94	0.19	Loose black clayey sand with inclusions of charcoal and heat shattered sandstone.	Fill of shallow pit (073)
075	Cut	0.60	0.60	0.18	Circular in shape, located 0.35 m northwest of (073). It had sharp break of slope at the top, concave sides leading to a concave base.	Cut of small pit
076	Fill	0.60	0.60	0.18	Loose brown peat with inclusions of some charcoal.	Fill of pit (075)
077	Cut	1.19	1.05	0.47	Circular in shape. It had sharp break of slope at the top to the north, west and east sides, with gradually sloping sides to the south leading to rounded base. It contained five fills (078), (079), (080), (081) and (025). It was truncated by drain (019).	Cut of pit
078	Fill	0.80	0.79	0.14	Moderately compact light grey silty clay with occasional inclusions of medium size stones and charcoal.	Lowermost fill in pit (077)
079	Fill	0.51	0.38	0.25	Moderately compact medium grey silty clay with occasional inclusions of medium size stones and charcoal lumps.	Slump deposit in pit (077)

Context No	Type	Length	Width	Depth	Description	Interpretation
080	Fill	0.60	0.58	0.19	Loose dark grey silty clay with inclusions of medium size stones, heat affected sandstones and some charcoal.	Fill of pit (077)
081	Fill	0.71	0.60	0.18	Loose dark grey silty clay with occasional inclusions of medium size stones and few small pieces of charcoal.	Fill of pit (077)
082	Fill	54.90	0.20	0.14	Linear in plan extending in a northwest-southeast direction and consisted of moderately compact medium brown grey silty clay with inclusions of stones and a clay pipe at the base.	Fill of modern field drain
083	Deposit	N/A	N/A	N/A	Loose grey silt clay with inclusions of medium sized stones. Varied dimensions across the site.	Deposit in several natural depressions to the south of site
084	Cut	2.20	1.86	0.23	Sub-circular in shape. It had gradual break of the slope at the top, concave sides leading to irregular rounded base. It contained two fills (085) and (086). It was cut by modern drainage pipe (082).	Cut of large shallow pit
085	Fill	1.46	0.60	0.08	Firm dark brown grey silty sand with frequent inclusions of small and medium sized stones.	Uppermost fill in pit (084)
086	Fill	1.70	1.65	0.20	Firm dark grey black clayey sand with frequent inclusions of small heat shattered sandstones, charcoal and animal bones.	Lowermost fill in pit (084)
087	Cut	3.58	3.05	2.48	Sub-circular in shape, orientated in a northwest-southeast direction. It had rounded break of slope at the top, steep sloping sides for over 1 m leading to a vertical drop for a further depth of 1.10 m. It fell to a slightly rounded base.	Cut of well
088	Cut	57.25	1.40	0.55	Linear in plan extending in a northwest-southeast direction. It had gradual break of slope at the top, steep sloping sides leading to slightly concave base. It contained one fill (089) and truncated Burnt Mound 3.	Cut of modern boundary ditch
089	Fill	57.25	1.40	0.55	Loose medium brown silty clay with occasional inclusions of sub-rounded and sub-angular stones.	Fill of modern boundary ditch (088)
090	Fill	1.40	1.30	0.24	Firm black brown silty clay with a moderate amount of heat shattered sandstone inclusions.	Slump deposit in well (087)
091	Fill	1.20	1.65	0.18	Firm brown black clayey sand.	Slump deposit in well (087)

Context No	Type	Length	Width	Depth	Description	Interpretation
092	Fill	1.30	0.90	0.22	Firm brown grey silty sand with frequent inclusions of stones.	Slump deposit in well (087)
093	Fill	1.70	0.80	0.18	Firmly compact brown grey silty clay with occasional inclusions of stones	Slump deposit in well (087)
094	Fill	1.40	1.30	0.34	Firm dark brown clay with some charcoal inclusions.	Fill of well (087)
095	Fill	1.65	0.75	0.19	Firmly compact brown grey silty clay with occasional inclusions of stones.	Slump deposit in well (087).
096	Fill	1.30	1.42	0.25	Firm dark brown clay with some inclusions of stones.	Fill in well (087)
097	Fill	1.95	0.95	0.20	Firm brown grey silty clay with no inclusions.	Slump deposit in well (087)
098	Fill	0.90	0.87	0.04	Loose brown black sandy silt with some inclusions of stones.	Fill of well (087)
099	Fill	1.05	1.54	0.07	Firm grey brown silty clay.	Fill of well (087)
100	Fill	1.90	1.50	0.08	Firm light brown clayey silt with orange flecking and occasional stone inclusions.	Uppermost fill in well (087)
101	Fill	3.50	0.96	0.18	Loose light brown silty clay with frequent inclusions of small stones.	Fill of curvilinear ditch (116). Same as (054)
102	Cut	3.50	2.05	1.70	Cut of well. Same as (106).	Cut of well (102). Same as (106)
103	Fill	0.55	0.44	0.07	Compact grey sandy clay.	Uppermost fill in pit (056)
104	Fill	22.00	0.68	0.08-0.20	Loose light grey clayey silt with occasional inclusions of small stones.	Lower fill of ditch (054). Same as (055)
105	Fill	22.00	0.68	0.11	Loose medium brown silty sand with frequent small stones and roots	Uppermost fill in curvilinear ditch (054)
106	Cut	3.50	2.05	1.70	Irregular in shape and orientated in northwest/southeast direction. It had sharp break of slope at the top, irregular yet concave to the north and south sides, convex on the east side and gently sloping to the west. It fell into a rounded base. It contained four fills (114), (069), (070) and (111). It was truncated by well (143).	Cut of well. Same as (102)
107	Fill	2.50	2.80	0.26	Loose dark brown red clayey silt with frequent inclusions of wooden twigs.	Fill of well (143)

Context No	Type	Length	Width	Depth	Description	Interpretation
108	Fill	1.20	1.20	0.15	Firm dark brown silty sand with occasional small pieces of charcoal.	Fill of well (143)
109	Fill	2.08	2.05	0.49	Firm light grey silty sand with frequent inclusions of small stone and occasional inclusions of charcoal lumps.	Upper fill in well (143)
110	Fill	3.17	2.80	0.50	Loose purple brown black clayey peat with a moderate amount of small stone inclusions, occasional charcoal flecking and wooden twigs.	Fill of well (143)
111	Fill	2.55	2.80	0.28	Loose light brown grey silty sand with a moderate amount of small stones	Fill in well (106)
112	Fill	1.03	0.57	0.20	Loose brown clayey silt with inclusions of charcoal and Stone.	Fill of shallow pit (113)
113	Cut	1.03	0.57	0.35	Sub-oval in shape, orientated in a northwest/southeast direction. It had vertical break of slope at the top, concave sides leading to a flat base.	Cut of shallow pit
114	Fill	0.72	0.64	0.32	Soft light grey silty sand with occasional inclusions of small stones, flecks of charcoal and animal bones.	Lowermost fill in well (106)
115	Fill	0.75	0.57	0.14	Loose dark brown clayey silt with inclusions of charcoal and pebbles. This deposit was disturbed by burrowing to the north.	Lowermost fill in pit (113)
116	Cut	3.50	0.66-0.75	0.21	Curvilinear in plan extending in an east-west direction across the site. It was truncated by several ditches and drains. It had gradual break of slope at the top, concave sides leading to rounded base. It contained three fills (055), (104), (105).	Cut of curvilinear ditch. Same as (054) and (128)
117	Fill	3.50	0.75	0.18	Loose grey brown silty clay with occasional inclusions of small stones.	Fill of curvilinear ditch (116). Same as (129).
118	Metalled surface	14.50	7.50	0.10	Metalled surface located to the east of modern drain (082). Sub-rectangular in shape, made up of tightly compact pebbles and stones.	Metalled surface
119	Cut	13.90	0.20	0.11	Loose dark brown clayey silt with stone inclusions with a ceramic pipe at the base.	Cut of modern drainage ditch with ceramic pipe
120	Fill	1.15	1.05	0.10	Loose brown clayey silt with inclusions of charcoal and stone. It was truncated by drainage ditch (124)	Upper fill of small pit (122)
121	Fill	0.55	0.55	0.04	Loose dark brown clayey silt with stone inclusions.	Lowermost fill in pit (122)
122	Cut	1.15	1.05	0.14	Sub-circular in shape. It had sharp break of slope at the top, concave sides leading to flat base.	Cut of small pit, truncated by drain (124)
123	Fill	13.20	0.36	0.23	Loose dark brown clayey silt with small pebble inclusions.	Fill of modern drainage

Context No	Type	Length	Width	Depth	Description	Interpretation
						ditch (124)
124	Cut	13.20	0.36	0.23	Linear in plan extending in an east-west direction. It had sharp break of slope at the top, steep concave sides leading to a tapered base.	Cut of modern drainage ditch
125	Wood	0.20-0.40	0.05	N/A	Wood deposit located at the base of (094) in well (087). It consisted of branch fragments with dimensions of 0.20-0.40 m long and 0.05 m wide.	Deposit of wood in well (087)
126	Cut	2.10	1.52	0.36	Circular in shape. It had gradual break of slope at the top, concave stepped sides to the north and vertical sides to the south, leading to a concave, rounded base. It contained four fills (127), (131), (132) and (039).	Cut of small pit
127	Fill	2.10	1.52	0.23	Loose grey clay sand with stone inclusions.	Lowermost fill of small pit (126).
128	Cut	18.20	0.68-0.90	0.11-0.29	Curvilinear in plan extending in an east-west direction. It had sharp break of slope at the top, sloping sides leading to flat, slightly rounded base. It became shallow as it travelled west.	Cut of curvilinear drainage ditch. Same as (054) and (116)
129	Fill	18.20	0.68-0.90	0.11-0.29	Moderately compact brown sandy silt with occasional sub-angular stones. It measured 3.20 m long by 0.50 m wide and 0.05 m thick. It became shallow as it travelled west.	Fill of curvilinear ditch (128). Same as (117)
130	Wood	0.20 (each piece)	0.10 (each piece)	0.03 (each piece)	Charred wood deposit at the base of (090) in well (087). Single timber broken into three pieces. Mostly charred on upper side. May relate to timber deposit (125) in (094)	Charred wood in well (087)
131	Fill	1.21	1.05	0.03	Loose black clayey sand with frequent amounts of charcoal.	Charcoal deposit in pit (126)
132	Fill	0.71	0.60	0.11	Loose grey black clayey sand.	Uppermost fill in pit (126)
133	Cut	2.90	1.50	0.16	Sub-rectangular in shape, orientated in north-south direction. It had gradual break of the slope at the top, concave sides leading to rounded flat base. This was also truncated by well (143) and drainage ditch (082).	Cut of shallow trough
134	Fill	2.90	1.50	0.16	Loose dark brown black silty sand with frequent inclusions of medium size sandstones and charcoal.	Fill of shallow truncated trough (133)
135	Deposit	4.02	4.01	0.03-0.05	Moderately compact brown grey sandy silt.	Deposit under metallated surface (118)
136	Cut	0.92	0.89	0.42	Circular in shape with sharp break of the slope at the top, steep sides to	Cut of pit near well (106)

Context No	Type	Length	Width	Depth	Description	Interpretation
					the north and sloping sides to the south, leading to flat base. It contained three fills (137), (139) and (146)	
137	Fill	0.92	0.89	0.42	Firmly compact grey brown silty clay.	Upper fill in pit (136)
138	Fill	2.80	1.16	0.08	Loose light grey brown silty sand with occasional inclusions of small stones.	Thin deposit in well (143)
139	Fill	0.52	0.29	0.16	Firm yellow grey silty clay.	Lower fill in pit (136)
140	Cut	2.00	1.50	0.29	Circular in shape, it had gradual break of slope at the top, concave sides, leading to concave base. It contained two fills (141) and (142).	Cut of shallow pit
141	Fill	2.00	1.50	0.11	Moderately compact dark brown grey silty sand with inclusions of small and medium size stones.	Upper fill in pit (140)
142	Fill	1.58	1.40	0.18	Firm dark grey black clayey sand with inclusions of heat shattered sandstone, charcoal and animal bones.	Lower fill in pit (140)
143	Cut	5.00	3.20	1.60	Sub-circular in shape, orientated in northwest-southeast direction. It had sharp break of slope at the top, concave sides leading to rounded base. It truncated well(106) and shallow trough (133)	Cut of well
144	Fill	0.60	0.60	0.90	Moderately compact grey black silty clay with frequent inclusions of medium sized sub-angular stones and charcoal. Tree stump/trunk was recovered from this fill (E2942:090)	Lower fill in well (087)
145	Fill	0.45	0.40	0.80	Loose medium grey silty sand with occasional inclusions of medium to small stones and charcoal.	Lowermost fill in well (087)
146	Deposit	0.10-0.12 (stones)	0.08-0.10 (stones)	0.05-0.08 (stones)	Deposit of packing stones located to the north of pit (136). It was semi-circle in plan.	Deposit of packing stones in pit (136)

Appendix 2 – Finds Register for Site E2942

Finds No.	Material	Type	Identification	Description
E2942:068:001	Metal	Iron	Possible nail	Heavily corroded nail with very flat wide head. The nail is bent at the bottom. Possibly post medieval in date but could be modern
E2942:068:002	Wood and iron	Iron	Nail attached to worked wood	Piece of worked wood with a nail/tack at one end, possibly post medieval, could be modern
E2942:042:001	Metal	Iron	Ring pin	Early medieval loop-head ring pin
E2942:048:001	Stone	Flint	flake	Light white grey flint flake

Appendix 3 – Sample Register for Site E2942

Sample	Context	Amount	Description	Type
E2942:001	012	10 L Bkt	Burnt mound deposit, from BM2, quad B	Environmental
E2942:002	020	10 L Bkt	Burnt deposit, over bank between two ditches, BM3	Environmental
E2942:003	011	10 L Bkt	Brown grey clayey sand, fill of ditch (003)	Environmental
E2942:004	018	20 L, 2 Bkts	Dark grey clayey silt, lower fill of ditch (003)	Environmental
E2942:005	013	10 L Bkt	Grey brown deposit from BM2, quad D.	Environmental
E2942:006	012	10 L Bkt	Burnt mound deposit, from BM2, quad C	Environmental
E2942:007	014	10 L Bkt	Burnt mound deposit, from BM2, quad C	Environmental
E2942:008	032	10 L Bkt	Grey silty clay, under burnt mound 2, quad D	Environmental
E2942:009	016	2 L Bag	Dark grey clayey silt, fill of possible pit (017)	Environmental
E2942:010	034	2 L Bag	Black clayey silt, fill of linear feature (033)	Environmental
E2942:011	012	2 L Bag	Burnt mound deposit, from burnt mound 2	Environmental
E2942:012	041	2 L Bag	Light grey yellow silty clay, fill of (040)	Environmental
E2942:013	026	1 L Bag	Animal bone, 3 medium sized fragments of bone from well (143)	Bone analysis/identification
E2942:014	048	5 L Bag	Black silty clay with sand and charcoal, deposit from BM1, quad A.	Environmental
E2942:015	048	1.5 L Bag	Black silty clay with sand and charcoal, deposit from BM1, quad B.	Environmental
E2942:016	048	2 L Bag	Black silty clay with sand and charcoal, deposit from BM1, quad C.	Environmental
E2942:017	048	1 L Bag	Black silty clay with sand and charcoal, deposit from BM1, quad D.	Environmental
E2942:018	045	5 L Bag	Middle fill from a possible pit (043)	Environmental
E2942:019	058	2 L Bag	Charcoal-rich deposit from pit (056)	Environmental
E2942:020	052	2 L Bag	Dark grey fill with charcoal inclusions, upper fill in linear (051)	Environmental
E2942:021	053	2 L Bag	Dark brown black fill in linear(051)	Environmental
E2942:022	063	1 L Bag	Light brown grey clayey silt with mollusc remains lower fill in linear (051)	Environmental
E2942:023	048	2 L Bag	Black silty clay with sand and charcoal, deposit from BM 1	Environmental/ PH Sample
E2942:024	049	2 L Bag	Grey clay deposit in BM 1	Environmental/ PH Sample
E2942:025	070	1 L Bag	Animal bone from grey brown clayey sand, mid fill in well (106)	Bone analysis/identification

Sample	Context	Amount	Description	Type
E2942:026	066	0.5 L Bag	Charcoal lumps from dark grey silty clay fill in pit (065)	Environmental/ Charcoal ID
E2942:027	069	0.5 L Bag	Wood fragments from light grey yellow clay fill in (106)	Environmental Wood ID
E2942:028	069	0.5 L Bag	Charred hazelnut shell from light grey yellow clay fill in (106)	Environmental
E2942:029	070	2 L Bag	Animal cranium from grey brown clay sand, middle fill in well (106)	Bone analysis/ identification
E2942:030	070	2 L Bag	Cluster of animal craniums from grey brown clay sand, middle fill in well (106)	Bone analysis/ identification
E2942:031	068	5 L Bag	Animal bone from brown silty clay fill in pit (067)	Bone analysis/ identification
E2942:032	068	0.5 L Bag	Hazelnut shell from brown peaty clay fill in (067)	Environmental
E2942:033	069	2 L Bag	Animal bone from upper grey yellow fill of pit (106)	Bone analysis/ identification
E2942:034	070	5 L bag	Cluster of animal bone from grey brown clay sand, middle fill in well (106)	Bone analysis/ identification
E2942:035	074	1 L Bag	Black clayey sand with charcoal and stone inclusions , fill of pit cutting BM 1 (073)	Environmental
E2942:036	076	1 L Bag	Brown peaty fill with charcoal and sand inclusions, fill of pit under BM 1 (075)	Environmental
E2942:037	078	0.5 L Bag	Charcoal lumps from light grey silty clay, lower fill of pit (077)	Environmental charcoal ID
E2942:038	079	1 L Bag	Medium grey silty clay fill in pit (077)	Environmental
E2942:039	080	1 L Bag	Dark grey silty clay fill in pit (077)	Environmental
E2942:040	083	1 L Bag	Grey silty clay fill from depression in natural subsoil	Environmental
E2942:041	068	2 L Bag	Grey brown silty clay fill in (067)	Environmental
E2942:042	085	2 L bag	Dark grey brown silty sand, upper fill in (084)	Environmental
E2942:043	086	2 L bag	Dark grey black clayey sand, lower fill in (084)	Environmental
E2942:044	002	1 L bag	Animal bone from natural surface of site	Bone analysis/ identification
E2942:045	070	2 L Bag	Grey brown clayey sand, middle fill in well (106)	Environmental
E2942:046	068	2 L bag	Grey brown silty clay fill in pit (067)	Environmental
E2942:047	068	0.5 L Bag	Animal mandible from grey brown silty clay fill in pit (067)	Bone analysis/ identification
E2942:048	098	2 L Bag	Brown black sandy silt fill from well (087)	Environmental
E2942:049	086	0.5 L Bag	Animal bone from dark grey black clayey sand, lower fill in (084)	Bone analysis/ identification
E2942:050	108	2 L Bag	Dark brown silty sand with charcoal, mid fill of (143)	Environmental

Sample	Context	Amount	Description	Type
E2942:051	110	2 L Bag	Dark brown black clayey sand with wood bone and charcoal inclusions in well (143)	Environmental
E2942:052	042	8 L , 4 Bags	Dark grey brown silty sand with charcoal inclusions, fill in (143), ring pin found in this context	Environmental
E2942:053	107	2 L Bag	Dark brown red clayey silt in (143)	Environmental
E2942:054	026	2 L Bag	Dark brown red silty sand, upper fills in (143)	Environmental
E2942:055	070	2 L Bag	Grey brown clayey sand, middle fill in well (106)	Environmental
E2942:056	114	2 L Bag	Light grey silty sand with stone, charcoal and bone inclusions, lowermost fill in (106)	Environmental
E2942:057	109	2 L Bag	Light grey yellow silty sand with charcoal and stones, upper fill in (143)	Environmental
E2942:058	069	2 L Bag	Light grey yellow clayey sand with stone, bone and hazelnut inclusions, lower fill in (106)	Environmental
E2942:059	111	2 L Bag	Light grey brown silty sand, upper in (106)	Environmental
E2942:060	115	1 L Bag	Dark brown clayey silt in pit (113)	Environmental
E2942:061	095	2 L Bag	Brown grey silty clay fill in well (087)	Environmental
E2942:062	090	4 L, 2 Bags	Black brown silty clay with heat shattered sandstones in well (087)	Environmental
E2942:063	091	4 L, 2 Bags	Brown black clayey sand in well (087)	Environmental
E2942:064	096	4 L, 2 Bags	Dark brown clay fill in well (087)	Environmental
E2942:065	094	4 L, 2 Bags	Dark brown clay with wood inclusions in well (087)	Environmental
E2942:066	125	6 L, 3 Bags	Wood fragments recovered at base of well (087)	Environmental Wood ID
E2942:067	094	0.5 L Bag	Animal bone from dark brown clay with wood inclusions in well (087)	Bone analysis/ identification
E2942:068	130	2 L Bag	Wood fragments recovered at base of well (087)	Environmental Wood ID
E2942:069	120	2 L Bag	Brown clay silty fill with charcoal and pebble inclusions in pit (122)	Environmental
E2942:070	093	2 L, 2 Bags	Brown grey clay with stone inclusions in well (087)	Environmental
E2942:071	121	1 L Bag	Dark brown clay silt in pit (122)	Environmental
E2942:072	127	2 L Bag	Animal bone from grey clayey sand fill in pit (126)	Bone analysis/ identification
E2942:073	134	2 L Bag	Dark brown black silty sand with stone and charcoal inclusions in (133)	Environmental
E2942:074	127	2 L Bag	Grey clayey sand in pit (126)	Environmental
E2942:075	132	2 L Bag	Dark grey black clayey sand fill in pit (126)	Environmental
E2942:076	131	0.5 L Bag	Black clayey sand lens in pit (126)	Environmental

Sample	Context	Amount	Description	Type
E2942:077	135	2 L Bag	Medium grey brown sandy silt deposit associated with metallated surface (118)	Environmental
E2942:078	094	1 L Bag	Wood fragments from dark brown clay in well (087)	Environmental Wood ID
E2942:079	110	0.5 L Bag	Animal bone from dark brown black clayey sand, lower fill in well (143)	Bone analysis/ identification
E2942:080	042	0.5 L Bag	Animal bone from dark brown clayey sand in well (143)	Bone analysis/ identification
E2942:081	114	1 L Bag	Animal bone from light grey silty sand basal fill in (106)	Bone analysis/ identification
E2942:082	053	0.5 L Bag	Animal bone from dark grey silty sand in linear (051)	Bone analysis/ identification
E2942:083	068	2 L bag	Grey brown silty clay in pit (067)	Environmental
E2942:084	090	0.5 L Bag	Animal bone from black brown silty clay, lower fill in well (087)	Bone analysis/ identification
E2942:085	132	0.5 L Bag	Animal teeth from black grey clayey sand, upper fill in pit (126)	Bone analysis/ identification
E2942:086	110	2 L Bag	Medium brown silty peat from well (143)	Environmental
E2942:087	027	2 L Bag	Brown grey silty sand, basal fill in well (143)	Environmental
E2942:088	144	2 L Bag	Grey black silty clay with charcoal in well (087)	Environmental
E2942:089	145	2 L Bag	Medium grey silty sand with occasional charcoal in well (087)	Environmental
E2942:090	144	5 L Bag	Wooden tree stump at the base of the well (087)	Environmental Wood ID
E2942:091	068	2 L bag	Grey brown silty clay in pit (067)	Environmental
E2942:092	095	0.5 L Bag	Animal teeth from brown grey silty clay, slump deposit in well (087)	Bone analysis/ identification

Appendix 4 – Photographic Register for Site E2942

Photo	Direction Facing	Description
E2942:001	Northeast	General shot of topsoil stripping
E2942:002	Northeast	General shot of topsoil stripping
E2942:003	Northeast	General shot of topsoil stripping
E2942:004	South	Pre-excavation working shots of E2942
E2942:005	South	Pre-excavation working shots of E2942
E2942:006	Southwest	Pre-excavation working shots of E2942
E2942:007	East	Pre-excavation working shots of E2942
E2942:008	South	Pre-excavation working shots of E2942
E2942:009	South	Pre-excavation working shots of E2942
E2942:010	South	Pre-excavation working shots of E2942
E2942:011	West	Pre-excavation working shots of E2942
E2942:012	North	Pre-excavation shot of site to the east of field boundary
E2942:013	North	Pre-excavation of burnt mound 3 to the east of field boundary
E2942:014	South	Pre-excavation of burnt mound 3 to the east of field boundary
E2942:015	West	Trench 1, testing of blue areas in E2942
E2942:016	North	Trench 2, testing of blue areas in E2942
E2942:017	West	Trench 3, testing of blue areas in E2942
E2942:018	North	Trench 4, testing of blue areas in E2942
E2942:019	North	Trench 5, testing of blue areas in E2942
E2942:020	North	Mid-excavation shot of pit (017)
E2942:021	West	Mid-excavation shot of linear (003)
E2942:022	East	Mid-excavation of intersecting ditches (003), (005), (007) and (009)
E2942:023	East	Mid-excavation of ditches (003) and (005)
E2942:024	North	Working shot of site E2942 with pre-excavation of burnt mound 1
E2942:025	Northeast	Working shot with Burnt Mound 3 and ditches (003) and (005)
E2942:026	West	Pre-excavation of area to the southeast and Burnt Mound 3
E2942:027	North	Pre-excavation of area to the southeast of site
E2942:028	East	Pre-excavation of area to the southeast of site
E2942:029	East	Pre-excavation of area to the southeast of site
E2942:030	South	Mid-excavation of Burnt Mound 3 , (020)
E2942:031	South	Mid-excavation shot of Burnt Mound 3, (020)
E2942:032	Northeast	Mid-excavation of linear (021)
E2942:033	North	Pre-excavation of area 2, northwest corner of site
E2942:034	North	Pre-excavation of area 2, northwest corner of site
E2942:035	South	Pre-excavation of area 2, northwest corner of site
E2942:036	East	Mid-excavation of burnt mound 2, (012), (014) and (019)
E2942:037	East	Mid-excavation of burnt mound 2, (012), (013), (015) and (032)
E2942:038	North	Mid-excavation of burnt mound 2, (012), (013), (015) and (032)
E2942:039	East	Southern end of burnt mound 2, (012) and (013)
E2942:040	West	Mid-excavation of burnt mound 2, (012), (013) and (015)
E2942:041	South	Pre-excavation of burnt mound 1
E2942:042	South	Pre-excavation of burnt mound 1
E2942:043	North	Pre-excavation of burnt mound 1
E2942:044	North	Pre-excavation of burnt mound 1
E2942:045	Southeast	Mid-excavation section of shallow pit (017)

Photo	Direction Facing	Description
E2942:046	West	Mid-excavation section of burnt mound 2, (012), (014) and (032)
E2942:047	South	Mid-excavation section of burnt mound 2, (012) and (032)
E2942:048	South	Mid-excavation of burnt mound 2, (012), (015) and (032)
E2942:049	North	Mid-excavation of burnt mound 2, (012), (015) and (032)
E2942:050	Northeast	Post-excavation of pit (017)
E2942:051	East	Mid-excavation of burnt mound 2
E2942:052	North	Post-excavation of linear (029)
E2942:053	Southeast	Mid-excavation section of linear (033) and (034)
E2942:054	South	Post-excavation of burnt mound 2
E2942:055	North	Post-excavation of burnt mound 2
E2942:056	Northwest	Pre-excavation of possible pit (040)
E2942:057	Southeast	Mid-excavation of shallow pit (040)
E2942:058	Southeast	Post-excavation of pit (040) and linear (033)
E2942:059	Northwest	Post-excavation of pit (040) and linear (033)
E2942:060	Northeast	Post-excavation of pit (040) and linear (033)
E2942:061	N/A	Iron ring pin, (E2942:042:001)
E2942:062	N/A	Iron ring pin, (E2942:042:001)
E2942:063	N/A	Iron ring pin, (E2942:042:001)
E2942:064	N/A	Iron ring pin, (E2942:042:001)
E2942:065	N/A	Iron ring pin, (E2942:042:001)
E2942:066	N/A	Iron ring pin, (E2942:042:001)
E2942:067	Southwest	Mid-excavation section of linear (051)
E2942:068	Northwest	Mid-excavation section of pit (043)
E2942:069	North	Post-excavation of area 1, southeast of site
E2942:070	North	Post-excavation of area 1, southeast of site
E2942:071	Northeast	Post-excavation of area 1
E2942:072	North	Post-excavation of area 1
E2942:073	South	Post-excavation of area 1
E2942:074	Southwest	General shot of burnt mound 1
E2942:075	West	General shot of burnt mound 1
E2942:076	Northwest	Clump of animal bone in well (106), context (070) in area 2
E2942:077	Northwest	Clump of animal bone in well (106), context (070) in area 2
E2942:078	Northeast	Mid-excavation section of pit (056),with drain (060)
E2942:079	East	Mid-excavation section of pit (056),with drain (060)
E2942:080	Northwest	Post-excavation shot of pit (043)
E2942:081	East	Post-excavation of pit (056), with drain (060)
E2942:082	Northeast	Post-excavation of pit (056), with drain (060)
E2942:083	Northwest	Mid-excavation section of (065)
E2942:084	East	Mid-excavation section of burnt mound 1, with possible pit
E2942:085	North	Mid-excavation section of burnt mound 1 and pit (067)
E2942:086	East	Mid-excavation section of burnt mound 1
E2942:087	North	Mid-excavation section of burnt mound 1
E2942:088	North	General overview of burnt mound 1
E2942:089	West	General overview of burnt mound 1
E2942:090	South	General overview of burnt mound 1
E2942:091	East	General overview of burnt mound 1
E2942:092	Southeast	Post-excavation of linear (051) and pit (062)

Photo	Direction Facing	Description
E2942:093	Northwest	Post-excavation of pit (065)
E2942:094	Southeast	Animal bone cluster in fill (070), well (106)
E2942:095	Southeast	Animal bone cluster in fill (070), well (106)
E2942:096	Southeast	Animal bone cluster in fill (070), well (106)
E2942:097	Southwest	Mid-excavation of well (106)
E2942:098	North	Post-excavation of burnt mound 1
E2942:099	North	Post-excavation of burnt mound 1
E2942:100	North	Post-excavation of burnt mound 1
E2942:101	West	Post-excavation of burnt mound 1
E2942:102	South	Post-excavation of burnt mound 1
E2942:103	South	Post-excavation of burnt mound 1
E2942:104	East	Post-excavation of burnt mound 1
E2942:105	South	Pre-excavation of pits (073) and (075)
E2942:106	East	Mid-excavation of pit (077)
E2942:107	Northwest	Mid-excavation of pit (067)
E2942:108	Northwest	Mid-excavation of pit (067)
E2942:109	South	Mid-excavation of pits (073) and (075)
E2942:110	South	Post-excavation of pits (073) and (075)
E2942:111	Southwest	Post-excavation of pit (077)
E2942:112	North	Pre-excavation of natural deposit (083)
E2942:113	North	Mid-excavation of shallow pits (084) and (140)
E2942:114	Northeast	Mid-excavation of shallow pit (140)
E2942:115	Northeast	Mid-excavation of shallow pit (084)
E2942:116	North	Mid-excavation of pit (087) and drain (088)
E2942:117	West	Mid-excavation of pit (087) and drain (088)
E2942:118	South	Mid-excavation of pit (087) and drain (088)
E2942:119	East	Mid-excavation of pit (087) and drain (088)
E2942:120	North	Mid-excavation of pit (087)
E2942:121	Northeast	Mid-excavation of stone lined linear (054)
E2942:122	West	Mid-excavation of well (106)
E2942:123	Southeast	Mid-excavation of well (106)
E2942:124	Southeast	Post-excavation of pits (084) and (140)
E2942:125	Southeast	Post-excavation of shallow pit (140)
E2942:126	Southeast	Post-excavation of shallow pit (084)
E2942:127	East	Mid-excavation of linear (116)
E2942:128	West	Mid-excavation of stone lined linear (054)
E2942:129	East	Mid-excavation of small pit (113)
E2942:130	East	Post-excavation of pit (113)
E2942:131	West	Pre-excavation of metal surface (118)
E2942:132	North	Pre-excavation of metal surface (118)
E2942:133	South	Pre-excavation of metal surface (118)
E2942:134	East	Pre-excavation of metal surface (118)
E2942:135	North	Pre-excavation of metal surface (118)
E2942:136	Northeast	Post-excavation of pit (067)
E2942:137	Northwest	Post-excavation of pit (067)
E2942:138	West	Mid-excavation of linear (116) and metal surface (118)
E2942:139	West	Mid-excavation of pit (122)

Photo	Direction Facing	Description
E2942:140	West	Mid-excavation of linear (116)
E2942:141	East	Mid-excavation of metalled surface (118)
E2942:142	West	Mid-excavation of stone lined linear (116)
E2942:143	North	Mid-excavation of stone lined linear (116)
E2942:144	North	Mid-excavation of stone lined linear (116)
E2942:145	North	Mid-excavation of wood (125) in well (087)
E2942:146	North	Mid-excavation of wood (125) in well (087)
E2942:147	North	Mid-excavation of wood (125) in well (087)
E2942:148	Southeast	Mid-excavation of pit (126)
E2942:149	Northwest	Mid-excavation of stone lined drain (128)
E2942:150	North	Post-excavation of pit (122)
E2942:151	West	Post-excavation of pit (122)
E2942:152	Northeast	Mid-excavation of trough(133)
E2942:153	Northeast	Mid-excavation of trough (133)
E2942:154	Northeast	Post-excavation of trough (133)
E2942:155	Northeast	Post-excavation of trough (133)
E2942:156	Northwest	Mid-excavation of linear (128)
E2942:157	Southeast	Mid-excavation of linear (128)
E2942:158	East	Mid-excavation of metalled surface (118)
E2942:159	East	Mid-excavation of metalled surface (118)
E2942:160	East	Mid-excavation of metalled surface (118)
E2942:161	Northwest	Post-excavation of (128)
E2942:162	Southeast	Post-excavation of (128)
E2942:163	Northwest	Post-excavation of (187)
E2942:164	East	Post-excavation of (187)
E2942:165	North	Post-excavation of (187)
E2942:166	East	Mid -excavation of wells (106) and (143)
E2942:167	East	Mid-excavation of wells (106) and (143)
E2942:168	East	Mid-excavation of wells (106) and(143)
E2942:169	East	Mid-excavation of wells (106) and (143)
E2942:170	East	Mid-excavation of wells (106) and (143)
E2942:171	West	Mid-excavation of wells (106) and (143)
E2942:172	West	Mid-excavation of wells (106) and (143)
E2942:173	Northwest	Mid-excavation of wells (106) and (143)
E2942:174	West	Mid-excavation of wells (106) and (143)
E2942:175	West	Mid-excavation of well (106)
E2942:176	West	Mid-excavation of well (106)
E2942:177	West	Mid-excavation of well (106)
E2942:178	West	Mid-excavation of well (106)
E2942:179	West	Mid-excavation of well (106)
E2942:180	Northeast	Mid-excavation of pit (136)
E2942:181	Northeast	Mid-excavation of pit (136)
E2942:182	South	Post-excavation of pit (126)
E2942:183	Southwest	Post-excavation of pit (136)
E2942:184	Southwest	Post-excavation of pit (136)
E2942:185	East	Post-excavation of wells (106) and (143)
E2942:186	Northwest	Post-excavation of wells (106) and (143)

Photo	Direction Facing	Description
E2942:187	North	Post-excavation of wells (106) and (143)
E2942:188	North	Post-excavation of wells (106) and (143)
E2942:189	Northwest	Post-excavation of wells (106) and (143)
E2942:190	Northwest	Post-excavation of wells (106) and (143)
E2942:191	Northeast	Post-excavation of wells (106) and (143)
E2942:192	Northeast	Post-excavation of wells (106) and (143)
E2942:193	East	Post-excavation of (106) and (143)
E2942:194	East	Post-excavation of (106) and (143)
E2942:195	North	Post-excavation of pit (126)
E2942:196	North	Post-excavation of well and other features
E2942:197	Southeast	Post-excavation of well and other features
E2942:198	North	Post-excavation of well and other features
E2942:199	East	Post-excavation of well and other features
E2942:200	North	Mid-excavation of well (106)
E2942:201	North	Mid-excavation of well (106)
E2942:202	North	Mid-excavation of well (143)
E2942:203	North	Mid-excavation of well (143)
E2942:204	North	Mid-excavation of well (087)
E2942:205	North	Mid-excavation of well (087)

Appendix 5 – Drawing Register for Site E2942

Draw No.	Sheet No.	Section	Plan	Scale	Description
1	1	N/A	Yes	1:20	Pre-excavation plan of southeast area of E2942
2	2	N/A	Yes	1:20	Pre-excavation plan of southeast area of E2942
3	3	N/A	Yes	1:20	Pre-excavation plan of southeast area of E2942
4	4	Yes	N/A	1:10	Northeast facing section of drain(003)
5	4	Yes	N/A	1:10	Southeast facing section of pit (017)
6	4	Yes	N/A	1:10	Southwest facing section of drain (003)
7	5	N/A	Yes	1:50	Pre-excavation plan of southeast area of E2942
8	6	Yes	N/A	1:10	West facing section of small burnt mound 2
9	4	Yes	N/A	1:10	Northwest facing section of pit (017)
10	4	Yes	N/A	1:10	West facing section of drain(029)
11	7	N/A	Yes	1:50	Pre-excavation plan of area to the south of E2942
12	8	N/A	Yes	1:50	Pre-excavation plan of area to the south of E2942
13	9	Yes	N/A	1:10	South facing section of (012) burnt mound 2
14	4	Yes	N/A	1:10	North facing section of pit (033)
15	10	Yes	N/A	1:10	South facing section of ditch (028)
16	11	Yes	N/A	1:10	Northwest facing section of (040)
17	12	N/A	Yes	1:50	Pre-excavation plan of north area of site E2942
18	14	Yes	N/A	1:10	South facing section of pit (043)
19	13	Yes	N/A	1:20	South facing section of burnt mound 1
20	11	Yes	N/A	1:10	East facing section of linear (051)
21	11	Yes	N/A	1:10	East facing section of linear(054)
22	14	Yes	N/A	1:10	West facing section of pit (056)
23	15	Yes	N/A	1:10	West facing section of burnt mound 1
24	16	Yes	N/A	1:10	East facing section of linear (051)
25	14	Yes	N/A	1:20	Post-excavation ground plan of pit (056)
26	11	Yes	N/A	1:10	East facing section of linear (051)
27	17	N/A	Yes	1:20	Post-excavation ground plan of pit (043)
28	18	Yes	N/A	1:20	Southwest facing section of pit (067)
29	18	Yes	N/A	1:10	North facing section of pits (073) and (075)
30	19	Yes	N/A	1:10	Southeast facing section of pit (065)
31	19	Yes	N/A	1:10	West facing section of pit (077)
32	20	N/A	Yes	1:20	Post-excavation ground plan of pit (065)
33	19	N/A	Yes	1:20	Post-excavation ground plan of pit (077)
34	17	Yes	N/A	1:10	East facing section of feature (084)
35	20	Yes	N/A	1:20	East facing section of well (087) and linear (088)
36	13	Yes	N/A	1:10	Northeast facing section of linear (116).
37	13	Yes	N/A	1:20	Northeast facing section of linear (116)
38	11	Yes	N/A	1:10	Northeast facing section of linear (054)
39	22	Yes	N/A	1:10	Southwest facing section of well (106)
40	11	Yes	N/A	1:10	West facing section of pit (113)
41	20	Yes	N/A	1:10	West facing section of linear (116)
42	20	N/A	Yes	1:10	Stone lined ground plan of (116)
43	18	Yes	N/A	1:20	East facing section of linear (116), (124), (119) and pit (122)
44	20	Yes	N/A	1:10	North facing section of pit (126)

Draw No.	Sheet No.	Section	Plan	Scale	Description
45	21	N/A	Yes	1:20	Post-excavation ground plan of pit (067)
46	21	Yes	N/A	1:10	West facing section of trough (133)
47	19	Yes	N/A	1:10	Southeast facing section of linear (128)
48	19	Yes	N/A	1:10	West facing section of metalled surface (118)
49	20	Yes	N/A	1:10	West facing section of pit (136)
50	23	Yes	N/A	1:20	Northeast facing section of well (106)
51	24	N/A	Yes	1:50	Post-excavation ground plan of well (106) and related features
52	25	N/A	Yes	1:20	Post-excavation plan of sub-circular well (087)
53	26	Yes	N/A	1:10	Section of sub-circular well (087)
54	20	N/A	Yes	1:20	Post-excavation ground plan of pit (136)
55	17	Yes	N/A	1:10	Section of pit (140)

Appendix 6 – Test Trench Register for Site E2942

Trench No.	Trench dimensions	Trench description	Archaeology Present
Trench 1:6.b	42.50 m northwest/southeast by 1.90 m wide and 0.27–0.30 m deep	Topsoil – Medium brown silty clay, 0.20 m deep Subsoil – Light yellow brown gritty silty clay, 0.07 m deep. Natural – Grey yellow boulder clay, frequent angular stone.	No archaeology
Trench 2:6.b	14.50 m northeast/southwest by 1.90 m wide average depth of 0.25–0.28 m deep.	Topsoil – Medium brown silty clay, 0.18–0.20 m in depth Subsoil – Light yellow brown silty clay, 0.08–0.10 m in depth. Natural – Grey yellow boulder clay, frequent angular stones.	No archaeology
Trench 3:6.b	56 m northeast/southwest by 1.90 m wide, with a depth of 0.29–0.35 m.	Topsoil – Medium brown silty clay, 0.24–0.26 m in depth Subsoil – Light yellow brown silty clay, 0.05–0.09 m in depth. Natural – Grey yellow boulder clay, frequent angular stone.	No Archaeology
Trench 4:6.b	3.50 m northwest-southeast by 1.90 m wide, with an average depth of 0.30–0.32 m deep.	Topsoil – Medium brown silty clay, 0.22–0.24 m in depth. Subsoil – Light yellow brown silty clay, 0.05–0.09 m in depth. Natural – Grey yellow boulder clay, frequent small angular stones	No archaeology
Trench 5:6.b	10.00 m northwest-southeast by 1.90 m wide, with an average depth of 0.30–0.35 m.	Topsoil – Medium brown silty clay, 0.23–0.25 m in depth. Subsoil – Light yellow brown silty clay, 0.07–0.10 m deep. Natural – Grey yellow boulder clay, frequent small angular stones.	No archaeology

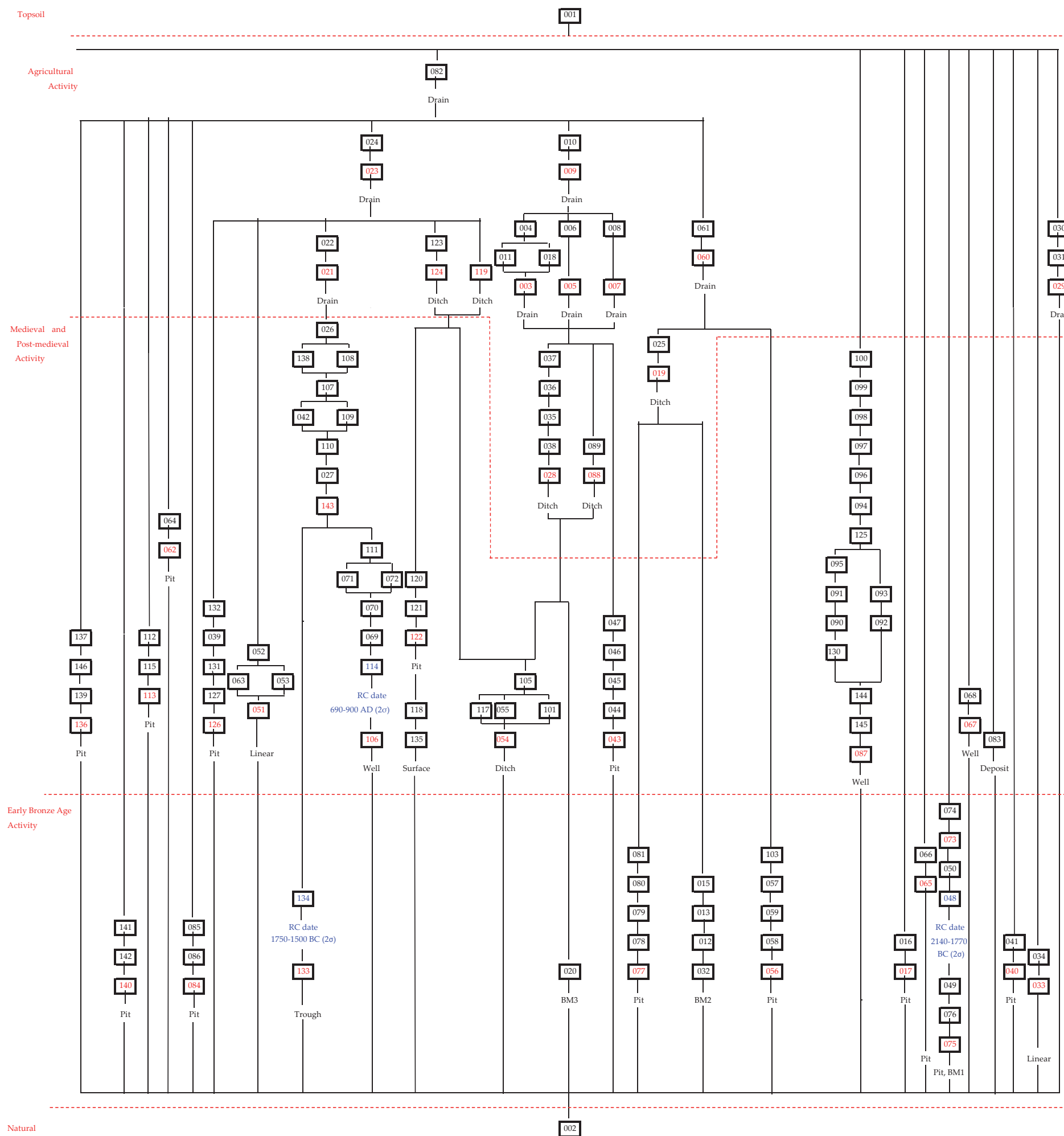
Appendix 7 Site Matrix for Site E2942

Red - Cut

Black - Fill

Blue - RC date

Topsoil



Appendix 8 – Palaeoenvironmental samples assessment for E2942, Hallahoise, Co. Kildare

By: Davie Masson and Dr. Scott Timpany

Introduction

Seventy-four environmental samples were taken, twenty of which were water logged, during the excavation at Site E2942 in the townland of Hallahoise, Co. Kildare, a site consisting of three burnt mounds, three waterlogged wells, fourteen pits, linear ditches and a metallised surface. Fifty-one of the soil samples were processed in order to retrieve any palaeoenvironmental material that may aid in the interpretation of the site.

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). All samples were initially assessed and those found to contain non-charcoal plant remains were taken to analysis level.

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

Results are presented in Table 1 (Radiocarbon dating results), Table 2 (Retent sample results), Table 3 (Flot sample results) and Table 4 (Analysis results). Of the fifty-one samples that were processed seven samples (005, 008, 012, 043, 052, 062 and 063) were archaeologically sterile.

Results of radiocarbon dating

Three radiocarbon dates have been made available for the site (see Table 1). Two dates associated with a burnt mound (Sample 017) and a trough (Sample 073) produced Bronze Age dates for activity. Both dates came from charcoal fragments, with alder (*Alnus glutinosa*) charcoal from burnt mound (048) producing a date of 2140-1770 cal BC (2 σ) (SUERC-25409; 3595 \pm 50 BP) and pomoideae (hawthorn/apple/pear) charcoal from trough (134) giving a date of 1750-1500 cal BC (2 σ) (SUERC-25410; 3340 \pm 50 BP). The third date showed a phase of activity from the early medieval period from sheep/goat rib bone, producing a date of cal AD 690-900 (2 σ) (SUERC-25295; 1205 \pm 50 BP).

Charred plant remains

Charred cereal grain was present within only two samples (018 and 086) and these were taken forward for analysis (see Tables 3 and 4). The grain assemblage included hulled barley (*Hordeum vulgare*), oat (*Avena* sp.) and club/bread wheat (*Triticum aestivo-compactum*). Some grains were found to be in such a poor state of preservation that identification to type was not possible; these are shown as *Cerealia* indet (see Table 4).

Wood charcoal

All samples (excluding those samples that were archaeologically sterile, see above) were found to contain charcoal fragments, with the exception of two samples (008 and 063) (see Tables 2 and 3). The quantity of charcoal fragments in the samples varied from rare to abundant, with fourteen samples containing fragments of a size suitable for radiocarbon dating and identification. Charcoal fragments from two samples (017 and 073) were identified and used for AMS (Accelerated Mass Spectrometry) dating (see Table 1 and 2).

Waterlogged plant remains

Nineteen samples from the fills of three wells, (087), (106) and (143), and trough (133) were waterlogged and were analysed for plant remains (see Tables 3 and 4). No charred cereal remains were present within these samples, however, a range of wild taxa were found. These included: sedges (*Carex* sp.), bramble (*Rubus fruticosus*), blackthorn (*Prunus spinosa*), violets (*Viola*), black elder (*Sambucus nigra*), hazel (*Corylus avellana*), midlands hawthorn (*Crataegus monogyna*), fat hen family (*Chenipodium* sp.), thistle (*Cirsium arvense*), dock (*Rumex* sp.) and the common nettle (*Urtica dioica*). Wood fragments were also observed within the samples (see Table 4). Uncharred hazel nutshell fragments were also present within Sample 041 the fill (068) of pit (067).

Other finds

Small quantities of burnt bone were found in nine samples (see Tables 2 and 3), with two samples (065 and 070) containing common amounts. Unburnt bone was recovered from six samples (see Table 2). A possible burnt flint (flake?) was also identified in Sample 017. These are discussed in Appendices 10 and 13

Discussion

The sampled features are discussed in chronological order below.

Burnt mounds c. 2060-1860 cal BC

Three burnt mounds, (012), (020) and (048), were identified in Area 1 of site E2942, with burnt mound (048) being dated to the Early Bronze Age from alder charcoal to 2140-1770 cal BC (2 σ) (SUERC-25409; 3595 \pm 50 BP). In all nine samples (001, 002, 005, 007, 008, 014, 015, 016 and 017) were analysed from the three burnt mound features. The only material of archaeological significance to come from these samples was charcoal fragments in all cases; with five of the samples containing abundant quantities (see Tables 2 and 3). The charcoal fragments from seven of the burnt mound samples contained fragments over 1 cm in size (see Table 2), which is consistent with their deliberate deposition in the burnt mound material and they are thus not likely to have travelled far from their source. The identification of alder charcoal within burnt mound (048) indicates that wetland or fringe woodland was utilised as a fuel source. Alder has been noted as a common fuel type in burnt mound assemblages and has been suggested to indicate the use of local woodland resources (*e.g.* Scott 2009). Unfortunately no other materials were recovered from the burnt mounds providing little other interpretative information.

Trough (133) 1750-1500 cal BC

A waterlogged sample (073) was analysed from the fill of a trough (133) in Area 2 of the site, which had been truncated by well (143) and drainage ditch (082). The fill (134) of the trough was found to contain a single sedge nutlet together with a common amount of charcoal fragments (see Tables 3 and 4). A fragment of pomoideae charcoal from this fill was dated to 1750-1500 cal BC (2 σ) (SUERC-25410; 3340 \pm 50 BP), giving the feature a latest Early Bronze Age date. This indicates the trough was probably in use during the same period as burnt mound (048). The assemblage itself is fairly limited

with the charcoal likely being a mixture of scattered fragments that have been incorporated into the trough through windblow and possible plough action. The identification of pomoideae charcoal is again suggestive of woodland fringe being utilized as a resource for fuel wood. The presence of sedge is likely to reflect the local growth of this plant around the trough during its period of infilling. Sedge nutlets were also found in the well deposits (see below) suggesting they were common around the site in post-activity phases.

Wells (087, 106 and 143) c. cal AD 690-900

Waterlogged samples were analysed from the fills of three wells, (087), (106) and (143), within Area 2 which were found to contain a good assemblage of non-charred plant remains (see Table 4). A rib bone identified as sheep/goat was radiocarbon dated from the fill (114) of well (106) and produced an early medieval date of cal AD 690-900 (2 σ) (SUERC-25295; 1205 \pm 50 BP). The assemblages from the three wells are all of a similar nature, containing plants indicative of wet and disturbed ground as would be expected near features such as wells. Plants such as brambles, common nettle, docks, thistle and knotgrass are all indicative of such locations (Clapham *et al* 1962; Stace 1997) and these plants may have been growing around the wells when they were active and probably over and within the wells themselves when they had gone out of use. Findings of hazelnut shell fragments, elder fruits, and hawthorn and blackthorn fruit stones within the samples suggest these trees were growing locally around the site. Their presence in the well fills may indicate accidental inclusion by people, with all three being edible wild foodstuffs; accidental deposition from birds, with elder fruits renowned for surviving the dietary tract; or deposition from trees located near to the wells.

Thus the waterlogged plants provide a picture of the local environment around the wells, indicating there were probably scrubby trees such as hawthorn, hazel, blackthorn and elder located near the wells. The ground around the wells was probably well used and thus we have a number of disturbed ground species growing around the wells themselves. Puddling of water also seems to have taken place around the wells and we can see this from the number of damp-loving taxa (e.g. sedges and bramble) remains in the assemblage. This puddling is likely to have been a result of spilling of water around the wells during their lifetime together with water collecting around these features after they have gone out of use.

Together with the uncharred plant remains present within the well fills, burnt bone fragments were also observed in a number of samples (see Tables 2 and 3). In particular, two samples (065 and 070) from within well (087) contained significant amount of burnt bone fragments and may indicate that domestic waste was being discarded into this well after it had gone out of use (Appendix 10). Another sample (048) from this well (087) also contained an abundant quantity of charcoal as did the upper fill (109) of well (143), which again is suggestive of deliberately discarded material. A small quantity of small-sized (<1 cm) charcoal fragments were also found in many of the other well samples (see Tables 2 and 3), which is likely to represent fragments that have been blown or washed into the wells from activity nearby. A single charred oat grain was also recovered from one sample (086) from well (143) (see Table 4) and again it is suspected this has been blown or washed into the well.

Undated features

Pit features: A total of fourteen samples were taken from pits across Area 1 and Area 2 of the site. Only one of the samples from Area 1 (pit (043), Sample 045), was found to contain non-charcoal charred plant remains (see Table 4). Charred grain of hulled barley and oat were found to dominate the assemblage, together with smaller amounts of club/bread wheat and indeterminate grain. Although undated, the assemblage would suggest a medieval date given the relatively high quantity of oat in the sample. Of perhaps even more interest is the presence of legumes in the sample, which suggest more than cereals were being cultivated in the area. The pit was also found to contain significant amounts of charred field pea (*Pisum sativa*) and broad bean (*Vicia faba*) fruits, together with

a number of charred mustard seeds (*Brassica/Sinapis* sp.). The presence of these cultivars would further indicate that this pit fill is of later medieval date (Monk 1985-86). Previous assemblages containing this mix of grain and legumes have been radiocarbon dated to the 15th century AD, such as at Cappydonnell, Co. Offaly (Lyons 2009). Together with the charred plant remains this pit assemblage also contained small quantities of charcoal fragments, burnt bone and unburnt bone. The assemblage as a whole would suggest this pit contains possible domestic discarded hearth waste relating to settlement sometime in the medieval to later medieval period.

The samples from the other pit features were all found to contain only charcoal fragments with burnt and unburnt bone also present in a small number of the pits (see Tables 2 and 3). These limited assemblages, compared to pit (045), provide little interpretative value for these features. Those pit fills with small quantities of charcoal and bone are more likely to represent washed or blown in material than those where charcoal are abundant; suggesting that these materials may have been deliberately discarded into the pits.

Curvilinear ditches: One sample (010) was taken from the fill (034) of curvilinear ditch (033) and three samples (020, 021 and 022) from the fills, (052), (053) and (063), of curvilinear ditch (051). In all cases the samples were found to contain only charcoal fragments (see Tables 2 and 3), with only one sample (020) containing an abundant quantity of fragments. It is likely that the charcoal within these ditches (as with the pits) represents a mixture of deliberately discarded material and material either washed or blown into the ditches.

Metalled surface (118): One sample (077) was taken from the metalled surface (118) feature (see Tables 2 and 3). This sample was found to contain only charcoal fragments of a small size (<0.5 cm). Therefore, the assemblage again offers little interpretative information; the charcoal may represent fuel waste from any industrial activities, which took place in this part of the site or may have been blown/washed in from other activities in the surrounding area.

Conclusions

- The Early Bronze Age burnt mound features contained limited assemblages dominated by charcoal fragments that suggest fringe woodland was exploited for fuel.
- The waterlogged plant remains from the well assemblages suggest the local environment around the wells was open ground with some wood scrub. The assemblage also suggests wet and disturbed ground existed in the immediate environment around the well features.
- The charred grain and legume assemblage from pit (045) would suggest a late medieval date for the agricultural evidence on site and that cultivated crops included field peas and broad beans together with the cereals.

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E- Number	Lab code	Sample ID	Material	δ13C	Radiocarbon age BP	Calibrated Age Ranges (1 σ)	Relative probability	Calibrated Age Ranges (2 σ)	Relative probability
E2942	SUERC - 25410	Sample 073, Context 134	Pomoideae charcoal	-22.7	3340 +/- 50	1690 - 1600 cal BC 1580-1530 cal BC	46.9 21.3	1750 - 1500 cal BC	95.4
E2942	SUERC- 25295	Sample 081, Context 114	Sheep/goat rib (bone)	-21.7	1205 +/- 30	cal AD 775 - 870	68.2	cal AD 690 – 750 cal AD 760-900	9.3 86.1
E2942	SUERC- 25409	Sample 017, Context 048	Alder charcoal	-25.2	3595 +/- 50	2030 - 1890 cal BC	68.2	2140-2080 cal BC 2060-1860 cal BC 1850-1770 cal BC	6.3 80.8 8.5

Table 1 – Radiocarbon dating results

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Dry Organic	Nutshell	Shell	Worked Stone	Other
				Qty	AMS	Burnt	Unburnt	Burnt	Unburnt					
12	1	10	Burnt mound deposit from BM2 Quad B	+++	*									
20	2	10	Burnt deposit over bank between two ditches from BM3	++++	*									
13	5	10	Grey brown deposit from BM2 Quad D	+					+ Seed					
14	7	10	Burnt mound deposit from BM2 Quad C	++++	*									
32	8	10	Grey silt clay under burnt mound Quad D						+			+		
16	9	1.5	Dark grey silt fill of poss Pit [17]	+										
34	10	2	Black clay silt fill of Linear feat. [33]	+++					++ Moss & Twigs					
41	12	2	Burnt mound deposit from BM2	+								+		
48	14	4	Black silt clay with	++++	*									

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Dry Organic	Nutshell	Shell	Worked Stone	Other
			sand & charcoal deposit from BM1 Quad A											
48	15	4	Black silt clay with sand & charcoal deposit from BM1 Quad B	++++	*									
48	16	4	Black silt clay with sand & charcoal deposit from BM1 Quad C	+++	*									
48	17	1.5	Black silt clay with sand & charcoal deposit from BM1 Quad D	+++	*								+ Poss Burnt Flint	
45	18	3	Mid fill from poss Pit [43]	++	*	+	+	+	Seeds					
58	19	2	Charcoal rich deposit from Pit [56]	+++										
52	20	0.5	Dark grey upper fill with charcoal inclusions from Linear [51]	++++	*							++		
53	21	2	Dark brown black fill from Linear [51]	++								+		
63	22	1	Lowermost, light brown grey clay silt fill with mollusc remains from Linear [51]	++										
74	35	0.5	Black clay sand with	+++								+		

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Dry Organic	Nutshell	Shell	Worked Stone	Other
			charcoal & stone inclusions, fill of Pit [73] cutting BM1											
76	36	1.5	Brown peat fill with charcoal & sand inclusions, fill of Pit [75] under BM1											
68	41	2.5	Grey brown silt clay fill from [67]	+				+ Seed			+			
85	42	1.75	Dark grey brown silt sand upper fill from [84]	++		+								
86	43	2	Dark grey black clay sand, lower fill from [84]	+										
70	45	1.5	Grey brown clay sand, mid fill from Well [106]	+						+ Wood	+	+		
98	48	1.3	Brown black sand silt fill from Well [87]	++++	*									
108	50	1.3	Dark brown silt sand with charcoal, mid fill from [133]	++		+			+ Seed	+ Wood		+		
110	51	1.5	Dark brown black clay sand fill with wood, bone & charcoal inclusions from Well [143]	+				++++		+++ Wood	+			
42	52	7	Dark grey brown silt sand fill with charcoal inclusions from Well	+		+						+		

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Dry Organic	Nutshell	Shell	Worked Stone	Other
107	53	1.75	[143] Dark brown red clay silt fill from Well [143]		+				++++	+ Wood	+	+		
26	54	2	Dark brown red silt sand, upper fill from Well [143]		+									
70	55	1	Grey brown clay sand, mid fill of Well [106]		+		+		++++	+ Wood		+		
109	57	2	Light grey yellow upper fill silt sand with charcoal & stones from [143]		+		+					+		
69	58	1.5	Light grey yellow clay lower fill sand with stone, bone & hazelnut inclusions		+		+			+ Beetle frags, + Wood	+++	+		
111	59	2	Upper light grey brown silt sand fill of [106]		+		+			+ Wood		+		
115	60	1.5	Dark brown clay silt fill of Pit [113]		+				+					
95	61	1	Brown grey silt fill of Well [87]											
90	62	3	Black brown silt clay with heat shattered sandstones from Well [87]		+									
91	63	2	Brown black clay sand from Well [87]											
96	64	4	Dark brown clay fill		+		+		+					

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Dry Organic	Nutshell	Shell	Worked Stone	Other
			from Well [87]											
94	65	4	Dark brown clay with wood inclusions from Well [87]	+		'+++		+++		+++ Wood				
120	69	4	Brown clay silt fill with charcoal & pebble inclusions from Pit [122]	+			+							
93	70	2	Brown grey clay clay with stone inclusions from Well [87]	++		+++								
121	71	0.5	Dark brown clay silt fill from Pit [122]	+										
134	73	2	Dark brown black silt sand fill with stone & charcoal inclusions from [133]	+++	*					+ Wood				
127	74	1.5	Grey clay sand fill from Pit [126]	++										
132	75	1.5	Dark grey black clay sand fill from Pit [126]	+++		+	+							
131	76	0.1	Black clay sand lens from Pit [126]	++++										
135	77	1.5	Mid grey brown sand silt deposit assoc. with metttled surface [118]	+								+		
110	86	2	Mid brown silt peat from Well [143]	+				+ Seed		+++ Wood & Twigs	+	+		

Context number	Sample number	Sample vol (L)	Context/ Sample description	Wood charcoal		Mammal bone		Plant		Dry Organic	Nutshell	Shell	Worked Stone	Other
27	87	1	Brown grey silt sand, basal fill from Well [143]	+			+		+++ Seed		++			
144	88	1	Grey black silt clay with charcoal from Well [87]	+					+ Seed,					
145	89	1.5	Mid grey silt sand with occasional charcoal from Well [87]	+						++ Wood				

Table 2 – E2942 Retent sample results

Context Number	Sample Number	Feature	Total flot Vol (ml)	Cereal grain:	Avena sp.	Hordeum vulgare	Triticum aestivo-compactum	Cerealia indet.	Charred plant remains	Waterlogged plant remains	Burnt bone	Charcoal Quantity
12	1	Burnt mound	500									+
20	2	Burnt mound	500									++++
13	5	Burnt mound	400									
14	7	Burnt mound	400									++++
32	8	Burnt mound	40									
16	9	Pit	150									+
34	10	Linear ditch	250									+++
41	12	Sub-oval feature	15									

Context Number	Sample Number	Feature	Total flot Vol (ml)	Cereal grain:	<i>Avena</i> sp.	<i>Hordeum vulgare</i>	<i>Triticum aestivo-compactum</i>	<i>Cerealia</i> indet.	Charred plant remains	Waterlogged plant remains	Burnt bone	Charcoal Quantify
48	14	Burnt mound	15									+
48	15	Burnt mound	15									+
48	16	Burnt mound	500									+
48	17	Burnt mound	<10									
45	18	Pit	250		+	++	+	+	+			+
58	19	Pit	10									+
52	20	Linear ditch	300									++++
53	21	Linear ditch	15									+
63	22	Linear ditch	10									+
74	35	Pit	10									+
76	36	Pit	10									+
68	41	Pit	30									+
85	42	Pit	10									++++
86	43	Pit	30									
70	45	Well	15							++++		+
99	48	Well	100							+		+
108	50	Well	50							++++		
110	51	Well	150							++++		++
42	52	Well	15									
107	53	Well	30							++++		
26	54	Well	1500							++++		+
70	55	Well	15							++++		+

Context Number	Sample Number	Feature	Total flot Vol (ml)	Cereal grain:	<i>Avena</i> sp.	<i>Hordeum vulgare</i>	<i>Triticum aestivo-compactum</i>	<i>Cerealia</i> indet.	Charred plant remains	Waterlogged plant remains	Burnt bone	Charcoal Quantity
109	57	Well	300							++++		++++
69	58	Well	10							+		+++
111	59	Well	20							++++		+
115	60	Pit	150									++++
95	61	Well	20							+		+
10	62	Modern ditch	150									
91	63	Well	10									
96	64	Well	20							++++		+
94	65	Well	20							++++		
120	69	Pit	15									+
93	70	Well	15							+	+	++
121	71	Pit	25									++++
134	73	Trough	50							+		++++
127	74	Pit	150									+++
132	75	Pit	75									+++
131	76	Pit	150									++
135	77	Metallic surface	50									++++
110	86	Well	250							++		++++
27	87	Well	75							++		+++
144	88	Well	200							++	+	++++
145	89	Well	350							+		+++
Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant												
	NB charcoal over 1cm is suitable for identification and AMS dating											

Table 3 – E2942 Flotation Sample Results

Waterlogged Samples																Charred
																Trough 133

Appendix 9 – Waterlogged Wood from Hallahoise, Site E2942, County Kildare

By: Simon Gannon

Introduction

The wood comprised four samples derived from two wells in Area 2 of the site at Hallahoise, E2942, Co. Kildare. Analysis took place after removal from the site and a period in storage. The sample was examined for any evidence of wood working and identification of species.

Identification of species

The results are summarised in Table 1.

Methodology

Slices were removed from the wood samples to reveal the transverse plains and where required the radial longitudinal and tangential longitudinal plains. Identification was made by microscopic examination of between x10 and x400. Reference material comprised samples of wood taxa from the National Botanic Gardens, Glasnevin and reference publications (Schweingruber 1990, Hather 2000).

Identification

The results are summarized in Table 1. Classification of the taxa follows that of *Flora Europaea* (Tutin *et al* 1964-80). The identification is consistent with the following group of taxa.

Broadleaf taxa

Betulaceae. *Alnus* spp., alders.

Fagaceae. *Quercus* spp. Oaks.

The inferred possible native species are common alder, *Alnus glutinosa*, fearnóg; pedunculate oak, *Quercus robur*, dair ghallda; and sessile oak, *Quercus petraea*, dair ghaelach (Scannell and Synott 1987).

Taxa in site context

Sample (027), context (069), fragments of mainly small roundwood identified as alder (*Alnus*). Sample (066), context (125), a section of whole roundwood identified as oak (*Quercus*). Sample (068), context (130), fragments of radial portions identified as oak (*Quercus*). Sample (078), context (094), fragments of radial portions identified as oak (*Quercus*).

Worked wood assessment

Methodology

After cleaning the various surfaces of each piece were examined for evidence of possible manufacture; tool use by direct cut marks or implied by facets, design implied by shape and surface contours, and conversion as indicated mainly by end grain structure.

Worked wood

Sample (027) was taken from context (069), a lower deposit from well (106). This sample was of several small fragments, the largest of which was a small section of whole roundwood alder (*Alnus*) with some bark retained. This was a small diameter knotty branchwood that had no tool marks but

possibly hewn or torn at one end. Other fragments in this sample were small sections of branchwood without any use indicators.

Sample (066) was a small section of whole roundwood oak (*Quercus*) from context (125), a deposit from the bottom of well (087). This was a piece of knotty branchwood with one end evidently broken from the stem, there were no tool marks or facets but the other end had an angled truncation similar to a axe/adze cut but also possibly split or torn away to produce a rough chisel point.

Sample (068) was of several fragments of oak (*Quercus*) from context (130), a deposit from the bottom of well (087). These were short sections of partly charred radial portions possibly from a single piece. There were no tool marks, but one fragment had a particularly flat surface which could have been split and/or possibly hewn flat.

Sample (078) was of three fragments of oak (*Quercus*) from context (094), a deposit from well (087). These were radial portions with all surfaces eroded and without tool marks or woodworking indicators.

Discussion and conclusion

All the wood came from the lower deposits of wells on the site and did not appear to have had any function *in situ*. Some of the pieces show suggestions of use, the species involved are both commonly recorded as used in structures at watery sites generally, and *fulachta fiadh* in particular. In the *fulacht fiadh* at Hallahoise, E2943, Co. Kildare, alder was used as planking at the base of the trough and at another *fulacht fiadh* site, Site E2586 in Johnstown, Co. Carlow, both alder and oak were used as structural material. Alder and oak are resistant to water degradation making them optimal material for use at sites that have watery settings. The indicated environment contained a dry ground setting for the growth of oak and a water course for alder.

Sample number	Context number	Item size (largest piece) mm	Conversion/ portion	Woodworking: site function	Taxa
027	069	77x33x17	whole roundwood	possibly hewn: stake	<i>Alnus</i>
066	125	480x72x72	whole roundwood	none: unknown	<i>Quercus</i>
068	130	180x75x30	radial	none: unknown	<i>Quercus</i>
078	094	30x38x18	radial	none: unknown	<i>Quercus</i>

Table 1 – E2942 Waterlogged Wood: Identification of Species, Woodworking Analysis

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Appendix 10 – Final report on the faunal remains from Hallahoise, Co. Kildare (E2942)

By: Auli Tourunen PhD and Albína Hulda Pálsdóttir MA

Introduction

This report discusses the results animal bone analysis from Hallahoise, Co. Kildare (E2942). Full archaeological resolution was conducted on this site between 14 May 2007 and 15 June 2007. This revealed three truncated burnt mounds, three wells, a metallated surface, a curvilinear drain, fourteen potential pits, a truncated trough, 16 drainage ditches and one boundary ditch (Doyle 2009, 3). The bone material dates to the early medieval phase of the site. The animal bone specimens were recovered by hand-picking and from soil sample processing. The bone in this report derives from fill (045) of pit (043), fill (053) of linear feature (051), fill (068) of pit (067), fills (085) and (086) of pit (084), fills (090), (094) and (095) of well (087), fills (069), (070), (111), and (114) of well (106), upper fill (120) of small pit (122), fills (127,) and (132) in pit (126) and fills (026), (027), (042), (108), (109) and (110) of well (143).

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). However, MNE was employed for the more detailed study of the epiphysis fusing stages and to study the species and anatomical distribution. Distinctions made between sheep and goat follow Boessneck (1969) and Prummel and Frisch (1986). In addition, Payne (1975) was used for the identification of sheep and goat milk teeth. 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, goat and pig bones. Tooth eruption and wear were recorded according to Grant (1982). Mandibles were further divided into age groups presented by O'Connor (2003, 160). Measurements were taken following von den Driesch (1976). In addition, the medial edge of the pelvis was measured according to Vretemark (1997). 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.

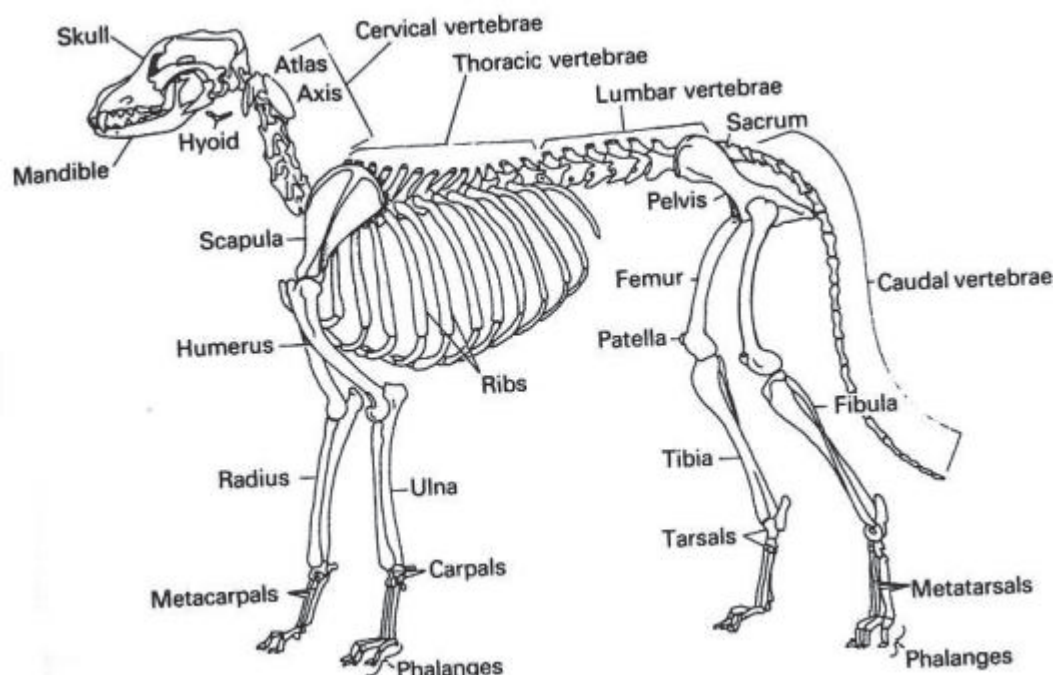


Figure 1 – Location on animal skeleton of terms referred to in text (Davis 1987, 54, in Reitz and Wing 1999).

Results

A total 814 bone specimens were analysed from the site (Table 1). All the identified mammal specimens derive from domestic animals apart from the one rabbit bone recovered from fill (045) of pit (043) which is possibly intrusive. The assemblage in whole is dominated by sheep, followed by pig and cattle. The assemblage also included horse, dog and goat bones. Sheep and goat bones are very similar and only some parts of their skeletons can be identified to a species. Only three goat bones were identified from the sample and it can be assumed that most of the bones in the category 'sheep or goat' are sheep bones. The preservation of the material varied from very well-preserved to highly-eroded. No rodent or carnivore teeth marks were noticed in the material.

<i>Context</i>	<i>Cattle</i>	<i>Horse</i>	<i>Pig</i>	<i>Sheep</i>	<i>Goat</i>	<i>Sh/ g</i>	<i>Dog</i>	<i>Cat</i>	<i>Rabbit</i>	<i>Lm</i>	<i>Mm</i>	<i>Unid</i>	<i>NISP</i>
026	3											1	4
027								1					1
042	1	1										1	3
045									1			305	306
053												19	19
068	5	3				3					2	15	28
069	5		1	18		23					17	22	86
070			36	11		35					13	84	179
085												1	1
086										8			8
090	3									2		4	9
094	2		1							1		40	44
095	2												2

<i>Context</i>	<i>Cattle</i>	<i>Horse</i>	<i>Pig</i>	<i>Sheep</i>	<i>Goat</i>	<i>Sh/g</i>	<i>Dog</i>	<i>Cat</i>	<i>Rabbit</i>	<i>Lm</i>	<i>Mm</i>	<i>Unid</i>	<i>NISP</i>
096												1	1
108												2	2
109												2	2
110	1					3	1					4	9
111						1						4	5
114			7	12	3	11					17	2	52
120												1	1
127	14		1			1						32	48
132			1									3	4
Total	36	4	47	41	3	77	1	1	1	11	49	543	814

Table 1 – Species representation of sample (NISP). Sh/g = sheep/goat, Lm = large mammal, Mm = medium mammal, Unid = unidentified

Bones from different features

The animal bone material from the Hallahoise derives from several different features, such as wells, pits and linear features. Each feature is dealt with individually below.

Pits and linear

A number of the animal bones from Hallahoise derive from various pits and a linear feature (Table 2). Pit (043) contained burnt and unburnt unidentifiable bone and a single rabbit mandible which is possibly intrusive. Linear feature (051) included only unidentified fragments. The material from pit (067) included cattle, sheep or goat and horse bones. Fill (085) of pit (084) contained one charred unidentifiable fragment but fill (086) of pit (084) contained eight large mammal shaft fragments, all unburnt, which probably derive from the same bone. Pit (122) contained a single unidentified unburnt fragment. Pit (126) included a small collection of cattle, sheep or goat and pig bones.

<i>Feature</i>	<i>Context</i>	<i>Cattle</i>	<i>Horse</i>	<i>Pig</i>	<i>Sh/g</i>	<i>Rabbit</i>	<i>Lm</i>	<i>Mm</i>	<i>Unid</i>	<i>NISP</i>
Pit (043)	045					1			305	306
Linear (051)	053								19	19
Pit (067)	068	5	3		3			2	15	28
Pit (084)	085								1	1
Pit (084)	086						8			8
Pit (122)	120								1	1
Pit (126)	127	14		1	1				32	48
Pit (126)	132			1					3	4
Total		19	3	2	4	1	8	2	376	415

Table 2 – Species representation of the bone from the pits and linear at Hallahoise (NISP). Sh/g = sheep/goat, Mm = medium mammal, Unid = unidentified

Only a few of the bones recovered from the pits and linear features from Hallahoise were burnt (Table 3). All of the burnt material was unidentifiable to either species or element.

<i>Feature</i>	<i>Context</i>	<i>Calcined</i>	<i>Charred</i>	<i>Unburnt</i>	<i>Total</i>
Pit (043)	045	13		293	306
Linear (051)	053			19	19
Pit (067)	068			28	28
Pit (084)	085		1		1
Pit (084)	086			8	8
Pit (122)	120			1	1
Pit (126)	127			48	48
Pit (126)	132		1	3	4
Total		13	2	400	415

Table 3 – Burning in the pits and linear features from Hallahoise

Only one feature, pit (067), had enough identified elements for the element distribution to be studied (Table 4). For both cattle and sheep/goats the elements present represent limb bones and teeth but no elements from the trunk, *e.g.* ribs and vertebra, are present. This element distribution suggest that the bones represent slaughter waste rather than domestic refuse but given the small sample size no firm conclusions about site function can be drawn from this.

One of the horse bones, a metacarpal, exhibited signs of osteoperiostitis on the anterior-medial shaft.

<i>Element</i>	<i>Cattle</i>	<i>Horse</i>	<i>Sh/g</i>	<i>Mm</i>	<i>Unid</i>	<i>NISP</i>
Mandible				2		2
Teeth	2		2			4
Scapula	1					1
Humerus	1	1	1			3
Metacarpal		1				1
Pelvis		1				1
Femur	1					1
Unidentified					15	15
Total	5	3	3	2	15	28

Table 4 – Element distribution for the material from pit (067). Sh/g = sheep/goat, Mm = medium mammal, Unid = unidentified

Wells

Most of the animal bones from Hallahoise derives from wells. The well features, (087) and (143), included small bone assemblages, dominated by cattle bone but with some sheep/goat, pig, dog and cat bones. These two assemblages are too small for proper anatomical analysis, however, the bones from the limbs are well represented in the samples. The assemblage from well (106) was relatively large and allowed further interpretation.

Well (087) A total of 56 bones were recovered from the fills of well (087), the majority of them were unidentifiable to either species or element. The only species identified were cattle and pig (Table 5).

<i>Context</i>	<i>Cattle</i>	<i>Pig</i>	<i>Large mammal</i>	<i>Unidentified</i>	<i>NISP</i>
090	3		2	4	9
094	2	1	1	40	44
095	2				2
096				1	1
Total	7	1	3	45	56

Table 5 – Species representation of bone from well (087) (NISP)

Due to the small size of the assemblage from well (087) the element distribution is not very informative; it can however be said that elements of the trunk are less frequent than those of the limbs (Table 6).

<i>Element</i>	<i>Cattle</i>	<i>Pig</i>	<i>Large mammal</i>	<i>Unidentified</i>	<i>NISP</i>
Mandible			1		1
Teeth	4	1		1	6
Rib			1		1
Humerus	1				1
Radius	1				1
Femur			1		1
Tibia	1				1
Unidentified				44	44
Total	7	1	3	45	56

Table 6 – Element distribution of the bone from well (087)

Over half of the material from well (087) was burnt (Table 7). All of the burnt material was unidentifiable to either species or element.

<i>Context</i>	<i>Calcined</i>	<i>Charred</i>	<i>Unburnt</i>	Total
090			9	9
094	12	26	6	44
095			2	2
096	1			1
Total	13	26	17	56

Table 7 – Burnt material from the fills of well (087)

Well (143) A total of 21 bones were recovered from well (143). The collection is very small but cattle bones were most frequent followed by sheep/goat bones (Table 8). A single horse tooth, a dog humerus and a cat thoracic vertebra were also found along with a number of unidentified fragments (Table 9).

<i>Context</i>	<i>Cattle</i>	<i>Horse</i>	<i>Sheep/goat</i>	<i>Dog</i>	<i>Cat</i>	<i>Unidentified</i>	<i>NISP</i>
026	3					1	4
027					1		1
042	1	1				1	3
108						2	2

Context	Cattle	Horse	Sheep/goat	Dog	Cat	Unidentified	NISP
109						2	2
110	1		3	1		4	9
Total	5	1	3	1	1	10	21

Table 8 – Species representation of bone from well (143) (NISP)

The collection from well (143) is very small and the element distribution for cattle and sheep/goat give no clear indication of the nature of the collection. The other species, horse, dog and cat, are represented by single elements (Table 9).

Element	Cattle	Horse	Sheep/goat	Dog	Cat	Unidentified	NISP
Teeth		1					1
Thoracic vertebra					1		1
Scapula	3						3
Humerus			1	1			2
Radius	2						2
Pelvis			1				1
Tibia			1				1
Unidentified						10	10
Total	5	1	3	1	1	10	21

Table 9 – Element distribution of the bone from well (143)

Only a few of the unidentifiable fragments from well (143) were burnt (Table 10).

Context	Calcined	Charred	Unburnt	Total
026			4	4
027			1	1
042			3	3
108	2			2
109	1	1		2
110			9	9
Total	3	1	17	21

Table 10 – Burnt material from the fills of well (143)

Well (106) A total of 322 animal bones were recovered from well (106). The animal bones from well (106) present a different pattern from the other features at Hallahoise. Here, sheep and goat bones form the majority of the finds, followed by pig and only a small number of cattle bones (Table 11).

Context	Cattle	Pig	Sheep	Goat	Sh/g	Mm	Unid	NISP
069	5	1	18		23	17	22	86
070		36	11		35	13	84	179
111					1		4	5
114		7	12	3	11	17	2	52
Total	5	44	41	3	70	47	112	322

Table 11 – Species representation of sample (NISP) from well (106). Sh/g = sheep/goat, Mm = medium mammal, Unid = unidentified

The sheep and goat bones derive mostly from head and limb bones (Figure 2). The limb bones were often complete, with no obvious signs of cracking for marrow. The minimum number of individuals in this sample is eight, based on the number of the right tibias.

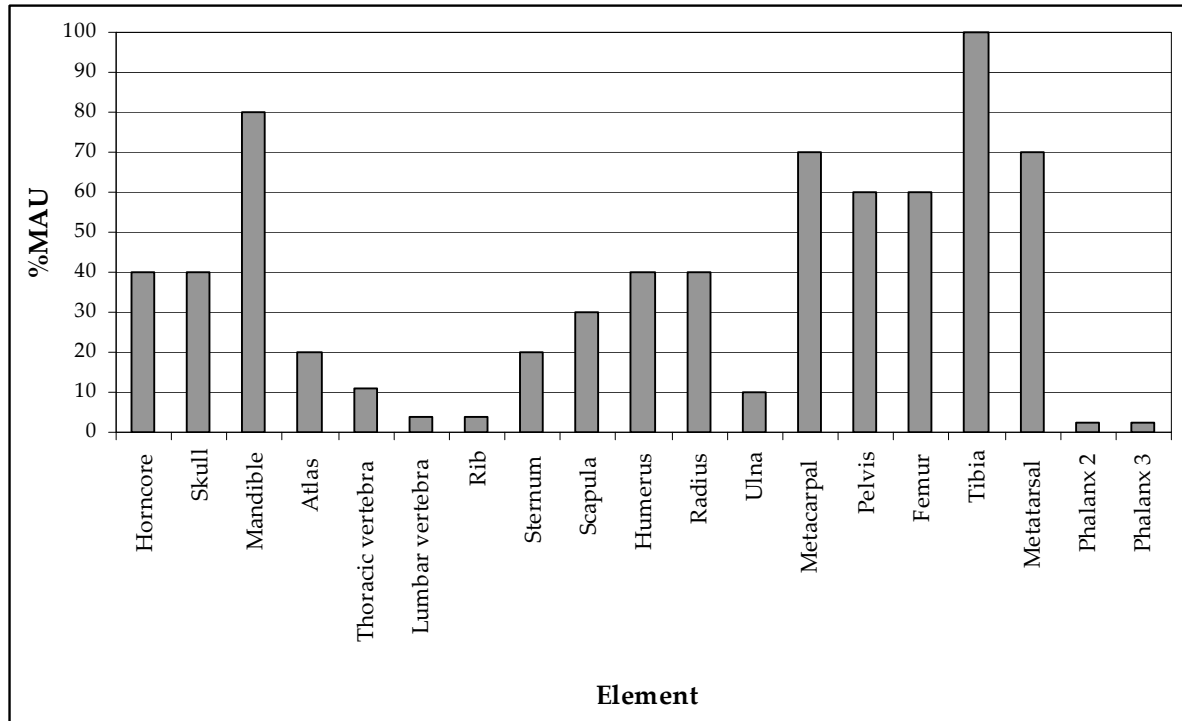


Figure 2 – The anatomical distribution of sheep and goat bones from well (106)

The majority of the pig bones from well (106) derive from fill (070). The bones are all from an immature (7-11 months old) pig and the assemblage has a MNI (Minimum number of individuals) of 1 and they could all derive from one individual (Table 12). These bones were apparently found in a cluster. The bones do not represent a complete skeleton: most of the bones of limbs, skull and mandible are present but no vertebrates were recovered. The preservation in the context is good: therefore it is unlikely that the part of the bones would have been destroyed. The pig remains probably represent either a deposition of partial skeleton or disturbed burial. In the former case, the meat of the pig could have been utilised; meat from the limbs possibly stripped off and the trunk of the carcass transported elsewhere. Another possibility is that it may represent either a discarded dead animal or remains of an animal that fell into well and drowned.

<i>Element</i>	<i>Left</i>	<i>Right</i>	<i>Unsided</i>	<i>NISP</i>
Skull	1	3		4
Mandible		1	6	7
Teeth			7	7
Scapula		2		2
Humerus	2	1		3
Radius	1	1		2
Ulna		1		1
Metacarpal	2			2
Pelvis	2	2		4

<i>Element</i>	<i>Left</i>	<i>Right</i>	<i>Unsided</i>	<i>NISP</i>
Femur		2		2
Tibia	1			1
Astragalus	1			1
Total	10	13	13	36

Table 12 – Elements present from the pig in fill (070) of well (106)

Very few of the bones from well (106) were burnt none of the burnt material could be identified to either species or element (Table 13).

<i>Context</i>	<i>Calcined</i>	<i>Charred</i>	<i>Unburnt</i>	<i>Total</i>
069	2		84	86
070		1	178	179
111			5	5
114			52	52
Total	2	1	319	322

Table 13 – Burning in the material from well (106)

Butchery: The sheep and goat bones exhibited some signs of carcass processing (Table 14). There were several cut marks on the distal end of the ribs. One goat skull and one horn core exhibited cut marks; the former probably relating to brain extraction and the latter to skinning or horn core removal. One sheep metacarpal had knife marks on its proximal shaft, likely caused by skinning.

<i>Context</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Butchery</i>	<i>Area</i>	<i>Notes</i>
069	Sheep/goat	Rib	1	>1 knife marks		
070	Sheep	Metacarpal	1	knife	Fp	proximal shaft
114	Goat	Skull	1	knife	Sp	parasagittal, near horncore
114	Goat	Skull	1	cut	Sp	through skull
114	Sheep/goat	Rib	4	>1 knife marks		in the distal end
114	Mm	Rib	1	>1 knife marks		
114	Mm	Rib	4	>1 knife marks		distal part

Table 14 – Mm = medium mammal, Fp = frontal plane, Sp = sagittal plane

One bone from Hallahoise exhibited signs of pathological change: a rib belonging to medium sized mammal (sheep, goat or pig) had a healed fracture on the shaft (Table 15).

<i>Context</i>	<i>Sample</i>	<i>Species</i>	<i>Element</i>	<i>Pathology</i>	<i>Notes</i>
114	81	Medium mammal	Rib	Trauma	Healed fracture on the shaft

Table 15 – The bone showing pathology from fill (114) of well (106)

Aging: Tooth wear could be recorded on nine mandibles from Hallahoise all of which come from well (106). The age of the animals spans from individual (or individuals) under one years old to individuals over two and half years old (Table 16). Five mandibles could be categorized using the O'Connor's method (2003, 160), however, two of them could belong to the same individual. Two mandibles derived from immature animals (I), three from adult (A3, two of which might be from same individual).

<i>Context</i>	<i>Species</i>	<i>Dp4</i>	<i>P4</i>	<i>M1</i>	<i>M2</i>	<i>M3</i>	<i>Age class</i>
070	Pig				a		
114	Pig		b	h	d	Erupting through bone	SA2
114	Pig	c		Crypt			Juvenile
070	Sheep	h		f			
114	Goat	f		c	Crypt		I
070	Sheep/goat				k	g	A3
070	Sheep/goat				k	g	A3
070	Sheep/goat			f	Erupting through bone		I
114	Sheep/goat		j	k	g	g	A3

Table 16 – Tooth wear according to Grant (1982). Age class according to O'Connor (2003, 160)

Measurements: Several measurements were taken from the bones to examine the size of the animals (Table 17). They will be discussed together since the features are all from the medieval period and the sample size is small. The majority of the measurable bones are sheep bones from well (106). Five sheep bones were available for withers heights reconstruction. The average withers height of the sheep was 53.6 cm (range 51.4–55.4 cm) (Teichert 1975). This average withers height is similar to that known from early medieval rural sites in Ireland (McCormick and Murray 2007, 92; Denham 2007, 241). The medial edge of the pelvis on one sheep was measurable for assessment of sex. Vretemark (1997, 45) gives some limits to the medial edge values for ewes, castrated males (wethers) and rams. According to her, ewes have a medial edge thickness below 4.1 mm; thus the pelvis from Hallahoise, with a value of 2.6, is likely to derive from a ewe. The result is in line with the result of morphological examination.

<i>Feature type</i>	<i>Context</i>	<i>Sample</i>	<i>Species</i>	<i>Element</i>	<i>GL</i>	<i>Bp</i>	<i>Bd</i>	<i>BT</i>	<i>41</i>	<i>42</i>	<i>Med edge</i>
Pit (067)	068	31	Horse	Humerus				74.4			
Well (087)	090	84	Cattle	Humerus				71.4			
Well (106)	069	32	Sheep	Humerus				24.4			
Well (106)	069	32	Sheep	Tibia			22.5				
Well (106)	070	29	Sheep	Horn core					29.1	18.7	
Well (106)	070	29	Sheep	Horn core					24.0	16.5	
Well (106)	114	81	Pig	Humerus				27.1			
Well (106)	114	81	Sheep	Humerus	120			24.6			
Well (106)	114	81	Sheep	Humerus				22.9			
Well (106)	114	81	Sheep	Tibia			21.0				
Well (106)	114	81	Sheep	Tibia			23.5				
Well (106)	114	81	Sheep	Tibia	180		22.2				
Well (106)	114	81	Sheep	Tibia	175	35.5	22.5				
Well (106)	114	81	Sheep	Tibia	180	35.5	23.2				
Well (106)	114	81	Sheep	Tibia	184	35.6	22.0				
Well (106)	114	81	Sheep	Femur			35.4				
Well (106)	114	81	Sheep	Pelvis							2.6
Well (143)	110	79	Dog	Humerus			19.4				

Table 17 – Measurements of the bone from Hallahoise. Following von den Driesch (1976) GL = greatest length, Bp = greatest breadth of the proximal end, Bd = greatest breadth of the distal end, BT = greatest breadth of trochlea, 41 = greatest diameter of horncore base, 42 = least diameter of horncore base. Following Vretemark (1997), Med edge = medial edge

Discussion

The assemblage from Hallahoise is principally representative of domesticated animals as bones from all the major domesticated animals are represented. Only one bone of a wild species a single rabbit mandible which was possibly intrusive was recovered. Cattle is the dominant species in all features at Hallahoise except in well (106), followed in turn by sheep/goat, pig and horse. In well (106), sheep, pig and possibly goat were more abundant than cattle. In a small assemblage from the medieval settlement in Timolin (E2970), Co. Kildare bones of cattle, sheep/goat, pig, horse and dog were also recovered along with rat, mouse, bird and fish bone. However no bones securely identifiable as goat were found at Timolin (Pálsdóttir 2010b). An unidentifiable animal tooth fragment was recovered from the fill of a medieval well from Hallahoise, Co. Kildare (E2943) (Pálsdóttir 2010a). The sheep and goat remains from well (106) might represent selective slaughter and preparation of these species. The relatively low number of ribs and vertebrae might indicate that parts of the carcasses were transported to other location for consumption. The presence of goat bones in the collection from Hallahoise is of interest as they are rare in medieval rural sites in Ireland (McCormick and Murray 2007, 42; Denham 2007, 248). The ratio of sheep to goat bones at Hallahoise is still within the ranges that can be expected. The assemblages from individual features other than well (106) are too small for proper anatomical analysis. However, for all the features elements from the head and limbs were dominant and elements from trunks were scarce. This could indicate that the site was used for slaughter and carcass preparation rather than for consumption. In summary the animal bones from the early medieval phase of Hallahoise seem to reflect butchery and carcass preparation rather than domestic refuse.

<i>Context</i>	<i>Sample no</i>	<i>Full ID</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Side</i>	<i>GT50</i>	<i>Proxfus</i>	<i>Distfus</i>	<i>Age</i>	<i>Notes</i>	<i>Percent</i>	<i>Texture</i>	<i>Burning</i>	<i>Recovery</i>	<i>Articulation</i>
026	013	E2942-2237	cow	rad	1	l	125	f			in 2 pieces		3		hc	
026	013	E2942-2236	cow	scap	1	l	35						4		hc	
026	013	E2942-2239	cow	scap	1	l	2345				in 2 pieces		3		hc	
026	013	E2942-2238	unid	ui	1								3		hc	
027	087	E2942-29408	cat	thor	1	b		f	f			90	2		1	
042	052	E2942-29415	horse	isoteeth	1						I				1	
042	080	E2942-2439	cow	scap	1	l	2345						2		hc	
042	080	E2942-2440	unid	ui	1								3		hc	
045	018	E2942-29412	rabbit?	mand	1	r	1						2		1	
045	018	E2942-29413	unid	tib	1					neo	probably fetal		2		1	
045	018	E2942-29414	unid	ui	291								2		1	
045	018	E2942-29421	unid	ui	13									cal	1	
053	082	E2942-2240	unid	ui	19								3		hc	
068	031	E2942-2248	cow	fem	1	l	78						2		hc	
068	031	E2942-2249	cow	hum	1	r	13456789AB	f	f		in 2 pieces		2		hc	
068	031	E2942-2246	cow	isoteeth	2						max pd				hc	
068	031	E2942-2247	cow	scap	1	l	12345	f					2		hc	
068	031	E2942-2250	horse	hum	1	r	3456789AB		f				2		hc	
068	031	E2942-2251	horse	m/c	1	l	125678				osteoperiostitis on the anterior-medial shaft		2		hc	
068	031	E2942-2244	horse	pel	1	l	123456				in 4 pieces		2		hc	
068	031	E2942-2245	sh/g	hum	1	r	46789AB	u	fg				2		hc	
068	031	E2942-2253	unid	ui	12								3		hc	
068	047	E2942-2242	mm1	mand	2								4		hc	
068	047	E2942-2241	sh/g	isoteeth	2						mand M				hc	
068	047	E2942-2243	unid	ui	3								4		hc	
069	032	E2942-2287	cow	m/p	3								3		hc	
069	032	E2942-2285	cow	m/t	1	l	256						3		hc	
069	032	E2942-2286	cow	m/t	1	r	78				in 2pieces		4		hc	
069	032	E2942-2281	mm1	scap	3								3		hc	
069	032	E2942-2257	pig	fem	1	r	235678	u					2		hc	
069	032	E2942-2258	sh/g	fem	2	r	235678	u	u				2		hc	
069	032	E2942-2259	sh/g	fem	1	l	2356789AB	u	u				2		hc	
069	032	E2942-2260	sh/g	hum	1	r	3456789A		f				2		hc	
069	032	E2942-2262	sh/g	hum	1	l	3456789A		f				2		hc	
069	032	E2942-2291	sh/g	lumb	1	b		f	f			90	2		hc	
069	032	E2942-2282	sh/g	pel	1	r	26						2		hc	
069	032	E2942-2283	sh/g	pel	2	r	157						2		hc	
069	032	E2942-2284	sh/g	pel	1	l	12456				in 2 pieces		2		hc	
069	032	E2942-2277	sh/g	rad	1								3		hc	
069	032	E2942-2293	sh/g	rib	1						prox		2		hc	
069	032	E2942-2292	sh/g	st	1	b							2		hc	
069	032	E2942-2288	sh/g	thor	3	b		f	f			90	2		hc	

<i>Context</i>	<i>Sample no</i>	<i>Full ID</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Side</i>	<i>GT50</i>	<i>Proxfus</i>	<i>Distfus</i>	<i>Age</i>	<i>Notes</i>	<i>Percent</i>	<i>Texture</i>	<i>Burning</i>	<i>Recovery</i>	<i>Articulation</i>
069	032	E2942-2289	sh/g	thor	1	b		u	u		whole corpus	70	2		hc	
069	032	E2942-2290	sh/g	thor	2	b					corpus	50	2		hc	
069	032	E2942-2255	sh/g	tib	1	r	789A	u	u				2		hc	
069	032	E2942-2256	sh/g	tib	1	r	789A		u				2		hc	
069	032	E2942-2266	sh/g	ulna	1	r	BCDE	u					2		hc	
069	032	E2942-2261	sheep	hum	1	r	3456789AB		f				2		hc	
069	032	E2942-2273	sheep	m/c	1	r	12345678		fg				2		hc	
069	032	E2942-2274	sheep	m/c	1	l	12345678		fg				2		hc	
069	032	E2942-2275	sheep	m/c	1	l	12						3		hc	
069	032	E2942-2276	sheep	m/c	1	l	78						3		hc	
069	032	E2942-2267	sheep	m/t	1	r	12345678		fg				2		hc	
069	032	E2942-2268	sheep	m/t	1	r	1235678		f				2		hc	
069	032	E2942-2269	sheep	m/t	1	r	12						3		hc	
069	032	E2942-2270	sheep	m/t	1	l	125678		u				2		hc	
069	032	E2942-2271	sheep	m/t	1	l	125678		u				3		hc	
069	032	E2942-2272	sheep	m/t	1	l	12345678		fg				2		hc	
069	032	E2942-2263	sheep	rad	1	r	1256789K	f	u				2		hc	
069	032	E2942-2264	sheep	rad	1	l	1256789K	f	u				2		hc	
069	032	E2942-2265	sheep	rad	1	l	125	f					2		hc	
069	032	E2942-2278	sheep	scap	1	l	12345	f					2		hc	
069	032	E2942-2279	sheep	scap	1	r	123	f					2		hc	
069	032	E2942-2280	sheep	scap	1	r	1234567	f					2		hc	
069	032	E2942-2254	sheep	tib	1	r	56789A	u	f				2		hc	
069	033	E2942-2294	mm1	rib	5						prox		2		hc	
069	033	E2942-2295	mm1	rib	9								2		hc	
069	033	E2942-2296	unid	ui	12								2		hc	
069	058	E2942-29410	sh/g	skull	1	b					occipitale, condyls		2		hc	
069	058	E2942-29411	unid	ui	8								2		hc	
069	058	E2942-29428	unid	ui	2									cal	1	
070	025	E2942-2310	mm1	rib	2						other in 4 pieces		2		hc	
070	025	E2942-2304	pig	astr	1	l	1234						3		hc	
070	025	E2942-2301	pig	fem	1	r	9A		u				3		hc	
070	025	E2942-2303	pig	hum	1	l	56		u				2		hc	
070	025	E2942-2307	pig	isoteeth	1						i mand				hc	
070	025	E2942-2302	pig	rad	1	l	3456789K	u	u				2		hc	
070	025	E2942-2305	pig	skull	1	r					frontale		2		hc	
070	025	E2942-2306	pig	skull	1	l					frontale, orbita		2		hc	
070	025	E2942-2308	sh/g	mand	1	l	5						2		hc	
070	025	E2942-2309	sh/g	skull	1	b					occipitale, both condyles, in 5 pieces, sutures open		2		hc	
070	025	E2942-2297	sheep	m/c	1	r	125678						2		hc	
070	025	E2942-2298	sheep	m/c	1	r	1256		u				2		hc	
070	025	E2942-2299	sheep	m/t	1	l	125678		u				2		hc	
070	025	E2942-2300	sheep	m/t	1	r	78						3		hc	

<i>Context</i>	<i>Sample no</i>	<i>Full ID</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Side</i>	<i>GT50</i>	<i>Proxfus</i>	<i>Distfus</i>	<i>Age</i>	<i>Notes</i>	<i>Percent</i>	<i>Texture</i>	<i>Burning</i>	<i>Recovery</i>	<i>Articulation</i>
070	025	E2942-2311	unid	rib	1								2		hc	
070	025	E2942-2312	unid	skull	6								2		hc	
070	025	E2942-2313	unid	ui	4								2		hc	
070	029	E2942-2319	mm1	mand	1								2		hc	
070	029	E2942-2320	mm1	rib	2								2		hc	
070	029	E2942-2321	sh/g	isoteeth	9						5 M max, 2 pd max, 2 M mand				hc	
070	029	E2942-2316	sh/g	mand	1	r	12DE						2		hc	E2942-2316
070	029	E2942-2317	sh/g	mand	1	l	12456DE				in 4 pieces		2		hc	E2942-2316
070	029	E2942-2318	sh/g	mand	1	r	2						2		hc	
070	029	E2942-2314	sh/g	pel	1	l	157						2		hc	
070	029	E2942-2322	sh/g	skull	1	r					condyl		2		hc	
070	029	E2942-2323	sh/g	skull	1	l					condyl		2		hc	
070	029	E2942-2324	sh/g	skull	1	r					zyg	90	2		hc	
070	029	E2942-2315	sh/g	thor	1	b		u	u		in 2 pieces		2		hc	
070	029	E2942-2326	sheep	horn	1	r					small horncore, with some skull attached 41: 29.1, 42: 18.7		2		hc	
070	029	E2942-2325	sheep	skull	1	b					parietale		2		hc	
070	029	E2942-2327	sheep	skull	1	b					both cores, skull around, small ones 41: 24, 42: 16.5, in 3 pieces		2		hc	
070	029	E2942-2328	unid	horn	2								2		hc	
070	029	E2942-2329	unid	skull	15								2		hc	
070	029	E2942-2330	unid	ui	8								2		hc	
070	030	E2942-2368	mm1	mand	2								2		hc	
070	030	E2942-2366	pig	skull	1	r					fossa mand		2		hc	
070	030	E2942-2365	pig	ulna	1	r	BCDEF	u					2		hc	
070	030	E2942-2364	sh/g	isoteeth	6						2 M mand, 4 M max				hc	
070	030	E2942-2359	sh/g	mand	1	r	2				in 2 pieces		2		hc	
070	030	E2942-2360	sh/g	mand	1	l	345				in 2 pieces		2		hc	
070	030	E2942-2361	sh/g	mand	1	r	45						2		hc	
070	030	E2942-2355	sh/g	skull	1	b					parietale, in 3 pieces		2		hc	
070	030	E2942-2356	sh/g	skull	1	b					occipitale, both condyles, in 2 pieces		2		hc	
070	030	E2942-2357	sh/g	skull	1	r					premaxilla, oral	70	2		hc	
070	030	E2942-2358	sh/g	skull	1	r					zyg, nuchal	70	2		hc	
070	030	E2942-2362	sheep	horn	1	r					complete but likely juvenile, some skull attached		2		hc	
070	030	E2942-2363	sheep	horn	1	l					base of horncore, some skull		2		hc	
070	030	E2942-2367	unid	skull	5								2		hc	
070	030	E2942-2369	unid	ui	2								2		hc	
070	034	E2942-2349	mm1	rib	6								2		hc	
070	034	E2942-2332	pig	fem	1	r	235678	u	u		in 2 pieces		2		hc	
070	034	E2942-2333	pig	hum	1	r	789AB	u	u		in 2 pieces		2		hc	

<i>Context</i>	<i>Sample no</i>	<i>Full ID</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Side</i>	<i>GT50</i>	<i>Proxfus</i>	<i>Distfus</i>	<i>Age</i>	<i>Notes</i>	<i>Percent</i>	<i>Texture</i>	<i>Burning</i>	<i>Recovery</i>	<i>Articulation</i>
070	034	E2942-2334	pig	hum	1	l	789 A		u				2		hc	
070	034	E2942-2348	pig	isoteeth	6						M, pd, 4 frags				hc	
070	034	E2942-2342	pig	m/c	1	l	13		u		III		2		hc	
070	034	E2942-2343	pig	m/c	1	l	13				IV		2		hc	
070	034	E2942-2344	pig	mand	1	r	1C						2		hc	
070	034	E2942-2347	pig	mand	6								2		hc	
070	034	E2942-2338	pig	pel	1	r	26						2		hc	
070	034	E2942-2339	pig	pel	1	r	5				in 2 pieces		2		hc	
070	034	E2942-2340	pig	pel	1	l	26	u					2		hc	
070	034	E2942-2341	pig	pel	1	l	5						2		hc	
070	034	E2942-2335	pig	rad	1	r	56789K	u	u		in 2 pieces		2		hc	
070	034	E2942-2336	pig	scap	1	r	2345				in 2 pieces		2		hc	
070	034	E2942-2337	pig	scap	1	r	2345						2		hc	
070	034	E2942-2353	pig	skull	1	r					oral part	50	2		hc	
070	034	E2942-2331	pig	tib	1	l	8						2		hc	
070	034	E2942-2346	sh/g	mand	1	l	1CD						2		hc	
070	034	E2942-2350	sh/g	skull	1	b					both nasale, oral part	50	2		hc	
070	034	E2942-2351	sh/g	skull	1	l					middle	70	2		hc	
070	034	E2942-2345	sheep	mand	1	r	123456AD				in 5 pieces		2		hc	
070	034	E2942-2352	unid	ui	9								2		hc	
070	034	E2942-2354	unid	ui	31								2		hc	
070	055	E2942-29422	sheep	phal3	1		12						2		1	
070	055	E2942-29423	unid	ui	1									char	1	
085	042	E2942-29427	unid	ui	1									char	1	
086	049	E2942-2370	lm	sha	8						all probably from one bone		3		hc	
090	084	E2942-2372	cow	hum	1	l	345678		f				2		hc	
090	084	E2942-2371	cow	rad	1	l	346789K		f				2		hc	
090	084	E2942-2373	cow	tib	1	r	1237	f			in 5 pieces		2		hc	
090	084	E2942-2375	lm	mand	1								2		hc	
090	084	E2942-2374	lm	rib	1								2		hc	
090	084	E2942-2376	unid	ui	4								2		hc	
094	065	E2942-29406	unid	ui	11									cal	1	
094	065	E2942-29407	unid	ui	26									char	1	
094	067	E2942-2377	cow	isoteeth	2						max M				hc	
094	067	E2942-2379	lm	fem	1								3		hc	
094	067	E2942-2378	pig	isoteeth	1						male mand c, 50% tip				hc	
094	067	E2942-2380	unid	isoteeth	1										hc	
094	067	E2942-2381	unid	ui	1									cal	hc	
094	067	E2942-2382	unid	ui	1								2		hc	
095	092	E2942-2384	cow	isoteeth	2						max M				hc	
096	064	E2942-29420	unid	ui	1									cal	1	
108	050	E2942-29416	unid	ui	2									cal	1	
109	057	E2942-29425	unid	ui	1									cal	1	

<i>Context</i>	<i>Sample no</i>	<i>Full ID</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Side</i>	<i>GT50</i>	<i>Proxfus</i>	<i>Distfus</i>	<i>Age</i>	<i>Notes</i>	<i>Percent</i>	<i>Texture</i>	<i>Burning</i>	<i>Recovery</i>	<i>Articulation</i>
109	057	E2942-29426	unid	ui	1									char	1	
110	079	E2942-2427	cow	rad	1	r	25678	f					3		hc	
110	079	E2942-2431	dog	hum	1	l	1234	f	f		fox sized dog		2		hc	
110	079	E2942-2429	sh/g	hum	1	r	356789AB	u	f				2		hc	
110	079	E2942-2428	sh/g	pel	1	r	12456				in 2 pieces		2		hc	
110	079	E2942-2430	sh/g	tib	1	l	789A	u	u				2		hc	
110	079	E2942-2432	unid	ui	4								2		hc	
111	059	E2942-29417	sh/g	phal2	1		123	f					2		1	
111	059	E2942-29418	unid	ui	4								2		1	
114	081	E2942-2405	goat	m/c	1	r	125678		u				2		hc	
114	081	E2942-2414	goat	mand	1	r	12356AC						1		hc	
114	081	E2942-2417	goat	skull	1	r					juvenile, porous core, with frontale and parietale		2		hc	
114	081	E2942-2420	mm1	rib	8						prox		1		hc	
114	081	E2942-2421	mm1	rib	4						prox		1		hc	
114	081	E2942-2422	mm1	rib	1								1		hc	
114	081	E2942-2423	mm1	rib	3								1		hc	
114	081	E2942-2425	mm1	rib	1						healed fracture on the shaft		1		hc	
114	081	E2942-2410	pig	fem	1	r	236	u					2		hc	
114	081	E2942-2409	pig	hum	1	l	3456789AB	u	f				1		hc	
114	081	E2942-2412	pig	mand	1	r	123567AC						2		hc	
114	081	E2942-2413	pig	mand	1	l	13456BCDE						1		hc	
114	081	E2942-2424	pig	rib	2						prox		1		hc	
114	081	E2942-2416	pig	skull	1	r					maxilla, complete zygomaticum, M1 unworn, M2 Crypt, lacrimale and frontale, in 2 pieces		2		hc	
114	081	E2942-2411	sh/g	at	1	b		u			right side	50	1		hc	
114	081	E2942-2404	sh/g	fem	1	l	23678		u				2		hc	
114	081	E2942-2399	sh/g	hum	1	r	789AB	u	u		foramen suprat		2		hc	
114	081	E2942-2415	sh/g	mand	1	l	127BCDE						1		hc	
114	081	E2942-2408	sh/g	pel	1	r	57						1		hc	
114	081	E2942-2401	sh/g	rad	1	r	56789K	u	u				2		hc	
114	081	E2942-2419	sh/g	rib	4						prox		1		hc	
114	081	E2942-2393	sh/g	tib	1	r	789A	u	u				2		hc	
114	081	E2942-2402	sheep	fem	1	r	123456789AB	fg	fg				1		hc	
114	081	E2942-2403	sheep	fem	1	l	236789AB		f		Bd 35.4		2		hc	
114	081	E2942-2398	sheep	hum	1	r	123456789AB	f	f				1		hc	
114	081	E2942-2400	sheep	hum	1	l	3456789AB	u	f				2		hc	
114	081	E2942-2406	sheep	m/c	1	l	3478		f		in 2 pieces		2		hc	
114	081	E2942-2407	sheep	pel	1	l	123456789ABC				med edge 2.6 , pelvis f		1		hc	
114	081	E2942-2391	sheep	tib	1	r	123456789A	fg	f				1		hc	
114	081	E2942-2392	sheep	tib	1	r	123456789A	fg	f				1		hc	
114	081	E2942-2394	sheep	tib	1	r	123456789A	f	f				1		hc	

<i>Context</i>	<i>Sample no</i>	<i>Full ID</i>	<i>Species</i>	<i>Element</i>	<i>NISP</i>	<i>Side</i>	<i>GT50</i>	<i>Proxflus</i>	<i>Distflus</i>	<i>Age</i>	<i>Notes</i>	<i>Percent</i>	<i>Texture</i>	<i>Burning</i>	<i>Recovery</i>	<i>Articulation</i>
114	081	E2942-2395	sheep	tib	1	r	123456789A	f	f				1		hc	
114	081	E2942-2396	sheep	tib	1	l	123456789A	f	f				1		hc	
114	081	KCK06 E2942 E2942-2397	sheep	tib	1	l	123456789A	f	f				1		hc	
114	081	E2942-2418	unid	skull	1								2		hc	
114	081	E2942-2426	unid	ui	1								1		hc	
120	069	E2942-29419	unid	ui	1								2		1	
127	072	E2942-2436	cow	astr	1	r	34				in 2 pieces		3		hc	
127	072	E2942-2433	cow	isoteeth	13						3 M max, 1 PM mand, 9 frags				hc	
127	072	E2942-2435	pig	isoteeth	1						I mand				hc	
127	072	E2942-2434	sh/g	isoteeth	1						M mand				hc	
127	072	E2942-2437	unid	ui	32								3		hc	
132	075	E2942-29409	unid	isoteeth	2										1	
132	075	E2942-29424	unid	ui	1									char	1	
132	085	E2942-2438	pig	isoteeth	1	r					M3 mand, L 34.4, B 15.1				hc	

Table 18 – Complete list of animal bones from Hallahoise

Key to complete list of animal bones:

Species

cow = cattle

lm = large mammal

mm1 = medium mammal (sheep, goat, pig)

rabbit? = rabbit

sh/g = sheep/goat

unid = unidentified

Elements

Mammals:

astr = astragalus

at = atlas

fem = femur

horn = horncore

hum = humerus

isoteeth = isolated teeth

lumb = lumbar vertebrae

mand = mandible

m/c = metacarpal

m/p = metapodial

m/t = metatarsal

pel = pelvis

phal 2= phalanx 2

phal3 = phalanx 3

rad = radius

scap = scapula

sha = shaft

st = sternum

thor = thoracic vertebrae

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

u = unfused

fs = fusing

Age

neo = neonatal

j = juvenile

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 11 – Radiocarbon dates and Certificates

E- Number	Lab code	Sample ID	Material	δ13C	Radiocarbon age BP	Calibrated Age Ranges (1 σ)	Relative probability	Calibrated Age Ranges (2 σ)	Relative probability
E2942	SUERC - 25410	Sample 073, Context 134	Pomoideae charcoal	-22.7	3340 +/- 50	1690 - 1600 cal BC	46.9	1750 - 1500 cal BC	95.4
						1580-1530 cal BC	21.3		
E2942	SUERC- 25295	Sample 081, Context 114	Sheep/goat rib (bone)	-21.7	1205 +/- 30	cal AD 775 - 870	68.2	cal AD 690 – 750 cal AD 760-900	9.3 86.1
E2942	SUERC- 25409	Sample 017, Context 048	Alder charcoal	-25.2	3595 +/- 50	2030 - 1890 cal BC	68.2	2140-2080 cal BC	6.3
								2060-1860 cal BC	80.8
								1850-1770 cal BC	8.5



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RADIOCARBON DATING CERTIFICATE

2 October 2009

Laboratory Code SUERC-25410 (GU-19285)

Submitter Karen Stewart
Headland Archaeology (Ireland) Ltd.
Unit 1 Wallingstown Business Park
Little Island
Co. Cork, Ireland.

Site Reference KCK06 E2942
Context Reference 134
Sample Reference 73

Material charcoal : Pomoideae

$\delta^{13}\text{C}$ relative to VPDB -22.7 ‰

Radiocarbon Age BP 3340 \pm 50

- 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 :-

P. Naysmith

Date :-

21/01/09

Checked and signed off by :-

E. Dunbar

Date :-

02/10/09.

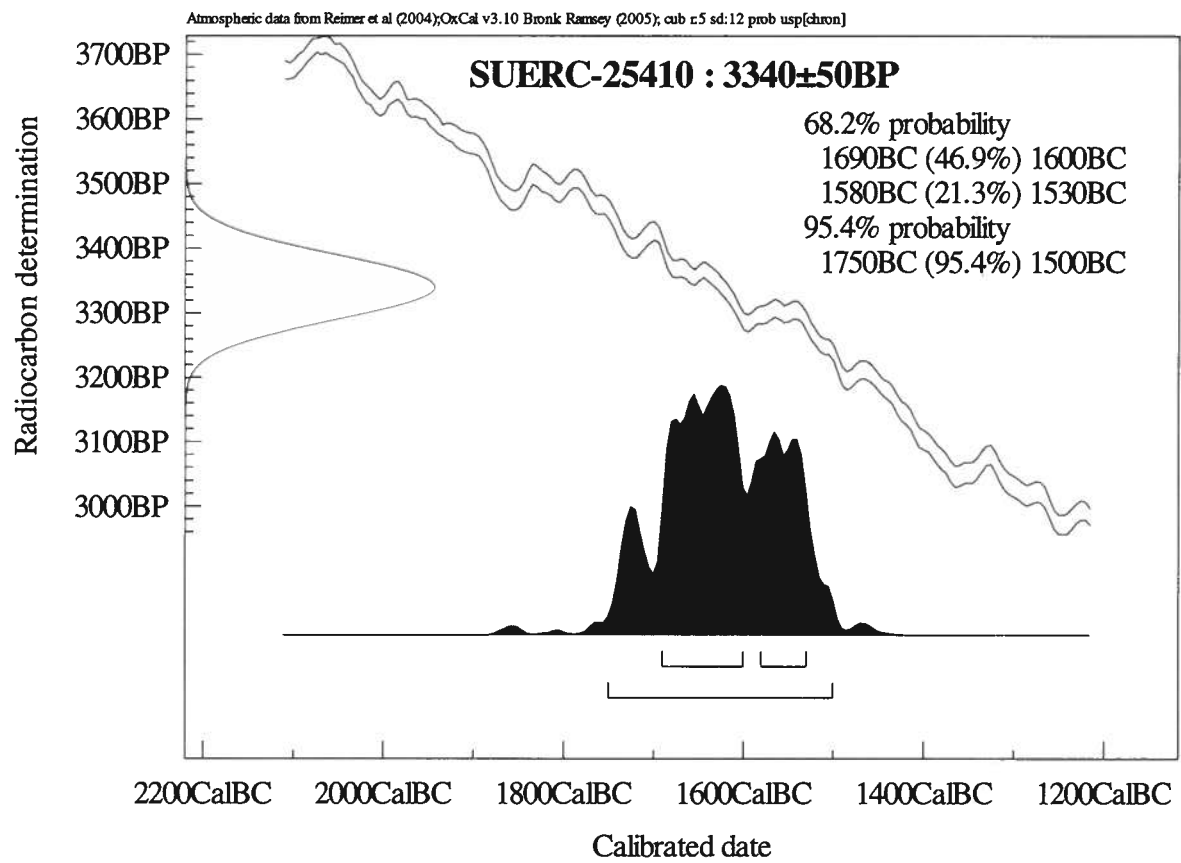


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Calibration Plot





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RADIOCARBON DATING CERTIFICATE

18 September 2009

Laboratory Code	SUERC-25295 (GU-19286)
Submitter	Karen Stewart Headland Archaeology (Ireland) Ltd. Unit 1 Wallingstown Business Park Little Island Co. Cork, Ireland.
Site Reference	KCK06 E2942
Context Reference	114
Sample Reference	81
Material	unburnt bone : sheep/goat rib
$\delta^{13}\text{C}$ relative to VPDB	-21.7 ‰
Radiocarbon Age BP	1205 \pm 30

- 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 :-

P. Naysmith

Date :-

18/9/09

Checked and signed off by :-

E. Dunbar

Date :-

18/9/09

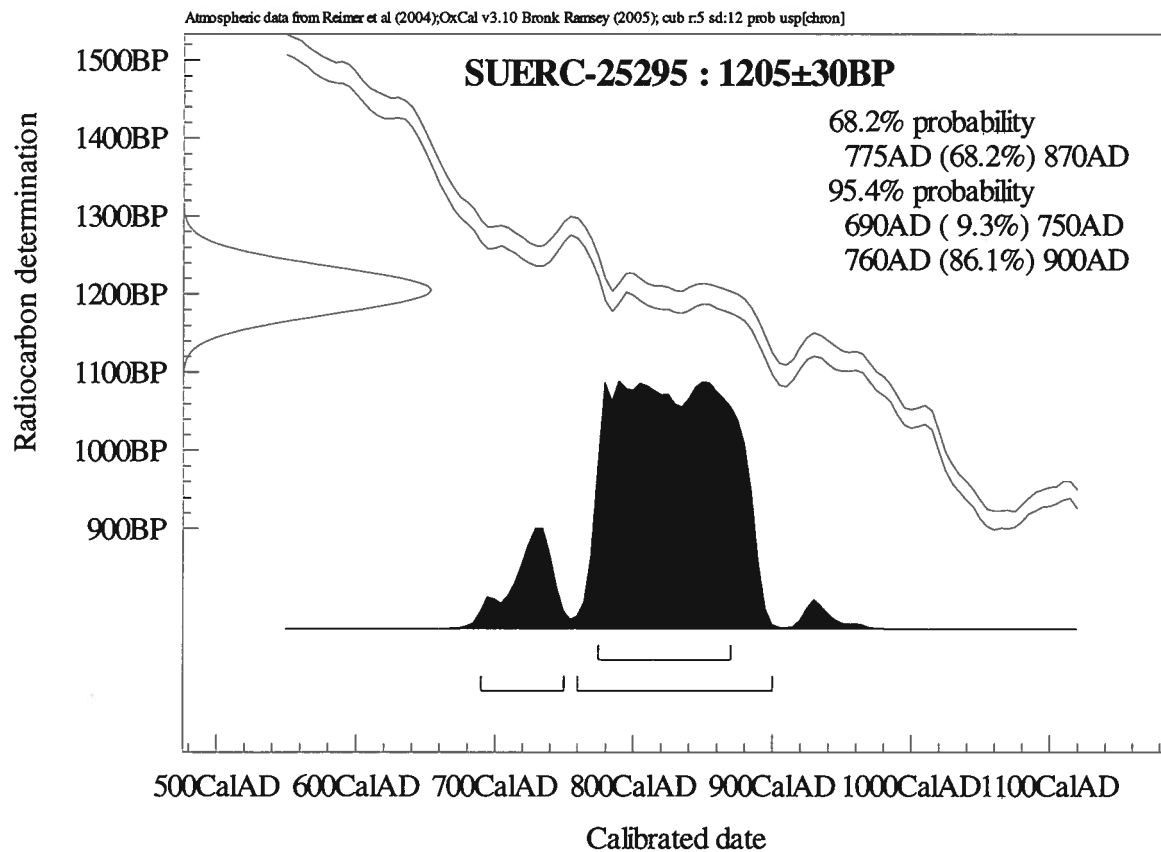


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RADIOCARBON DATING CERTIFICATE

2 October 2009

Laboratory Code	SUERC-25409 (GU-19284)
Submitter	Karen Stewart Headland Archaeology (Ireland) Ltd. Unit 1 Wallingstown Business Park Little Island Co. Cork, Ireland.
Site Reference	KCK06 E2942
Context Reference	48
Sample Reference	17
Material	charcoal : alder

$\delta^{13}\text{C}$ relative to VPDB -25.2 ‰

Radiocarbon Age BP 3595 \pm 50

- 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 :-

P. Naysmith

Date :-

2/10/09

Checked and signed off by :-

E. Dunbar

Date :-

02/10/09

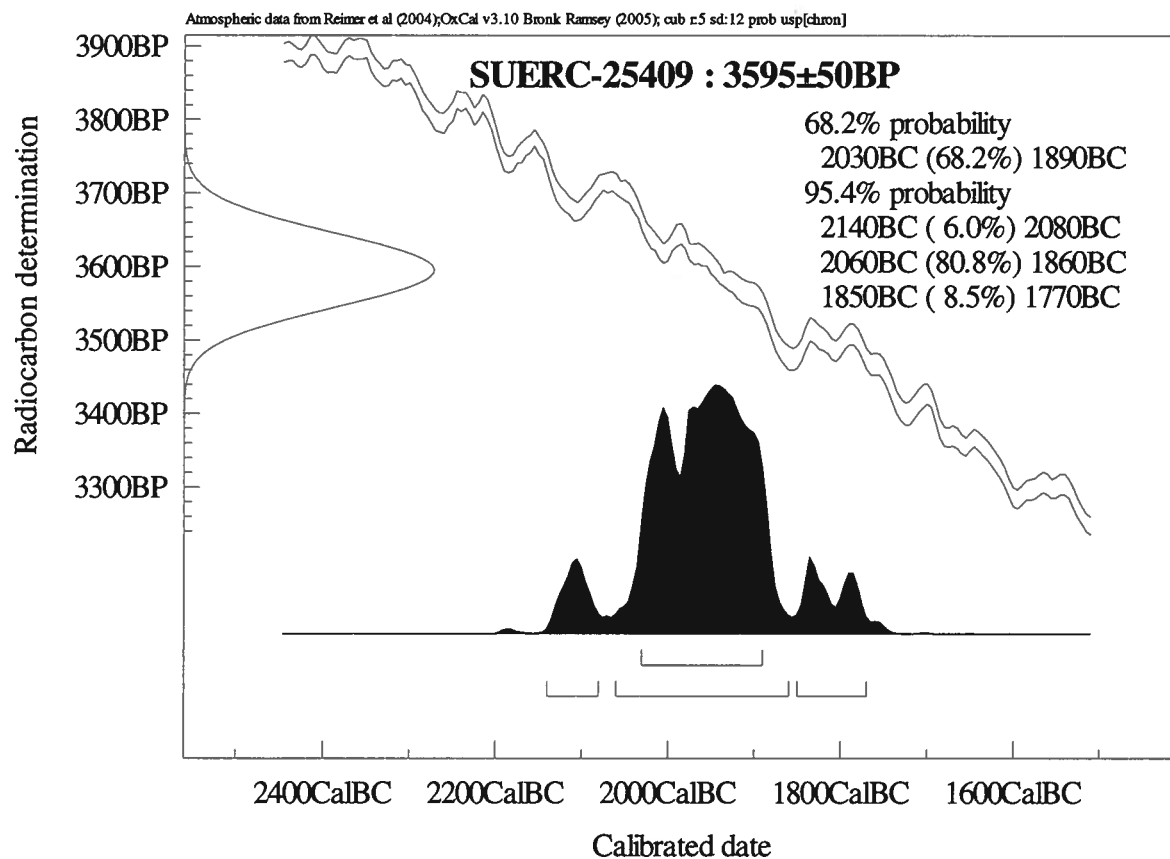


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Appendix 12 – Report on Ferrous Artefacts from Site E2942 at Hallhoise Townland, Co. Kildare
By: Miriam Carroll and Annette Quinn, Tobar Archaeological Services

Introduction

Three ferrous objects were recovered from the excavations at site E2942 in Hallhoise townland, County Kildare. The artefacts consist of an iron ringed pin (E2942:042:001), an iron nail (E2942:068:001) and an iron tack (E2942:068:002). They are discussed below according to type and general function, where possible, and each section is followed by a catalogue.

Dress Accessories

Ringed Pin

One ringed pin (E2942:042:001) was recovered from the fill (042) of a well (143) in Area 1 of the site. The pin is made of iron and would have had some corrosion prior to conservation. The pin catalogued here is classified according to Fanning's classification and typology of ringed pins (1994). According to Fanning (1994, 3) a ringed pin consists of a pin with a loose swivel ring inserted into a looped, perforated or pierced head. Both the ring and the pin are separate components and are brought together to form a dress pin to which the term ringed pin is applied (*ibid.*). Both the head and the ring of ringed pins form the basis for their classification.

The ringed pin from Hallhoise represents an example of a kidney-ringed, polyhedral-headed pin. Only one head type occurs with the close-fitting kidney ring and consists of the large polyhedral form which has a distinctive square appearance (*ibid.*, 36). Polyhedral heads are rarely fully perforated but are usually bored at either side to form sockets to receive the kidney ring (*ibid.*). The large central lozenge-shaped panels of this head type are the main feature and may be decorated with a variety of motifs. Commonly the heads of kidney-ringed pins are decorated with a distinctive beaded or 'billeted' pattern termed 'brambling' (*ibid.*). The pin from Hallhoise has a brambled polyhedral head and the central lozenge-shaped panel is decorated with the saltire motif in which two beaded panels are visible. The ring head, although damaged, would also appear to be decorated with a beading effect. According to Fanning (*ibid.*, 41) the kidney-ringed class of pin developed out of the plain-ringed polyhedral-headed pin during the mid-late 10th century. The kidney-ringed variety then continued in use throughout the 11th century with examples known from Dublin and Knowth (*ibid.*).

Ringed Pin E2942:042:001 *Fe.* L. 110 mm, D. (shank) 2.8 mm, Th. (head) 5.6 mm, Wt. 6.6 g. Complete. Kidney-ringed polyhedral-headed ringed pin. Decorated ring now fused as result of corrosion. Bramble decoration on head with

one decorated lozenge-shaped panel visible. Opposing panel damaged. Traces of copper alloy on ring and damaged panel of head. Shank circular in section, Point slightly bent. Corroded prior to conservation.

Nails and Tacks

One iron nail (E2942:068:001) and an iron tack (E2942:068:002) were recovered from the fill of a pit or possible well (067) at Hallahoise, Co. Kildare. The nail is a relatively large example and has a flat head which was possibly originally sub-rectangular. The tack has a flat sub-rectangular head and survives within a worked timber baton. In general, while different nail types can be identified through their distinct heads and/or size (e.g. horseshoe nails), little can be said of the typological development of nails with rectangular or circular heads which continued in use from the early medieval period through to the 19th century. The nail is likely to have been used as structural ironwork while the survival of the tack in the wooden baton demonstrates the use of such items in finer wooden objects.

Nail E2942:068:001 *Fe.* L. 61.2 mm, W. (shaft) 11.4 mm, W. (head) 26.9 mm, Th. (shaft) 6.7 mm, Wt. 22.4 g. Complete. Corroded nail with flat sub-rectangular head. Shaft rectangular in section, tapers to blunt tip.

Tack E2942:068:002 *Fe.* L. 14.3 mm, W (head) 6.8 mm. Complete. Small tack with flat sub-rectangular head and rectangular sectioned shaft. Survives within slender wooden baton.

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Appendix 13 – The knapped stone assemblage from Hallahoise, Co. Kildare (E2942)

By: Maria Soledad Mallia-Guest

Introduction

A single flint find was recovered upon environmental processing of the soil samples recovered at Site E2942 in the townland of Hallahoise, Co. Kildare. Burnt mound activity was identified on site, including three burnt spreads with a number of nearby pits no clearly associated to this activity and a number of features which incorporated heat-shattered deposits including a trough, wells, a metalled surface, a curvilinear ditch and a linear feature (Doyle 2009). The artefactual assemblage comprised a very limited number of finds including iron nails and a piece of possible worked antler (*ibid.*).

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 based on 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.

In addition, when macroscopic evidence of use-wear was present, subsequent basic high-power micro-wear analysis was carried out using a reflective microscope at 200x magnification. The presence/absence of use traces such as micro-polish, motion striation and edge-scarring/rounding were also recorded.

Results

A single piece of light whitish grey flint (E2942:048:001) was recovered from the black silty clay (048) burnt mound deposit containing charcoal and heat-shattered sandstones.

The piece is a very small cortex backed flake measuring 6.1 mm in length by 6.4 mm in width with a thickness of 1.8 mm. It can be classified as knapping by-product presenting a slight proximal fracture and a plain unprepared platform. The find presents cortex remnant (10%) on its side and appears discoloured, patinated and lustered due to thermal damage. The dorsal scar pattern suggests this flake was possibly detached from a scraper as it shows relatively invasive negatives at a rather abrupt angle and some blunting confined to the external border of the platform. This flake could represent some kind of secondary technology by-product (derived from the trimming/thinning of formal artefacts), more precisely, an edge resharpening by-product.

Discussion

The single lithic find recovered at Site E2942 (Hallahoise, Co. Kildare) can be considered a possible resharpening flake that falls within the debitage or knapping by-product category.

The pattern of flake scars observed suggests that it could have resulted from the reactivation of a blunted convex scraper or any other unifacially retouched artefact presenting a rather abrupt edge.

The find also displays a low grade of thermal damage, mostly discolouration as well as lustre, which argues for an exposure to relatively constant low temperatures (200°-300°C). Flint nodules are available as beach pebbles on coastal localities or as glacially transported material within till deposits (Woodman *et al.* 2006), and are known to be of poor knapping quality. In general, the reduction of such small-sized nodules is facilitated through the use of the bipolar technique, which requires the use of a stationary anvil to succeed in the splitting of the nodule (Whittaker 1994). The flake here recovered is however a platform technology by-product.

No chronological frame can be drawn from this find. Furthermore, evidence of lithic assemblages in the area, also associated with burnt mound activity, is scant and mostly derived from unstratified deposits; such is the case of the convex sub-circular scraper recovered at Site E2995 (Coolane, Co. Kildare) or the isolated knapping by-products also recorded at Coolane (E2940) or at Site E2943 (Hallahoise, Co. Kildare) (Mallia-Guest 2009). So far, as pointed out by Sternke (2008) lithic assemblages associated with burnt mound activity in the Carlow/Kildare area have proven to be undersized, incorporating isolated artefacts, some of them clearly intrusive and redeposited. Nevertheless, the excavation of a number of burnt mounds recorded at Greyabbey and Cherryville (Co. Kildare) appeared to produce a small flint dominated assemblages of both retouched artefacts and waste flakes, particularly at Site 5 (01E0583) (Cherryville, Co. Kildare) (Breen 2001).

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NMI Number	Raw Material	Type	Category	Length (mm)	Width (mm)	Thickness (mm)	State	Condition	Others	Cortex	Blank	Type of Platform	Preparation	Bulb	Ripples	Erailleur scar	Lip	Colour
E2939:0 48:001	Flint	Inner angular flake (poss. resharpening by-product)	Debitage	6.1	6.4	1.8	F	Fair	Bn, Ds., Lt	10%	No	Plain	No	ND	D	No	No	Light whitish/ pinkish grey

Key: *Indet*: indeterminate; *F*: fragmented, *Bn*: burnt, *Lt*: lustered; *ND*: non-differentiated; *D*: Diffuse; *P*: pronounced

Table 1 – The lithic assemblage from Hallahoise, Co. Kildare (E2942)