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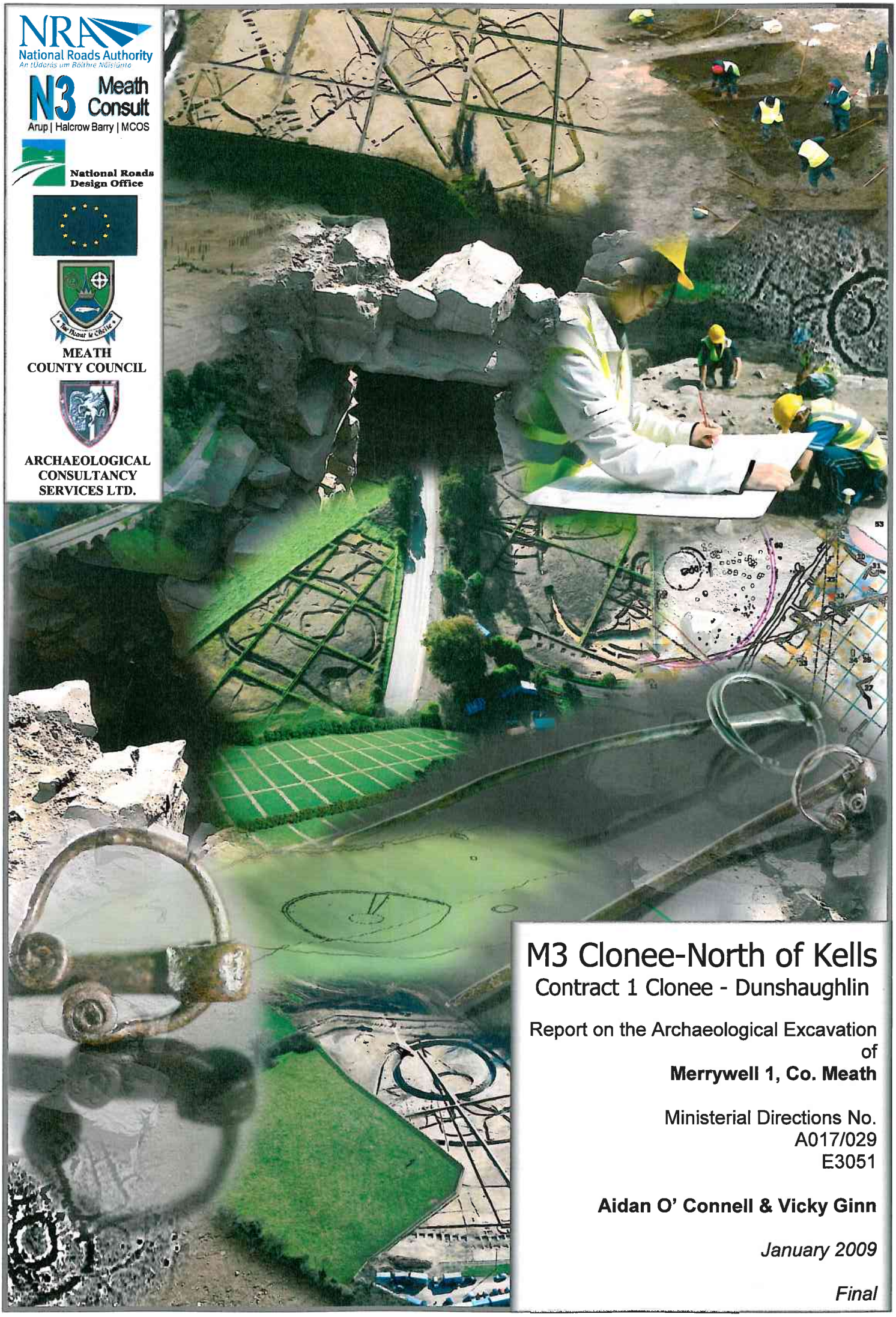

M3 Clonee-North of Kells

Contract 1 Clonee - Dunshaughlin

Report on the Archaeological Excavation
of
Merrywell 1, Co. Meath

Ministerial Directions No.
A017/029
E3051

Aidan O' Connell & Vicky Ginn

January 2009

Final

PROJECT DETAILS

Project	M3 Clonee–Kells Motorway
Site Name	Merrywell 1
Ministerial Direction Number	A017/029
Registration Number	E3051
Senior Archaeological Consultant	Donald Murphy
Archaeologist	Aidan O'Connell
Excavated	22 August – 15 November 2005
Townland	Merrywell
Parish	Knockmark
County	Meath
National Grid Reference	293411 250954
Chainage	000–250 (New Trim Road)
OD	108.03m
Report Type	Final
Report Status	Submitted
Date of Report	January 2009
Report by	Aidan O'Connell and Vicky Ginn

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

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NON-TECHNICAL SUMMARY

This site at Merrywell 1 was excavated by Archaeological Consultancy Services Ltd (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council NRDO and the NRA. The excavation was carried out between August and November 2005 under Ministerial Direction Number A017/029 issued by DOEHLG in consultation with the NMI. Merrywell 1 represents a medieval site consisting of a field system associated with a large well. Over 400 sherds of medieval pottery were recovered in addition to a large wooden beam with dowels still in situ. A wooden bowl of probably medieval date was discovered in the base of the well/cistern.

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1 INTRODUCTION

The site at Merrywell 1 (Figures 1–6) was identified during advance testing carried out by Tara O'Neill during May 2004 under licence number 04E0483 (O Neill 2004). The site was tested for geophysical anomalies by Bartlett-Clark Consultancy and a large number were revealed (Bartlett 2002). However, none of these corresponded with the features located during testing. These features included a number of medieval ditches representing a medieval field system, several spreads, four furrows, a drain, and two field boundaries (O'Neill 2004). The medieval ditches ran northwest–southeast parallel to the Trim–Batterstown Road (ibid.). A Topsoil Assessment (metal detection and field walking) was conducted on the site in 2005 and produced 563 finds of modern date (Appendix 4).

1.1 Development

Meath County Council is constructing 49km of two-lane, dual-carriageway motorway between Clonee and Kells and 10km of single carriageway from Kells to just north of Kells alongside additional road upgrades, realignments and associated ancillary works. The scheme has been subdivided into five separate sections as follows: Clonee to Dunshaughlin (Contract 1), Dunshaughlin to Navan (Contract 2), the Navan Bypass (Contract 3), Navan to Kells and the N52 Kells Bypass (Contract 4), and Kells to North of Kells (Contract 5). This section of the scheme (Contract 1) commences at the end of the existing Clonee Bypass, immediately east of Dunboyne (NGR 303070, 241625), and proceeds in a northwestern direction, finishing to the west of Dunshaughlin (NGR 295567, 253082).

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

2 EXCAVATION

Excavation occurred between 17 August and 15 November 2005 under Ministerial Direction Number A017/029 issued to Meath County Council NRDO. The work was carried out by Aidan O'Connell on behalf of ACS. The topsoil (F82) consisted of a friable, mid-brown-grey loam with occasional stones while the subsoil (F84) comprised a loose, dark-grey, sandy gravel with frequent stones. The topsoil was removed by machine equipped with a grading bucket under archaeological supervision.

All archaeological features exposed were recorded and excavated by hand using the single context method. Each feature was assigned a context number. Where appropriate, samples were retrieved in an attempt to obtain evidence for the date and function of these features (Appendix 3). Unless otherwise stated, the features have been measured length-width-depth. All measurements are in metres. All finds were numbered according to the requirements of the National Museum of Ireland from 1 onwards consistent with licence and feature number. The artefacts recovered from the site underwent an initial archaeological assessment and where deemed appropriate, further specialist analysis was carried out on each artefact type. All radiocarbon dates are quoted in calibrated form to two sigma.

2.1 Results

A total of 81 contexts were identified, of which 79 were of archaeological interest. Only the principal archaeological features of Merrywell 1 will be discussed within this report; full details of all these, and further, contexts are located in Appendix 1.

The site consisted of a large well/cistern, pits, and a number of medieval and post-medieval, parallel (northwest–southeast) and perpendicular (northeast–southwest) linear features, some of which respected each other and some of which were inter-cutting (Plates 1–2).

Prehistoric activity

One of the pits may represent a charcoal-production pit. The primary fill of sub-angular, north–south F73 (3.62m x 2.00m x 0.40m) was a compact, bright-orange layer of oxidised clay on top of which a loose, friable, black, carbonised, silty clay fill containing frequent charcoal lumps (F74). Both fills contained alder or hazel (*Alnus / Corylus*), Maloideae and cherries (*Prunus* spp) (ASDU, Appendix 7). A radiocarbon date of 907–796 BC was derived from this pit (F74) (Beta 241280, Appendix 5) suggesting that this was among the earliest of the features on site.

Early linear features

Curvilinear F47 (17.00m x 0.27m x 0.25m) most likely represents a drainage ditch and contained animal bones (Sloane, Appendix 6) in its fill (F46). It traversed much of the site and was cut by F28 and F33. It was also cut by F45 and must therefore be earlier in date than this medieval ditch.

F66 (12.00m x 1.25m x 0.20m) with its one fill (F65) was cut by Ditch 1, ditch F58 and pit F68 (see below) and must therefore be earlier than these medieval features.

Medieval features

Well

Circular F54 (c. 2.50m length x 1.50m depth; Plates 3–4) contained two fills. The primary fill, F36, comprised a soft, plastic, bluish-grey, silty clay with a blackish hue and contained animal bones (Sloane, Appendix 6). Waterlogged seeds (including fool's parsley, sun spurge, hawthorn, sheep's sorrel, thistle, knotgrass, prickly sow-thistle, common chickweed, common nettle, bramble, elder, sedges, goosefoot, mosses, cinquefoil, buttercup, rose family, and dock), insect and mollusc fragments and a bird bone were identified within this fill (ASDU, Appendix 7). These waterlogged seeds indicate the presence of a 'mixed deciduous woodland with scrub understorey' (ASDU, Appendix 7). Wooden dowels (A017/029:36:1–17; E O'Carroll: Appendix 13) were found alongside medieval pottery sherds (A017/029:36:18–19) (Dublin-type coarseware: McCutcheon, Appendix 8). A wooden lathe turned bowl (ash) was retrieved from the primary fill (A017/029:36:1; O'Carroll: Appendix 13). A range of similar artefacts retrieved from excavations in Waterford City dated from the 12th – 14th century (but predominantly to the mid to late 13th century) (Hurley and McCutcheon 1997). A sample of hazel wood (*corylus avellana)* retrieved from this primary fill (F36) has been dated to AD 657 – 862 (Beta 246952; Appendix 5). A plastic, compact, mid-brown-grey, silty clay with frequent stones and moderate charcoal flecks represented the secondary fill, F35. Medieval pottery sherds (A017/029:35:1–17 and A017/029:35:20–41) were contained within this fill (Dublin-type coarseware, Dublin-type ware: McCutcheon, Appendix 8), along with a large wooden yoke (A017/029:35:19; Appendix 13) with dowels (A017/029:35:18) still in situ (Plate 5). Animal bone was also recovered. The medieval ditch F9 cuts into this well/cistern and seems to have acted as an overflow mechanism.

Pits

Two possible medieval pits were also observed. Oval, northwest–southeast F68 (2.20m x 3.10m x 0.52m; Plate 6) consisted of three fills (F78, F77 and F67). F78, the primary fill, was a silty clay. The secondary fill, F77, was a soft, black, carbonised, silty clay with frequent

burnt limestones while the upper fill, F67, comprised a soft, black, friable material with occasional charcoal flecks. Alder or hazel (*Alnus / Corylus*), hazel (*Corylus avellana*), ash (*Faxinus excelsior*), and Maloideae were identified within the charcoal from F77 (ASDU, Appendix 7). The second pit, F43 (2.20m x 0.70m x 0.13m) was smaller in size and contained only one fill (F42: soft, dark-blackish-brown, silty clay with moderate charcoal flecks, a small quantity of unidentified burnt bone (ASDU; Appendix 11) and animal bones (Sloane, Appendix 6)). One body sherd of medieval pottery (Dublin-type cooking ware: McCutcheon: Appendix 8) (A017/029:42:1) was recovered from this fill.

Wall

The foundation of a dry-stone wall, possibly medieval in date, was revealed during excavations. F34 (3.70m length x 0.50m width; Plate 7) consisted of angular and sub-angular stones. This wall was may have been robbed out, as indicated by F39 (0.78m length x 0.46m depth), a trench containing F38 (mid-brown, silty clay with frequent small stones and medieval pottery sherds (A017/029:38:1–14) (Leinster Cooking Ware, Dublin-type cooking ware, Dublin-type coarseware: McCutcheon, Appendix 8)).

Linear features

Northwest–southeast linear features

Ditch 1 (length extended outside the proposed landtake x 1.00–2.60m width x 0.25–1.20m depth) was dug in sections (F9, F25, F45, and F56). Its fills (F8, F16, F24, F44, F48, F49, F52, and F55) varied from plastic–compact, yellow–grey–brown, silty–stony clay with stones in F9 and charcoal inclusions in F16 and F24. Two iron nails (A017/029:08:1 and A017/029:24:53), over 100 medieval pottery sherds (A017/029:08:2–61, A017/029:16:1, A017/029:44:1–16, and A017/029:24:1–52) (Leinster Cooking Ware, Dublin-type coarseware, Dublin-type ware, Dublin-type cooking ware, Dublin-type fineware: McCutcheon, Appendix 8), a bipolar scraper (28mm in length) produced using the bipolar technique (A017/029:24:54; Nelis, Appendix 9), animal bones (Sloane, Appendix 6) and bones from a domestic fowl (Hamilton-Dyer; Appendix 10) were recovered from several of the fills. The northern section of this ditch, F9, which contained the stony fill F8, appears to have acted as an overflow from the well/cistern (see above).

The second principal ditch, Ditch 2, was split into two sections by the limits of the proposed landtake. The southern section (F72: 38m x 2.25m x 0.50m) contains one fill (F71: moderately compact, mid-grey-brown, silty clay) in which medieval pottery (A017/029:71:1–6) (Leinster Cooking Ware, Dunlin-type cooking ware, Dublin-type ware: McCutcheon, Appendix 8), an iron knife (A017/029:71:7) and animal bones (Sloane, Appendix 6) were

recovered. The northern section consisted of F6 (22.60m x 1.30m x 0.50m), the primary fill of which (F5) consisted of a stony fill with occasional charcoal flecks, medieval pottery (A017/029:05:1–5 and A017/029:05:7–16) (Dublin-type cooking ware and Dublin-type coarseware: McCutcheon, Appendix 8), a flint flake (A017/029:05:6), and cremated bone. A blue-grey clay forms the secondary fill (F81) in which two iron nails (A017/029:81:1, A017/029:81:143), an iron knife blade (A017/029:81:142), medieval pottery (A017/029:81:2–141) (Leinster Cooking Ware, Dublin-type cooking ware, Dublin-type coarseware, Dublin-type ware: McCutcheon, Appendix 8), animal bones (Sloane, Appendix 6), bone fragments from at least two domestic fowls (Hamilton-Dyer, Appendix 10), 1 piece of iron slag (Wallace; Appendix 12) and cremated bone were discovered. A radiocarbon date of AD 1174–1281 (Beta 241281, Appendix 5) was returned from this fill. A layer of re-deposited clay (F7) was situated above F81. Medieval pottery (A017/029:04:1–3) (Dublin-type cooking ware: McCutcheon, Appendix 8) and 91 charred cereal grain (dominated by wheat with a few grass seeds and also a possible pea present: ASDU, Appendix 7) was also found in the upper fill (F4) which was stony with charcoal flecks. This northern section was cut by ditch F20 (20m x 0.65m x 0.25m) (Plate 8). F20 contained one fill (F17) with occasional charcoal flecks, animal bones (Sloane, Appendix 6) and slag (Wallace; Appendix 12). Medieval pottery (A017/029:17:1–17 and A017/029:17:20–21) (Dublin-type cooking ware, Dublin-type coarseware, Dublin-type ware: McCutcheon, Appendix 8) and two iron nails (A017/029:17:18–19) were recovered from this fill.

Another medieval ditch or drain was represented by F19 (39m x 1.90m x 0.27m; Plates 9–10) containing F18 which consisted of a compact, mid-brown, silty clay with occasional charcoal flecks and large charcoal inclusions. A radiocarbon date of AD 1663–1953 (Beta 241279, Appendix 5) was derived from this fill but would appear to be associated with intrusive material based on the overwhelmingly later medieval finds assemblage. Large quantities of medieval pottery (A017/029:18:1–38, A017/029:18:41–116 and A017/029:18:119–171) (Leinster Cooking Ware, Dublin-type cooking ware, Dublin-type coarsware, Dublin-type ware: McCutcheon, Appendix 8) were recovered from this fill, along with four iron nails (A017/029:18:39–40 and A017/029:18:117–118), animal bone, an oyster shell, and a mollusc shell. Oak (*Quercus* sp) and elm (*Ulnus* sp) was identified within the charcoal sampled (ASDU, Appendix 7). Additionally, a fragment of goose bone (Hamilton-Dyer; Appendix 10) 75 fragments of medieval pottery (Dublin-type cooking ware, Dublin-type coarseware, Dublin-type ware: McCutcheon, Appendix 8) and a small quantity of unidentified burnt bone (ASUD; Appendix 11) were retrieved from the upper surface (F10) of this ditch (F19).

F62 (18.00m x 1.00m x 0.13m) represented a medieval furrow containing a mid-brown, silty clay fill (F61). A second medieval furrow, F15 (1.25m width x 0.50m depth), was located to the east of Ditch 2. Its two fills (F14 and F13) contained frequent stones; F14 also contained Dublin-type coarseware (A017/029:14:1–4) (McCutcheon, Appendix 8) and F13 contained a clay pipe stem (A017/029:13:1) and animal bones (Sloane, Appendix 6). To the southeast of F15, but not apparently related, was F64 (35m x 1.90m x 0.50m) with animal bone in its moderately compact, mid-brown fill (F63). It represents the remains of a possible ditch/drain. A fragment of animal bone (species ID: horse) collected from this ditch has been dated to AD 695 – 967 (Beta 246053; Appendix 5).

Northeast–southwest linear features

Three ditches (F60, F66 and F80) ran perpendicular to these northwest–southeast features and were located at the southern end of the site (Figure 7). They would appear to form a separate, earlier field system. F66 (12m x 1.25m x 0.20m) was cut by Ditch 1, F57 and by the pit F68. The similar alignment of F60 and F80 would suggest a degree of association. However no artefacts or other datable material was recovered from the fills of these ditches to confirm their dating.

Post-medieval features

F23 (18.75m x 1.65m x 0.38m) was the most westerly of the northwest–southeast linear features and contained two stony fills (F21 and F22) with clay pipe stems (A017/029:21:1–3), black and red glazed post-medieval eathernware sherds (A017/029:21:4 and A017/029:22:1–2), iron nails (A017/029:22:3–9), and modern glass (A017/029:21:5). The straight sides, stony fills and artefacts of F23 suggest that it is post-medieval in date.

Two post-medieval ditches were recorded with a general northeast – southwest orientation. F28 (30m x 1.85m x 0.75m) consisted of two fills (F27 and F26) in which pottery (A017/029:26:1–63 and A017/029:27:1–2), an iron horseshoe fragment (A017/029:26:65), an iron nail (A017/029:27:3), and animal bones (Sloane, Appendix 6) were recovered. The upper fill, F26, also contained charcoal flecks and glass (A017/029:26:67) in addition to a small quantity of unidentified burnt bone (ASDU Appendix 11). F33 (30m x 3.00m x 1.00m) had two fills, the primary of which (F32) contained animal bone and the secondary of which (F31) contained post-medieval pottery (A017/029:31:1–19), black-glazed, early modern glass sherds (A017/029:31:20–21) and a clay pipe stem (A017/029:31:22) and 6 pieces of iron slag (Wallace; Appendix 12). Above F31 was a layer of clearance material, F29, which contained a flint flake (A017/029:29:1). These two ditches cut Ditch 1.

To the east of Ditch 1 was an almost-parallel, post-medieval ditch consisting of F41 (its fill (F40) contained occasional charcoal flecks, possible prehistoric (A017/029:40:1–3), medieval (A017/029:40:4–7) and red earthenware, post-medieval (A017/029:40:8–9) pottery sherds and an iron clasp (A017/029:40:10). Its full extent is unknown.

2.2 Finds

Excavations at Merrywell 1 revealed the abovementioned numerous medieval and post-medieval pottery sherds (See Appendix 2). The animal bones and occasional scraps of iron, in the form of nails and horseshoe fragments, are typical of field system sites. The flint debitage and scraper were undiagnostic (Nelis, Appendix 9; See also Appendix 2).

3 DISCUSSION

3.1 Charcoal-producing pit

The possible charcoal-producing pit contained alder or hazel, both suitable for charcoal production. Such pits are most often rectangular with rounded corners and evidence for oxidisation, as was the case with F73. The pit would have been loaded with timber, such as alder, to a height of c. 1m. The timber would then be covered in a dry material such as straw or bracken. The wood would be roasted at temperatures of c. 600˚C thus driving off water and impurities but not allowing the wood to burn. The wood would then turn to charcoal which could have been used in a variety of functions. The whole process would have taken several days and would have required constant supervision so it is likely that other associated sites were located in the vicinity. The Late Bronze Age date of 910–790 BC (Beta 241280) is similar to dates returned for ditch fills (920–800 BC: Beta 229134; 970–820 BC: Beta 220135) at the site at Knocks 1 (A017/022) located c. 3km northeast of Merrywell 1 and to dates returned for the construction and first recut of a double ringditch (920–800: Beta 236012; 780–410 BC: Beta 236015; 1000–810 BC: Beta 241283; 840–780 BC: Beta 241284) at Raynestown 1 (A017/016) c. 5km to the southeast. While it is not suggested that these three sites were necessarily associated, it is possible that some elements of them were contemporary.

3.2 Well

The well at the northwestern side of the site is likely to have provided an easily accessible source of water for people, animals and/or crops. Radiocarbon dating of the primary fill of the feature would appear to suggest that it was constructed somewhere between the mid-seventh and mid-ninth centuries AD, in the early medieval period. However, the finds assemblage from the well was overwhelmingly later medieval in character. In addition to some well preserved wooden artefacts, a large number of later medieval pottery sherds were retrieved

from this feature. It could therefore be possible to suggest an early medieval origin for the well, which continued in use into the later medieval period. The later medieval artefacts recovered from the base fill (F36) can be interpreted as intrusive and explained by their sinking through soft silty material to the bottom of the well.

3.3 Field system

The medieval ridge and furrow system apparent at this site through the parallel ditches is typical of medieval field systems. The broken and scattered pottery sherds and the burnt bone fragments are likely to represent the use of household rubbish and midden deposits for manuring the fields (ASDU, Appendix 8; O'Connor 1998, 58). It is likely that this field system, dated by radiocarbon analysis and the pottery sherds to the 12–13th centuries (McCutcheon, Appendix 8; AD 1170–1280: Beta 241281, Appendix 5), was operated by farmers living in the locality. However, in Kinsella's research report on the site he emphasises that the settlement could have been on the site.

3.4 Possible settlement

Kinsella argues that 'the diversity of artefacts and high numbers of pottery sherds found at Merrywell suggests possible settlement evidence' (Kinsella 2006).

Merrywell – A settlement of the Gaelic-Irish Betaghs or the Anglo-Norman free tenants? – Jonathan Kinsella from Kinsella 2006

Could Merrywell be such a townland, a landscape that was farmed and resided upon away from the manorial village by either the Gaelic-Irish *betagh*s or the Anglo-Norman free tenants? It is certainly conceivable that the high numbers of pottery sherds, artefacts and presence of a well at Merrywell may signify that a settlement once existed there, while farming activities undoubtedly occurred, represented by the medieval field systems. The townland is also located close to Dunshaughlin, which was probably a medieval borough (Bhreathnach 1999; Graham 1975) and is surrounded by a number of other townlands, …, which contained both a church and a castle – essential buildings that formed part of the manorial village (Graham 1975, 225). Both Killeen and Culmullin, no more than three kilometres to the north and west, respectively, of Merrywell are described as manorial villages (*ibid*) and I believe Merrywell may have been a townland at the edge of a medieval manorial village where either the *betagh*s or Anglo-Norman free tenants worked the land and possibly lived.

The *betagh*s were the lowest social grade in the manor and could be sold or given away at any time by their lord. Above the *betagh* in the social hierarchy were the cottagers, who held a

cottage without land, and the villiens, who were their lord's property but could also acquire small parcels of land (Mitchell & Ryan 1998, 311). The Anglo-Norman free tenants were also peasants but were enticed to Ireland because they were offered the opportunity of upward social mobility as free tenants (O' Conor 1998, 42; Barry 2000, 113). Free tenants held their land through military service or payment of money rents but the unfree *betagh*s had to give their lord turf, stack his hay and corn and give him their best animals and clothes (O' Keeffe 2000, 61). The *betagh*s, like the unfree *fuidri* and *bothach*s before them, from the early medieval period, had to perform the most manually demanding work on the farm and in the harshest conditions (Kelly 1988, 33–35, 112; 1997, 440).

The lack of definitive settlement evidence at Merrywell may simply be explained by the extent of modern agricultural activity that has occurred in County Meath in modern times. The homes of the poorest individuals were possibly simple wood or clay structures whose mark on the landscape may have since been ploughed away. This lack of evidence can be put into perspective if we consider the difficulties in locating medieval manorial villages throughout the heavily colonised regions. According to Simms (1988), the presence of free tenants in townlands, that were separate from manorial villages, resulted in the villages' small size and, as a result, difficulty in tracing them in the archaeological landscape. Manorial villages may also have been deserted by 1400 due to a number of political and environmental factors such as the Bruce Wars, famine, the Black Death and the Gaelic resurgence (O' Conor 1998, 47; O' Keeffe 2000, 72–3). If archaeologists are finding it difficult to locate manorial villages that were occupied for over a hundred years or even longer, they may have survived until the late 17th century (Graham 1975, 247), it highlights the difficulty of identifying the homes of the poorest and isolated tenants in the modern landscape.

4 CONCLUSIONS

Merrywell 1 (A017/029), excavated 22 August – 15 November 2005 by Aidan O'Connell (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council NRDO, and the NRA represents a prehistoric charcoal-producing pit and a medieval field system with an associated well. Several hundred sherds of medieval pottery (Leinster and Dublin-type ware) and burnt bone fragments suggest that manuring was taking place in the fields, although Kinsella (2006) has used this evidence, combined with the cistern/well, possible wall and wooden bowl, to argue for the presence of a settlement of low social class on the site.

5 REFERENCES

Barry, T 2000 'Rural settlement in medieval Ireland', *in* T Barry (ed.), *A History of Settlement in Ireland*. London.

Bartlett, A. (2002) *M3 Clonee to North of Kells, Report on Archaeogeophysical Survey, Part 1 Clonee to Dunshaughlin*. Unpublished report prepared for Meath County Council.

Bhreathnach, E 1999 'Authority and supremacy in Tara and its hinterland c. 950 – 1200', *Discovery Programme Reports* ***5*** Dublin.

Kelly, F 1988 *A Guide to Early Irish Law* Dublin.

Kelly, F 1997 *Early Irish Farming* Dublin.

Kinsella, J 2006 *Research for the townland of Merrywell*. Unpublished research report prepared for Archaeological Consultancy Services Ltd.

Graham, BJ 1975 'Anglo Norman settlement in Co. Meath', *Proceedings of the Royal Irish Academy* ***75C***, 223–48.

Hurley, MF and McCutcheon SWJ 1997 'Wooden artefacts' in MF Hurley & OMB Scully (eds.) *Late Viking age and medieval Waterford: Excavations 1986–1992*. Waterford Corporation.

Mitchell, F & Ryan, M 1998 *Reading the Irish Landscape*. Dublin.

O' Conor, KD 1998 *The Archaeology of Medieval Rural Settlement in Ireland*. Dublin.

O' Keeffe, T 2000 *Medieval Ireland – An Archaeology*. Gloucestershire.

O'Neill, T 2004 *Report on Archaeological Assessment at Testing Area 21, Merrywell, Co. Meath, Licence Number: 04E0483.* Unpublished report prepared for Archaeological Consultancy Services Ltd.

Simms, A 1988 'The geography of Irish Manors: the example of the Llanthony Cells of Duleek and Colp in County Meath', *in* J Bradley, (ed.) *Settlement and Society in Medieval Ireland – Studies Presented to F. X. Martin o. s. a.* 291–326. Kilkenny.

Signed:

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Aidan O'Connell

January 2009

APPENDIX 1 *Context Details*

Merrywell 1: A017/029											
No	**Type**	**Fill of/ Filled with**	**Strat above**	**Strat below**	**Description**	**Interpretation**	**Group**	**Artefacts**	**Animal bone**	**Cremated bone**	**Samples**
1-3					Used previously in Topsoil Assessment						
4	fill	6	81	82	moderately compact, yellow-brown, silty clay with small, angular and sub-angular stones and pebbles and occasional charcoal flecks. 10.50m x 0.75m x 0.17m	top fill of ditch 6	D2	pottery			# 4 <1g seeds
5	fill	6	6	81	compact, stony fill with yellowish-brown, silty clay and occasional charcoal flecks. 22.60 x 1.20m x 0.45m	primary fill of ditch 6	D2	pottery, flint		yes	#11 2g cremated bone
6	cut	4, 5, 7	84	5	linear, north-south cut (22.60m x 1.30m x 0.50m) with a sharp break of slope, rounded sides and a sharp break of slope leading to a concave base. Cut by ditch 20	medieval ditch, ditch 2	D2				#5 Seeds and charcoal flecks
7	deposit	6	81	83	clearance above fill 3	re-deposited clay above fill 3					
8	fill	9	9	16	plastic, compact, mid-grey, silty clay with frequent stones. 2.60m width x 0.72m depth	fill of ditch 9	D1	iron, pottery	bones		#19 nothing
9	cut	8, 16	84, 35	8	linear, northwest-southeast cut (2.60m width x 1.20m depth) with a sharp break of slope, rounded sides and a sharp break of slope leading to a flat base	medieval ditch, acting as an overflow from the well. ditch 1	D1				
10	fill	same as fill 18, 30				clearance above fill 18			bones	yes	#1 3g cremated bones
11	fill	12	12	83	loose, mid-brown, silty clay with small, angular and sub-angular stones. 0.40m width x 0.50m depth	fill of post-medieval drain 12		iron	bones		

12	cut	11	84	11	linear cut with vertical sides. 0.40m width x 0.50m depth. Cuts ditch 6	post- medieval drain					
13	fill	15	14	82	moderately compact, mid-yellow/brown, silty clay with frequent sub-angular and sub-rounded, small pebbles and stones. 1.25m width x 0.27m depth	upper fill of ditch 15		clay	bones		#7 nothing
14	fill	15	15	13	compact, dark-yellow-brown, silty clay with frequent inclusions of small and medium stones. 0.75m width x 0.19m depth	primary fill of ditch 15		pottery			#8 nothing
15	cut	13, 14	84	14	linear, northwest-southeast cut (1.25m width x 0.50m depth) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base. Truncated by drain 12	medieval ridge, furrow ditch					
16	fill	9	8	82	compact, mid-brown, stony clay with occasional charcoal flecks. 1.25m width x 0.38m depth	upper fill of medieval ditch 9		pottery			#18 nothing
17	fill	20	20	83	moderately compact, grey clay with occasional charcoal flecks and stones. 12m length	fill of medieval ditch 20	D2	pottery, iron	bones		#10 nothing
18	fill	19	19	82, 39	compact, mid-brown, stony clay with occasional charcoal flecks and a large concentration of charcoal. 39m x 1.90m x 0.27m	fill of cut 19		pottery, iron	bones		# 12, 16, 23, 24 19g oyster shell, 21g snail shell, 11g cremated bone, 6g charcoal
19	cut	18	84	18	linear, northwest-southeast cut (39m x 1.90m x 0.27m) with a sharp break of slope, rounded sides and a sharp break of slope leading to a concave base	medieval plough furrow/ water drain					
20	cut	17	5	17, 34	linear, northwest-southeast cut (20m x 0.65m x 0.25m) with a sharp break of slope, rounded sides and a sharp break of slope leading to a concave base. Cuts ditch 6	ditch, ditch 2	D2				

21	fill	23	22	83	moderately compact, mid-brown, silty clay with frequent small stones and pebbles. 0.65m width x 0.25m depth	upper fill of post-medieval ditch 23		clay, pottery, glass			# 9 nothing
22	fill	23	23	21	moderately compact, mid-dark-brown, silty clay with frequent small stones and pebbles. 18.75m x 1.65m x 0.38m	primary fill of ditch 23		pottery, iron			
23	cut	21, 22	84	22	linear, northwest-southeast cut (18.75m x 1.65m x 0.38m) with a sharp break of slope, rounded sides and a sharp break of slope leading to a flat base. Cut by field drain	post- medieval ditch					
24	fill	25	48	52, 83	moderately compact, mid-yellow-brown, silty clay with occasional charcoal flecks. 1.45m width x 0.25m depth	upper fill of medieval ditch section 25/ possible	D1	pottery, iron, flint	bones		# 26 nothing
25	cut	24, 48, 52	84	24, 48	linear, northwest-southeast cut (1.50m width x 0.25m depth) with a sharp break of slope, concave sides and a sharp break of slope leading to a concave base. Cut by ditches 28, 33	medieval ditch, ditch 1	D1				
26	fill	28	27	83	moderately compact, mid-yellow-brown, silty clay with occasional charcoal flecks. 30m x 1.85m x 0.50m	upper fill of post-medieval ditch 28, recorded on geophysical survey		pottery, glass, iron	bones		
27	fill	28	28	26	moderately compact, mid-grey-brown, silty clay with occasional small stones. 30m x 0.75m x 0.13m	primary fill of post- medieval ditch 28, recorded on geophysical survey		pottery, iron	bones		
28	cut	26, 27	40, 44	27	linear, northeast-southwest cut (30m x 1.85m x 0.75m) with a sharp break of slope, steep, slightly rounded sides and a gentle break of slope leading to a flat base. Cut by ditches 41, 45	post-medieval ditch					
29	fill	33	31	82	clearance above fill 31	fill of ditch 33		flint			
30	same as fill 18				clearance to south of fill 10						

31	fill	33	32	82, 29	moderately compact, mid-grey-brown, silty clay with moderate small and medium stones. 3.00m width x 0.75m depth	upper fill of ditch 33		pottery, glass, clay			slag
32	fill	33	33	31	compact, mid-dark-grey, silty clay with medium, sub-rounded stones. 1.00m width x 0.25m depth	primary fill of post- medieval ditch 33			bones		
33	cut	31, 32	40, 44, 46	32	linear, northeast-southwest cut (30m x 3.00m x 1.00m) with a sharp break of slope, steep, slightly concave sides and a gentle break of slope leading to a flat base. Cuts ditches 41, 45	ditch					
34	wall	N/A	20	39, 53	stone wall (3.70m length x 0.50m width) consisting of angular and sub-angular stones on the base	wall foundation, dry stone wall, possible medieval					#47 nothing
35	fill	54	36	9	plastic, compact, mid-brown-grey, silty clay with frequent sub-angular and sub-rounded, small stones and moderate charcoal flecks. 1.20m x 1.90m x 0.65m	middle fill of well/ cistern 54		pottery, wood	bones		# 17 nothing
36	fill	54	54	35	soft, plastic, bluish-grey, silty clay with blackish hue	organic, bottom fill of well 54		wood, pottery	yes		# 2, 25, 27 Shell, seeds, nut shell
37	discarded number										
38	fill	39	39	83	compact, mid-brown, silty clay with frequent small stones. 0.79m width x 0.46m depth	fill of robber trench 39		pottery			
39	cut	38	34, 18, 53	38	cut recorded in section (0.78m length x 0.46m depth) with a sharp break of slope, straight, vertical sides and a moderate break of slope leading to a flat base	possible robber trench associated with 34					
40	fill	41	41	28, 33	soft, yellow-brown, silty clay with occasional charcoal flecks. 0.81m width x 0.35m depth	fill of ditch 40		pottery, iron			#20 nothing

41	cut	40	84	40	linear cut (0.81m width x 0.35m depth) with a sharp break of slope, steep sides and a sharp break of slope leading to a flat base	ditch, overcut					
42	fill	43	43	83	soft, dark-blackish-brown, silty clay with moderate charcoal flecks. 2.20m x 0.70m x 0.13m	fill of medieval pit 43		pottery	bones		#31 Charcoal, cremated bone flecks
43	cut	42	84	42	oval, east-west cut (2.20m x 0.70m x 0.13m) with a sharp break of slope, concave sides and a gradual break of slope leading to a rounded base	medieval pit					
44	fill	45	45, 49	28, 33	soft, yellow-brown, silty clay. 1.50m x 0.29m depth	fill of medieval ditch section 45	D1	pottery	bones		#21 nothing
45	cut	44, 49	46	44	linear, north-south cut (1.50m width x 0.31m depth) with a gradual break of slope, slightly concave sides and a gradual break of slope leading to a slightly rounded base. Cut by ditches 28, 33 and cuts trench 47	medieval ditch, continuation of ditch 09, ditch 1	D1				
46	fill	47	47	45, 33	plastic, moderately compact, bright-yellow clay. 17m x 0.27m x 0.25m	fill of drainage trench 47			bones		#13, 14 nothing
47	cut	46	84	46	curvilinear, north-south cut (17m x 0.27m x 0.25m) with a sharp break of slope, straight vertical sides and a sharp break of slope leading to a slightly rounded base	medieval drain					
48	fill	25	25	24	plastic, soft, light-grey, silty clay. 2.16m width x 0.50m depth	primary fill of medieval ditch section 25	D1				
49	fill	45	45	44	plastic, soft, light-grey, silty clay	fill of medieval ditch section 45	D1				#22 nothing
50	fill	51	51	83	compact, mid-brown, silty clay	fill of plough furrow 51					
51	cut	50	25	50	linear, northeast-southwest cut with a sharp break of slope, straight sides and a sharp break of slope leading to a flat base. Cuts ditch 25	plough furrow, modern					
52	fill	25	24	83	details missing	fill of ditch section 25	D1				

53	deposit	N/A	34	39	compact, brownish-yellow, silty clay with frequent small and medium stones	bank material					
54	cut	35, 36	84	36	circular cut with a sharp break of slope, steep and undercut sides and a sharp break of slope leading to a rounded base	medieval well, overflow carried away by ditch 9					
55	fill	56	56	60	soft, light-grey, silty clay. 25m x 1.00m x 1.04m	fill of medieval ditch section 56	D1				# 34 nothing
56	cut	55	59	55	linear, northwest-southeast cut (25m length x 1.00m x 1.04m) with a moderate break of slope, concave sides and a moderate break of slope leading to a flat base. Cuts ditch 60. Aligned with ditches 24, 45	medieval ditch, ditch 1	D1				
57	fill	58	58	83	soft, light-grey-brown, silty clay	fill of post-medieval ditch 58					
58	cut	57	65	57	linear, northwest-southeast cut (16m length) with a sharp break of slope, concave sides and a sharp break of slope leading to a gently rounded base. Cut by ditch 33 and cuts ditch 66	post- medieval ditch, continuation of ditch 41					
59	fill	60	60	56	plastic, soft light-grey-brown clay with occasional small pebbles. 5.00m length	fill of medieval ditch 60					# 28 nothing
60	cut	59	55, 84	59	linear, northeast-southwest cut (5.00m length) with a sharp break of slope, concave sides and a sharp break of slope leading to a gently rounded base. Cut by ditch 56	medieval ditch					
61	fill	62	62	83	mid-brown, silty clay. 18m x 1.00m x 0.13m	fill of ditch 62					
62	cut	61	84	61	linear, northwest-southeast cut (18m x 1.00m x 0.13m) with a sharp break of slope, concave sides and a sharp break of slope leading to a rounded base	medieval ridge, furrow ditch					
63	fill	64	64	83	moderately compact, mid-brown, silty clay. 35m x 1.90m x 0.50m	fill of ditch 64			bones		

64	cut	63	84	63	linear, northwest-southeast cut (35m x 1.90m x 0.50m) with a sharp break of slope, steep sides and a sharp break of slope leading to a concave base	ditch/ possible drain					
65	fill	66	66	58	soft, light-grey-brown, silty clay with moderate small pebbles. 12m x 1.25m x 0.20m	fill of medieval ditch 66					# 35 nothing
66	cut	65	84	65	linear, northeast-southwest cut (12m x 1.25m x 0.20m) with a sharp break of slope, concave sides and a sharp break of slope leading to a rounded base. Cut by ditches 56, 58 and pit 68	medieval ditch					
67	fill	68	77	83	friable, soft, black, silty clay with occasional charcoal flecks. 2.20m x 1.60m x 0.10m	upper fill of pit 68					
68	cut	67, 77, 78	65	78	oval, northwest-southeast cut (2.20m x 3.10m x 0.52m) with a sharp break of slope, concave sides and a sharp break of slope, concave sides and a sharp break of slope leading to a rounded base	possible medieval pit					
69	fill	70	70		plastic, light-brown clay	fill of cut 70					
70	cut	69	84	69	oval cut	possible pit/ depression or gully					
71	fill	72	72	82	moderately compact, mid-grey-brown, silty clay. 38m x 2.25m x 0.50m	fill of medieval ridge, furrow ditch section	D2	pottery, iron	bones		
72	cut	71	84	71	linear, northwest-southeast cut (38m x 2.25m x 0.50m) with an imperceptible break of slope, concave sides and an imperceptible break of slope leading to a rounded base. Cut by modern drain	medieval ridge, furrow ditch, ditch 2	D2				
73	cut	74, 76	84	76	sub-angular, north-south cut (3.62m x 2.00m x 0.40m) with rounded corners, a sharp break of slope, vertical sides and a sharp break of slope leading to a flat base	charcoal production pit					# 29 nothing

74	fill	76	76	83	loose, friable, black, carbonised, silty clay with frequent charcoal lumps. 1.12m length x 0.38m depth	upper fill of charcoal production pit 73					#37 6g charcoal
75	NON-ARCHEOLOGICAL										
76	fill	73	75	74	compact, bright-orange, oxidised clay. 2.50m length x 0.40m depth	fill of pit 73					
77	fill	68	78	67	soft, black, carbonised, silty clay with frequent burnt limestone. 2.20m x 2.00m x 0.12m	fill of pit 68					# 30, 32 nothing
78	fill	68	68	77	plastic, soft, light-grey, silty clay. 2.20m x 3.10m x 0.30m	primary fill of pit 68					# 33 nothing
79	fill	80	80	83	moderately compact, light-brownish-grey, silty clay	fill of ditch 80					# 36 nothing
80	cut	79	84	79	linear, northeast-southwest cut with an imperceptible break of slope, concave sides and an imperceptible break of slope leading to a concave base	ditch					
81	fill	6	5	4, 7	soft, plastic, blue-grey clay. 10.50m x 1.20m x 0.15m	fill of ditch 6	D2	iron, pottery	bones	yes	slag, # 3 14g cremated bone, 15g charcoal
82	sod	N/A	N/A	N/A		sod					
83	topsoil	N/A	84	N/A	friable, mid-brown-grey loam with occasional stones 0.30m – 0.40m in depth	topsoil					
84	subsoil	N/A	N/A	83	loose, dark-grey, sandy gravel with frequent stones						

APPENDIX 2 *Finds List*

Find number	Description
A017/029:4:1-3	Medieval pottery (3 sherds)
A017/029:5:1-5	Medieval pottery (5 sherds)
A017/029:5:6	Tertiary flint flake
A017/029:5:7-16	Medieval pottery (10 sherds)
A017/029:8:1	Nail
A017/029:8:2-5	Medieval pottery
A017/029:8:6	Dublin-type ware
A017/029:8:7-8	Medieval pottery
A017/029:8:9	Dublin-type ware
A017/029:8:10-11	Medieval pottery
A017/029:8:12	Dublin-type ware
A017/029:8:13-15	Medieval pottery
A017/029:8:16-18	Dublin-type ware
A017/029:8:19	Medieval pottery
A017/029:8:20	Dublin-type ware
A017/029:8:21	Medieval pottery
A017/029:8:22	Dublin-type ware
A017/029:8:23-24	Medieval pottery
A017/029:8:25-26	Dublin-type ware
A017/029:8:27	Medieval pottery
A017/029:8:28-29	Dublin-type ware
A017/029:8:30	Medieval pottery
A017/029:8:31	Dublin-type ware
A017/029:8:32	Medieval pottery
A017/029:8:33-38	Dublin-type ware
A017/029:8:39-40	Medieval pottery
A017/029:8:41-42	Dublin-type ware
A017/029:8:43	Medieval pottery
A017/029:8:44-51	Dublin-type ware
A017/029:8:52-54	Medieval pottery
A017/029:8:55-57	Dublin-type ware
A017/029:8:58-59	Medieval pottery
A017/029:8:60-63	Dublin-type ware
A017/029:10:1-79	Medieval pottery (79 sherds)
A017/029:11:1	Knife. Fe. 13th century. Overall Length 154mm. Length of blade 132mm, width of blade 20mm tapering to a blunt 5mm point. Thickness 4mm. Small 22mm broken tang at end for insertion into a wooden or bone handle. (Plate 15)
A017/029:13:1	Clay pipe stem
A017/029:14:1	Medieval pottery sherd
A017/029:16:1	Medieval pottery sherd
A017/029:17:1-17	Medieval pottery (17 sherds)
A017/029:17:18-19	2 Iron nails
A017/029:17:20-21	Medieval pottery (2 sherds)
A017/029:18:1-2	Medieval pottery (2 rim sherds)
A017/029:18:3-38	Medieval pottery (38 sherds)
A017/029:18:39-40	2 Nails
A017/029:18:41-115	Medieval pottery (75 sherds)
A017/029:18:116	Medieval pottery (decorated rim + handle sherd)
A017/029:18:117-118	2 Nails
A017/029:18:119-120	Medieval pottery (2 strap handles)
A017/029:18:121	Medieval pottery (poss. spout fragment)
A017/029:18:122-127	Medieval pottery (6 Base sherds)
A017/029:18:128-134	Medieval pottery(7 rim sherds)
A017/029:18:135-147	Medieval pottery (13 body sherd)
A017/029:18:148-149	Medieval pottery (2 rim sherds)
A017/029:18:150	Medieval pottery (base sherd)
A017/029:18:151-170	Medieval pottery (21 body sherds)
A017/029:18:171-174	Medieval pottery (4 body sherd)zxc
A017/029:21:1-3	3 Clay pipe stems

A017/029:21:4	Black glazed earthenware
A017/029:21:5	Glass
A017/029:22:1	Red glazed earthenware
A017/029:22:2	Black glazed earthenware
A017/029:22:3-9	7 Nails
A017/029:25:1-47	Medieval pottery (47 sherds)
A017/029:25:48-51	Medieval pottery (4 rim sherds)
A017/029:25:52	Medieval pottery (base sherd)
A017/029:25:53	Nail
A017/029:25:54	Secondary flint scraper
A017/029:25:55	Medieval pottery
A017/029:26:1-56	White glazed modern pottery
A017/029:26:57-59	Brown glazed stoneware
A017/029:26:60	Medieval pottery
A017/029:26:61	Black glazed earthenware
A017/029:26:62	Red glazed earthenware
A017/029:26:63	Medieval pottery sherd
A017/029:26:64	Glass
A017/029:26:65	Horseshoe fragment
A017/029:26:66	Red brick fragment
A017/029:26:67	Glass
A017/029:27:1	Brown glazed stoneware
A017/029:27:2	Modern pottery
A017/029:27:3	Nail
A017/029:29:1	Tertiary flint flake, platform blade complete
A017/029:31:1-14	White glazed modern pottery (14 sherds)
A017/029:31:15-19	Black glazed earthenware (5 sherds)
A017/029:31:20-21	Glass
A017/029:31:22	Clay pipe stem
A017/029:31:23-25	3 Modern metal objects
A017/029:31:26	Medieval pottery
A017/029:31:27-29	3 Clay pipe stems
A017/029:35:1-17	Medieval pottery (17 sherds)
A017/029:35:18	Un-worked wood (in house)
A017/029:35:19	Un-worked wood, natural identified on site as Alder (in house)
A017/029:35:20-41	Medieval pottery (22 sherds)
A017/029:35:42	Large Timber yoke (warehouse)
A017/029:36:1	Wooden bowl (conservation)
A017/029:36:2	Worked wood, notched fragment (in house)
A017/029:36:3	Un-worked wood fragment, natural (in house)
A017/029:36:4-17	Wood fragments, identified by Ellen O'Carroll (in house)
A017/029:36:18-19	Medieval pottery (2 sherds)
A017/029:37:1-51	Medieval pottery (51 sherds)
A017/029:38:1-14	Medieval pottery (14 sherds)
A017/029:40:1-3	Medieval pottery (3 sherds)
A017/029:40:4-7	Medieval pottery (3 sherds)
A017/029:40:8-9	Medieval pottery (2 sherds)
A017/029:40:10	Metal clasp/buckle. Copper Alloy. 13th century. Clasp has a rectangular loop on one end with a smaller circular perforation along the stem and a tre-foil shaped tip at the other end. Two small rivets (3mm length) still in situ, one through the tre-foil shaped tip and the second beside the circular perforation indicate that it was attached to another object possibly a leather strap. Overall length 60mm (Plate 15)
A017/029:40:11-15	Medieval pottery (5 sherds)
A017/029:42:1	Medieval pottery
A017/029:44:1-17	Medieval pottery (17 sherds)
A017/029:53:1-5	Medieval pottery (5 sherds)
A017/029:55:1	Medieval pottery (Dublin-type fineware)
A017/029:57:1	Clay pipe bowl fragment

A017/029:72:1-5	Medieval pottery (5 sherds)
A017/029:72:6	Iron knife. Fe. 13th century. Length 72mm, width 20mm tapering to 7mm with a broken point. Thickness 4mm.
A017/029:81:1	Iron nail
A017/029:81:2-15	Medieval pottery (14 sherds)
A017/029:81:16-30	Medieval pottery (15 sherds)
A017/029:81:31-35	Medieval pottery (5 sherds)
A017/029:81:36-75	Medieval pottery (40 sherds)
A017/029:81:76-78	Medieval pottery (3 rim sherds)
A017/029:81:79-80	Medieval pottery (2 base sherds)
A017/029:81:81-82	Medieval pottery (2 spouts)
A017/029:81:83	Tile fragment
A017/029:81:84-157	Medieval pottery (74 sherds)
A017/029:81:158	Knife blade. Fe. Early 13th century. Length 108mm, width 20mm tapering to 5mm with a broken point. Thickness 4mm.
A017/029:81:159	Nail
A017/029:81:160	Socketed Iron arrowhead. Early 13th century. Overall Length 57mm, Length of blade 34mm, Width of blade 13mm Plate 15

APPENDIX 3 *Sample List*

Sample No	Context No	Results
1	10	3g cremated bones
2, 25, 27	36	shell, seeds, nut shell
3	81	14g cremated bone, 15g charcoal
4	4	<1g seeds
5	6	seeds and charcoal flecks
7	13	nothing
8	14	nothing
9	21	nothing
10	17	nothing
11	5	2g cremated bone
12, 16, 23, 24	18	19g oyster shell, 21g snail shell, 11g cremated bones, 6g charcoal
13, 14	46	nothing
17	35	nothing
18	16	nothing
19	8	nothing
20	40	nothing
21	44or45	nothing
22	49	nothing
26	24	nothing
28	59	nothing
29	73	nothing
30, 32	77	nothing
31	42	charcoal, cremated bone flecks
33	78	nothing
34	55	nothing
35	65	nothing
36	79	nothing
37	74	6g charcoal
47	34	nothing

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

PROJECT DETAILS

Project	Metal Detection: M3 Clonee to North of Kells, Contract 1
Archaeologists	Maria Lear & Stuart Rathbone
Project Start	13 June 2005
Report Date	June 2005

List of Figures

1. INTRODUCTION

The proposals for archaeological resolution included an assessment of the potential for finds retrieval from topsoil at archaeological sites. This assessment will be achieved by a program of metal detecting at ploughed and pasture fields. As per the *Method Statement for Topsoil Assessment Including Metal Detection*, metal detection of the topsoil began within Contract 1on June 13, 2005.

2. ARCHAEOLOGICAL ASSESSMENT

2.1 Metal Detection Methodology

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

2.2 Field Walking Survey Methodology

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

2.3 Results

Usually, the first phase of metal detection dealt with the sod layer only and finds recovered were labelled as being from context 1. However, this was not the case in the assessment of Merrywell 1 as the sod was not metal detected and was removed before assessment began. Initial metal detection of the Merrywell 1 site produced an extremely high number of 'hits'. A total of 542 'hits' were recorded with 542 finds recovered. In order to keep all recording methods cohesive, finds from this phase of assessment were labelled as being from context 2. Field walking of Merrywell 1 produced a further collection of 21 modern finds. All of the finds recovered from the metal detection were of modern date and consisted of items associated with a modern timeframe (nails, bolts, wire, modern pottery/ceramic etc…).

2.4 List of Finds

Find Number	Description
A017/029:2:1-5	5 Nails
A017/029:2:6	Modern iron object
A017/029:2:7	Iron hook
A017/029:2:8	Nail
A017/029:2:9-11	3 Nails
A017/029:2:12	Modern iron object
A017/029:2:13	Curved modern iron object
A017/029:2:14	Modern iron object
A017/029:2:15-16	2 Nails
A017/029:2:17	Metal washer
A017/029:2:18	Iron bracket
A017/029:2:19	Nail
A017/029:2:20	Machine part fragment
A017/029:2:21	Nail
A017/029:2:22	Modern iron object
A017/029:2:23-27	5 Nails
A017/029:2:28	Modern iron object

A017/029:2:29	Nail
A017/029:2:30	Modern iron object
A017/029:2:31-34	4 Nails
A017/029:2:35	Magnetized stone
A017/029:2:36	Slag
A017/029:2:37	Slag
A017/029:2:38-39	2 Nails
A017/029:2:40-41	2 Modern iron objects
A017/029:2:42-43	2 Nails
A017/029:2:44	Modern iron object
A017/029:2:45	Slag
A017/029:2:46	Heel fragment
A017/029:2:47-48	2 Modern iron objects
A017/029:2:49	Iron heel fragment
A017/029:2:50	Nail
A017/029:2:51	Modern iron object
A017/029:2:52-56	5 Nails
A017/029:2:57-59	3 Modern iron objects
A017/029:2:60	Nail
A017/029:2:61-63	3 Nails
A017/029:2:64	Nail
A017/029:2:65	Nail
A017/029:2:66	Metal peg
A017/029:2:67-68	Modern iron objects
A017/029:2:69	Nail
A017/029:2:70	Modern iron object
A017/029:2:71	Nail
A017/029:2:72-73	Modern iron object
A017/029:2:74	Nail
A017/029:2:75	Nail
A017/029:2:76-78	3 Nails
A017/029:2:79	Modern iron object
A017/029:2:80	Chain link
A017/029:2:81	Modern iron object
A017/029:2:82	Magnetized stone
A017/029:2:83-85	3 Modern iron objects
A017/029:2:86	Nail
A017/029:2:87-89	3 Modern iron objects
A017/029:2:90-91	2 Modern iron objects
A017/029:2:92-93	2 Nails
A017/029:2:94	Modern iron object
A017/029:2:95-99	5 Nails
A017/029:2:100	Modern coin
A017/029:2:101-105	5 Modern iron objects
A017/029:2:106-108	3 Nails
A017/029:2:109	Modern iron object
A017/029:2:110-111	2 Nails
A017/029:2:112-115	4 Modern iron objects
A017/029:2:116	Nail
A017/029:2:117	Magnetized stone
A017/029:2:118-119	2 Modern iron objects
A017/029:2:120-121	2 Nails
A017/029:2:122-123	2 Modern iron objects

A017/029:2:124-126	3 Nails
A017/029:2:127	Modern iron object
A017/029:2:128-129	2 Nails
A017/029:2:130	Modern iron object
A017/029:2:131-132	2 Nails
A017/029:2:133	Modern iron object
A017/029:2:134	Nail
A017/029:2:135	Nail
A017/029:2:136	Modern iron object
A017/029:2:137-140	4 Nails
A017/029:2:141-142	2 Modern iron objects
A017/029:2:143	Nail
A017/029:2:144	Glass
A017/029:2:145	Nail
A017/029:2:146	Clay pipe stem fragments
A017/029:2:147	Flint flake (un-worked)
A017/029:2:148	Nail
A017/029:2:149-151	3 Nails/bolts
A017/029:2:152-153	2 Nails
A017/029:2:154	Bolt head
A017/029:2:155-157	3 Nails
A017/029:2:158	Magnetized stone
A017/029:2:159	Nail
A017/029:2:160	Modern iron object
A017/029:2:161	Large bolt
A017/029:2:162	Clay pipe stem
A017/029:2:163-164	2 Nails
A017/029:2:165	Modern iron object
A017/029:2:166-171	6 Nails
A017/029:2:172	Modern iron object
A017/029:2:173-175	3 Nails
A017/029:2:176	Modern iron object
A017/029:2:177	Nail
A017/029:2:178-179	2 Modern iron objects
A017/029:2:180	Nail
A017/029:2:181	Modern iron object
A017/029:2:182	Metal hook
A017/029:2:183	Nail
A017/029:2:184	Modern iron object
A017/029:2:185	Chain link
A017/029:2:186-187	2 Modern iron objects
A017/029:2:188	Modern iron object
A017/029:2:189	Nail
A017/029:2:190	Magnetized stone
A017/029:2:191-196	6 Nails
A017/029:2:197	Nail
A017/029:2:198-199	2 Nails
A017/029:2:200-202	3 Nails
A017/029:2:203	Wire
A017/029:2:204	Modern iron object
A017/029:2:205	Nail
A017/029:2:206-207	2 Modern iron objects
A017/029:2:208	Nail

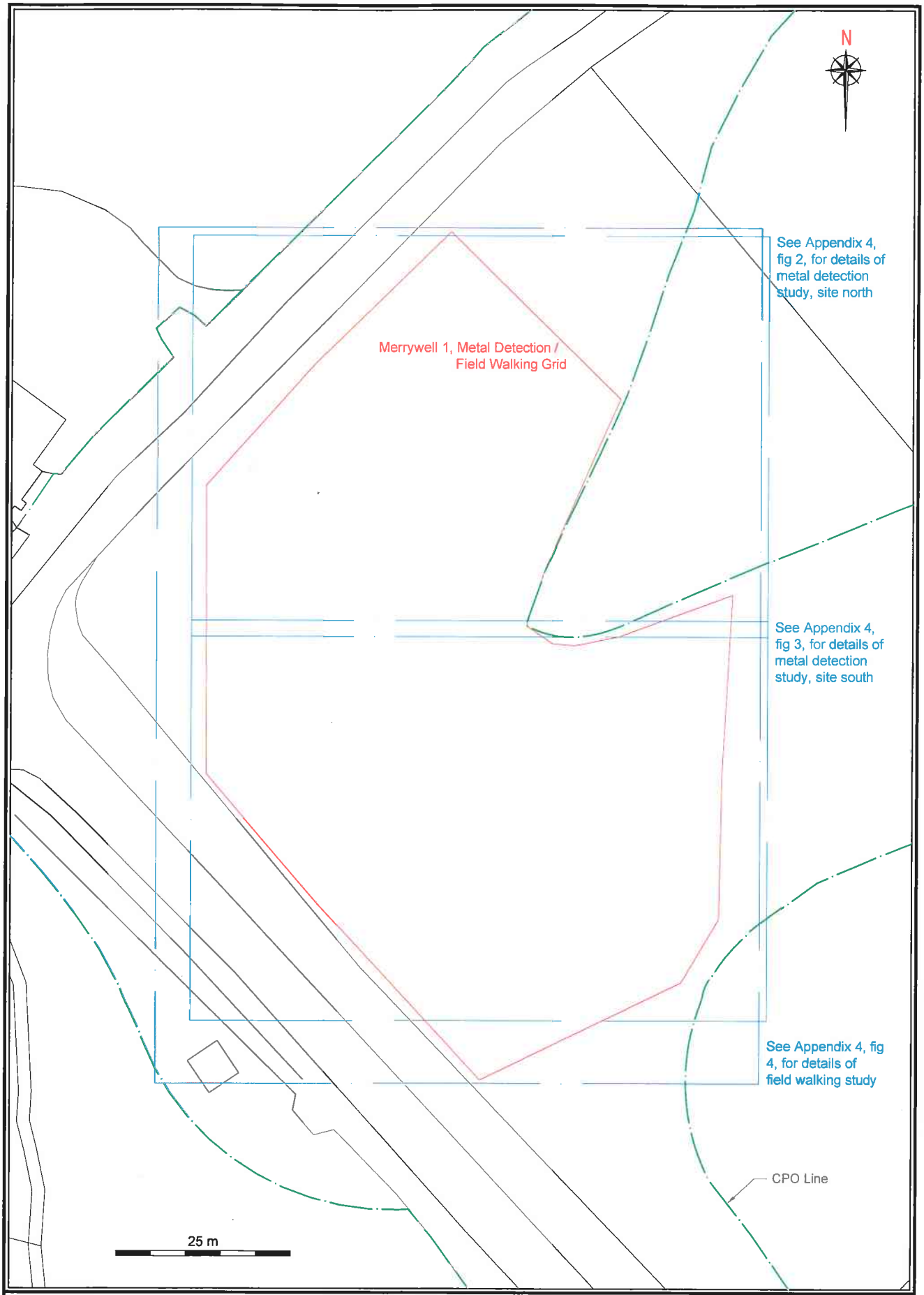
A017/029:2:209	Iron clip/hook
A017/029:2:210-212	3 Nails
A017/029:2:213-217	5 Modern iron objects
A017/029:2:218-222	5 Nails
A017/029:2:223	Small modern iron object
A017/029:2:224-225	2 sherds of black-glaze earthenware
A017/029:2:226	Clay pipe stem fragment
A017/029:2:227-229	3 Nails
A017/029:2:230	Modern iron object
A017/029:2:231-233	3 Nails
A017/029:2:234-235	2 Modern iron objects
A017/029:2:236-237	2 Nails
A017/029:2:238	Modern iron object
A017/029:2:239	Nail
A017/029:2:240-241	2 Modern iron object
A017/029:2:242	Nail
A017/029:2:243	Modern iron object
A017/029:2:244	Nail
A017/029:2:245-246	2 Modern iron objects
A017/029:2:247	Nail
A017/029:2:248-251	4 Modern iron objects
A017/029:2:252	Nail
A017/029:2:253-254	2 nails
A017/029:2:255	Nail
A017/029:2:256	Modern iron object
A017/029:2:257	Nail
A017/029:2:258-259	2 Modern iron objects
A017/029:2:260-266	7 Nails
A017/029:2:267	Modern iron object
A017/029:2:268	Nail
A017/029:2:269	Nail
A017/029:2:270	Shoe heel
A017/029:2:271	Nail
A017/029:2:272-275	4 Modern iron object
A017/029:2:276-277	2 Nails
A017/029:2:278-280	3 Modern iron objects
A017/029:2:281	Nail
A017/029:2:282	Modern iron object
A017/029:2:283-284	2 Nails
A017/029:2:285	Modern iron object
A017/029:2:286-288	3 Nails
A017/029:2:289	Nail
A017/029:2:290	Medieval pottery
A017/029:2:291-292	2 Nails
A017/029:2:293	Nail
A017/029:2:294	Nail
A017/029:2:295	Modern iron object
A017/029:2:296	Nail
A017/029:2:297	Modern iron object
A017/029:2:298-299	2 Nails
A017/029:2:300-301	2 Nails
A017/029:2:302-304	3 Modern iron objects
A017/029:2:305	Nail

A017/029:2:306-307	2 Modern iron objects
A017/029:2:308	Nail
A017/09:2:309	Modern iron object
A017/029:2:310	Nail
A017/029:2:311-314	4 Modern iron objects
A017/029:2:315-318	4 Nails
A017/029:2:319	Modern iron object
A017/029:2:320-321	Nail
A017/029:2:322	Modern iron object
A017/029:2:323-325	3 Nails
A017/029:2:326	Modern iron object
A017/029:2:327-328	2 Nails
A017/029:2:329	Large modern iron object
A017/029:2:330-332	3 Nails
A017/029:2:333	Nail/Bolt
A017/029:2:334	Tin can
A017/029:2:335-336	2 Modern iron object
A017/029:2:337	Nail fragment
A017/029:2:338	Nail
A017/029:2:339-341	3 Modern iron objects
A017/029:2:342-343	2 Nails
A017/029:2:344-345	2 Modern iron object
A017/029:2:346	Nail
A017/029:2:347	Modern iron object
A017/029:2:348-352	5 Nails
A017/029:2:353	Nail fragment
A017/029:2:354	Medieval pottery
A017/029:2:355	Modern iron object
A017/029:2:356	Nail
A017/029:2:357-359	3 Modern iron objects
A017/029:2:360-367	8 Nails
A017/029:2:368-369	2 Modern iron objects
A017/029:2:370	Nail
A017/029:2:371	Modern iron object
A017/029:2:372	Modern iron object
A017/029:2:373-376	4 Nails
A017/029:2:377-379	3 Modern iron objects
A017/029:2:380	Nail
A017/029:2:381	Modern iron object
A017/029:2:382	Nail
A017/029:2:383-384	2 Modern iron objects
A017/029:2:385	Nail
A017/029:2:386	Modern iron object
A017/029:2:387-393	7 Nails
A017/029:2:394	Slag
A017/029:2:395-397	3 Nails
A017/029:2:398	Modern iron object
A017/029:2:399	Nail
A017/029:2:400	Modern iron object
A017/029:2:401-402	2 Nails
A017/029:2:403	Modern iron object
A017/029:2:404-405	2 Nails
A017/029:2:406	Modern iron object

A017/029:2:407-408	2 Nails
A017/029:2:409	Modern iron object
A017/029:2:410	Nail
A017/029:2:411	Modern iron object
A017/029:2:412-413	2 sherds of modern pottery
A017/029:2:414-416	3 Nails
A017/029:2:417-419	3 Nails
A017/029:2:420-421	2 Nails/bolts
A017/029:2:422	Nail
A017/029:2:423	Modern iron object
A017/029:2:424-425	2 Nails/bolts
A017/029:2:426	Machine part/fixture
A017/029:2:427	Nail
A017/029:2:428	Modern iron object
A017/029:2:429	Nail fragment
A017/029:2:430	Modern iron object
A017/029:2:431-432	2 Nails
A017/029:2:433	Modern iron object
A017/029:2:434-435	2 Nails
A017/029:2:436	Modern iron object
A017/029:2:437	Nail
A017/029:2:438	Iron bar
A017/029:2:439	Modern iron object
A017/029:2:440	Slag
A017/029:2:441-443	3 Nails
A017/029:2:444-447	4 Modern iron objects
A017/029:2:448	Nail
A017/029:2:449	Modern iron object
A017/029:2:450	Nail
A017/029:2:451	Medieval pottery
A017/029:2:452	Modern iron object
A017/029:2:453	Nail
A017/029:2:454	Modern iron object
A017/029:2:455	Hook
A017/029:2:456-457	2 Modern iron objects
A017/029:2:458	Nail
A017/029:2:459	Modern iron object
A017/029:2:460	Nail
A017/029:2:461	Nail
A017/029:2:462	Modern iron object
A017/029:2:463	Modern iron object/hinge
A017/029:2:464	Nail/bolt
A017/029:2:465	Modern iron object
A017/029:2:466	Nail
A017/029:2:467	Iron bar
A017/029:2:468-469	2 Nails
A017/029:2:470	Modern iron object
A017/029:2:471	Nail
A017/029:2:472	Modern pottery sherd
A017/029:2:473	Modern iron object/nut
A017/029:2:474	Clay pipe fragment
A017/029:2:475	Modern iron object/hinge
A017/029:2:476	Iron bar

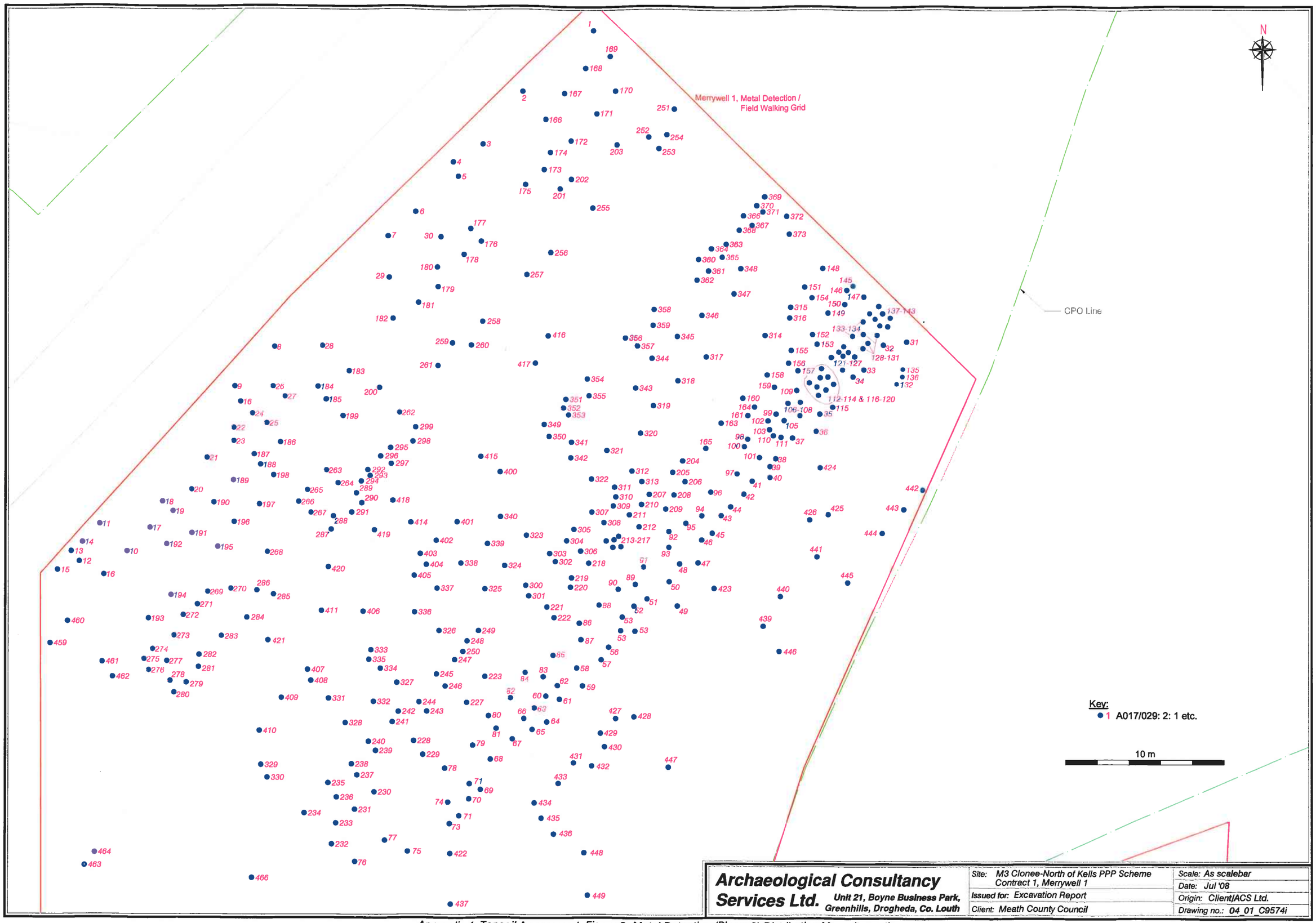
A017/029:2:477	Magnetized stone
A017/029:2:478	Iron bar
A017/029:2:479	Nail
A017/029:2:480	Iron strap/brace
A017/029:2:481	Nail
A017/029:2:482	Bolt
A017/029:2:483-484	2 Nails/bolts
A017/029:2:485	Iron clip
A017/029:2:486-487	2 Modern iron objects
A017/029:2:488-490	3 Nails
A017/029:2:491	Bolt
A017/029:2:492-493	2 Nails
A017/029:2:494	Modern iron object
A017/029:2:495-496	2 Nails
A017/029:2:497	Modern iron object
A017/029:2:498	Nail
A017/029:2:499	Modern iron object
A017/029:2:500	Modern iron object
A017/029:2:501-503	3 Nails
A017/029:2:504	Iron nut
A017/029:2:505	Iron plate
A017/029:2:506	Modern iron object
A017/029:2:507	Nail
A017/029:2:508	Modern coin
A017/029:2:509	Nail
A017/029:2:510-514	5 Modern iron objects
A017/029:2:515	Nail
A017/029:2:516	Modern pottery sherd
A017/029:2:517	Modern iron object
A017/029:2:518-519	2 Nails
A017/029:2:520	Nail
A017/029:2:521-522	2 Modern iron objects
A017/029:2:523-527	5 Nails/bolts
A017/029:2:528	Modern iron object
A017/029:2:529	Animal bone/tooth
A017/029:2:530	Nail
A017/029:2:531	Slag
A017/029:2:532	Nail
A017/029:2:533	Black glazed earthenware
A017/029:2:534	Clay pipe stem
A017/029:2:535	Modern iron object
A017/029:2:536	Modern pottery
A017/029:2:537	Modern iron object
A017/029:2:538	Clay pipe stem
A017/029:2:539	Nail
A017/029:2:540	Modern iron object
A017/029:2:541-542	2 Nails
A017/029:2:543	Iron plate
A017/029:2:544-547	4 Nails
A017/029:2:548	Iron plate
A017/029:2:549-550	2 Nails
A017/029:2:551	Metal plate
A017/029:2:552-554	3 Nails

A017/029:2:555	Bolt
A017/029:2:556-557	2 Nails
A017/029:2:558	Small modern iron object
A017/029:2:559	Nail
A017/029:2:560-561	2 Modern iron objects
A017/029:2:562	Nail
A017/029:2:563	Clay pipe stem

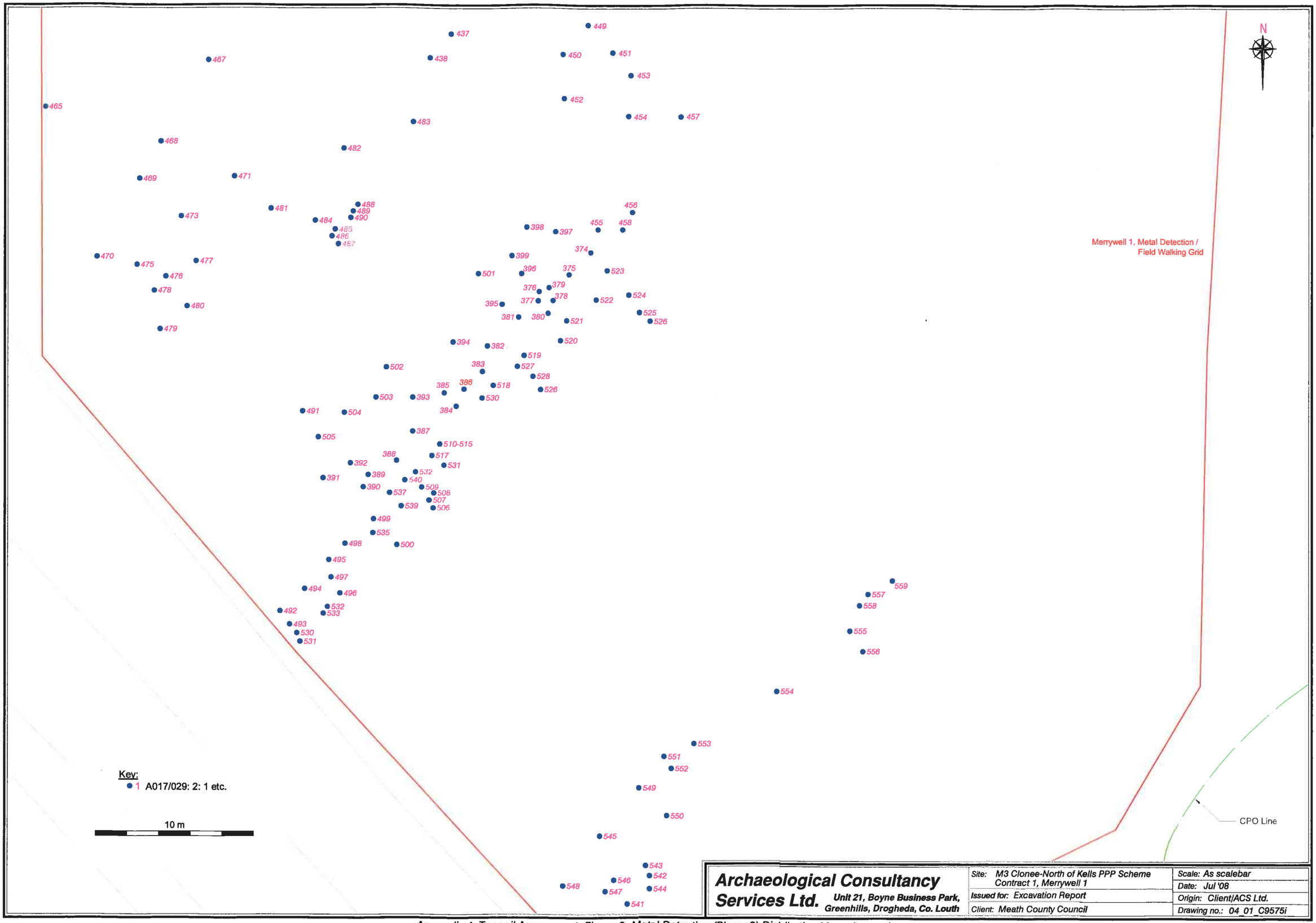


Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 1, Merrywell 1	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C9573i

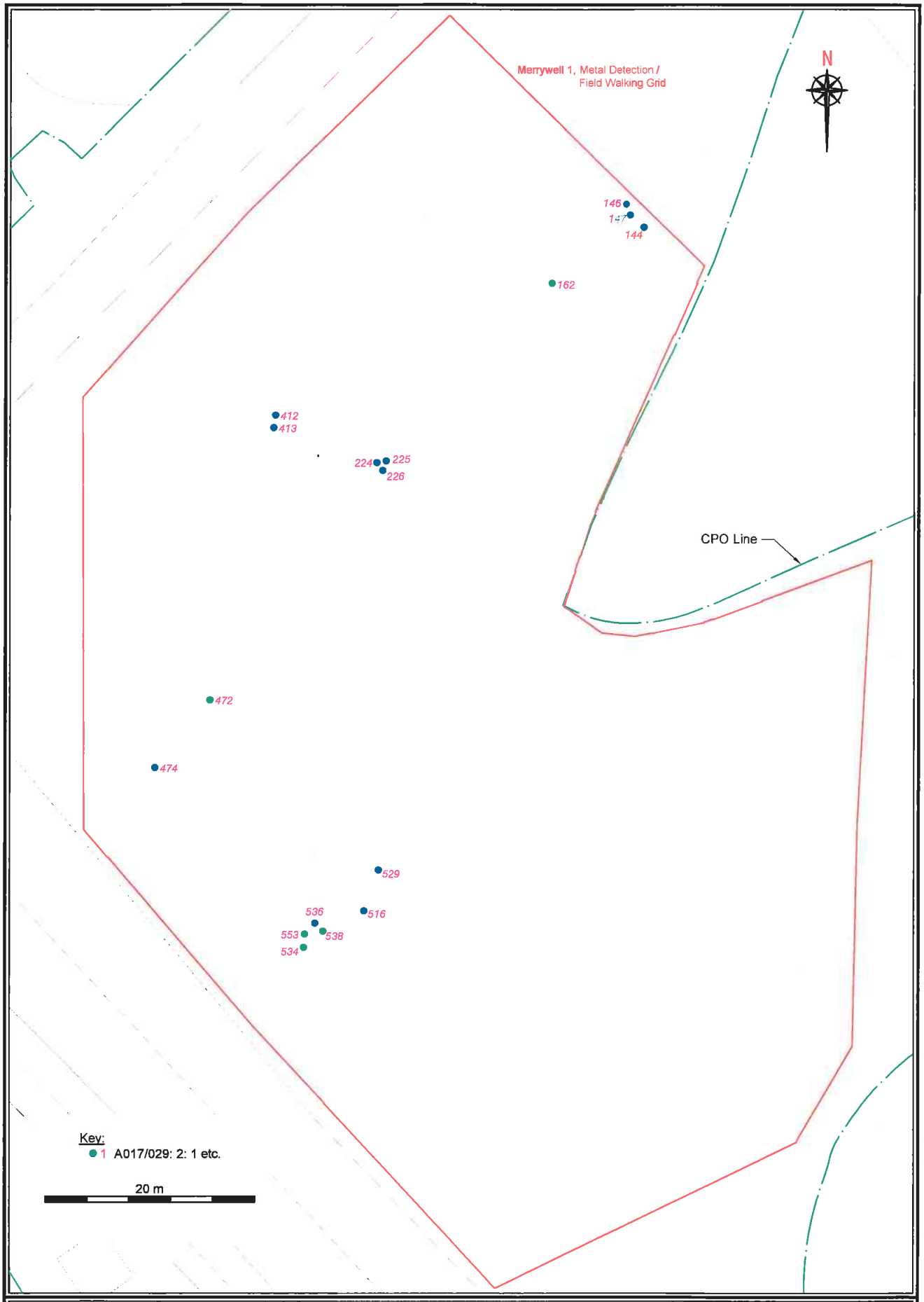
Appendix 4, Topsoil Assessment, Figure 1: Location plan



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



Appendix 4, Topsoil Assessment, Figure 3: Metal Detection (Phase 2) Distribution Map, site south



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee - North of Kells PPP Scheme Contract 1, Merrywell 1	Scale: 1: 500 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C9576i

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

APPENDIX 5 *Radiocarbon Dates*

Context	Sample No	Material	Species id/Weight	Lab	Lab Code	Date Type	Calibrated Date	Conventional Date (BP)	13C/12C
F18: fill of medieval ditch	24	Charcoal	Elm (239mg)	Beta	241279	AMS (Std)	AD 1663-1953	160 +/- 40BP	-24.9
F36: base fill of well F54	1	Wood	Hazel (117g)	Beta	246952	RMT (Ex)	AD 657-862	1280 +/- 40 BP	-25.8
F63: fill of linear ditch	1	A/bone	Horse right prominal tibia fragment (162g)	Beta	246953	AMS (Std)	AD 695-967	1190 +/- 40BP	-22.6
F74: fill of pit F73	37	Charcoal	Maloideae (127mg)	Beta	241280	AMS (Std)	907-796 BC	2680 +/- 40 BP	-24.7
F81: fill of ditch	1	Charcoal	Hazel (192mg)	Beta	241281	AMS (Std)	AD 1174-1281	790 +/- 40BP	-24.3

APPENDIX 6 *Animal Bone Report: Rachel Sloane*

04_01, M3 Clonee to North of Kells Road Scheme

Analysis of mammalian bone remains from Merrywell 1, Co. Meath

(A017/029)

6th December 2007

Rachel Sloane

1. Introduction

This report records the results of analysis of mammalian bone remains retrieved during archaeological excavation at the site of Merrywell 1, Co. Meath. Resolution phase excavation took place from 17th August to 15th November 2005 as part of the proposed M3 Clonee to North of Kells Road Scheme (O'Connell and Ginn 2006, 4). The site was revealed as medieval and included a possible ridge and furrow field system (*Ibid*, 2). A large well or cistern was also discovered (*Ibid*). Recordable mammalian bone was retrieved from all of the features detailed in Table 1. In order to facilitate less fragmented presentation of zooarchaeological results, the data compiled for various features has been amalgamated into groups as far as is reasonably possible. Groups 1, 2, 3, 4 and F42 have all been determined as medieval in date while F11 and F27 represent post-medieval features (Ginn, pers. comm.). At the time of writing this report F63 had not been assigned to a particular archaeological/historical period.

Group	Features	Description
1	F8	Stony fill of northern section (F9) of Ditch 1
	F24	Upper fill of Ditch 1
	F44	Fill of medieval ditch continuation of Ditch 1
2	F3	Secondary fill of northern section (F6) of Ditch 2
	F17	Fill of medieval ditch F20 (only had 1 fill) Ditch 2
	F71	Fill of medieval ridge, furrow ditch section, Ditch 2
3	F35	Middle fill of well/cistern F54
	F36	Basal fill of well/cistern F54
4	F10	Same as F18 & F30
	F18	Fill of medieval plough furrow/water drain
N/A	F27	Primary fill of post-medieval ditch F28
N/A	F42	Fill of medieval pit F43 (only had 1 fill)
N/A	F11	Fill of post-medieval drain F12
N/A	F63	Fill of ditch F64 i.e. ditch/possible drain

Table 1 Merrywell 1: Archaeological groups and features from which recordable animal bone was retrieved.

2. Methodology

The methodology adopted for analysis of this collection is based on that used for Knowth by McCormick and Murray (2007). A detailed description of the applied methodology has been outlined by the current author in the analysis report for Roestown 2 mammalian bone remains, recovered from archaeological excavation carried out as part of the M3 Clonee-North of Kells Road Scheme. The quantification method applied is a modified version of that used by Albarella and Davis (1996). It entails a selective approach which, rather than counting every fragment of bone, results in the production of NISP values i.e. number of identifiable specimens. The method involves examination of all faunal bone remains but specimens found to be of low-grade information value are not recorded. Consequently the recording of a narrower range of clearly defined bone elements is ensured. Selected elements are recorded provided at least 50% of the diagnostic zone survives. This procedure avoids multiple counting of very fragmented elements (*Ibid*). The MNI i.e. minimum number of individuals was calculated for all species. This estimates the minimum number of animals that the recorded faunal remains could have come from (Chaplin 1971, 70). It is calculated through dividing the recorded value of each element for a species by its frequency in the skeleton. The resulting highest value is the MNI for that particular species. While both sides and proximal or distal were taken into account for MNI calculations, ageing data was not.

3. Results of Analysis

3.1 Summary of Findings

All of the Merrywell 1 animal bone retrieved from archaeological features was thoroughly inspected and a total of 112 recordable elements were observed. A further six specimens were recorded as 'non-countable'. A 'non-countable' specimen may be defined as one that does not meet the recognised criteria for quantification (see Roestown 2 methodology). However, due to the presence of any noteworthy evidence, in this case butchery and burning, such specimens are recorded but not included in the quantification of the assemblage. The species of cattle (*Bos taurus*), sheep/goat (*Ovis/Capra*), pig (*Sus sp.*), horse (*Equus caballus*), dog (*Canis familiaris*) and cat (*Felis catus*) were all represented. In one instance it was possible to confirm a mandible specimen as sheep (*Ovis aries*) rather than sheep/goat. This identification was reached through inspection of the morphological traits of the deciduous fourth premolar (dP4) as outlined by Payne (1985, 144). Figure 1 illustrates the percentage of the total NISP for which each group or feature accounts.

Merrywell 1: %Total NISP distribution

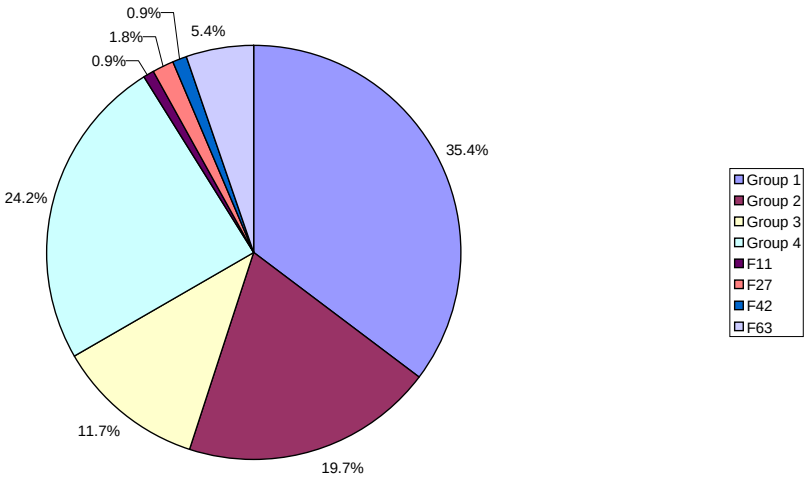


Figure 1 Merrywell 1: % of total NISP for each archaeological group or feature.

Tables 2-5 detail the range of species and elements represented by the medieval material of Groups 1-4. Group 1 accounts for 35.4% of the total NISP, the largest portion of the overall assemblage. Five of the six species present in the Merrywell 1 collection are evident in this group. The minimum number of individuals present is two cattle and one of each of the other species.

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Total
Cranium				2		2
Loose teeth	5			8	1	14
Loose lower incisor			3			3
Loose lower premolar			2			2
Loose lower M1/2	1			1		2
Mandible	2			3		5
Humerus					1	1
Radius	1			1		2
Metacarpal					1	1
Pelvis	1	2		1		4
Femur	1				1	2
Metatarsal	1					1
Metapodial	0.5					0.5
NISP	12.5	2	5	16	4	39.5
%NISP	31.6	5.1	12.7	40.5	10.1	
MNI	2	1	1	1	1	6
%MNI	33.3	16.7	16.7	16.7	16.7	

Table 2 Merrywell 1: Group 1 Number of identifiable specimens (NISP) by element and species[1].

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

With a NISP value of 22, Group 2 accounts for 19.7% of the total NISP. Cattle, sheep/goat, pig and horse are all represented and the minimum number of individuals includes two cattle and one of each of the other three species.

Element	Cattle	Sheep/Goat	Pig	Horse	Total
Loose teeth				1	1
Loose lower incisor		2	4		6
Loose lower canine			1		1
Mandible	2	1	1		4
Scapula	1				1
Humerus	2	1			3
Pelvis	1				1
Femur		2			2
Tibia				1	1
Metatarsal	1				1
Phalanx 1				1	1
NISP	7	6	6	3	22
%NISP	31.8	27.3	27.3	13.6	
MNI	2	1	1	1	5
%MNI	40	20	20	20	

Table 3 Merrywell 1: Group 2 Number of identifiable specimens (NISP) by element and species[2].

Group 3 consists of a small group of elements with cattle, pig and dog being the only species evident. It accounts for 11.4% of the total NISP and a minimum of two cattle, one pig and one dog are represented.

Loose teeth or unfused epiphyses were not counted. Incisors for pig were divided by 6. Premolars were divided by 6, M1/2 were divided by 4. With the exception of teeth, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable. In the case of cattle metapodials, MC2/MT2/MP2 were counted as 0.5 units. This explains why the total number of recordable specimens was 40 but the NISP value was 39.5.

[2] Loose teeth include loose maxillary teeth and teeth that could not be definitely classified as either mandibular or maxillary. Cranium includes either zygommatic arch or tooth row where 3 or more teeth of the dP4/P4-M3 tooth row were present.
For calculation of MNI;
Loose teeth or unfused epiphyses were not counted. Incisors for sheep/goat were divided by 8, for pig were divided by 6. Pig canines were divided by 2. Phalanges were divided by 8. With the exception of teeth and phalanges, left and right were taken into account for all elements. Proximal and distal ends were taken into account for all elements where applicable.

Element	Cattle	Pig	Dog	Total
Cranium	2			2
Loose teeth	1	1	4	6
Loose lower incisor		2		2
Mandible		1		1
Scapula	1			1
Radius			1	1
NISP	4	4	5	13
%NISP	30.8	30.8	38.5	
MNI	2	1	1	4
%MNI	50	25	25	

Table 4 Merrywell 1: Group 3 Number of identifiable specimens (NISP) by element and species.

The Group 4 assemblage is the second largest portion of the overall collection, comprising 24.2% of the total NISP, and all six species are represented. The minimum number of individuals is one of each species with horse and cat both being represented by a single specimen.

Element	Cattle	Sheep/Goat	Pig	Horse	Dog	Cat	Total
Loose teeth	10			1	1		12
Loose lower incisor	1						1
Loose lower M1/2	1	1			1		3
Mandible		1	1			1	3
Scapula	1	1					2
Ulna					1		1
Pelvis			1		1		2
Calcaneum		1					1
Metatarsal	1						1
Phalanx 1	1						1
NISP	15	4	2	1	4	1	27
%NISP	55.6	14.8	7.4	3.7	14.8	3.7	
MNI	1	1	1	1	1	1	6
%MNI	16.7	16.7	16.7	16.7	16.7	16.7	

Table 5 Merrywell 1: Group 4 Number of identifiable specimens (NISP) by element and species.

NISP details for the individual features of F11, F27, F42 and F63 are provided in Tables A1-A4 of the appendix. The consequence of dealing with such a small assemblage of animal bone is that the zooarchaeological data is of restricted interpretative value. For example, the construction of age/slaughter patterns is not worthwhile as the limited quantity of evidence would mean any such pattern would be unreliable. Nevertheless, some age-related data was observed and recorded using the two most commonly applied methods.

3.2 Ageing Data

In analysing mammalian bone remains, two ageing methods are generally used. These include recording the state of tooth eruption and wear, which is recognised as the more

reliable ageing method. In general, tooth eruption and wear is recorded for cattle, sheep/goat and pig teeth wherever the occlusal surface of the mandibular dP4 (deciduous fourth premolar), P4 (fourth premolar), M1/2 (first or second molar) or M3 (third molar) survives. In the case of loose mandibular M3s, as this is the innermost tooth, a mandible wear stage (MWS) can be assigned thereby facilitating estimation of a minimum age range for the animal represented. Similarly, for mandible specimens with teeth remaining in situ, if the innermost tooth is present a MWS may also be assigned. The more problematic ageing method (Watson 1978, 97-101) entails recording state of epiphyseal fusion for appropriate elements. It involves examining the rate of development the metaphysis or epiphysis has reached. The metaphysis is the growing end of the shaft of a developing long bone while the epiphysis is a part of a bone that develops from a separate ossification centre but later fuses with the bone (Davis 1987, 16).

3.2.1 Tooth wear

All recorded tooth wear data is detailed in Tables 6-10. Mandible wear stages were applied wherever possible and consequently a minimum age range was established in several instances. For cattle and pig, tooth wear stages followed Grant (1982) while for sheep/goat tooth wear stages were after Payne (1973 and 1987). Mandible wear stages (MWS) were assigned following Higham (1967, 104-106). The data recorded for loose mandibular cattle teeth (Table 6) is quite inconclusive. The specimens consisted of individual M1/2s and therefore could not be assigned a mandible wear stage. Due to the survival in situ of the M3 in the F11 mandible (Table 7), a mandible wear stage of 20 could be assigned indicating that the animal to which it belonged had lived to reach an age of at least 40 months old (*Ibid*, 104). Although the M3 is missing from the F42 mandible specimen, it could be argued that a mandible wear stage of 20 might be tentatively assigned considering that the M2 displayed the same stage of wear as that of the F11 specimen.

Group/Feature	Element	Grant TWS	Higham MWS
Group 1 (F44)	M1/2	a	N/A
Group 4 (F18)	M1/2	k	N/A

Table 6 Merrywell 1: Tooth wear stages for loose mandibular cattle teeth following Grant (1982, 92).

Cattle Mandible	Feature	Grant TWS					Higham MWS
		dP4	P4	M1	M2	M3	
	F11	0	0	X	j	g	20
	F42	0	f	k	j	X	

Table 7 Merrywell 1: Tooth wear stages for cattle teeth in mandibles following Grant (1982, 92) and mandible wear stages assigned following Higham (1967, 104).

It was only possible to assign an estimated age range to one sheep/goat specimen. A mandible from Group 4 was allocated a mandible wear stage of 16 (Table 9) thereby signifying the animal it represented had lived to become a mature animal i.e. over the age of 26-28 months (*Ibid*, 106).

Group/Feature	Element	Payne TWS	Higham MWS
Group 4 (F18)	M1/2	5A	N/A

Table 8 Merrywell 1: Tooth wear stages for loose mandibular sheep/goat tooth after Payne (1973 and 1987).

Sheep/Goat Mandible	Group/Feature	Payne TWS					Higham MWS
		dP4	P4	M1	M2	M3	
	Group 2 (F3)	14L	0	4B	X		N/A
	Group 4 (F18)		X	9A	9A	9G	16

Table 9 Merrywell 1: Tooth wear stages for sheep/goat teeth in mandibles after Payne (1973 and 1987) and mandible wear stage assigned following Higham (1967, 106).

Tooth wear data for pig was similarly insufficient as the M3 was missing from all three mandible specimens with recordable tooth wear. The M2 of the Group 4 specimen was found to be in a state of secondary eruption (Table 10) and therefore a tentative mandible wear stage of 12 was allocated. This suggests that the animal represented had reached an age of at least 10-11 months before death (*Ibid*, 105).

Pig Mandible	Group/Feature	Grant TWS					Higham MWS
		dP4	P4	M1	M2	M3	
	Group 2 (F3)		b	h	c	X	N/A
	Group 3 (F36)		a	e	b	X	N/A
	Group 4 (F18)		X	c	H	X	12 (tentative)

Table 10 Merrywell 1: Tooth wear stages for pig teeth in mandibles following Grant (1982, 94) and mandible wear stage assigned following Higham (1967, 105).

3.2.2 Epiphyseal Fusion

It was possible to record epiphyseal fusion data for cattle, sheep/goat, pig, horse and dog, with all detailed in Tables A5-A21 of the appendix. For cattle, sheep and pig, interpretation of epiphyseal fusion data followed Reitz and Wing (1999, 76). Any sheep/goat elements with stage of fusion recorded were assumed to be sheep rather than goat when assigning age ranges. States of epiphyseal fusion for horse and dog were after Silver (1969, 285-286). The fusion data for cattle indicates that some mature animals are represented. The fully fused nature of the Group 1 proximal femur (Table A5) and the Group 2 proximal humerus (Table A6) provide evidence of animals that lived to reach an age of at least 42 months and 42-48 months respectively (Reitz and Wing 1999, 76). Only one unfused specimen was observed for cattle. An unfused distal metatarsal from Group 2 (Table A7) was observed as having both the unfused epiphysis and the unfused metaphysis of the element present. The presence

of both, which could easily become separated by any small amount of disturbance, would seem to suggest that there had been very little disturbance of the archaeological context between the time of deposition of the specimen and its recent retrieval during the archaeological excavation of the site. The unfused nature of this specimen indicates that the animal it belonged to had died before reaching the age of 24-36 months old (*Ibid*).

Fusion data for sheep indicates the presence of some old animals with a fully fused Group 2 proximal femur (Table A10) and Group 4 proximal calcaneum (Table A12) providing evidence of animals that had lived to an age of at least 30-42 months and 30-36 months respectively (*Ibid*). One unfused sheep specimen was recorded from Group 2 (Table A11). An unfused distal femur merely indicates that the animal it represents died before reaching an age of 36-42 months (*Ibid*).

State of epiphyseal fusion was applicable in only one case for pig. The fused state of a pelvis specimen (Table A14) means that the animal it represents reached a minimum age of 12 months old (*Ibid*).

Fusion data for horse was provided by Group 1 and 2 as well as F27 and F63 (Tables A15-A18). All specimens were found to be in a fully fused state and the evidence indicates the presence of animals that had at least reached an age of 3-3.5 years (Silver 1969, 285-286). This is unsurprising as horses in medieval Ireland were not generally bred for meat consumption and might be expected to live to a good age being kept for the purposes of working or riding (McCormick 2007, 93).

Dog specimens from Groups 1, 3 and 4 were all observed as being in a fully fused state (Tables A19-A21). The most mature age range represented was by a proximal femur from Group 1 that provided evidence for an animal with a minimum age of 1.5 years old (*Ibid*).

The tooth wear and epiphyseal fusion data for cattle, sheep/goat and pig compare quite favourably to each other. Older cattle, that had reached an age of at least 40 months (based on tooth wear) and 42-48 months (based on epiphyseal fusion), are represented. Mature sheep i.e. over the age of 26-28 months (tooth wear) and some at least 30-42 months old (fusion) were observed. For pig an animal that had reached at least 10-11 months old (toothwear) and at least 12 months old (fusion) was evident. Unfortunately, the minute amount of ageing data provided by the Merrywell 1 collection makes it impracticable to attempt any reasonable conclusions regarding livestock husbandry.

3.3 Metrical Data

Biometrical data was recorded as applicable following measurement specifications of von den Driesch (1976), Payne and Bull (1988) and Boessneck (1969). In three cases of complete specimens it was possible to record a greatest length (GL) or greatest lateral length (GLl). This facilitated calculation of estimated shoulder heights for the three animals represented, the results of which are detailed in Table 11.

Group/Feature	Species	Element	Measurement (mm)	ESH (cm)
Group 3 (F36)	Dog	Radius	GL = 164.8	54.4
Group 4 (F18)	Sheep/goat	Calcaneum	GL = 46.5	50.1
F27	Horse	Metatarsal	GLl = 284.4	151.6

Table 11 Merrywell 1: Estimated shoulder heights calculated for dog after Harcourt (1974, 154), sheep after Teichert as detailed in von den Driesch and Boessneck (1974, 339) and horse after Kiesewalter (1888) as detailed in von den Driesch and Boessneck (1974, 333).

F36 was dated as 13th century based on the retrieval of pottery of this date from the feature (Ginn pers. comm.). The estimated shoulder height arrived at for the Merrywell 1 dog radius compares as larger than that based on a contemporary urban specimen from Dyer Street, Drogheda (Sloane 2005, 47) but smaller than a contemporary urban specimen from Back Lane, Dublin (*Ibid*).

Site Name	Date	Element	ESH (cm)
Merrywell 1	13th century	Radius	54.4
Caffrey's, Dyer Street, Drogheda	Early 13th – Mid 14th century	Radius	49.7
Back Lane, Dublin	Mid – Late 13th century	Radius	60.8

Table 11A Merrywell 1: Comparison of estimated shoulder height for Merrywell 1 dog radius with contemporary urban specimens. The Dublin data is taken from Turrell (2003, 128).

Medieval pottery retrieved from F18 has been used to assign a 12th – 14th century date to this feature. An estimated shoulder height of 50.1cm was calculated based on a sheep/goat calcaneum from F18 (Table 11). Comparison of this with contemporary data from Dyer Street, Drogheda and Nicholas Street, Dublin (*Ibid*, 34) shows that the Merrywell specimen suggests a smaller animal than any of the data from the other sites. However, it is not possible to place great significance on a single specimen.

Site Name	Date	Element	ESH (cm)
Merrywell 1	12th – 14th century	Calcaneum (1 specimen)	50.1
Caffrey's, Dyer Street, Drogheda	Early 13th – Mid 14th century	Metacarpal (10 specimens)	53.2 – 61.9
Caffrey's, Dyer Street, Drogheda	Early 13th – Mid 14th century	Metatarsal (5 specimens)	56.3 – 63.9
Nicholas Street, Dublin	12th – 14th century	Metacarpal (19 specimens)	55 – 64.6
Nicholas Street, Dublin	12th – 14th century	Metatarsal (14 specimens)	52 – 66.4

Table 11B Merrywell 1: Comparison of estimated shoulder height for Merrywell 1 sheep/goat calcaneum with contemporary metapodial specimens. The Dublin data is taken from Turrell (2003, 175).

The horse metatarsal that produced an estimated shoulder height of 151.6cm has been interpreted as of post-medieval date (Ginn pers. comm.). Data for 16th century Dublin has shown that horses up to 156.7cm in shoulder height were present at this time with the smallest height observed being 133.2cm (McCormick 2007, 98). It is suggested that the increased size in horse evident in the 14th, 15th and 16th centuries is likely to be a result of demand for large horses to work at ploughing (*Ibid*). The Merrywell 1 specimen may represent such an animal.

3.4 Sex Determination

Sex determination of certain mammalian bone remains is possible through examination of specified characteristics. It was possible to determine sex for two elements of the Merrywell 1 collection. In the case of pig, the morphology of the root of the permanent canine tooth or the alveolus (where the canine is absent) should be considered in order to distinguish males and females (Schmid 1972, 81). One loose mandibular pig canine from Group 2 and a second remaining in situ in a mandible specimen, from Group 3, were both identified as male.

3.5 Butchery/Gnawing/Burning/Pathology/Injury

The Merrywell 1 animal bone assemblage did not present any evidence of gnawing, burning, pathology or developmental defects. Butchery evidence was very limited and consisted of the presence of chop marks or cut marks for two recordable specimens as well as for five 'non-countable' pieces. These are detailed in Table A22 of the appendix. A clear pattern of butchery practice may not be established given the small size of the assemblage. However, it is likely that the animal bone remains represent discarded table waste. Other noted details include a right proximal horse tibia from F63 which was observed to have a circular perforation present on its medial side below the proximal articulation. Such isolated occurrences are difficult to interpret. As this particular specimen was in a fairly poor state of preservation and part of its anterior-lateral surface was also damaged, the circular nature of

the medial perforation may simply be coincidental. A 'non-countable' fragment from F3 described as an undiagnostic large mammal fragment was blackened over much of its surface suggesting it had at least been partially burnt. This was the only specimen in the collection that provided any evidence of possible burning. The state of preservation of this assemblage was in general of a relatively good standard. 80.4% of the recordable collection was found to be in 'good' condition while 9.8% was classified as being in 'excellent' condition and the remaining 9.8% was observed as being in 'fair' condition.

4. Conclusion

Cattle, sheep/goat, pig, horse, dog and cat were all evident amongst the small assemblage of mammalian bone retrieved at Merrywell 1. Ageing data based on tooth wear and epiphyseal fusion indicated the presence of older cattle (at least 40-48 months old) and mature sheep but due to the small size of the assemblage, conclusive age/slaughter patterns could not be constructed. Metrical data allowed calculation of estimated shoulder heights for three specimens. Although comparison was made with contemporary data from some urban sites, decisive implications regarding size of animals are hampered by the small quantity of data for Merrywell 1. Both cut marks and chop marks were noted on a number of recordable and 'non-countable' specimens and it is likely that the majority of the assemblage represents discarded food waste. Unfortunately, once again confident conclusions cannot be proposed, regarding aspects such as butchery practice or livestock husbandry, due to the very small amount of zooarchaeological data provided by this site.

5. Recommendations

It is recommended that the recordable and 'non-countable' assemblage from Merrywell 1 discussed in this report, be stored in a National Museum approved low-acid box (as used by ACS Ltd.) and be left ready for transfer to NMI along with the other significant mammalian bone remains retrieved from archaeological excavation along the route of the M3 Clonee to North of Kells Road Scheme.

Bibliography

Albarella, U. and Davis, S.J. 1996. 'Mammals and birds from Launceston Castle, Cornwall: decline in status and the rise of agriculture', *Circaea* 12 (1), 1-156.

Boessneck, J. 1969. 'Osteological Differences between Sheep (*Ovis aries Linné*) and Goat (*Capra hircus Linné*)', in D. Brothwell and E. Higgs (eds.), *Science in Archaeology*, 331-358. London: Thames and Hudson.

Chaplin, R.E. 1971. *The Study of Animal Bones from Archaeological Sites*. London and New York: Seminar Press.

Davis, S.J. 1987. *The Archaeology of Animals*. New Haven and London: Yale University Press.

Driesch, A. von den. 1976. *A guide to the measurement of animal bones from archaeological sites*. Cambridge, Massachusetts: Peabody Museum of Archaeology and Ethnology, Harvard University.

Driesch, A. von den and Boessneck, J. 1974. 'Kritische Anmerkungen zur Widerristhohenberechnung aus Langenmassen vor- und fruhgeschichtlicher Tierknochen', *Saugetierkundliche Mitteilungen* 22, 325-348.

Grant, A. 1982. 'The use of tooth wear as a guide to the age of domestic ungulates', in B. Wilson, C. Grigson and S. Payne (eds.), *Ageing and sexing animal bones from archaeological sites*, 91-108. (British Archaeological Reports British Series 109). Oxford: BAR.

Harcourt, R.A. 1974. The dog in prehistoric and early historic Britain. *Journal of Archaeological Science* **1**, 151-175.

Higham, C.F.W. 1967. 'Stockrearing as a cultural factor in prehistoric Europe', *Proceedings of the Prehistoric Society* 33, 84-106.

McCormick, F. 2007. 'The horse in early Ireland', *Anthropozoologica* 42 (1), 85-104.

McCormick, F. and Murray E. 2007. *Knowth and the zooarchaeology of Early Christian Ireland.* Dublin: Royal Irish Academy.

O'Connell, A. and Ginn, V. 2006. 'Interim report on archaeological excavation at Merrywell 1, County Meath', 1-10. Unpublished report.

Payne, S. 1987. 'Reference codes for wear states in the mandibular cheek teeth of sheep and goats', *Journal of Archaeological Science* 14, 609-614.

Payne, S. 1985. 'Morphological Distinctions between the Mandibular Teeth of Young Sheep, *Ovis,* and Goats, *Capra*', *Journal of Archaeological Science* 12, 139-147.

Payne, S. 1973. 'Kill off patterns in sheep and goats: the mandible from Asvan Kale', *Anatolian Studies* 23, 281-303.

Payne, S. and Bull, G. 1988. 'Components of variation in measurements to distinguish wild from domestic pig remains', *Archaeozoologia* II (1-2), 27-66.

Reitz, E.J. and Wing, E.S. 1999. *Zooarchaeology*. (Cambridge Manuals in Archaeology). Cambridge: Cambridge University Press.

Silver, I.A. 1969. 'The Ageing of Domestic Animals' in D.R. Brothwell and E. Higgs (eds.), *Science in Archaeology*, 283-302. London: Thames and Hudson.

Schmid, E. 1972. *Atlas of Animal Bones For Prehistorians, Archaeologists and Quaternary Geologists*. Amsterdam-London-New York: Elsevier Publishing Company.

Sloane, R. 2005. 'The mammal bone remains from Caffrey's former monumental works, Dyer Street, Drogheda, Co. Louth'. Unpuslished MSc dissertation, Queen's University Belfast.

Turrell, S.J. 2003. 'The Archaeozoology of Medieval Dublin and Ireland'. Unpublished MSc dissertation, Queen's University Belfast.

Watson, J.P.N. 1978. 'The interpretation of epiphyseal fusion data', in D.R. Brothwell, K.D. Thomas, J. Clutton-Brock (eds.), *Research problems in zooarchaeology*, 97-101. (Occasional Publication No. 3). London: Institute of Archaeology.

Appendix

Element	Cattle
Mandible	1
NISP	1
MNI	1

Table A1 Merrywell 1: F11 Number of identifiable specimens (NISP) by element and species.

Element	Horse
Metatarsal	1
Phalanx 2	1
NISP	2
MNI	1

Table A2 Merrywell 1: F27 Number of identifiable specimens (NISP) by element and species.

Element	Cattle
Mandible	1
NISP	1
MNI	1

Table A3 Merrywell 1: F42 Number of identifiable specimens (NISP) by element and species.

Element	Cattle	Sheep/goat	Pig	Horse	Total
Loose teeth			1	1	2
Mandible			1		1
Pelvis		1			1
Tibia				1	1
Phalanx 2	1				1
NISP	1	1	2	2	6
% NISP	16.7	16.7	33.3	33.3	
MNI	1	1	1	1	4
%MNI	25	25	25	25	

Table A4 Merrywell 1: F63 Number of identifiable specimens (NISP) by element and species.

CATTLE		Age in months
Early Fusing	metapodium p.	fused before birth
	radius p.	12-18
	acetabulum	6-10
Middle Fusing	metapodium d.	24-36
Late Fusing	femur p.	42

Table A5 Merrywell 1: Group 1 fused (fused and fusing) cattle specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

CATTLE		Age in months
Early Fusing	humerus d.	12-18
Late Fusing	humerus p.	42-48

Table A6 Merrywell 1: Group 2 fused (fused and fusing) cattle specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

CATTLE		Age in months
Middle Fusing	metapodium d.	24-36

Table A7 Merrywell 1: Group 2 unfused cattle specimen present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

CATTLE		Age in months
Early Fusing	scapula	7-10
	metapodium p.	fused before birth
	phalanx 1 p.	18-24

Table A8 Merrywell 1: Group 4 fused (fused and fusing) cattle specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

CATTLE		Age in months
Early Fusing	phalanx 2 p.	18-24

Table A9 Merrywell 1: F63 fused (fused and fusing) cattle specimen present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

SHEEP		Age in months
Early Fusing	humerus d.	3-10
Late Fusing	femur p.	30-42

Table A10 Merrywell 1: Group 2 fused (fused and fusing) sheep specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

SHEEP		Age in months
Late Fusing	femur d.	36-42

Table A11 Merrywell 1: Group 2 unfused (fused and fusing) sheep specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

SHEEP		Age in months
Middle Fusing	calcaneum p.	30-36

Table A12 Merrywell 1: Group 4 fused (fused and fusing) sheep specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

SHEEP		Age in months
Early Fusing	acetabulum	6-10

Table A13 Merrywell 1: F63 fused (fused and fusing) sheep specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

PIG		Age in months
Early Fusing	acetabulum	12

Table A14 Merrywell 1: Group 4 fused (fused and fusing) pig specimens present, classified as early, middle or late fusing after Reitz and Wing (1999, 76).

Bone	Ossification Centre	Age of Fusion
Radius	Distal epiphysis	3.5 yrs
Pelvis	Fusion of main bones	1.5-2 yrs

Table A15 Merrywell 1: Group 1 fused horse specimens present with age of fusion after Silver (1969, 285-286).

Bone	Ossification Centre	Age of Fusion
Tibia	Distal epiphysis	20-24 mts
1st phalanx	Proximal epiphysis	13-15 mts
	Distal epiphysis	Before birth

Table A16 Merrywell 1: Group 2 fused horse specimens present with age of fusion after Silver (1969, 285-286).

Bone	Ossification Centre	Age of Fusion
Metatarsal	Proximal epiphysis	Before birth
	Distal epiphysis	16-20 mts
2nd phalanx	Proximal epiphysis	9-12 mts
	Distal epiphysis	Before birth

Table A17 Merrywell 1: F27 fused horse specimens present with age of fusion after Silver (1969, 285-286).

Bone	Ossification Centre	Age of Fusion
Tibia	Proximal epiphysis	3-3.5 yrs

Table A18 Merrywell 1: F63 fused horse specimens present with age of fusion after Silver (1969, 285-286).

Bone	Ossification Centre	Age of Fusion
Humerus	Distal epiphysis	8-9 mts
Femur	Proximal epiphysis	1.5 yrs
Metacarpus	Proximal epiphysis	Before birth
	Distal epiphysis	8 mts

Table A19 Merrywell 1: Group 1 fused dog specimens present with age of fusion after Silver (1969, 285-286).

Bone	Ossification Centre	Age of Fusion
Radius	Proximal epiphysis	11-12 mts
	Distal epiphysis	11-12 mts

Table A20 Merrywell 1: Group 3 fused dog specimens present with age of fusion after Silver (1969, 285-286).

Bone	Ossification Centre	Age of Fusion
Ulna	Olecranon	9-10 mts

Table A21 Merrywell 1: Group 4 fused dog specimens present with age of fusion after Silver (1969, 285-286).

APPENDIX 7 *Environmental Report: Archaeological Services Durham University*

Archaeological Services
University of Durham

Merrywell 1, M3 Motorway Project, Co Meath, Ireland

environmental analysis

on behalf of
Archaeological Consultancy Services Ltd

Report 1752
March 2008

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Merrywell 1, M3 Motorway Project, Co Meath, Ireland

environmental analysis

Report 1752

March 2008

Archaeological Services Durham University
on behalf of
Archaeological Consultancy Services Ltd
Unit 21 Boyne Business Park, Greenhills, Drogheda, Co. Louth, Ireland

1. Summary

The project

1.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Merrywell 1, Co Meath, Ireland. The site consisted of a possible medieval ridge and furrow field system with a large well or cistern. This report presents the results of environmental analysis of fills of ditches, pits and the well.

Results

1.2 Charred plant remains indicate that wheat, and possibly also pulses, were used at the site. Waterlogged seeds and charcoal indicate the presence of mixed deciduous woodland with a scrub understorey. Alder was used for the production of charcoal, and oak appears to have been important, perhaps as a source of structural timber or firewood.

1.3 Small quantities of bone were retrieved from five contexts associated with the medieval ridge and furrow field system. Four contexts contained definite or possible animal bone, but it was not possible to determine whether the remaining bone was animal or human. No human bone was positively identified in any of the contexts. The bone tended to be patchy mid grey to white in colour throughout most contexts, indicating that most bone had been exposed to moderate temperatures (*c.* 300-600ºC+). It seems likely that these burnt bone fragments represent the spreading of midden deposits containing domestic refuse over the field system.

1.4 Land snail shells were very sparse and poorly preserved. The only species present was species *Cepaea* spp. (probably the white lipped *C. hortensis*). The analysis could provide little information to aid with the interpretation of features on the site or local land-use.

2. Project background

Location and background

2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Merrywell 1, Co Meath, Ireland. The site consisted of a possible ridge and furrow field system with a large well or cistern. Over 400 sherds of medieval pottery were recovered, in addition to a large wooden beam with dowels still *in situ*. A wooden bowl of probable medieval date was recovered from the base of the well. This report presents the results of environmental analysis of fills of ditches, pits and the well.

Objective

2.2 The objective was to analyse the charcoal, flots, shell and bone from the site to provide information about the diet, land use and local environment.

Dates

2.3 Samples were received by Archaeological Services Durham University on 31st August 2007. Analysis and report preparation was conducted between October 2007 – March 2008.

Personnel

2.4 Sample processing was undertaken by Archaeological Consultancy Services Ltd. Charcoal and charred seed identifications were carried out by Dr Charlotte O'Brien. Cremated bone analysis was by Dr Anwen Caffell, with faunal remains identifications by Ms Louisa Gidney. Shell analysis was by Dr Mike Allen. Mr Lorne Elliott assisted with the sorting of residues.

Archive

2.5 The licence number is A017/029 (E3051). The charcoal, flots, shells, bone and residues are currently held at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Environmental analysis

Methods

3.1 The residues were examined for plant remains, shells, bones, pottery sherds and metalworking debris. The dry flots were scanned at up to x60 magnification using a Leica MZ6 stereomicroscope for charred and waterlogged plant remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant taxonomic nomenclature follows Stace (1997).

3.2 Charcoal was collected from the residues and flots and added to pre-sorted material. Following Boardman (1995), identifications were made on all fragments >4mm. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Hather (2000), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. The different species were weighed separately.

Results

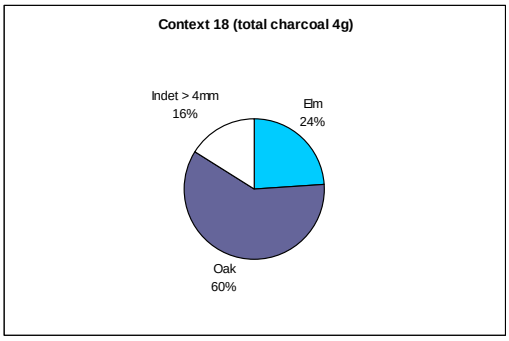
3.3 Charcoal occurred in varying quantities in the residues and flots of most of the samples. Context (36), the well fill, contained a diverse range of waterlogged seeds, in addition to a few fragments of insects and molluscs, and a bird bone. Charred plant remains were absent from most of the flots, but a moderate amount of charred cereal grain was present in context (4), the fill of a ridge and furrow ditch. These were dominated by wheat grains, with a few grass seeds and a possible pea also present. A single wheat grain occurred in context (42), a pit fill.

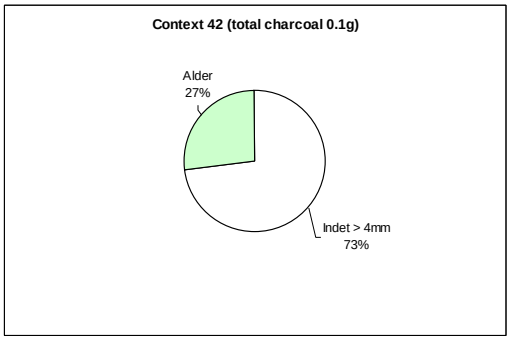
3.4 The identified charcoal included alder, hazel, Maloideae (apple, pear, whitebeams and hawthorns), ash, oak, elm, blackthorn and cherries. Some of the >4mm pieces could not be identified due to the poor condition of the fragments. The results of the environmental analysis are presented in Appendix 1. The proportions of identified charcoal species are presented in Figure 3.1.

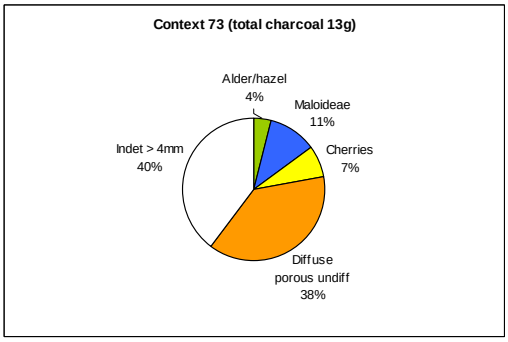
Discussion

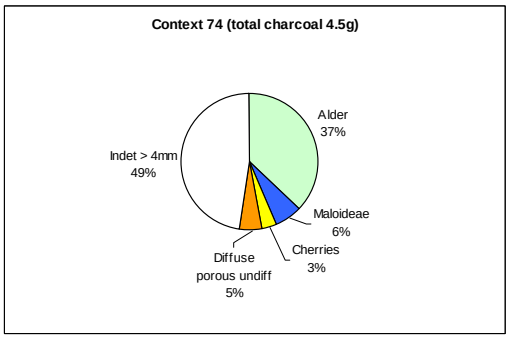
3.5 The ridge and furrow ditch fill, context (4), contained 91 charred cereal grains. A quarter of these were too damaged to be identified, but the rest were all wheat. Although it is not possible to give a positive identification of which species of wheat was present due to the absence of chaff, many of the grains had the short, stout form most often seen in the free threshing bread wheat. The presence of wheat is not unexpected, as studies of crop husbandry practice in Ireland suggest that there was an increase in the use of wheat, particularly bread wheat, in the medieval period (Monk 1986). The occurrence of a possible pea is also in line with evidence from other sites of medieval date, which indicate a more widespread use of the pulse crops at that time (Monk 1986). It has been suggested that these developments reflect changes in crop husbandry practice such as the introduction of open field systems utilising crop rotation. The favourable climatic conditions which existed until the end of the 13th century (Lamb 1977) may also have influenced the increased use of wheat and pulses.

3.6 The waterlogged conditions of the well (context 36) allowed the preservation of uncharred seeds, molluscs, insect fragments and a jackdaw ulna. Jackdaws are commensals, attracted to human habitations for nesting & roosting. The well might have had a suitable ledge in it for a nest, or the bones may have been deposited in the well with food waste, indicating that corvids formed a part of the diet at the site. The waterlogged seeds include the arable weeds fool's parsley and sun spurge, which may have grown with the cereal crops or on waste ground with the ruderal taxa knotgrass, prickly sow-thistle, common chickweed and nettles. Sedges were recorded, which probably grew on the damp ground around the well. The nuts and fruitstones of hazel, elder, bramble and hawthorn suggest there were areas of woodland near the site, from which these wild foods may have been collected to supplement the diet.









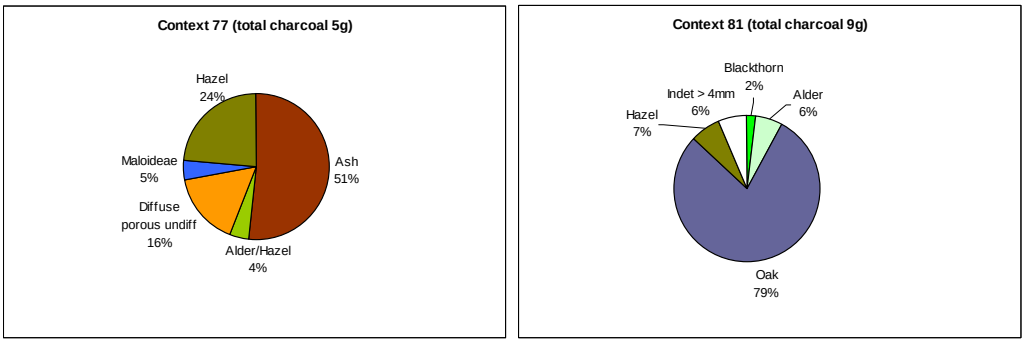


Figure 3.1: Proportions of identified charcoal from Merrywell 1

3.7 The charcoal assemblages also provide information about the local woodland composition and suggest the presence of mixed deciduous woodland with a high canopy of oak, elm and ash, with a scrub understorey of hazel, cherries, Maloideae and blackthorn. Alder occurred in several contexts, which would have grown on areas of damp ground, either forming a carr or as individual stands.

3.8 Oak was the dominant charcoal taxon in the ditch fill contexts (18) and (81). Oak was commonly used as a structural timber, as it is easy to work and has a durable heartwood (Grogan *et al* 2007). These contexts may therefore contain the remains of burnt wooden structures. However, oak also makes a good firewood, and therefore the ditches may contain waste from domestic or industrial hearths.

3.9 Alder was the main taxon in context (74), the charcoal production pit, which is not surprising as alder produces particularly good charcoal (Grogan *et al* 2007). Alder was the only charcoal species identified in context (42), which may indicate that this pit was used for a similar function.

3.10 There are an insufficient number of well-preserved charcoal roundwood fragments to undertake a study of whether woodland management was undertaken at the site, but it is feasible that some or all of the above taxa were coppiced in order to maintain a supply of wood for fuel or construction.

4. Cremated bone analysis

Methods

4.1 Samples of bone from five contexts were presented for analysis, weighing 33.6g in total. Each sample was passed through a nest of sieves, with mesh sizes of 10mm, 5mm, and 2mm (McKinley 2004). Each fraction was weighed and the largest fragment of bone was measured.

Results and interpretation

4.2 Summary data for each context is presented in Table 4.1 and the fraction weights and fragment size data for each context are given in Table 4.2.

4.3 All contexts contained small quantities of cremated bone, ranging from 0.6g to 12.6g in weight, with the lightest context deriving from a medieval pit. Maximum fragment size ranged from 10.3mm to 42.8mm, and the bone was mainly distributed between the two larger sieved fractions (Table 4.2).

Table 4.1: Summary of cremated remains

Context	Context Detail	Bone Colour	Species	Weight (g)
5	Primary fill of medieval ridge furrow ditch	Most brown, flecks black, some white	Possible animal	6.5
10	Clearance above C18	White/ pale grey	Possible animal	2.3
18	Fill of medieval ridge furrow ditch	White/ pale grey	Animal (including cattle-size and sheep-size)	11.6
42	Fill of medieval pit	Grey, some white	Unknown	0.6
81	Ditch fill	Grey to white	Animal (including sheep-size)	12.6

Table 4.2: Fraction weights and fragment size

Context	Sample	Total Weight	Fraction Weights						Max. Frag Size
			>10mm		5-10mm		2-5mm		
		g	g	%	g	%	g	%	mm
5	1	6.5	3.5	53.8	2.8	43.1	0.2	3.1	30.5
10	1	2.3	1.1	47.8	1.2	52.2	0.0	0.0	25.5
18	1	11.6	7.5	64.7	3.9	33.6	0.2	1.7	29.0
42	1	0.6	0.0	0.0	0.4	66.7	0.2	33.3	10.3
81	1	12.6	4.6	36.5	7.6	60.3	0.4	3.2	42.8

4.4 The bone from most contexts was mid grey to white in colour (Table 4.1), suggesting that it had been exposed to temperatures of 300-600ºC+, or that insufficient oxygen was available for full oxidation (McKinley 2004). Context (5) contained predominantly brown fragments with some black flecks, suggesting charring of the bone at low temperatures (*c.* 300ºC or less).

4.5 Eleven fragments were examined with a view to identification. Four of the five contexts contained possible or definite fragments of animal bone (Table 4.1), and it seems likely that the remaining bone fragments were also derived from animals. The positive identifications of animal bone included a sheep-size rib and a cattle-size vertebra (in several pieces), in context (18), and a sheep-size metatarsal in context (81). Unfortunately, the fragments of bone in context (42) were too small and featureless for identification, and it could not be determined whether the bone was human or animal. No human bone was identified in any of the contexts. It seems likely that these burnt bone fragments represent the spreading of midden deposits containing domestic refuse over the field system.

5. Land snail analysis

Methods

5.1 Land snails recovered from the fill of the medieval ridge and furrow ditch (context 18) were examined. The shells were recovered by hand during excavation. Hand-picked shells on their own are not normally of great palaeo-environmental value as this biases towards the larger and readily recognisable species (Evans 1972). Nevertheless, in an attempt to increase recovery they were placed in water to loosen soil within the interstices of the large shells to facilitate release and recovery of finer shell fragments (cf. Allen 1995). The resultant flot was retained on a sieve with 350µm mesh aperture.

Results

5.2 Shells were very sparse and poorly preserved; only large species were present, and even shells of these were very thin, fragile and brittle. The only species present was species *Cepaea* spp. (probably the white lipped *C. hortensis*). No fragments of other similar species (eg, *Arianta arbustorum*) were recorded (Table 5.1).

Discussion

5.3 With so few shells little can be said, except that weakly base-rich soils have led to poor preservation and loss of the smaller species. *C. hortensis*, is an intermediate species (Evans 1972) and can live in moderately moist places, under leaf litter, grassy fields, among grass and herbage by roadsides as well as woods (Kerney 1999). Although similar in habitat requirements to *C. nemoralis*, they are often locally mutually exclusively (Evans 1972; Cain & Curry 1963).

5.4 The group of seven collected shells may suggest that this was a hibernating group and may have been sheltering under stones of leaf litter that had accumulated within the ditch/furrow. Comparable assemblages have been noted in Bronze Age barrow ditches (Allen 1995). Unfortunately, little else can be said to aid with the interpretation of this feature or of the local land-use, but their presence does not preclude ridge and furrow cultivation.

Table 5.1: Land snails from Merrywell 1

Mollusca	***no.***
Cepaea spp.	5
Cepaea cf. *hortensis* (Müller)	2
Total	**7**

6. Sources

Allen, M J, 1995 Land-use history of Round-the-Down: the molluscan evidence, in Butler, C, The excavation of a Bronze Age round barrow at Round-the-Down, near Lewes, East Sussex, *Sussex Archaeological Collections* **133**, 13-16

Boardman, S J, 1995 Charcoal and charred macrofossils, in K, Branigan & P, Foster (eds) *Barra: archaeological research on Ben Tangaval, Sheffield*: SEARCH Volume **1**, 149-157

Cain, A J, & Curry, J D, 1963 Area effects in *Cepaea, Philosophical Transactions of the Royal Society* **(B) 246**, 1-81

Evans, J G, 1972 *Land Snails in Archaeology,* London

Grogan, E, O'Donnell, L, & Johnston, P, 2007 *The Bronze Age landscapes of the Pipeline to the West, an integrated archaeological and environmental assessment*, Wicklow

Hather, J G, 2000 *The identification of the Northern European Woods: a guide for archaeologists and conservators*, London

Kerney, M P, 1999 *Atlas of the Land and Freshwater Molluscs of Britain and Ireland,* Colchester

Lamb, H H, 1977 Climate Past, Present and Future: volume 2, *Climatic History and the Future*, London

McKinley, J I, 2004 Compiling a Skeletal Inventory: Cremated Human Bone, in M Brickley & J I McKinley (eds) *Guidelines to the Standards for Recording Human Remains*, 9-13, Southampton and Reading

Monk, M A, 1986 Evidence from macroscopic plant remains for crop husbandry in prehistoric and early historic Ireland, *Journal of Irish Archaeology*, **3**, 31-36

Preston, C D, Pearman, D A, & Dines, T D, 2002 *New Atlas of the British and Irish Flora,* Oxford

Stace, C, 1997 *New Flora of the British Isles*, 2nd Edition, Cambridge

Context	4	18	35	36	36	42	59	65	73	74	77	81
Sample	4	12	27	2	25	31	28	35	29	37	32	1
Fill type	ditch	ditch	?	well	well	pit	ditch	ditch	pit	pit	pit	ditch
Residue weight (g)	569	609	-	2368	2035	468	144	382	325	-	905	-
Flot weight (g)	7	-	5	15	11	2	2	<1	1	23	3	-
Flot volume (ml)	10	-	2	25		2	1	<1	1	10	2	-
Residue contents (relative abundance)												
Charcoal	✓	✓	-	✓	-	✓	✓	✓	✓	✓	✓	-
Jackdaw (ulna)	-	-	-	-	1	-	-	-	-	-	-	-
Large angular/cracked stones	-	-	-	1	-	-	-	-	1	-	-	-
Sub-rounded stones	-	-	-	-	3	-	-	-	-	-	-	-
Charcoal (g)												
Total charcoal	-	4.166	-	-	-	0.114	-	-	12.977	4.492	5.331	8.952
Number of charcoal fragments >4mm	-	21	-	-	-	4	-	-	56	18	36	38
Alnus glutinosa (Alder)	-	-	-	-	-	-	-	-	-	0.741	-	0.323
Alnus / Corylus (Alder or hazel)	-	-	-	-	-	0.031	-	-	0.188	-	0.094	-
Corylus avellana (Hazel)	-	-	-	-	-	-	-	-	-	-	0.528	0.352
Fraxinus excelsior (Ash)	-	-	-	-	-	-	-	-	-	-	1.158	-
Maloideae	-	-	-	-	-	-	-	-	0.558	0.127	0.101	-
Prunus spp (Cherries)	-	-	-	-	-	-	-	-	0.351	0.061	-	-
Prunus spinosa (Blackthorn)	-	-	-	-	-	-	-	-	-	-	-	0.099
Quercus sp (Oak)	-	2.031	-	-	-	-	-	-	-	-	-	4.136
Ulmus sp (Elm)	-	0.804	-	-	-	-	-	-	-	-	-	-
Diffuse-porous undifferentiated	-	-	-	-	-	-	-	-	1.891	0.108	0.356	-
Unidentified >4mm fraction	-	0.543	-	-	-	0.083	-	-	1.978	0.947	-	0.338
Unidentified <4mm fraction	-	0.788	-	-	-	-	-	-	8.011	2.508	3.094	3.704
Flot matrix (relative abundance)												
Charcoal	✓	-	-	-	-	✓	✓	✓	-	✓	✓	-
Insect fragment	-	-	-	1	1	-	-	-	-	-	-	-
Modern roots	-	-	-	-	-	-	-	-	1	-	1	-
Mollusc	-	-	-	-	1	-	-	1	-	-	-	-
Straw	-	-	-	-	1	-	-	-	-	-	-	-
Wood	-	-	-	2	-	-	-	-	-	-	-	-
Charred remains (total counts)												
(c) Cerealia indeterminate	25	-	-	-	-	-	-	-	-	-	-	-
(c) Fabaceae cf. *Pisum sativum* (cf. pea)	1	-	-	-	-	-	-	-	-	-	-	-
(c) *Triticum* spp (Wheat undifferentiated)	20	-	-	-	-	-	-	-	-	-	-	-

(c) *Triticum* cf. *aestivum* (cf Bread wheat)		46	-	-	-	-	1	-	-	-	-	-	-
(x) Poaceae spp >2mm (Grass)		6	-	-	-	1	-	-	-	-	-	-	-
Waterlogged remains (relative abundance)													
(a) *Aethusa cynapium* (Fool's parsley)	fruit	-	-	-	-	1	-	-	-	-	-	-	-
(a) *Euphorbia helioscopia* (Sun spurge)	seed	-	-	-	-	1	-	-	-	-	-	-	-
(h) *Rumex acetosella* (Sheep's sorrel)	nutlet	-	-	-	1	-	-	-	-	-	-	-	-
(r) *Cirsium / Carduus* spp (Thistle)	achene	-	-	-	1	2	-	-	-	-	-	-	-
(r) *Polygonum aviculare* (Knotgrass)	nutlet	-	-	-	1	1	-	-	-	-	-	-	-
(r) *Sonchus asper* (Prickly sow-thistle)	achene	-	-	-	2	1	-	-	-	-	-	-	-
(r) *Stellaria media* (Common Chickweed)	seed	-	-	-	2	2	-	-	-	-	-	-	-
(r) *Urtica dioica* (Common Nettle)	achene	-	-	-	2	1	-	-	-	-	-	-	-
(t) *Corylus avellana* (Hazel)	nut shell fragment	-	-	-	1	2	-	-	-	-	-	-	-
(t) *Crataegus monogyna* (Hawthorn)	fruitstone	-	-	-	-	2	-	-	-	-	-	-	-
(t) *Rubus fruticosus* agg. (Bramble)	fruitstone	-	-	-	1	1	-	-	-	-	-	-	-
(t) *Sambucus nigra* (Elder)	fruitstone	-	-	-	1	1	-	-	-	-	-	-	-
(w) *Carex* spp (Sedges)	trigonous nutlet	-	-	-	2	2	-	-	-	-	-	-	-
(x) Caryophyllaceae sp (Pink family)	seed	-	-	-	-	-	-	-	-	-	-	-	-
(x) *Chenopodium* sp (Goosefoot)	seed	-	-	-	1	-	-	-	-	-	-	-	-
(x) Musci spp (Mosses)	branch	-	-	2	1	1	-	-	-	-	-	-	-
(x) Poaceae spp <2mm (Grass)	caryopsis	-	-	-	-	-	1	-	-	-	-	-	-
(x) *Potentilla* spp (Cinquefoil)	achene	-	-	-	1	-	-	-	-	-	-	-	-
(x) *Ranunculus* subgenus *Ranunculus* (Buttercup)	achene	-	-	-	2	2	-	-	-	-	-	-	-
(x) Rosaceae sp (Rose family)	achene	-	-	-	1	-	-	-	-	-	-	-	-
(x) *Rumex* sp (Dock)	nutlet	-	-	-	2	2	-	-	-	-	-	-	-

(a: arable; c: cultivated plant; h: heathland; r: ruderal; t: trees/shrubs; x: wide niche). Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Appendix 1: Plant macrofossils and charcoal from Merrywell 1

APPENDIX 8 *Pottery Report: Clare McCutcheon*

The medieval pottery from Merrywell 1, Co Meath (A017/029)

Clare McCutcheon MA MIAI

Introduction:

A total of 710 sherds of pottery were presented for study. Following some reassembly within contexts, this was reduced to 647 sherds. The assemblage generally dates from the later twelfth to mid-thirteenth century based on the relative quantities of the various Dublin-type wares. The site is described as a ridge and furrow system with a large well cistern. It appears both from testing and further excavation that this site is a field system possibly associated with a settlement. The finding of medieval pottery outside of domestic habitation, and the worn condition of the sherds, may be explained by the use of waste material on fields, a common practice in the medieval period.

Historical background:

In the first years of the new Dublin community it is clear that most of the prominent Anglo-Norman adventurers in this country made more or less extensive grants to 'the canons who served God in the monastery of blessed Thomas the martyr near Dublin' (Gwynn 1954, 14). This foundation in Dublin, dedicated to St Thomas the Martyr i.e. Thomas à Becket, was a very early dedication in 1177 AD. Becket had been murdered at Canterbury in late 1170 and canonised in 1173. Part of Henry II's penance was to build and dedicate churches in honour of the saint (*ibid*., 12). St Thomas' was located outside the western gate of Dublin and the canons set about developing the area and beyond with considerable vigour (Duddy 2003). 'St Thomas's was founded with ends in mind, that were advantageous to civil society, for example, the development of the suburb, but these ends were to be reached through the Christian ethic' (*ibid*, 82ff).

The significance of St Thomas in connection with the distribution of pottery lies in its location in the western suburbs. Clarke (1998, 50-51) describes Thomas Street as 'the great artery for food and other necessities entering the city', with an eight day fair established in 1204, subsequently lengthened to a fifteen day fair by 1215. Down the hill and parallel to Thomas Street lay Crocker Street. As early as 1190 this street is named *vicus pottorum*, later reappearing as *vicus figulorum* and Crocker Street (Brooks 1936). No kilns and associated features such as workshops, clay settling pits or waste heaps have been uncovered on the

street, although pottery wasters have been recovered at excavations in the Iveagh Markets to the south of the medieval wall (McCutcheon in prep) and waste material from ridge tile production, in clay similar to Dublin-type coarseware has been recovered at the Cornmarket (Wren forthcoming). Nevertheless the use of the imported word 'crocker' is substantial if circumstantial evidence for the association with the production of pottery. In addition, a number leases between Thomas Street and Crocker Street were held in the early thirteenth century by people whose names clearly indicated that they were involved in the making of earthenware (Brooks 1936). The vigorous development of the western suburbs by St Thomas' Abbey and the extensive properties held in Meath and Kildare in particular would have encouraged the lively production of familiar looking pottery for the use of the new settlers in Dublin and beyond. The distribution of the Dublin-type wares is widespread and, for example, extends at least to Trim, Co. Meath; Maynooth Castle, Co. Kildare, and Dundrum and Carrickmines Castles, Co. Dublin (McCutcheon forthcoming a-d).

Methodology:

The sherds have been identified visually and the information is presented in Table 1. This includes the number of sherds in each fabric type, the minimum number of vessels (MNV) present as distinct from the minimum vessels represented (MVR). The form of vessels represented and the currently known date range of the fabric types completes the table.

The material is then listed by context in Table 2. This table contains the context description and the quantity of sherds in each fabric type, along with a suggested date range for the assemblages in these contexts.

Database:

The identification of each sherd has been entered on a database table (Access format) as per the requirements of the National Museum of Ireland, the body responsible for the material remains from excavations within the state. The database shows the *licence*, *context* and *finds* number; the *links* of reassembled sherds within and between contexts; the *category* and *type* of material i.e. ceramic and pottery; the *identification* of the fabric type and the diagnostic *description* i.e. rim, handle etc. This is followed by two *location* fields, the first of which shows the box number where each sherd is stored. The second is a blank field for the use of the National Museum of Ireland to show the location of the box within their storage system. The database is easily searchable for particular types of pottery, vessels parts etc and is also appropriate for all other small finds recovered from the site. The two fields showing links and description are not specifically required by the National Museum of Ireland but have been inserted by this researcher in the course of considerable work on small finds from urban excavations, including pottery. They fulfil the necessity of indicating the diagnostic part of

the vessel recovered but can also be useful to indicate stick pin type, nail type etc. in the case of metal artefacts.

Fabric type	Sherds	MNV	MVR	Form	Date
Leinster Cooking Ware	23	-	1	Cooking pot	L12th-14th
Dublin-type cooking ware	352	-	4	Cooking pots	L12th-13th
Dublin-type coarseware	137	1	5	Jugs	L12th-E13th
Dublin-type ware	134	-	>4	3 Jugs, storage pot	13th
Dublin-type fineware	1	-	1	Jug	L13th-14th
Total	**647**	**1**	**>15**		

Table 1: Medieval pottery, Merrywell 1 (A017/029).

Leinster Cooking Ware:

'Leinster Cooking Ware is the single most widespread medieval pottery type in Leinster' (Ó Floinn 1988, 340). It has been found in varying quantities on both urban and rural sites from Dungarvan to Dublin and further north. The fabric contains large plates of mica, quartz grits and other inclusions such as decomposed feldspar (*ibid* 327). The most significant diagnostic feature of all Leinster Cooking Ware is the technique of sand-gritting on the bases, a feature not seen on the Dublin-type cooking ware vessels.

The name of this fabric type is somewhat restrictive as many other vessel forms were made in addition to those jars used as cooking pots. The range includes cisterns, dripping dishes, lamps, jugs and small bowls i.e. a full range of forms in ceramic to complement the wide range of wooden plates, cups and dishes. The only form present in this assemblage, however, is a cooking pot with everted rim.

Dublin-type wares:

The designation of a fabric with the suffix *-type* is recommended pottery practice to indicate that a ware has been consistently found in a particular area while evidence for a production centre or kiln which has not yet been discovered (Blake & Davey 1983, 39-40). A fuller discussion of the names of the Dublin-type wares has been detailed elsewhere (McCutcheon 2000, 120-23; 2006, 58-84).

Dublin-type cooking ware: This is an unglazed ware, primarily used for cooking jars, contemporary with the hand-built coarseware and the later wheel-thrown Dublin-type ware, dating from the later twelfth to the early fourteenth century. Unlike Leinster Cooking Ware, this ware appears to have been used solely for cooking pots. As noted above, the significant diagnostic difference from the Leinster Cooking Ware is the complete absence of sand-gritting on the bases of all vessels.

Three of the rims are from everted pots, one with a groove on the top of the rim with the other two flat-topped. One of the pots has a series of light combing in bands of three rows, in a manner similar to the contemporary Bristol Ham Green cooking ware.

The fourth rim is from a straight-sided pot, a much less common shape in medieval pottery where the everted rim is the norm.

Dublin-type ware coarseware: This is hand-built in a coarse fabric, glazed and dating from the later twelfth to early thirteenth century.

Five handle fragments were present, all of which were decorated. One had a single central incised line while the second had a central incised line bordered by diagonal slashes. A third fragment also had diagonal slashes but the centre was marked with a line of stabbing. The fourth fragment had three irregular lines of stabbing while the fifth, a rim/handle fragment, had square rouletting on the handle and rim and was probably matched with body sherds also decorated with square rouletting.

Dublin-type ware: This is wheel-thrown, externally glazed ware and dates broadly to the thirteenth century.

While much of the material identified as Dublin-type ware was fired red, some nine sherds were part of a jug that fired grey internally with a red exterior, including a well-made hard-fired rim sherd with a portion of a strap handle. Two spout fragments were recovered, both evident of pulled rather than applied spouts. A storage vessel is represented by several shallow everted rim fragments with glaze on the upper body, in addition to a trumpet handle, characteristic of the Dublin-type storage jars.

The most unusual piece is a portion of a tubular spot with evidence of having been attached by a horizontal strut to the neck of the jug. A small portion of a second tubular spout was also present in the assemblage. These spouts would have been attached to the top of the belly of a rounded jug.

Dublin-type fineware: This is a clean or smooth, lower-fired clay and dates to the later thirteenth to early fourteenth centuries. A single sherd of this type was recovered.

Discussion:*

Table 2 contains the list of contexts containing medieval pottery and the context description as provided from the stratigraphic report. The quantity of sherds listed is that following reassembly. The dates suggested are based on the relative quantities of each of the fabric types and simply reflect the final fill of any particular feature. These dates may be modified by the presence or absence of any post-medieval pottery or other finds on the site.

Context	Context description	Fabric type & quantity	Date
4	Fill ridge & furrow cultivation ditch	Dublin-type cooking ware (x3)	L12th-13th
5	Primary fill ridge & furrow ditch.	Dublin-type cooking ware (x11) Dublin-type coarseware (x1)	L12th-E13th
8	Fill of medieval well	Leinster Cooking Ware (x1) Dublin-type coarseware (x19) Dublin-type ware (x35)	E13th
10	Clearance above medieval ridge & furrow ditch (C18)	Dublin-type cooking ware (x66) Dublin-type coarseware (x6) Dublin-type ware (x3)	E13th
14	Fill medieval? Ditch	Dublin-type coarseware (x1)	L12th-E13th
16	Upper fill medieval ditch	Dublin-type ware (x1)	13th
17	Fill medieval ridge & furrow ditch	Dublin-type cooking ware (x12) Dublin-type coarseware (x2) Dublin-type ware (x3)	E13th
18	Fill medieval ridge & furrow ditch	Leinster Cooking Ware (x7) Dublin-type cooking ware (x115) Dublin-type coarseware (x24) Dublin-type ware (x14)	E13th
25	Fill medieval ditch	Leinster Cooking Ware (x2) Dublin-type cooking ware (x17) Dublin-type coarseware (x7) Dublin-type ware (x28)	E13th
26	Fill post-medieval ditch	Dublin-type ware (x1)	13th residual
31	Fill post-medieval ditch	Dublin-type coarseware (x1)	L12th-E13th residual

* Editor's note: F08 has been incorrectly described as 'fill of medieval well': it is a fill of Ditch 1 (Section F09). F25 has been used incorrectly: F25 is a cut and the pottery comes from its fill, F24. F37 was later deemed to be non-archaeological.

35	Fill medieval well	Dublin-type coarseware (x14) Dublin-type ware (x13)	E13th
36	Fill medieval well	Dublin-type coarseware (x2)	E13th
37		Dublin-type cooking ware (x11) Dublin-type coarseware (x19) Dublin-type ware (x19)	E13th
38	Fill poss trench assoc. with wall (C34)	Leinster Cooking Ware (x1) Dublin-type cooking ware (x2) Dublin-type coarseware (x6)	E13th
40	Fill of ditch	Leinster Cooking Ware (x5) Dublin-type cooking ware (x2) Dublin-type ware (x6)	13th
42	Fill medieval refuse pit	Dublin-type cooking ware (x1)	13th
44	Fill medieval ditch	Leinster Cooking Ware (x1) Dublin-type coarseware (x8) Dublin-type ware (x5)	E13th
53	Earthen bank	Dublin-type cooking ware (x1)	13th
55	Fill medieval ditch	Dublin-type fineware (x1)	L13th-E14th
72	Fill medieval ditch	Leinster Cooking Ware (x1) Dublin-type cooking ware (x1) Dublin-type ware (x2)	13th
81	Fill medieval ridge & furrow ditch	Leinster Cooking Ware (x5) Dublin-type cooking ware (x110) Dublin-type coarseware (x15) Dublin-type ware (x6)	E13th

Table 2: Medieval pottery by context, Merrywell 1 (A017/029).

Bibliography:

Brooks, E. St. John (ed.) 1936 *Register of the Hospital of S John the Baptist without the New Gate, Dublin*. Dublin.

Blake, H. & Davey, P. (eds) 1983 *Guidelines for the processing and publication of medieval pottery from excavations*. London.

Clarke, H.B. 1998 'Urbs et suburbium: beyond the walls of medieval Dublin', in C. Manning (ed.), *Dublin and beyond the Pale*. 45-58. Dublin.

Duddy, C. 2001 'The role of St Thomas's abbey in the early development of Dublin's western suburbs', in S. Duffy (ed.), *Medieval Dublin IV: Proceeding of the Friends of*

Medieval Dublin Symposium 2002. 79-97. Dublin.

Gwynn, A. 1954 'The early history of St Thomas' Abbey, Dublin', *Journal of the Royal Society of Antiquaries of Ireland* **84**, 1-35.

McCutcheon, C. 2000 'Medieval pottery in Dublin: new names and some dates' in S. Duffy (ed.), *Medieval Dublin 1*, 117-25. Dublin.

McCutcheon, C. 2006 *Medieval pottery from Wood Quay, Dublin.* Dublin.

McCutcheon, C. forthcoming (a) 'The pottery', in A. Hayden, *Excavations at Main Street, Trim, Co. Meath.*

McCutcheon, C. forthcoming (b) 'The pottery', in A. Hayden, *Excavations at Maynooth Castle, Co. Kildare*.

McCutcheon, C. forthcoming (c) 'The pottery', in E. O'Brien, *Excavations at Dundrum Castle, Co. Dublin*.

McCutcheon, C. forthcoming (d) 'The medieval pottery', in M. Clinton, *Excavations at Carrickmines Castle, Co. Dublin*.

McCutcheon, C. in prep 'The pottery', in F. Myles, *Excavations at the Iveagh Markets, Dublin.*

Ó Floinn, R. 1988 'Handmade medieval pottery in south-east Ireland - 'Leinster Cooking Ware' in G. MacNiocaill & P.F. Wallace (eds), *Keimelia*. 325-49. Galway.

Pearce, J.E., Vince, A.G. & Jenner, M.A. 1985 *A dated type series of London medieval pottery part 2: London-type ware*. London.

APPENDIX 9 *Lithic Report: Eimear Nelis*

M3 Batch 2

CHIPPED AND WORKED STONE ASSEMBLAGE

ANALYSIS, CATALOGUES AND REPORTS

Bennetstown 1 (A017/003)
Bennetstown 3 (A017/005)
Knocks 1 (A017/022)
Leshamstown 1 (A017/025)
Knockmark 1 (A017/028)
Merrywell 1 (A017/029)
Drumree 1 (A017/027)
Johnstown 2 (A017/020)
Johnstown 3 (A017/021)
Ardsallagh 1 (A008/035)
Ardsallagh 2 (A008/034)
Ardsallagh 4 (A008/037)
Ardsallagh 5 (A008/038)
Kennastown 1 (A023/001)
Garretstown 2 (A008/008)

DR EIMÉAR NELIS MA PHD MIAI

NOVEMBER 2007

Introduction

During a programme of archaeological testing at the M3 Clonee-North of Kells PPP scheme, an assemblage of chipped, worked and unworked stone was recovered from a total of fifteen sites, namely: Bennetstown 1 (A017/003: 8 pieces); Bennetstown 3 (A017/005: 1 piece); Knocks 1 (A017/022: 45 pieces); Leshamstown 1 (A017/025: 4 pieces); Knockmark 1 (A017/028: 34 pieces); Merrywell 1 (A017/029: 3 pieces); Drumree 1 (A017/027: 5 pieces); Johnstown 2 (A017/022: 10 pieces); Johnstown 3 (A017/021: 16 pieces); Ardsallagh 1 (A008/035: 20 pieces); Ardsallagh 2 (A008/034: 35 pieces); Ardsallagh 4 (A008/037: 2 pieces); Ardsallagh 5 (A008/038: 1 piece); Kennastown 1 (A023/001: 1 piece); Garretstown 2 (A008/008: 17 pieces). For each site assemblage, a similar analytical methodology has been applied (see *Methodology* below). The analysis for each site assemblage is presented individually (Sections 1-15); within each section, the assemblages are quantified and presented in catalogue form, and the composition of the assemblage is discussed in detail; the distribution of

the assemblages is discussed, and the assemblages are discussed in their broader analytical context.

Methodology

All recovered artefacts have been presented for analysis, and have been studied visually and catalogued, and subject to statistical analysis based on the following attributes: contextual information (including context/feature/sample number etc), basic condition, extent of abrasion, material, colour, cortex, basic character and detailed classification, platform and termination type (where relevant for chipped stone), detail of working (where relevant), length (L), breadth (B), thickness (T), fragment size (given in mm) and mass (g). The criteria upon which these attributes have been selected, and the analytical methodology deployed, are presented in further detail elsewhere (Nelis 2003).

Section 6: Merrywell 1 (A017/029)

Introduction

Excavation at Merrywell 1 (A017/029) uncovered the Medieval remains of a ridge and furrow field system and a large well or cistern. A large assemblage of Medieval pottery was found, in addition to wooden structural remains and small finds. Lithic artefacts were found in C5, C25 and C29 (Table 6.1).

Analysis and Discussion

Three piece of flint were found (Table 6.1), including flake debitage (2 pieces) and a small scraper (1 piece). The flakes were produced using platform reduction methods, whereas bipolar techniques had been deployed in the production of the scraper. All of the artefacts were small in scale, with the flake debitage measuring 31mm or less in length, and the scraper measuring just 28mm in length.

Unique No	Context	Material	Condition	Cortex	Character	Classification	Platform	Termination	Length (mm)	Breadth (mm)	Thickness (mm)	Mass (g)
A017/029:5:6	5	Flint	Patinated	Tertiary	Flake	Platform core trimming	Winged	Hinged	17	22	2	.98
A017/029:25:54	25	Flint	Fresh	Secondary	Modified	Bipolar Scraper	Bipolar	Feathered	28	20	8	5.48
A017/029:29:1	29	Flint	Fresh	Tertiary	Flake	Platform blade complete	Splintered	Plunging	31	15	4	1.28

Table 6.1: Merrywell 1 (A017/029): showing basic catalogue of assemblage.

The scraper was based on a small bipolar flake, derived from a small beach-rolled flint pebble. Its scraping edge was formed on its proximal end and has been retouched using quite fine edge retouch and semi-invasive pressure flaking to produce a shallow scraping edge. Along one lateral edge, similarly fine pressure flaking has produced a straight edge which may have been useful for cutting as well as scraping (Plate 6.1). None of the artefacts were directly related, and none could be refitted. None of the artefacts could be closely dated: generic scrapers, such as this piece, can be found during any period ranging from the Neolithic through to the historic period, although they are often thought to relate to the Late Neolithic period and Early/Middle Bronze Age.

References

Nelis, E. 2003. *Lithics of the Northern Irish Neolithic*. Unpublished PhD thesis. Belfast: Queen's University, Belfast.

Nelis, E. 2004. 'Neolithic flint-work from the north of Ireland: some thoughts on prominent tool types and their production', pp.155-175, in Gibson, A. and Sheridan, A. *From Sickles to Circles: Britain and Ireland at the time of Stonehenge*. Stroud: Tempus.

Plate 6.1: Merrywell 1 (A017/029): C25:54: Scraper.

APPENDIX 10: *Bird and other Animal Bones: S. Hamilton-Dyer*

Introduction

Bird bones from several excavations of the M3 road scheme were submitted for analysis. All bones, including those that proved to be of mammals, were fully recorded to element and taxon as far as practicable. Taxonomic identifications were made using the reference collections of the author. Recently broken bones were counted as single specimens. Measurements follow von den Driesch (1976) in the main and are in millimetres.

Merrywell 1

Five bones were submitted for analysis. One of the three bones from context 81 is the left humerus of a foetal/neonatal piglet. Although this is an extremely small assemblage the dominance of domestic poultry is typical of medieval and post-medieval material.

Context 8, fill of drainage ditch cut 9
Distal fragment of a domestic fowl right humerus.

Context 10, fill above 18
Distal half of a goose femur, domestic or greylag size.

Context 81, fill of ridge and furrow ditch 6
Distal portion of a domestic fowl right femur. This bone is from a female in lay, as evidenced by the large amount of medullary bone visible within the broken shaft. The distal breadth of this bone is 14.4, comparable with small modern breeds including the larger types of bantam.

Distal half of a domestic fowl left femur, not a pair with the above bone as it is from a smaller individual and without medullary bone.

References

Driesch, A. von den (1976) A guide to the measurement of animal bones from archaeological sites, Peabody Museum Bulletin **1**, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge Massachusetts

APPENDIX 11: *Burnt and cremated bones: Archaeological Services Unit, Durham University*

Archaeological Services
University of Durham

Merrywell 1, M3 Motorway Project, Co Meath, Ireland

cremated bone analysis

on behalf of
Archaeological Consultancy Services Ltd

Report 2032
November 2008

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cremated bone analysis

Report 2032
November 2008

Archaeological Services Durham University

on behalf of

Archaeological Consultancy Services Ltd
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Contents

1. Summary

The project

1.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Merrywell 1, Co Meath, Ireland. Features on the site included a possible ridge and furrow field system and a large well or cistern. This report presents the results of the analysis of cremated bone from 2 ditch fills (contexts 18 and 26), 1 pit fill (context 42), and a layer of clay (context 10).

Results

1.2 A small amount of moderately fragmented burnt bone (7.6g) was recovered. None of the contexts contained any identifiable fragments of bone, and it was not possible to tell if it was human or animal. Most bone had been burnt at high temperatures and was fully oxidised.

2. Project background

Location and background

2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Merrywell 1, Co Meath, Ireland (NGR 293411 250954). A possible ridge and furrow field system with a large well or cistern was observed. Over 400 sherds of medieval pottery were recovered, in addition to a wooden bowl of probable medieval date. This report presents the results of the analysis of cremated bone from 2 ditch fills (contexts 18 and 26), 1 pit fill (context 42) and a layer of clay (context 10).

Objective

2.2 The objective was to establish the nature of the cremated bone recovered from the site.

Dates

2.3 Samples were received by Archaeological Services Durham University in April 2008. Analysis and report preparation was conducted between April – November 2008.

Personnel

2.4 Sample processing was undertaken by Archaeological Consultancy Services Ltd. Cremated bone analysis was by Dr Anwen Caffell.

Archive

2.5 The licence number is A017/029. The bone samples are currently held at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Methods

3.1 Four contexts were presented for analysis, with a total weight of 7.6g. Each context was passed through a nest of sieves, with mesh sizes of 10mm, 5mm, and 2mm (McKinley 2004). Each fraction was weighed and the largest fragment of bone was measured.

4. Results and interpretation

4.1 Summary data for each context is presented in Table 4.1, and the fraction weights per context are given in Table 4.2.

4.2 The weight of burnt bone in each context was small, ranging from 0.8g to 3.5g (Table 4.1). The bone tended to be moderately fragmented, and the maximum fragment size ranged from 21.1 to 30.8mm, with a mean of 24.1mm (Table 4.2).

4.3 Bone from most contexts was white to pale grey in colour, implying exposure to high temperatures in excess of *c.* 600ºC with a plentiful supply of oxygen (McKinley 2004). A small area of black was present on the fragment from

context (26), suggesting cooler temperatures (*c.* 300-600ºC) or limited oxygen availability.

Table 4.1: Summary of cremated remains

Context	Context Detail	Bone Colour	Species	Weight (g)
10	Grey brown silty clay	White/ pale grey	Unknown	1.9
18	Fill of medieval ditch (19)	White & grey	Unknown	0.8
26	Upper fill of ditch (28)	White/ pale grey, small area of black	Unknown	1.4
42	Fill of medieval pit	White/ pale grey	Unknown	3.5

4.4 All fragments were examined with a view to identification, but it was not possible to determine whether the bone was human or animal. Given the nature of the features, it is most likely that the bone was animal.

Table 4.2: Fraction weights and fragment size

Context	Total Weight	Fraction Weights						Max. Frag Size
		>10mm		5-10mm		2-5mm		
	g	g	%	g	%	g	%	mm
10	1.9	1.9	100.0	0.0	0.0	0.0	0.0	21.5
18	0.8	0.0	0.0	0.8	100.0	0.0	0.0	21.1
26	1.4	1.4	100.0	0.0	0.0	0.0	0.0	22.9
42	3.5	2.9	82.9	0.6	17.1	0.0	0.0	30.8

5. Sources

McKinley, J I, 2004 Compiling a Skeletal Inventory: Cremated Human Bone, in M Brickley & J I McKinley (eds) *Guidelines to the Standards for Recording Human Remains*, 9-13, Southampton and Reading

APPENDIX 12: *Archaeometallurgical Report: Angela Wallace*

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Archaeometallurgical Report
on
material from
Merrywell 1
For
Archaeological Consultancy Services Ltd.

Angela Wallace MSc, MIAI
December 2008

Merrywell 1
F3 Sample 15
Medium sized piece of slag, length 60mm, width 50mm, thickness 20-30mm, weight 120g. An amorphous piece, light grey-brown in colour with some flecks of rusty material.

F17 Sample 6
1 small-medium piece of slag. Length 60mm, width 42mm, thickness 20mm. Weight 105g.
This piece is quite dense, it is light brown in colour as it's coated with a fine soil layer, there are patches of dark grey siliceous material and rust also visible. Given the density of this piece it is likely iron content is quite high.

F31 Sample 13
5 small pieces of iron slag ranging from 10-30mm in maximum width. All pieces are light brown in colour with rusty patches visible.
1 small-medium sized piece, length 55mm, width 30mm, thickness 10-20mm. This is quite a dense piece, light brown in colour with some grey material and rust visible
Total Weight 124g

Conclusion
The slag from this site is from F3 a topsoil layer, F17 the fill of medieval ditch F20 and F31 the upper fill of ditch F33. The material cannot be linked to any clearly defined iron-working areas on the site. The presence of these stray pieces of iron slag points to isolated episodes of small-scale smithing activity or artefact repair on the site.
No further recommendations are required for this material.

APPENDIX 13: *Wood Report: Ellen O'Carroll*

AN ANALYSIS OF THE WOOD REMAINS FROM MERRYWELL 1, A017-029, CO. MEATH

ELLEN OCARROLL
September 2006

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1. Introduction

Seventeen samples of wood were retrieved from a large well or cistern associated with a medieval site in Merrywell. The site consisted of a possible ridge and furrow field system, and over 700 sherds of Medieval Pottery were also uncovered at the site. The wood analysed comprised a possible wooden yoke, a wooden bowl and some wood chips and split timbers. The possible yoke was excavated from **C35,** a bluish grey soft clay, and the rest of the wood pieces came from **C36** which was also bluish grey clay with plenty of organic remains.

In recent years there has been a considerable amount of structural as well as non-structural wood recovered from archaeological deposits in Ireland. Wood was a vital and widely used raw material from prehistoric to medieval times although its importance is rarely reflected in the analysis of archaeological assemblages mainly due to its perishable nature. It is important to note that people in prehistoric, Early Christian and medieval communities were mainly dependant on woodland resources for the construction of buildings and for the manufacture of most implements. The woods in a surrounding catchement area were exploited and often managed to provide an essential raw material for the community. The economic importance of wood cannot be over-estimated.

The analysis presented here concentrates on species identification, species selection and the composition of local woodland in the land surrounding Merrywell during the Medieval Period. The wooden bowl and the possible wooden yoke has also been described and discussed in terms of their function and species type. The amount of information obtainable from each sample varied; however, some conclusions can be drawn from the analysis of the samples.

2. Methods

The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). Thin slices were taken from the transversal, tangential and longitudinal sections of each piece of wood and sampled using a razor blade. These slices were then mounted on a slide and glycerine was painted onto the wood to aid identification. Each slide was then examined under a microscope (Leica GZ 6) at magnifications of x12. By close examination of the microanatomical features of the samples the species were determined. The diagnostic features used for the identification of wood are micro-structural characteristics such as the vessels and their arrangement, the size and arrangement of rays, vessel pit arrangement and also the type of perforation plates. It is important to note that only in some cases were all the characteristic features described above

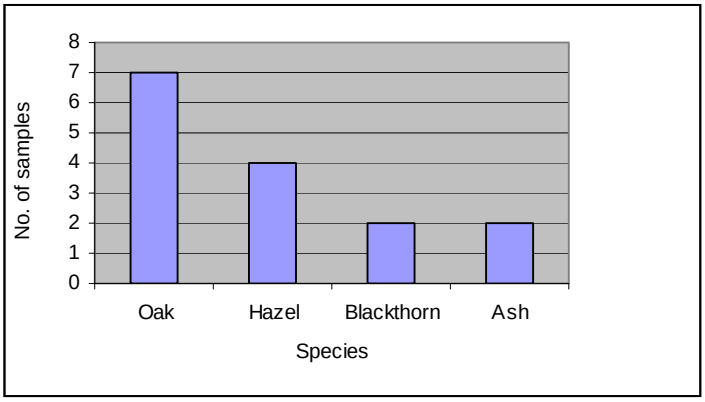
present in the archaeological samples. It was impossible to identify some of the samples as they were bark. The microstructure of bark is similar for all species.

3. RESULTS

Table 1: Identified samples

Site no./ Context no./ Sample no.	**Sample type**	**Species**	**Comment and Dimensions**
A017/029:35:42	Possible Yoke	Oak with oak dowels	See description below
A017/029:36:4	Wood chip	Hazel	3 yrs. Fast growth. 4 x 3 x 0.6cm
A017/029:36:5	Wood pieces	Hazel	Degraded and Mushy. No tooling
A017/29:36:6	Wood chip	Oak	6 x 4 x 1.2cm
A017/029:36:7	Wood chip	Ash	4yrs. Slow growth. 7 x 2.5 x 0.5cm.
A017/029:36:8	Half split	Hazel	Metal toolmark at end (3 x 2 cm). 6.5 x 1cm
A017/029:36:9	2 wood chips	Oak	Very slow growth. 2 x 2 x 0.6cm, 2 x 5 x 0.6cm
A017/029:36:10	Brushwood	Hazel	5yrs. Spring cutting. 1.3cm diam. 10cm L.
A017/029:36:11	Bark	Unidentifiable	
A017/029:36:12	Wood chip	Blackthorn	Flat metal tool mark (2 x 1.5cm) 3 x 2 x 0.3cm.
A017/029:36:13	Bark	Unidentifiable	
A017/29:36:14	Half split	Blackthorn	10 yrs, Split deliberately. Small metal facet at one end
A017/029:36:15	Half split	Oak	5yrs, 2.5 cm diam 4.5cm L,
A017/029:36:16	Wood chip	Oak	10 yrs.4 x 2 x 3cm.
A017/029:36:17	Wood chip	Oak	5yrs. 6 x 2 x 0.5cm
A017/029:36:1	Bowl	Ash	In 7 pieces, turned
A017/029:36:2	Worked wood. Notched	Oak	Half split (see description below

Figure 2: Species represented in the identified samples



4. Artefacts

Three artefacts were sampled from the excavations at Merrywell 1. The possible wooden yoke was retrieved from **C35** while the wooden bowl and the notched split object were was excavated from **C36**. The wooden yoke and the notched object were identified as oak (*Quercus* sp.) while the bowl has been identified as ash (*Fraxinus excelsior*).

4.1 Possible Wooden Yoke and notched object

The possible wooden yoke measured 167cm in length and between 13cm and 18cm in maximum thickness. The yoke was made of oak and was carved from an oak tree which was quite knotty in character. One end of the yoke was curved for a distance of 32 cm and contained two dowel holes with oak dowels still present in the holes. The dowel holes measured 4cm x 3.4cm and 4cm x 3.5cm respectively and the oak dowels were sub-circular in shape measuring 2.8cm x 3 cm.

Research undertaken at the National Museum in Kildare Street provided the author with information on six wooden yokes. They were all slightly different in shape but three (Carrowreagh, Co. Sligo, Cloonascragh, Co. Galway and Castle Leslie, Co. Monaghan) of the six yokes had evidence of two dowel holes at either end of their curved ends. The curved piece of oak wood from Merrywell resembled yokes from Ballygear, Co. Meath (1968:434), Carrowreagh, Co. Sligo (1968:441), Erriff townland, Ballyhaunis, Co. Mayo (Reg. No. 1909:52) and a yoke from near Castle Leslie, Co. Monagahan. The yoke from Co. Monaghan is discussed further in P. W. Joyce in 'A Social History of Ancient Ireland' 3rd imp. 1920, Vol II, page 275. There is a drawing of this two-animal yoke, of willow [*salix* sp.) which measures 3 feet 9 inches long. The drawing is attributed to 'Wilde's Catalogue'. It had a kink/curve at each end and contained an oval hole at the mid-point and a further pair of smaller holes towards each end.

The only yoke identified to species was the yoke from Co. Monaghan and this was uncovered by reading a copy of Wilde's Catalogue in the Museum whereby the species was handwritten beside the entry for that artefact type. It read '*Salix* sp (willow) M. Scannal 1960'. The remaining yokes researched in the Museum were not identified to species.

From analogies with other yokes found in Ireland the carved doweled wooden artefact excavated from the well at Merrywell is most likely to represent a yoke although it is slightly longer than the majority of the yokes discussed above. The yoke from Merrywell may not be present in its entirety and its deposition in the well may be associated with its non-functional nature due to its fractured state.

There is very little archaeological evidence for yokes in Ireland prior to the 18th Century (Lucas 1972, 53). We know from the law tracts that there is no responsibility for injuries inflicted by oxen, which are yoked, *oc a ngabail*, and no claim can be sustained by oxen engaged in such work (Laws 3, 266). The law texts refer to ash wood been used as shafts and spears and also makes reference to ash being used for oars and yokes (Kelly 2000, 383). The only definite yoke (Castle Leslie, Co. Monaghan) identified to date has been identified as *salix* sp (willow).

Oak would have also been a suitable species for use as a yoke as it is a strong lasting wood. It was used throughout pre-history and history for use as structural timbers due to its properties of great durability and strength.

A split oak object was also identified from the assemblage. It measured 17cm in length and 4.5cm in depth by 4cm in thickness. There was a notch or indent present along its length, which suggests it may have been part of a composite object.

4.2 Wooden bowl

A turned ash (*Fraxinus excelsior*) bowl was also excavated from the well/cistern. The bowl was in 7 pieces and therefore its full dimensions could not be determined. It measured 0.5cm in thickness and there was evidence of a rim on one piece. It was probably a wide shallow bowl being c. 7cm in depth.

Ash is a tough strong and resistant wood and was traditionally used for cart shafts, cartwheel rims, furniture and particularly for the turning of wooden bowls in the medieval period. Excavations in Waterford revealed that over 55% of the turned wooden bowls from the Medieval Period were manufactured from ash (Hurley & McCutcheon 573).

5 Wood chips and split timbers

Eight wood chips were identified from **C36**. These wood chips were of oak, ash, hazel and blackthorn. They varied in size but the majority of them averaged 2 cm in width and between 7 and 3 cm in length. They are definitely associated with human activities as some of them had flat metal tooling present on them. They may have been debris from some type of woodworking activity which took place on or near the site.

6 Miscellaneous wooden objects

There was one unworked hazel brushwood of 5yrs in age and measuring 1cm in diameter and 10 cm in length. The function of this brushwood is unknown. Three split timbers identified as oak, blackthorn and hazel were also retrieved from the well/cistern at Merrywell. A split oak object was also identified from the assemblage. It measured 17cm in length and 4.5cm in depth by 4cm in thickness. There was a notch or indent present along its length, which suggests it may have been part of a composite object.

7 Assessment of Wood Assemblage

Four species were present in the wood samples from Merrywell 1. The most commonly occurring species was oak (*Quercus* sp.). Hazel *(Corylus avellana),* blackthorn *(Prunus* spp.) and ash *(Fraxinus excelsior)* follow in order of representation in the assemblage. Samples of bark could not be identified because the cell structure of bark of different species is very similar.

Oak may have been selected for use in the yoke while ash was specifically selected for use in the turning of a wooden bowl. Identified wood chips comprised oak, ash, hazel and blackthorn which is indicative of several species being exploited from the surrounding landscape. The trees and shrubs listed above are all representative of mixed woodland conditions in Ireland. From the results above the local environment of the sites suggests a dryland environment where open forests prevailed to support some large trees on good soils.

Apart from the artefacts there appears to have been no specific selection of wood for a specific function. The wood identified from the well/cistern does not appear to form a structure within the pit and was possibly dumped or alternatively fell in after it went out of use.

Oak , *Quercus sp*

The wooden yoke, some wood chips and the unidentified notched object were identified as oak. Oak was one of the most prevalent trees growing in Ireland throughout the medieval period. The anglicised form of oak (derry) is included in

many townland names today. Out of 62,000 townlands in Ireland about 1,600 contain the word "derry" in one form or another, either as a prefix or suffix (Mc Cracken 1971, 23).

Oak has excellent properties of great durability and strength. Sessile oak *(Quercus petraea)* and pedunculate oak *(Quercus robur)* are both native and common to Ireland and the wood of these species can not be differentiated on the basis of their anatomic characteristics. Pendunculate oak is found growing in areas of heavy clays and loams, particularly where is the soil is alkaline. Sessile oak is found on acid soils and often in pure stands. Unlike pendenculate oak, it thrives on well drained soils but is tolerant of flooding (Beckett 1979, 40-41). Both species of oak grow to be very large trees (30-40m high) and they were one of the most important species of wood for the production of large timbers during the medieval period.

Ash, *Fraxinus excelsior*

The wooden bowl and a wood chip were identified as ash. Ash is a native species preferring lime-rich freely draining soils. It is not a very durable timber in waterlogged conditions but has a strong elastic nature. It is easily worked and lends itself well to a range of different requirements like the turning of wooden bowls.

Blackthorn *Prunus spinosa.*

Some wood chips were of blackthorn. Blackthorn *(Prunus spinosa)* is a thorny shrub found in woods and scrub on all soil types. In a woodland situation it is more likely to occur in clearings and at the woodland edges.

Hazel, *Corylus avellana*

An unworked hazel brushwood and some wood chips were identified from the pit/cistern. Hazel is a native species and was very common up to the end of the 17th century. McCracken (1971, 19) points out that "it was once widespread to a degree that is hard to imagine today". With the introduction of brick, steel and slate the crafts associated with hazel became obsolete, and today the woods that supplied hazel have diminished rapidly.

Hazel is normally only about 3-5m in height and is often found as an understory tree in deciduous woods dominated by oak. It also occurs as pure copses on shallow soils over limestone as today like The Burren in Co. Clare and survives for 30 to 50 years. Its main advantage is seen in the production of long flexible straight rods through the process known as coppicing.

8. Conclusions on Wood Assemblage

The wood assemblage analysed here comprised mainly of wood chips and debris and were not associated with any structural timbers. Therefore the results are limited to the local environmental conditions of the site and species selection of particular wood for a small amount of artefacts. All of the wood species sampled from the excavations at Merrywell 1 were of native origin.

Ash was selected for the turning of the wooden bowl while oak was selected for use in the possible yoke and the notched object. The yoke analysed from this assemblage is similar in shape and profile to yokes uncovered from Ballygear, Co. Meath (1968:434), Carrowreagh, Co. Sligo (1968:441), Erriff townland, Ballyhaunis, Co. Mayo (1909:52) and a yoke from near Castle Leslie, Co. Monagahan therefore it may indeed have functioned as a yoke and was deposited in the well once it had become damaged. Three of the yokes researched for this report including the yoke from Co. Monaghan also contained two dowel holes at the curved end of the timber piece which is similar to the yoke identified from the Merrywell 1 well.

The range of species identified from Merrywell 1 includes large trees, small trees and scrub. The ash and oak were probably selected from areas of open forest where good soils prevailed. Blackthorn would have been easily collected from nearby hedgerows while hazel coppice could have grown as an understory or in glades at the edge of the wood.

Woodworking evidence noted on the wood chips comprised of small flat facts averaging 2 cm in diameter. This tooling possibly represents a smallish iron axe reminiscent of what was being used in the medieval period.

It would be interesting to compare the above results with the archaeobotanical analysis. The archaeobotanical results may shed some light on the function of the pit and also substantiate the type of environment highlighted within the charcoal and wood results.

9. References

Barry, T., 1987, *The Archaeology of Medieval Ireland.* University Press, Cambridge.

Beckett, J.K., 1979, *Planting Native Trees and Shrubs*. Jarrold and Sons Ltd; Norwich.

Bradley, J. (ed.), 1984, *Viking Dublin Exposed-the Wood Quay saga.* O'Brien Press, Dublin.

Cronne, A., 1987, "Tree-ring studies and the reconstruction of woodland management practices in antiquity", in G. C. Jacoby, and J.W. Hornbeck (eds), *Proceedings of the International Symposium on Ecological Aspects of Tree Ring Analysis, 327-36.*

Hall, V., 1995, "Woodland Depletion in Ireland over the last Millennium" in J.R. Pilcher and S. Mac An tSaoir (eds), *Wood, Trees and Forests in Ireland, 23-35.*

Huntley, J.P., 1987, *Woodland Management Studies from Carlisle; Castle Street 1981,* Ancient Monuments Laboratory Report, 119-87.

Hurley, M.F., 1982, "Wooden artifacts from the excavation of the medieval City of Cork" in S. McGrail, *Woodworking Techniques before A.D 1500,* B A R **129**, 301-311.

Hurley, M.F., 1986, *A study of Skeletal and Wooden Artifacts from Medieval Cork.* Unpublished M.A. Thesis, University College Cork.

Hurley, M. & Scully, O., 1997, *Late Viking Age and Medieval Waterford Excavations 1986-1992.* Waterford Corporation.

Joyce P. W. *A Social History of Ancient Ireland* 3rd imp. 1920, Vol II.

Kelly, F., 1988, *A Guide to Early Irish Law.* Institute for Advanced Studies, Dublin.

Kelly, F., 2000, *Early Irish Farming.* Institute for Advanced Studies, Dublin

Lucas, A.T., 1972. *Irish Ploughing Practices*, Tools and Tillage

Levy, J. F., 1970, "The Condition of Wood from Archaeological Sites", *Science in Archaeology,* 188-9.

Mitchell, F., 1976, *The Irish Landscape.* Glasgow. Collins

McCracken, E., 1971, *The Irish Woods Since Tudor Times.* Institute of Irish Studies, Belfast.

McCracken, E., 1947, 'The Woodlands of Ulster in the early 17th century', *Ulster Journal of Archeaology* 10, 16-25.

Morgan, R., 1975, "The Selection and Sampling of Timber from Archaeological Sites for Identification and Tree-ring analysis", *Journal of Archaeological Science,* 2, 221-230.

Nelson E.C., 1993, *Trees of Ireland.* The Lilliput Press, Dublin.

O Carroll, E., 1994, *The analysis of two wooden assemblages from Corlea Bog, Co. Longford and King John's Castle, Co. Limerick.* Unpublished M.A. Thesis, University College Cork.

O' Sullivan, A., 1987, "Wood in Archaeology", *Archaeology Ireland* **4** , 69-73.

O' Sullivan, A., 1994, "The use of Trees and Woodland in early medieval Ireland", *Irish Forestry* **51,** 80-94.

Rackham, O., 1976, *Trees and Woodlands in the British Landscape.* Weidenfeld & Nicholson, London.

Rackham, O., 1980, *Ancient Woodland: its history, vegetation and uses in England.* Edward Arnold, London.

Schweingruber, F.H., 1990, (3rd edition) *Microscopic Wood Anatomy.* Birmensdorf: Swiss Federal Institute for Forest, Snow and Landscape Research.

Simpson, L. 1995, *Excavations at Essex Street West, Dublin.* Temple Bar Properties, Dublin.

Therkorn *et al.* 1984, An early Iron Age farmstead: Site Q of the Assendelver Polders Project. *Proceedings of the Prehistoric Soceity* **50,** 351-73.

Wallace, P.F., 1987, "The Economy and Commerce of Viking Dublin", in K. Duwal, H. Jankhum, H. Siems, and D. Tempe, (eds), *Der Handel der Karolinger-und Wikingzeit, of Unteruchung en zu handel und Frihgenschichtli zeit in Miltel- und Nordewopa* **4**, 200-45.

Wallace, P.F., 1992, *The Viking Age Buildings of Dublin.* Medieval Dublin Excavations 1962-81, vol. 1. Dublin.

Webb, D.A., 1977, *An Irish Flora*. Dundalgan Press Ltd., Dundalk.

Western, C. A., 1970, "Wood and Charcoal in Archaeology", *Science in Archaeology,* 178-187.

Research for the townland of Merrywell

The M3 Clonee to North of Kells Motorway

Jonathan Kinsella

ACS Ltd.

11 January 2006

Introduction

Excavations in the townland of Merrywell uncovered evidence for medieval field systems and a range of artefacts, and some features that suggest it may also have been a settlement. Archaeological knowledge regarding medieval field systems and isolated rural settlements in Ireland is minimal so any information obtained from Merrywell is crucial to our understanding of the period. This research paper will begin by examining the archaeological, cartographic and placename evidence for the site and townland of Merrywell. I will then assess the archaeological, historical and placename evidence for Merrywell's surrounding townlands, which is essential in placing Merrywell in its medieval landscape context. The final part of the paper deals with examining the possible settlement evidence at Merrywell, assessing its relationship with neighbouring manorial villages, and developing narratives about the people who lived and worked there. I have also proposed some future areas of research related to the artefacts uncovered at Merrywell and its medieval field systems, where there is a dearth of information and much to be learned.

Merrywell – Archaeological Testing Evidence

Testing area 21 stretched across three pastoral fields and is situated southwest of Drumnee Village and to the south of the junction of the Trim Road, from Dunshaughlin, with the main Trim-Batterstown Road. The scheme mostly affected field 1, two separate areas within field 2 and a small stretch of land to the western extent of field 3.

One concentration of archaeological activity was revealed during the assessment including a number of medieval ditches representing possible field systems. Field 1 contained two medieval ditches:

Ditch F06 was linear and orientated northwest-southeast. The ditch measured 1.9m in width and extended for a distance of 64m across the site. A depth of 0.35m was recorded from a section cut through the ditch. Finds included two sherds of unglazed medieval pottery, a corroded iron nail and a fragment of a corroded iron knife.

Ditch F07 was linear and measured 0.90-1.1m in width and with a depth of 0.25m. It ran beyond the roadtake to the southeast of the site. The finds included sherds of unglazed medieval pottery and a corroded iron knife.

The two ditches ran parallel to each other, representing a possible medieval field system.

A shallow spread F12 was located west of ditch F07 and measured 4.5m by 1.25m, with a depth of 0.05m. A sherd of unglazed medieval pottery was uncovered from it.

The Geophysical Evidence

The geophysical survey detected a possible rectangular enclosure in field 1 along with various other possible linear features within both fields. A large number of anomalies were revealed but the ditches did not correspond with the location of these.

Further Archaeological Investigation of Merrywell

Further excavation of the site located four possible ridge and furrow ditches in close proximity to ditch F07. The ditches ran parallel to each other and all produced medieval pottery. A possible roof timber, worked wood and an ash bowl were uncovered within the proximity of ditch F06. A well and cistern were also uncovered during excavation and ditch F06 ran into the well, indicating both could be contemporary.

Between 400 and 500 sherds of medieval pottery were discovered on site with the majority represented by Dublin-type wares; including Dublin-type cooking ware, Dublin-type ware and Dublin-type coarsware. All the medieval pottery was dated to the late twelfth and thirteenth centuries (McCutcheon 2000, 122-123).

Merrywell - Cartographic Background

The townland of Merrywell is not recorded on the Down Survey Map 1654, Sir William Petty's Map 1685 or Larkin's Map 1812. The first cartographic recording of Merrywell is featured on the 1st edition Ordnance Survey Map 1836. The parish of Knockmark, which the townland of Merrywell is located in, is however recorded on the Down Survey.

The omission of Merrywell from the earliest maps poses a few questions as it is probable that townlands, the smallest administrative areas in Ireland, were created before the arrival of the Anglo-Normans (Simms 1988, 291), so it is unclear why the townland of Merrywell is not included on the earliest maps. It is possible that the first cartographers

were either unaware or unconcerned about the importance of Merrywell to warrant its inclusion on their maps: See Smith (1998) for deliberate inclusions and omissions by cartographers on the creation of their maps and the development of map making. We will see below that Merrywell may have been the home of the Anglo-Norman free tenants or the Gaelic-Irish *betaghs*, on the outskirts of a neighbouring Anglo-Norman manorial village, and their lower social grading and the resulting low status of the townland may have resulted in its deliberate omission from official records, even hundreds of years later.

Merrywell - Placename Evidence

The placename Merrywell is not included in Lewis' (1995) *A Topographical Directory of Ireland*, Joyce's (1973) *The Origin and History of Irish Names of Places* or Killanin and Duignan's (1995) *The Shell Guide to Ireland*. It is, however, recorded in the *General Alphabetical Index to the Townlands and Towns, Parishes and Baronies of Ireland* based on the Census of Ireland for 1851. Two townlands in County Meath, called Merrywell, are recorded as being within the parishes of Knockmark and Dunshaughlin and in the baronies of Lower Deece and Ratoath respectively (Census of Ireland 1984, 696). Merrywell, under discussion here, is within the parish of Knockmark yet the other townland of Merrywell, within the parish of Ratoath, is located only a few kilometres to the southeast. It is unclear why the two townlands, of the same name, are situated geographically so close together but the uncovering of a well, during excavation of the site, may offer a clue as to the names' origin. It is possible that the name Merrywell

became anglicised with the coming of the Anglo-Normans as the area was settled from at least early medieval times (see directly below).

Merrywell – Recorded Archaeological Sites and Monuments

Two archaeological sites are listed in the *Archaeological Inventory of County Meath* at Merrywell: A ringfort, with a circular area defined by a scarp and a diameter of 63m, and a slightly raised circular enclosure, with a diameter of 28m and traces of a surrounding ditch (Moore 1987, 81, 103).

The Surrounding Landscape – The Placename, Historical and Archaeological Evidence

Dunshaughlin

Dunshaughlin is located a few kilometres to the northeast of Merrywell and takes its name from a church founded by Bishop Sechnaill, the nephew of Saint Patrick, who arrived and established an abbey during the middle of the fifth century (Killanin & Duignan 1995, 174; Lewis 1995, 589). The Sechnaill kings were closely connected to Dunshaughlin throughout the early medieval period, they were recorded the title of king, or *rí*, six times between 950 and 1200 AD, and it is very likely there primary residence was in Dunshaughlin (Bhreathnach 1999, 4).

The kingdom of the Deiscert Breg ended with the colonisation of Tara's hinterland by various Anglo-Norman knights as Hugh de Lacy granted the barony of Lower Deece to Hugh de Hose, "all the land and dues which Shaclin held" (*ibid*, 5).

Rather than creating new territories and boundaries, it is probable that the Anglo-Normans replaced the Gaelic lords with their own knights and asserted their hegemony within pre-existing borders. Dunshaughlin continued its importance as a settlement during the medieval period and Graham (1975, 226) believes it was one of seven smaller, unwalled settlements in County Meath that existed in the middle of a functional hierarchy of settlement strata. The *Miscellaneous Irish Annals* for the year 1176 states that an Anglo-Norman castle was built in Dunshaughlin (Bhreathnach 1999, 17) which could represent the 'possible' motte described in the *County Inventory of County Meath* as a flat topped circular mound with a base diameter of 34m and a top diameter of 26m (Moore 1987, 158). A church site is also listed (*ibid*, 135), which dates to the early medieval period, and is probably connected with the Sechnaill dynasty and the building of the first church in Dunshaughlin in the fifth century.

Knockmark

Merrywell is located within the parish of Knockmark in the barony of Lower Deece. There are few documentary references to Knockmark with Lewis (1995, 240) stating only that "In the R. C. divisions, it forms part of the union or district of Dunshaughlin". Knockmark is situated, therefore, in close proximity to Dunshaughlin and 'Knockmark moat' and a church site (Moore 1987, 35, 139) are recorded only a couple of kilometres north of Merrywell.

Ratoath

Ratoath was previously named Rathtotoath, supposedly derived from a mount near the church on which Malachy, the first monarch of all Ireland, is said to have held a convention of the states (Lewis 1995, 509). Located between Ashbourne and Dunshaughlin and approximately eight kilometres to the east of Merrywell, Ratoath contains a castle which Hugh de Lacy built before 1186 and which is now represented by a motte and bailey. The effigy of a medieval knight from c1300 is located in the grounds of the ruined Protestant Church (Killanin & Duignan 1995, 274).

Graham (1975, 226) believes Ratoath, like Dunshaughlin, acted as a centre of major land grants of sub-infeudation and as a monastic and market centre. Both areas possessed borough status although Lewis (1995, 509) believed Ratoath was not classed among the borough towns until Henry VI reign. Bhreathnach (1999, 17) also agrees that Ratoath was an important Anglo-Norman site but suggests that Dunshaughlin had greater significance due to its many documentary references from both the Irish and Anglo-Norman sources.

The motte and bailey, referred to earlier, is surrounded by a flat top earthen mound with a base diameter of 62m and a top diameter of 20m. The remains of the rectangular bailey and fosse are situated to the southeast. Located in close proximity to the castle are a church site, a cross and a font (Moore 1987, 161, 144, 149, 152).

Trevet

Approximately three or four kilometres to the northeast of Merrywell is the townland of Trevet. Its importance in pre-Norman times is indicated by references in the annals which states that Trevet was plundered in 1152. The annals, according to Bhreathnach (1999, 16) focused on the most important sites, concentrating on areas of battle, strategic locations or places of population and power. Trevet is also referred to in *The Irish Pipe Roll of 14 John 1211-12* as an Anglo-Norman settlement and was significant to the Anglo-Norman family de Essocot (*ibid*, 18) and Graham (1975) also listed it amongst the manorial villages of County Meath. Its association with the crown continued throughout the medieval period as Sir Thomas Cusack, Henry VIII and Mary Tudor's Lord Chancellor, was buried in Trevet (Killanin & Duignan 1995, 174).

The archaeological sites recorded in Trevet include a rectangular enclosure that is associated with a field system, covering ten acres, and with a sunken roadway leading in the direction of a church. A memorial inscription within the undecorated nave and chancel is dated to 1571 and a tumulus is also located nearby (Moore 1987, 119, 124, 147, 33). Only archaeological excavation and investigation can determine if some of these sites are medieval in date but Bhreathnach (1999, 18) has suggested that some sites may have been reused from one period to the next, even though their outward appearance may have changed little over the years and centuries. Recent testing at Trevet 1 revealed a possible medieval house and the remains of one or more rectangular stone-footed buildings. Thirteenth and fourteenth century medieval pottery was also uncovered at the site (Report on archaeological assessment at testing area 4, section 2, Dunshaughlin –

Navan, M3 Clonee – North of Kells, 2005) so both the archaeological and historical evidence suggest Trevet was an important Anglo-Norman settlement.

Killeen

Killeen is approximately three or four kilometres to the north of Merrywell and roughly the same distance to the northwest of Dunshaughlin. 'Killeen Castle', probably a motte, was founded by Hugh de Lacy in 1181 and passed to Sir Christopher Plunkett in 1445. A church, in close proximity to the north of the castle, is dated to the early fifteenth century and a medieval cross is located outside (Moore 1987, 171, 138, 149). Killeen has also been described by Graham (1975) as a former Anglo-Norman manorial village.

Dunsany

Dunsany Castle was founded by Hugh de Lacy c1200 and, like Killeen Castle, was passed to Sir Christopher Plunkett in 1403. A church, dated to the late fifteenth century, and a cross are also located in close proximity to the castle (Moore 1987, 171, 135, 148). All three medieval sites are situated approximately four or five kilometres to the northwest of Merrywell.

Culmullin

Culmullin, according to Graham (1975), was a manorial village and is survived by a possible motte and a church site situated approximately two kilometres to the west of Merrywell (Moore 1987, 158, 133).

Medieval Field Systems – An Overview

Medieval field systems in Ireland have received little academic attention (Graham 1980, 24; 1985, 23; 1993, 75; O' Conor 1998, 69) and the traditional view of the three-field system that was common in the English midlands and adopted by the Anglo-Normans in Ireland remains the dominant discourse. The open field systems, operated on the Anglo-Norman manors, involved the division of land into two or three sectors, where each sector contained large fields and crops were rotated within these sectors. Land in one sector stayed fallow, for a season, as it was grazed and manured. Wheat, and sometimes rye, was sown in the winter, on the land that had had remained fallow and oats, and to a lesser degree barley, were sown in the spring as the second cycle of crops (O' Keeffe 2000, 62). The land was held in strips, which were arranged in furlongs and it was these furlongs that made up the fields. Individual farmers held land in strips that were scattered throughout the large open fields (Mitchell & Ryan 1998, 313).

The available archaeological and documentary evidence suggests that the open fields under strip cultivation were much smaller, than those throughout the medieval English midlands, due to Ireland's pre-existing townland boundaries (Simms 1983, 146-47; 1988, 291) and have not left the same long-term impact on the Irish landscape. O' Conor (1998, 69-70) suggests that ridge and furrow ploughing did not occur in medieval Ireland and its absence makes it difficult to locate medieval fields on the ground. O' Keeffe (2000, 64) believes however that ridge and furrow ploughing did occur in Ireland, but not at the same scale as that in England. Flat ploughing was possibly preferred in Ireland where one season's furrow was cut through the previous season's ridge. Rather

than being unable to recognise medieval field systems, O' Keeffe (2000, 65) suggests an examination of old estate maps and the Ordnance Survey maps of enclosed fields can help trace open medieval fields. Long, narrow fields, which curve as they stretch across the landscape, represent the enclosure of several ridges of arable while large fields, which maintain the orientation and curvature of smaller strips, represent the enclosure of entire furlongs or parts of furlongs.

It has also been argued that the traditional open field system model, associated with the medieval English midlands, is not applicable to Ireland. Butlin (cited in Graham 1980, 25) has suggested that social, economic and environmental factors influenced settlement and field systems and that it is too simplistic to state that the Anglo-Normans simply brought over their established farming practices to Ireland and introduced them to their new colony. A vast array of field and settlement patterns emerged from a continuously shifting and changing society and environment, effected by such things as the Bruce Invasions and Black Death (Graham 1993, 74).

Almost all land in Ireland was enclosed by the seventeenth century but some medieval extents, such as the cell of Colp, County Meath in 1408, shows that small units of enclosed land lay within the larger open fields (Simms 1988, 307). Land was probably starting to be enclosed in the late medieval period as landlord absenteeism increased and the need for keeping fields open decreased (O' Keeffe 2000, 66).

Discussion

Merrywell – Settlement Evidence?

After initial testing of the site at Merrywell, the excavator reported that there were no traces of settlement within the confines of the site and that the presence of domestic material in the medieval ditches was the result of manuring (Merrywell Testing Report, ACS Ltd 2005, 11). Further archaeological excavation however uncovered a well and a cistern, while finds included worked wood, a possible roof timber, an ash bowl and over 400 sherds of medieval pottery. Although household rubbish was used for manuring medieval fields in Ireland (O' Conor 1998, 58), I believe the diversity of artefacts and high number of pottery sherds found at Merrywell suggests possible settlement evidence.

The presence of a cistern and, especially, the well strongly support my view that the people who worked the fields at Merrywell also lived within close proximity. It is probable that modern agricultural activity at Merrywell, and across County Meath in general, has destroyed much of its archaeology and any settlement evidence in the area may now be lost. This would especially be true if Merrywell's residents came from the lowest social classes of medieval society, such as the cottagers and *betagh*s, as their homes would not have survived or left the same visual traces as mottes or moated sites for example.

I have referred, above, to the lack of cartographic references to the townland from the earliest maps but this may represent the map makers' attitudes to the people who had previously lived in Merrywell. The documentary sources from the early medieval period

in Ireland, for example, refer only sporadically to the lowest social classes while coastal settlements, the probable homes of the very lowest social grades and where there is much archaeological evidence, are not documented in the law-texts, Saints' lives or annals. A lack of references (see Kinsella 2005, 17-20) or high levels of archaeological evidence, therefore, does not mean that an area, such as Merrywell, had not been previously settled. Before we learn more about the people who once worked, and probably lived, in Merrywell, we need to understand its relationship with the surrounding landscape and the interaction between the people there.

Merrywell and its Surrounding Landscape

Merrywell's surrounding landscape conveys a rich tapestry of medieval activity. The archaeological and historical evidence for Dunshaughlin shows that it was an important settlement, both in the early medieval and medieval periods (Bhreathnach 1999; Graham 1975). The documentary and physical evidence for Trevet also suggests it was a significant Anglo-Norman settlement, but not on the same scale as Dunshaughlin. Killeen, to the north, Dunsany, to the northwest, and Culmullin, to the west of Merrywell, all feature significant medieval archaeological sites while Knockmark, Merrywell's parish, contains a 'moat' and a church site (Moore 1987). In fact, all the surrounding townlands, with the exception of Trevet, feature a medieval castle and church site in close proximity to each other. The remains of a church survive at Trevet but there is no evidence for an Anglo-Norman castle (Moore 1987). This is unsurprising as County Meath was a heavily colonised landscape after 1169 and it has important implications for our understanding of Merrywell's function as a site within these surroundings.

Manorial Centres and Villages

The building of castles, during the medieval period, heralded the beginning of a new power dynasty and they were the greatest physical display of feudal society (McNeill 1997; O' Keeffe 2000). They were however not only military in function and also acted as manorial centres responsible for rural administration. O' Conor (1998, 26) suggests that lords also lived in wooden and clay houses that served the same functions as castles but did not require the same levels of fortification or status implicit in the masonry structures. The hierarchy of tenants and various farming activities were carried out around the manorial centres in the manorial villages. The manorial village always contained a church and, sometimes a castle or mill (Graham 1993, 73), and there were 98 such villages recorded in County Meath by the civil survey (Graham 1975, 246).

O' Keeffe (2000, 71) and Barry (2000, 114) argue however that nucleations in County Meath, like Ulster (McNeill 1980), were few in numbers and that the manorial centres were places of administration, where tenants occasionally visited to conduct business, rather than centres of population where they lived. Simms (1988, 313), examining the documentary extents from the cells of Duleek and Colp in County Meath, believes Anglo-Norman manorial villages were different to the traditional medieval villages across the Irish sea because the colonists adopted the pre-existing townland boundaries in the composition of their manors and, as a result, the free tenants lived in separate townlands surrounding the manorial centre. This resulted in considerably smaller and under-populated villages within the Anglo-Norman strongholds of Ireland. It has also been suggested that the Gaelic Irish tenants, the *betagh*s, lived in clustered houses in

townlands away from the manorial villages. They owed labour services and rents to the lord but farmed their land in common, like the later rundale system (McNeill 1980; O' Conor 1998, 44).

Merrywell – A settlement of the Gaelic-Irish Betaghs or the Anglo-Norman free tenants?

Could Merrywell be such a townland, a landscape that was farmed and resided upon away from the manorial village by either the Gaelic-Irish *betagh*s or the Anglo-Norman free tenants? It is certainly conceivable that the high numbers of pottery sherds, artefacts and presence of a well at Merrywell may signify that a settlement once existed there, while farming activities undoubtedly occurred, represented by the medieval field systems. The townland is also located close to Dunshaughlin, which was probably a medieval borough (Bhreathnach 1999; Graham 1975) and is surrounded by a number of other townlands, discussed above, which contained both a church and a castle – essential buildings that formed part of the manorial village (Graham 1975, 225). Both Killeen and Culmullin, no more than three kilometres to the north and west, respectively, of Merrywell are described as manorial villages (*ibid*) and I believe Merrywell may have been a townland at the edge of a medieval manorial village where either the *betagh*s or Anglo-Norman free tenants worked the land and possibly lived.

The *betagh*s were the lowest social grade in the manor and could be sold or given away at any time by their lord. Above the *betagh* in the social hierarchy were the cottagers, who held a cottage without land, and the villiens, who were their lord's

property but could also acquire small parcels of land (Mitchell & Ryan 1998, 311). The Anglo-Norman free tenants were also peasants but were enticed to Ireland because they were offered the opportunity of upward social mobility as free tenants (O' Conor 1998, 42; Barry 2000, 113). Free tenants held their land through military service or payment of money rents but the unfree *betagh*s had to give their lord turf, stack his hay and corn and give him their best animals and clothes (O' Keeffe 2000, 61). The *betagh*s, like the unfree *fuidri* and *bothach*s before them, from the early medieval period, had to perform the most manually demanding work on the farm and in the harshest conditions (Kelly 1988, 33-35, 112; 1997, 440).

The lack of definitive settlement evidence at Merrywell may simply be explained by the extent of modern agricultural activity that has occurred in County Meath in modern times. The homes of the poorest individuals were possibly simple wood or clay structures whose mark on the landscape may have since been ploughed away. This lack of evidence can be put into perspective if we consider the difficulties in locating medieval manorial villages throughout the heavily colonised regions. According to Simms (1988), the presence of free tenants in townlands, that were separate from manorial villages, resulted in the villages' small size and, as a result, difficulty in tracing them in the archaeological landscape. Manorial villages may also have been deserted by 1400 due to a number of political and environmental factors such as the Bruce Wars, famine, the Black Death and the Gaelic resurgence (O' Conor 1998, 47; O' Keeffe 2000, 72-3). If archaeologists are finding it difficult to locate manorial villages that were occupied for over a hundred years or even longer, they may have survived until the late seventeenth

century (Graham 1975, 247), it highlights the difficulty of identifying the homes of the poorest and isolated tenants in the modern landscape.

Future Research Issues

Archaeologists have been too reliant on the historical sources, such as medieval extents, on what they inform us about settlement and farming activities. Can the homes of the *beatgh*s or free Anglo-Norman tenants and medieval farming practices be traced in the archaeological record? A number of conjoined rectangular enclosures were excavated at Ballynamona, County Limerick. Finds included green glazed pottery, a fragment of a decorated disc quern and some animal bone (Ó Ríordáin 1935, cited in O' Conor 1998, 57). The enclosures were located away from the manorial village and may have represented the homes of the lower social grades. Only a small number of isolated medieval sites, however, have been excavated in Ireland (*ibid*, 58), so this highlights the importance the site of Merrywell and the future excavations at Trevet and Garretstown, which are likely to reveal medieval houses and a moated site respectively, will have in adding to our knowledge of the medieval period.

There is a great need for increased excavation of isolated medieval sites and comparative studies examining the material culture, structural appearances and landscape context to determine the function of the site and the status of its individuals (see Kinsella 2005 for a similar study locating the lowest social classes of early medieval Ireland). Both O' Conor (1998, 58) and O' Keeffe (2000, 72) have commented upon the difficulty of identifying the ethnicity and status of the various social grades based on the range of

artefacts and dwelling places so only increased research and excavation can create the information and knowledge required.

The amount and type of pottery uncovered during the excavations at Merrywell, for example, could be compared with pottery uncovered from other medieval sites as a means of identifying the status of the people who lived there. McCutcheon (2000, 117) has suggested that potters were among the lower social grades in medieval Ireland and that women and children were involved in the majority of production. There were no imported pottery wares uncovered at Merrywell, with the majority represented by Dublin-type wares. Does this mean that the people who lived or worked at Merrywell only had access to local wares or were lower status women and children involved in the making and use of the pots? I believe the high numbers of coarse and handmade pottery fragments, where there is a lack of prestige or status items, adds substance to the possibility that Merrywell was a low status settlement and it offers us the possibility of incorporating women and children into medieval narratives – social groups who are often neglected from archaeological discourse. Clearly however, greater excavation, research and comparative studies are needed to assess the function, status and ethnicity of the people who possibly lived and worked at Merrywell.

I have focused, mainly, on the possible settlement evidence at Merrywell, based largely on the types and number of artefacts located there and the uncovering of the well and cistern. Although household rubbish was used for manuring fields in medieval Ireland, and it is conceivable that domestic material ended up in medieval ditches as a

result of farming activities, I believe the high numbers of pottery fragments and presence of a well suggests Merrywell was more than only a ploughed landscape. There remains however, a dearth of archaeological knowledge regarding medieval field systems and farming practices (Graham1980; 1985; 1993; O' Conor 1998). Much of our knowledge about medieval farming in County Meath comes from the contemporary and later written sources, such as *The Pipe Roll of 14 John 1211-12* (Davies & Quinn 1941). The location, therefore, of two parallel medieval ditches and, importantly, four ridge and furrow medieval ditches to the north of the site at Merrywell, provides crucial archaeological evidence as O' Conor (1998, 69-70) states that medieval ridge and furrow ditches did not occur in Ireland. O' Keeffe (2000, 64) asserts that ridge and furrow ploughing occurred only on a small scale in medieval Ireland so the archaeological evidence uncovered at Merrywell is invaluable in developing our knowledge of medieval farming practices.

Can we learn from the field system evidence at Merrywell, for example, if there is any evidence of the revered 'S' curves of the ploughed strips so typical in the English midlands? Heavy Irish soils are not well suited to flat ploughing as the drainage offered by permanent, deep furrows are more advantageous for successful yields (O' Keeffe 2000, 64) so we must assume that ridge and furrow ploughing was practised by knowledgeable Anglo-Norman farmers whose livelihoods and profits were determined by the success of their crops. The presence of field systems at Merrywell is another indicator, I believe, of the status of its former inhabitants. Brady (1994) has shown that agricultural activities were performed by the servile classes, during the early medieval period in Ireland, as the lowest social grades ploughed their lords' lands. This was an

arrangement that continued throughout the medieval period (Graham 1993; O' Conor 1998; O' Keeffe 2000) and we can imagine that the landscape at Merrywell was being cultivated by either the Gaelic-Irish or Anglo-Norman peasantry, during the late twelfth and thirteenth centuries, for their lords in the neighbouring manorial villages. Clearly, much remains to be learned about medieval farming practices in the archaeological record but the evidence from Merrywell offers us small clues and shows that ridge and furrow ploughing was utilised during the period.

Conclusion

Such is the lack of archaeological knowledge concerning many aspects of the medieval period in Ireland that any archaeological excavations must be welcomed and cherished by anyone with an interest in the period. The speed of development, typified by the building of roads and spread of housing estates, across the country is unearthing a mass of archaeological information in places that, otherwise, we would have known nothing about. This can only impact positively on the archaeology of medieval Ireland as there is a distinct lack of knowledge regarding both isolated settlements and field systems. The archaeological evidence at Merrywell will allow us to increase the amount of information we have about the period and crucially facilitate research questions in the pursuit of knowledge. Future excavations along the M3 route at Trevet and Garretstown will prove invaluable in developing our knowledge of the medieval period in both County Meath and the country in general.

I have interpreted the archaeological evidence at Merrywell by suggesting it was farmed and resided upon by the peasantry of medieval Ireland. By availing of the documentary, cartographic and material evidence, I investigated the relationship between Merrywell and its surrounding landscape and distinguished its location at the edge of a number of probable Anglo-Norman manorial centres and villages, where Dunshaughlin was the largest and most important colonial settlement. The evidence, in my opinion, indicates an intensively farmed landscape, which was the work of the lowest social grades such as the *betagh*s or the formerly unfree English peasantry, and a probable settlement, indicated by the well and the number and range of artefacts, again signifying the presence of the lowest social grades. As the number of archaeological excavations increase, so will our understanding of the medieval period in Ireland. Comparative studies will add to our understanding of the function, status and ethnicity of the inhabitants of various settlements, especially isolated rural medieval sites, while any evidence related to field systems will hugely benefit our understanding of medieval farming practices and will decrease our reliance on the historical sources as the dominant means of understanding medieval Ireland.

Bibliography

Barry, T 1994 'Rural settlements' in Ryan, M (ed.) *Irish Archaeology Illustrated* Dublin, pp 180-83.

Barry, T 2000 'Rural settlement in medieval Ireland', in Barry, T (ed.) *A History of Settlement in Ireland* London.

Bhreathnach, E 1999 'Authority and supremacy in Tara and its hinterland c. 950 – 1200', in *Discovery Programme Reports **5*** Dublin.

Brady, N 1994 'Labour and agriculture in early medieval Ireland: evidence from the sources', in Frantzen, A. J. & Moffat, D (eds) *The Work of Work: Servitude, Slavery and Labour in Medieval England* Glasgow, pp 125-145.

Census of Ireland 1984 (First published in Dublin, 1861) *General Alphabetical Index to the Townlands and Towns, Parishes and Baronies of Ireland* Baltimore.

Davies, O & Quinn, D. B. 1941 'The Irish Pipe Roll of 14 John, 1211-1212', in *Ulster Journal of Archaeology **4***, supplement.

Graham, B. J. 1975 'Anglo Norman settlement in Co. Meath', in *Proceedings of the Royal Irish Academy **75C***, pp 223-48.

Graham, B. J. 1980 *Medieval Irish Settlement: a Review* Norwich.

Graham, B. J. 1985 *Anglo-Norman Settlement in Ireland* Athlone.

Graham, B. J. 1993 'The high middle ages: c. 1100 – c. 1350', in Graham, B. J. & Proudfoot, L. J. (eds) *An Historical Geography of Ireland*, pp 58-98.

Joyce. P. W. 1973 *The Origin and History of Irish Names of Places* London.

Killanin, L & Duignan, M. V. 1995 *The Shell Guide to Ireland* Dublin.

Kelly, F 1988 *A Guide to Early Irish Law* Dublin.

Kelly, F 1997 *Early Irish Farming* Dublin.

Kinsella, J 2005 *Locating the Poor and Unfree of Early Medieval Ireland* Unpublished MA Thesis, UCD.

Lewis, S 1995 (First published 1887) *A Topographical Dictionary of Ireland* London.

McCutcheon, C 2000 'Medieval pottery in Dublin: new names and some dates', in Duffy, S (ed.) *Medieval Dublin **1***, pp 117-25.

McNeill, T. E. 1980 *Anglo-Norman Ulster* Edinburgh.

McNeill, T. E. 1997 *Castles in Ireland. Feudal Power in a Gaelic World* London.

Mitchell, F & Ryan, M 1998 *Reading the Irish Landscape* Dublin.

Moore, M 1987 *Archaeological Inventory of County Meath* Dublin.

O' Conor, K. D. 1998 *The Archaeology of Medieval Rural Settlement in Ireland* Dublin.

O' Keeffe, T 2000 *Medieval Ireland – An Archaeology* Gloucestershire.

Simms, A 1983 'Rural settlement in medieval Ireland: the example of the royal manors of Newcastle Lyons and Esker in south County Dublin', in Roberts, B. K. & Glasscock, R. E. (eds) *Villages, Fields and Frontiers* Oxford, pp 133-52.

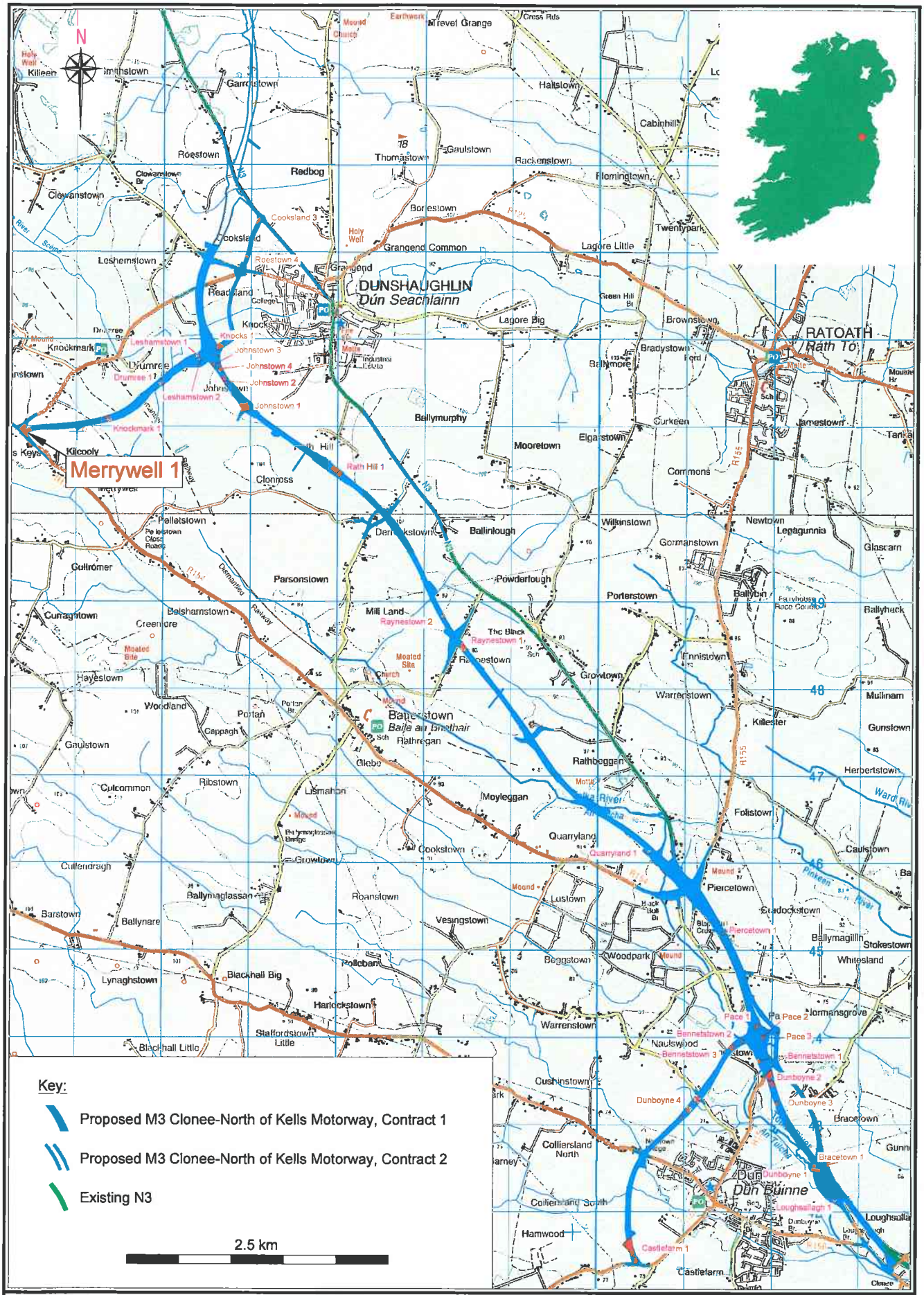
Simms, A 1988 'The geography of Irish Manors: the example of the Llanthony Cells of Duleek and Colp in County Meath', in Bradley, J (ed.) *Settlement and Society in Medieval Ireland – Studies Presented to F. X. Martin o. s. a.* Kilkenny, pp 291-326.

Smith, A 1998 'Landscapes of power in nineteenth century Ireland: Archaeology and Ordnance Survey maps', in *Archaeological Dialogues* ***5(1)***, pp 69-84.

Other sources

ACS Ltd 2005 *Report on archaeological assessment at testing area 21, Merrywell, Dunshaughlin – Navan, M3 Clonee – North of Kells*.

ACS Ltd 2005 *Report on archaeological assessment at testing area 4, section 2, Dunshaughlin – Navan, M3 Clonee – North of Kells*.



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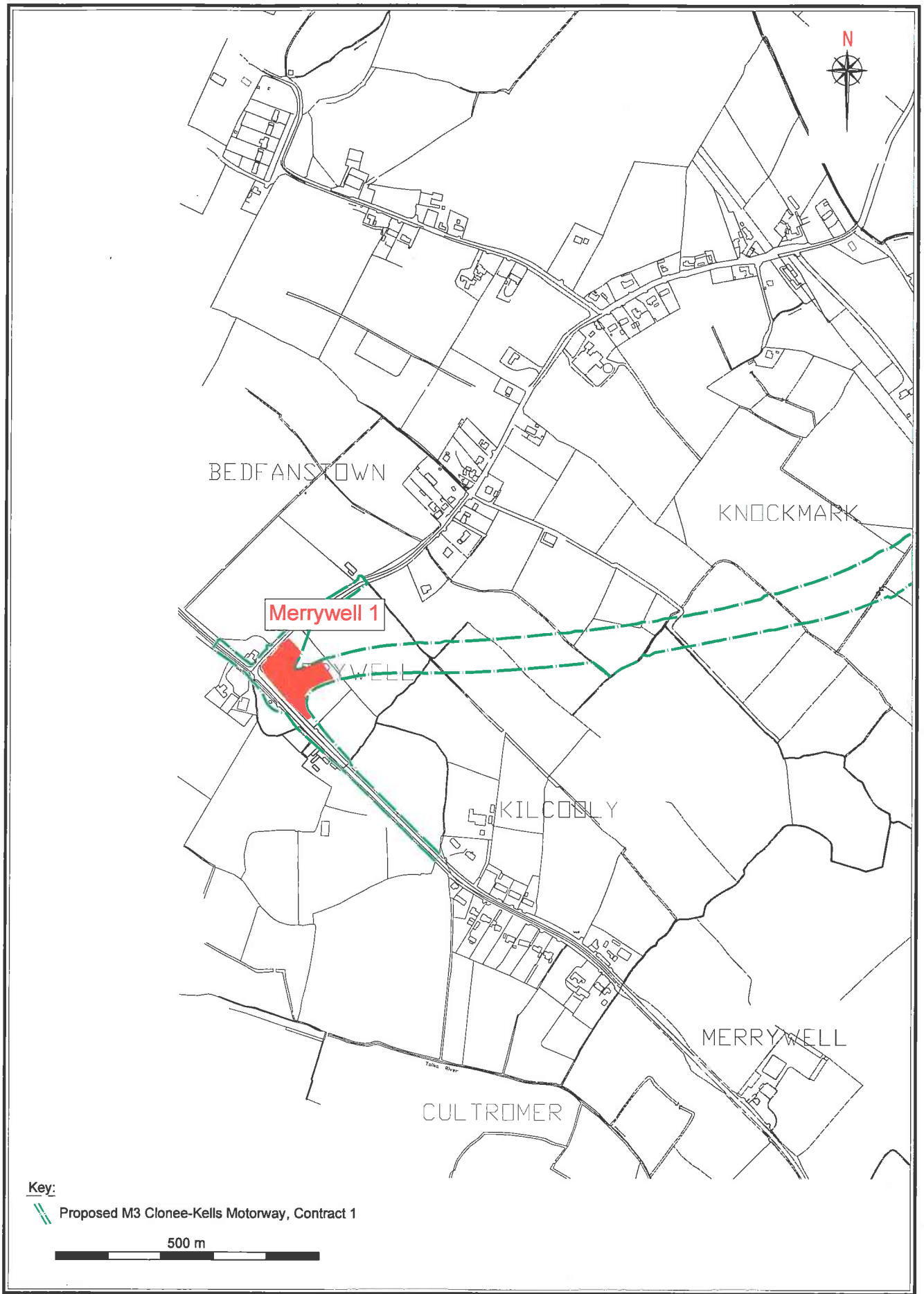
	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: OSi Discovery Series
		Drawing no.: 04_01_C9561i

Figure 1: Location of Merrywell 1



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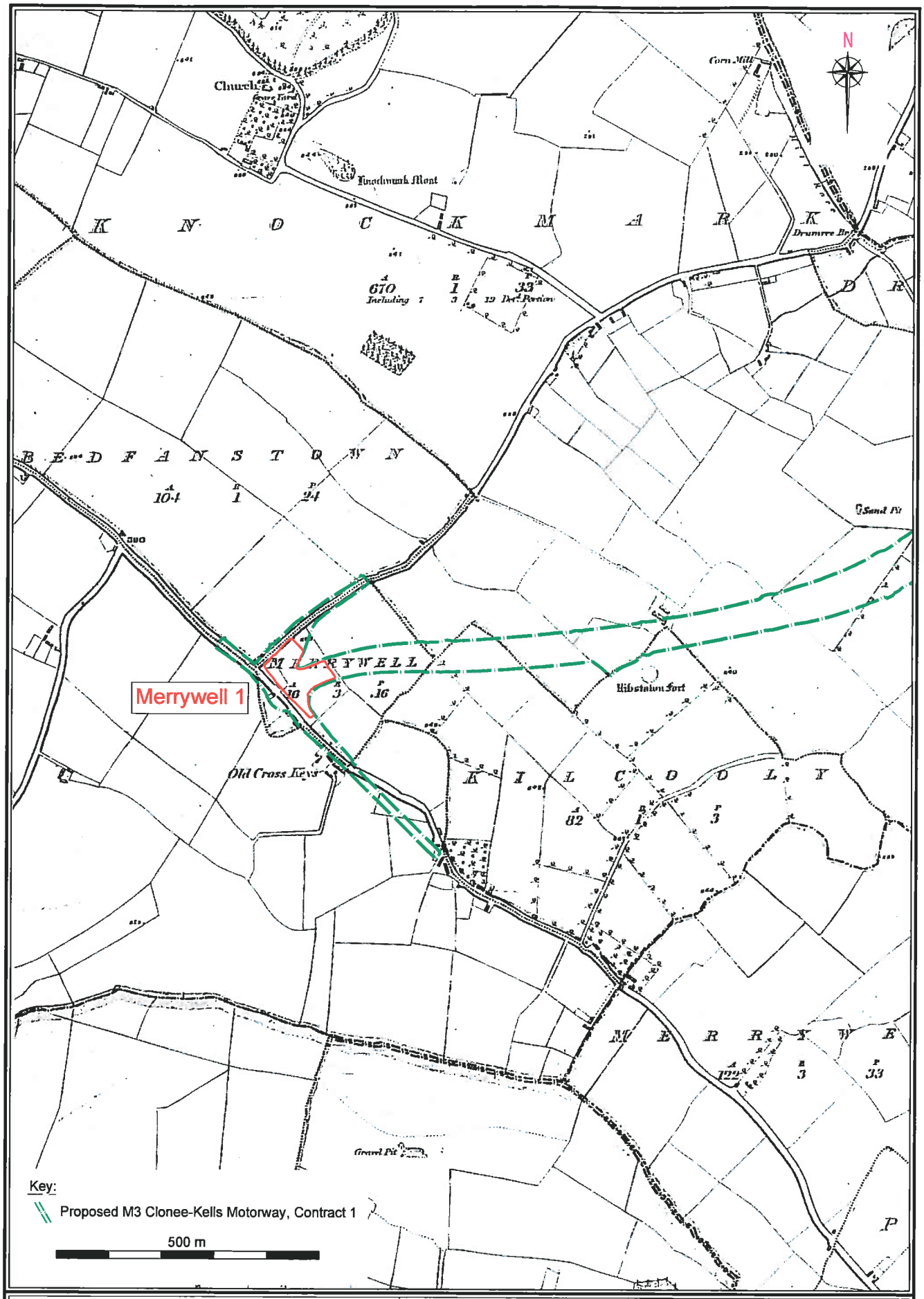
	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: Client/ACS Ltd.
		Drawing no.: 04_01_C9562i

Figure 2: Location of Merrywell 1 on current OS background



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	Client: Meath County Council	Drawing no.: 04_01_C2659i

Figure 3: Merrywell 1, extract from 1st edition OS map, Meath sheet 44

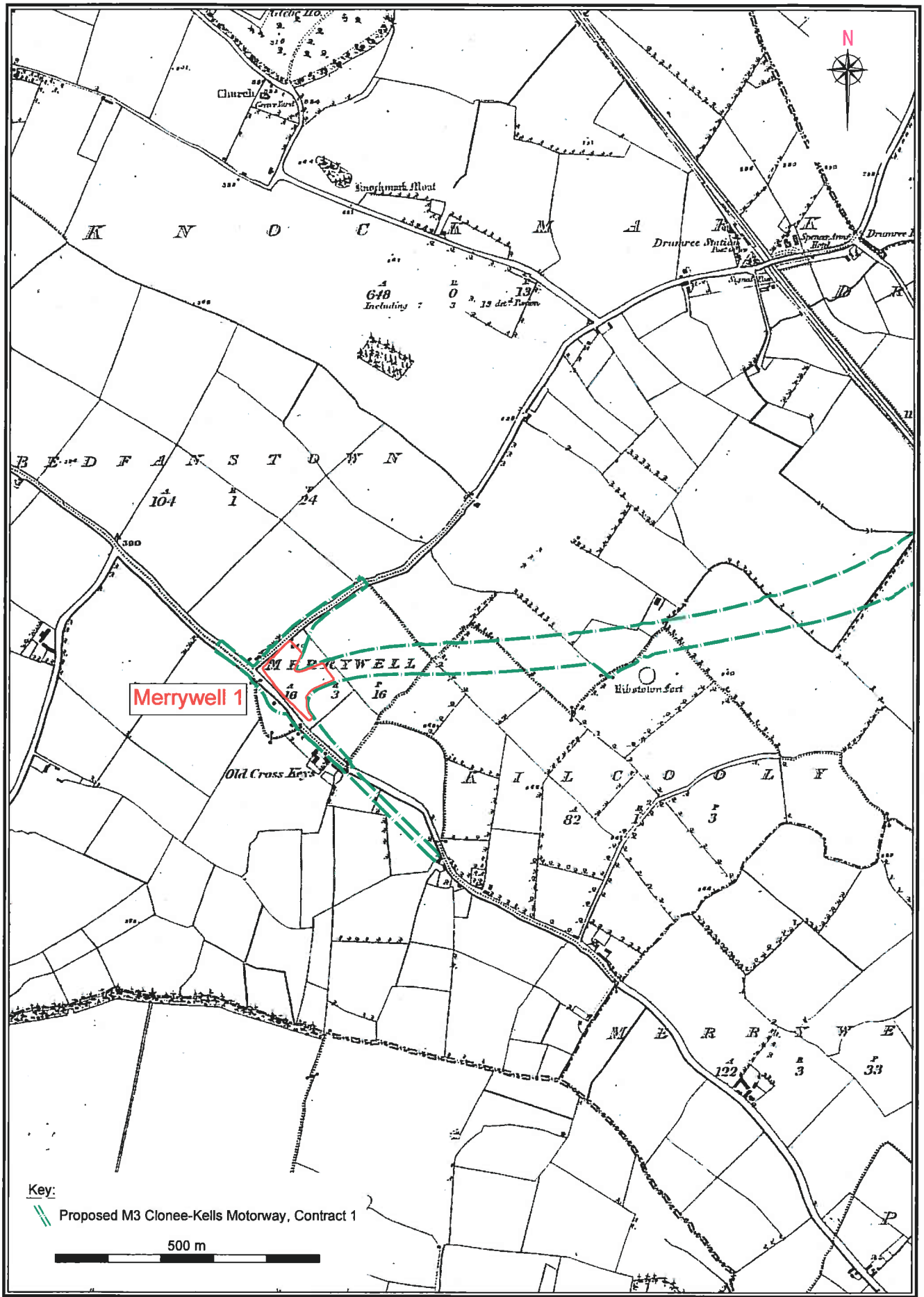

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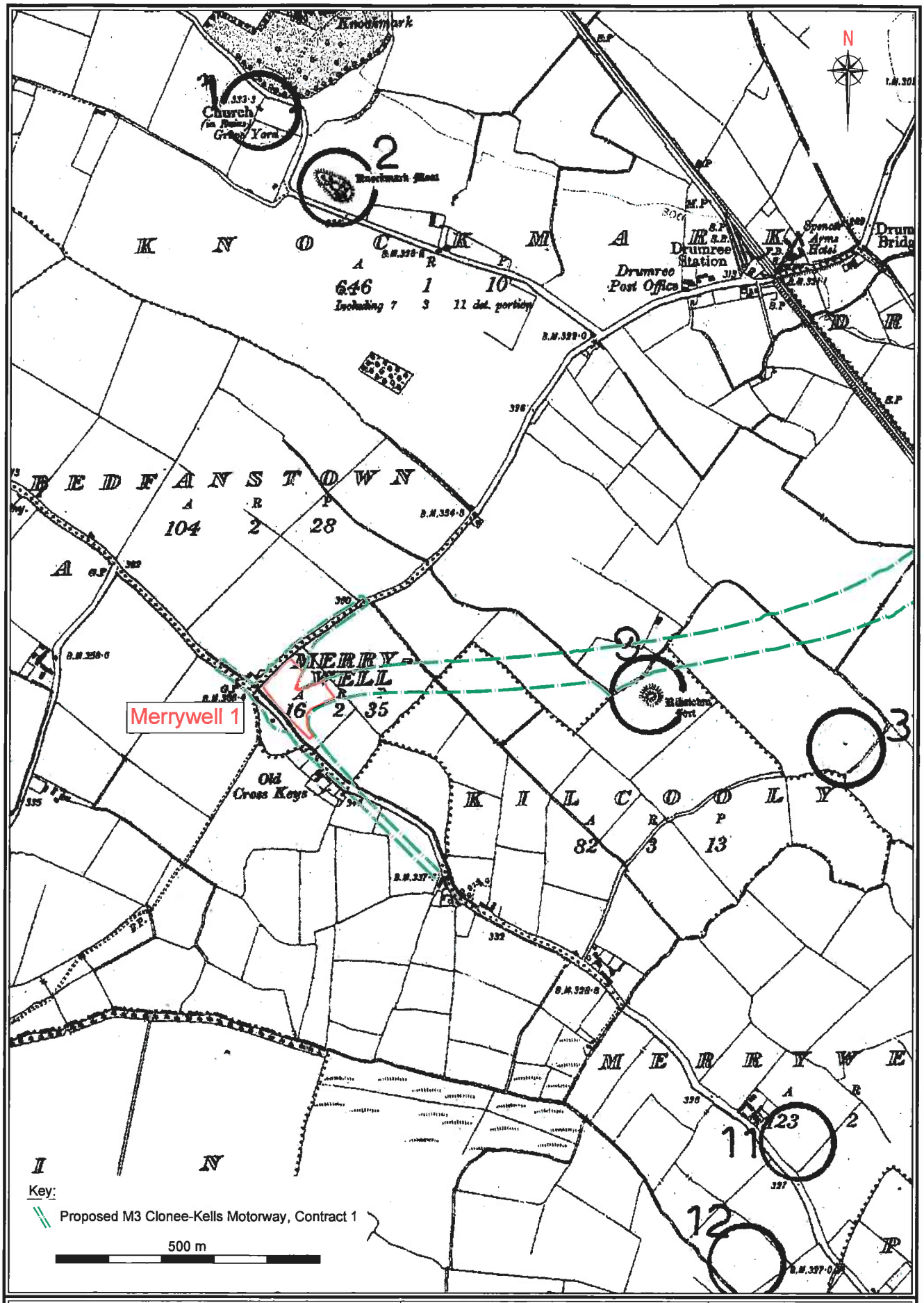
Figure 4: Merrywell 1, extract from 2nd edition OS map, Meath sheet 44



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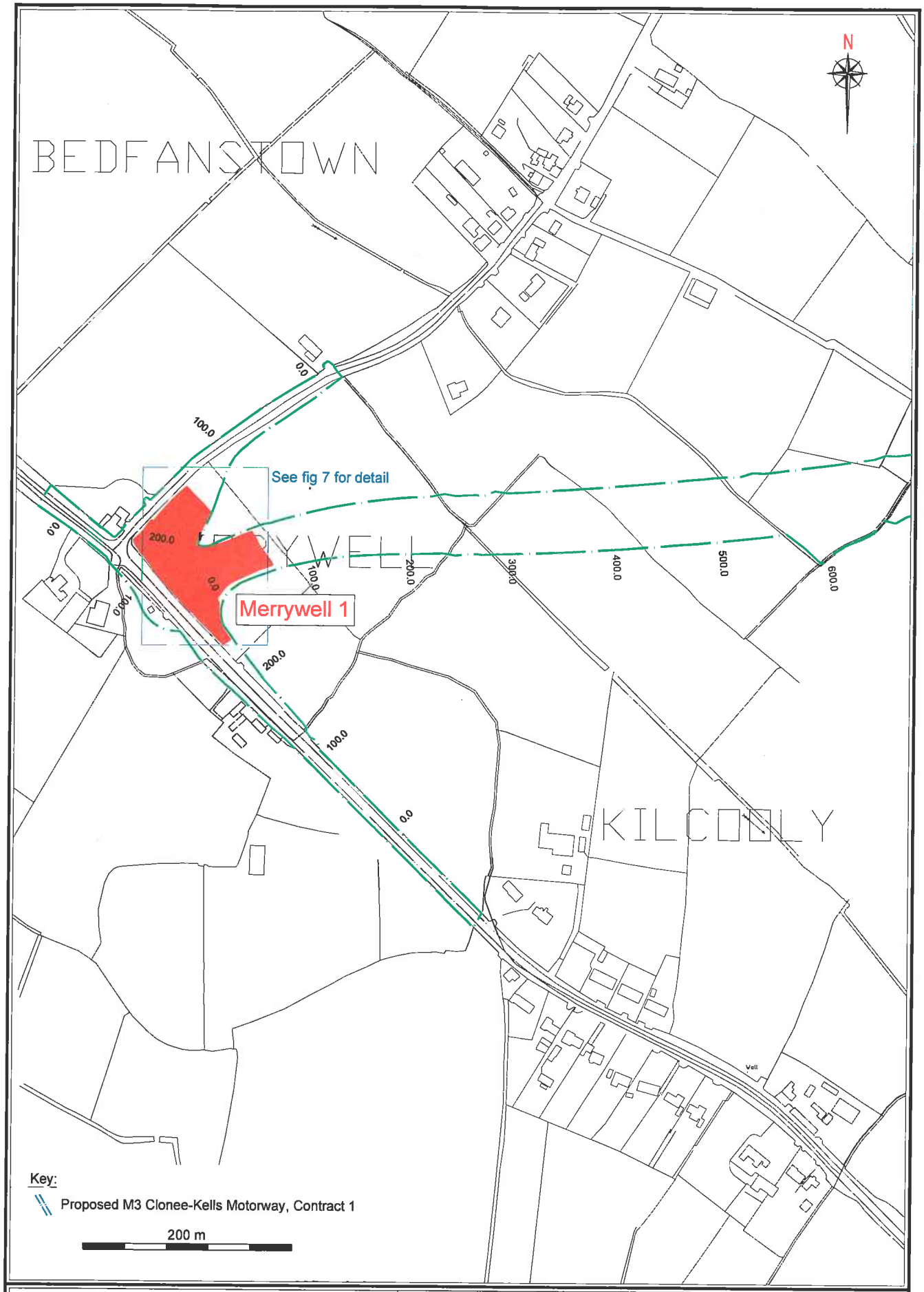
	Issued for: Excavation Report	Origin: OSi (1909)
	Client: Meath County Council	Drawing no.: 04_01_C2661i

Figure 5: Merrywell 1, extract from 3rd edition OS map, Meath sheet 44



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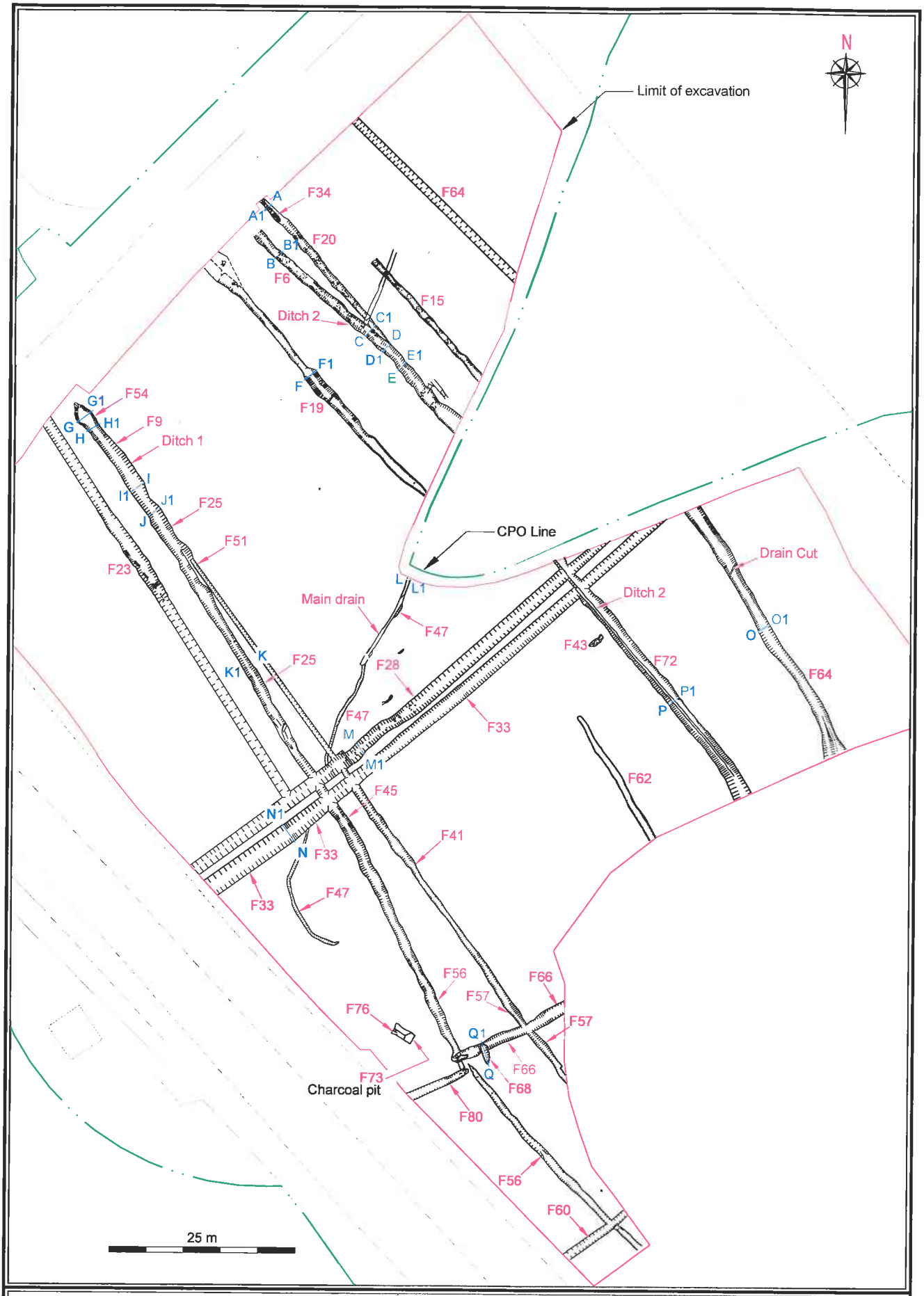
	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: Client/ACS Ltd.
		Drawing no.: 04_01_C2662i

Figure 6: Detailed location of Merrywell 1



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		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C9567i

Figure 7: Post-excavation plan of Merrywell 1

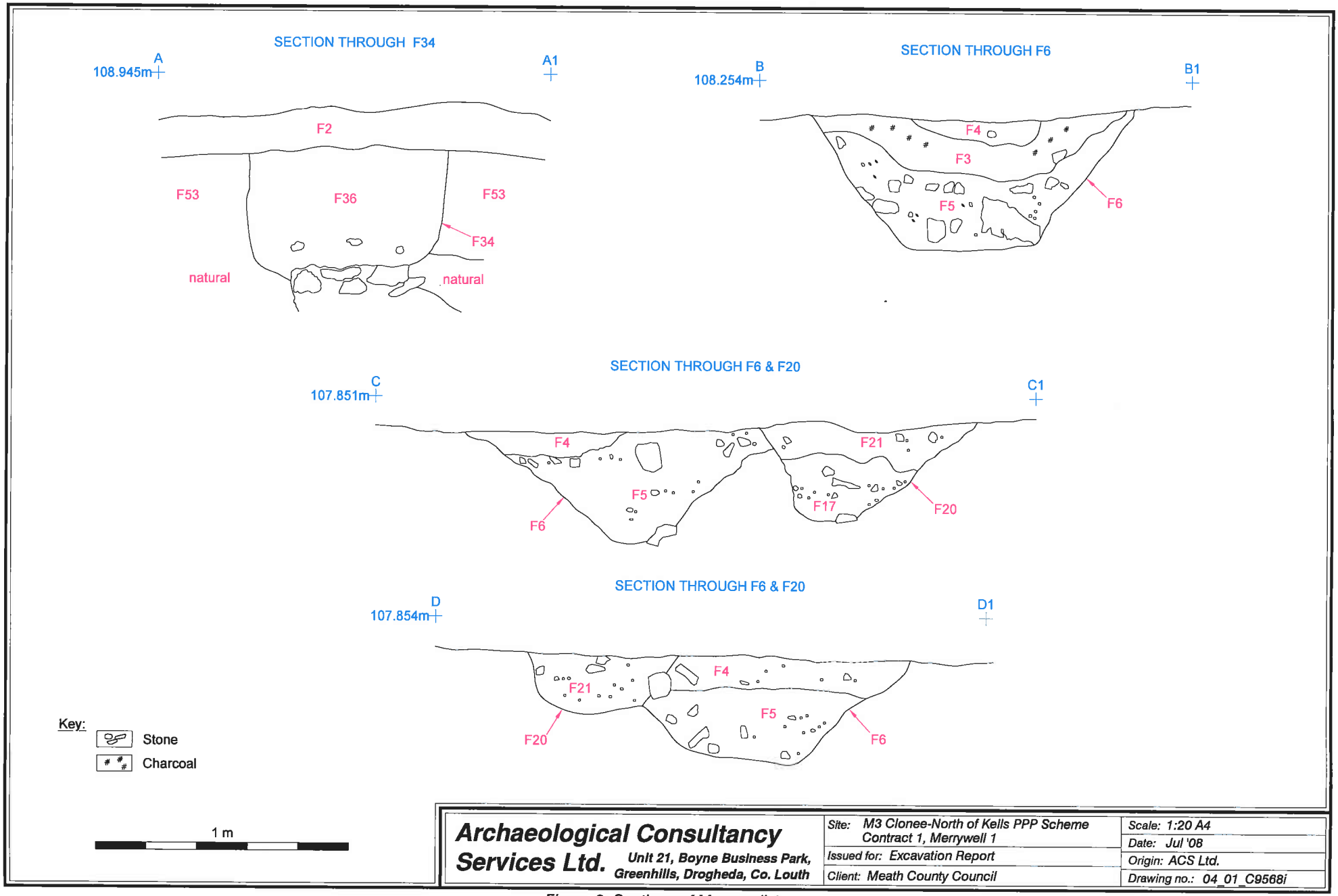


Figure 8: Sections of Merrywell 1

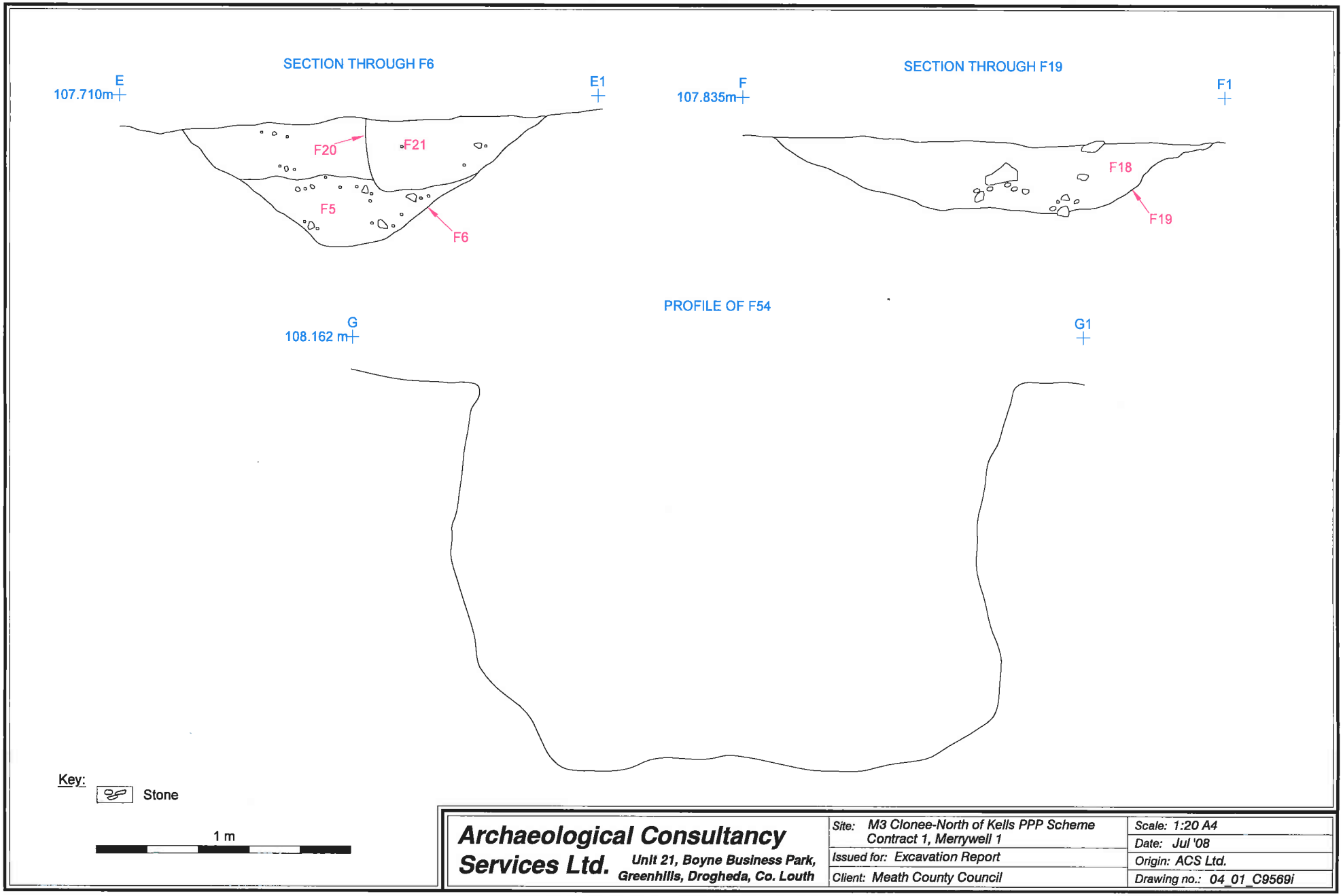


Figure 9: Sections & profile of Merrywell 1

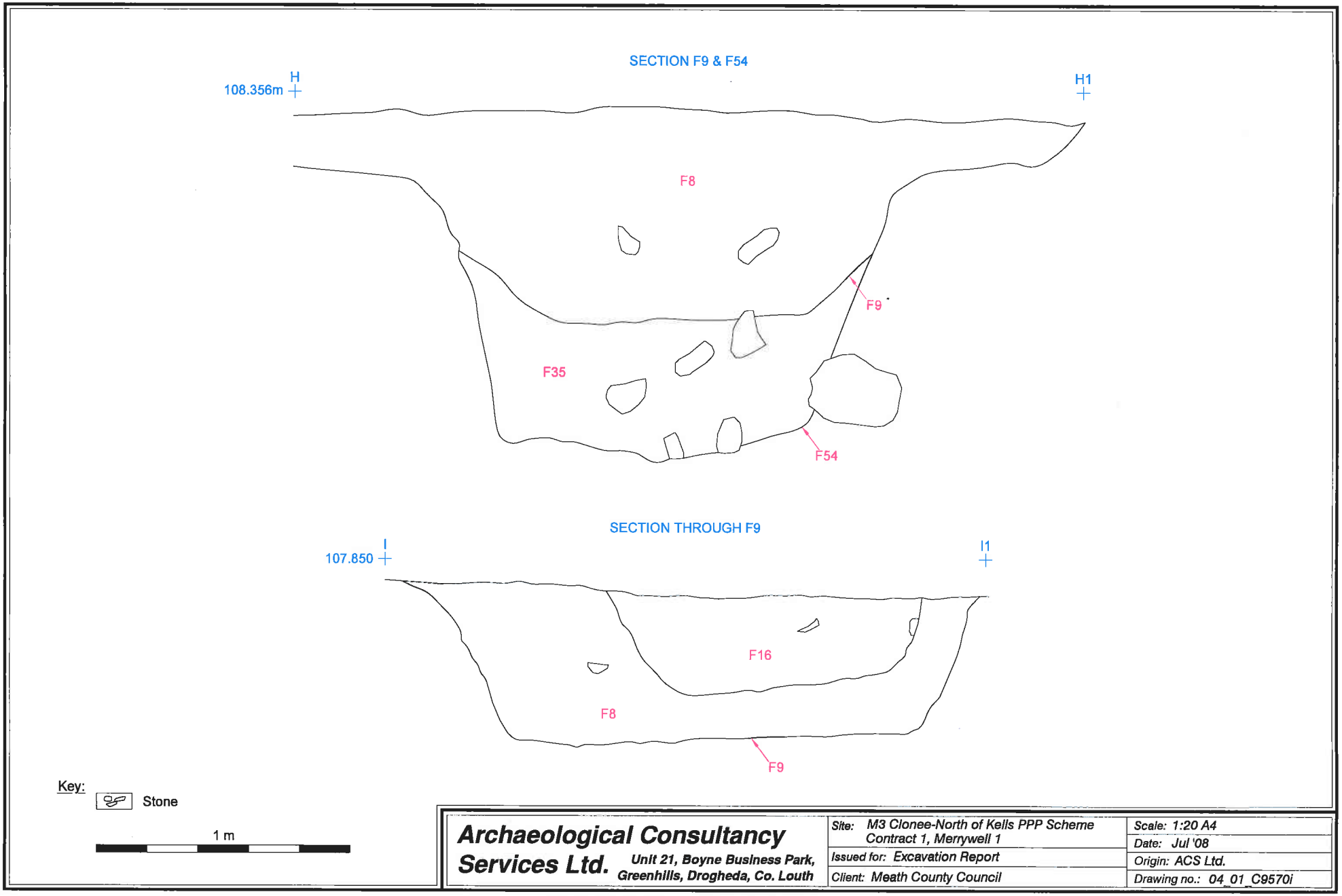


Figure 10: Sections of Merrywell 1

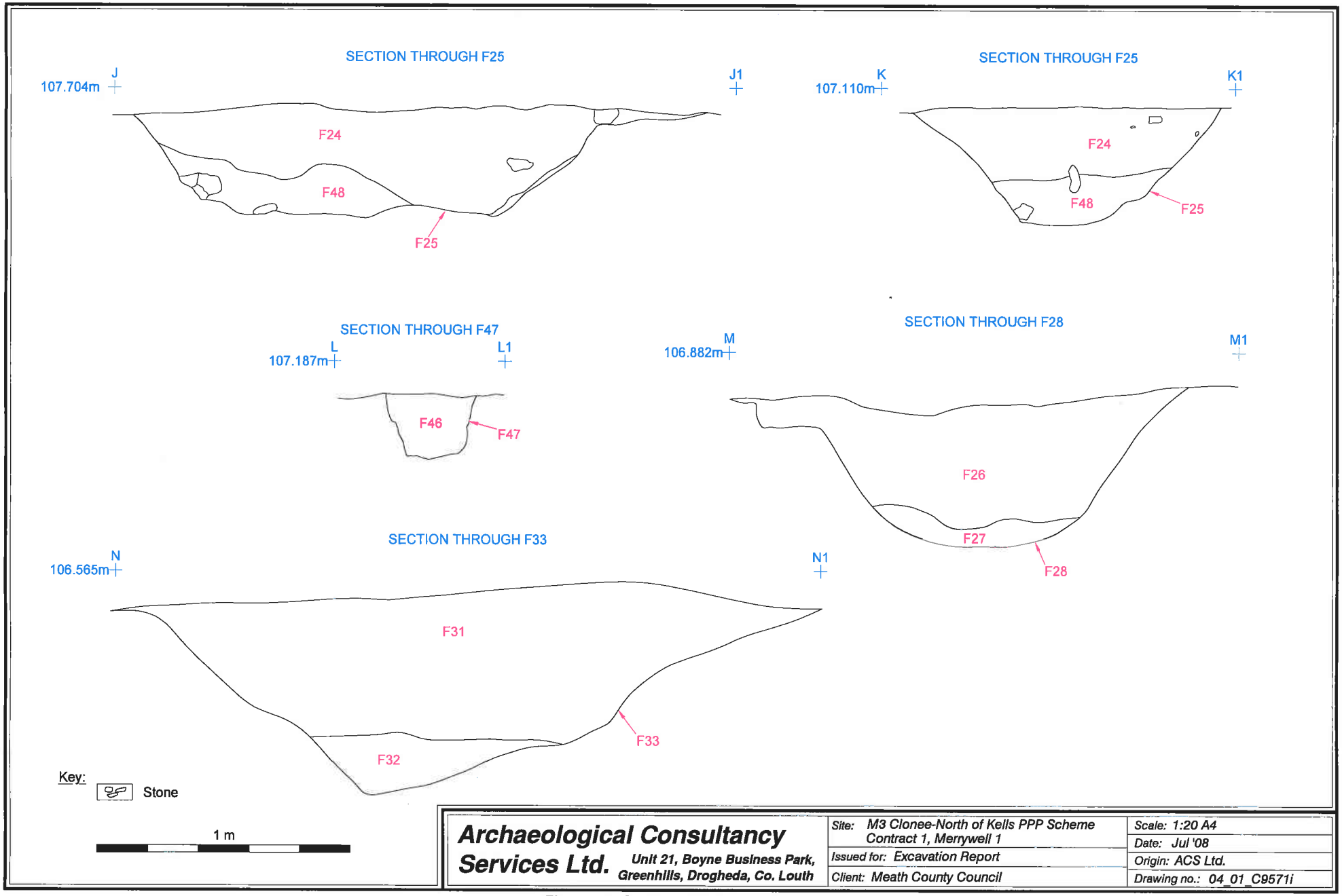
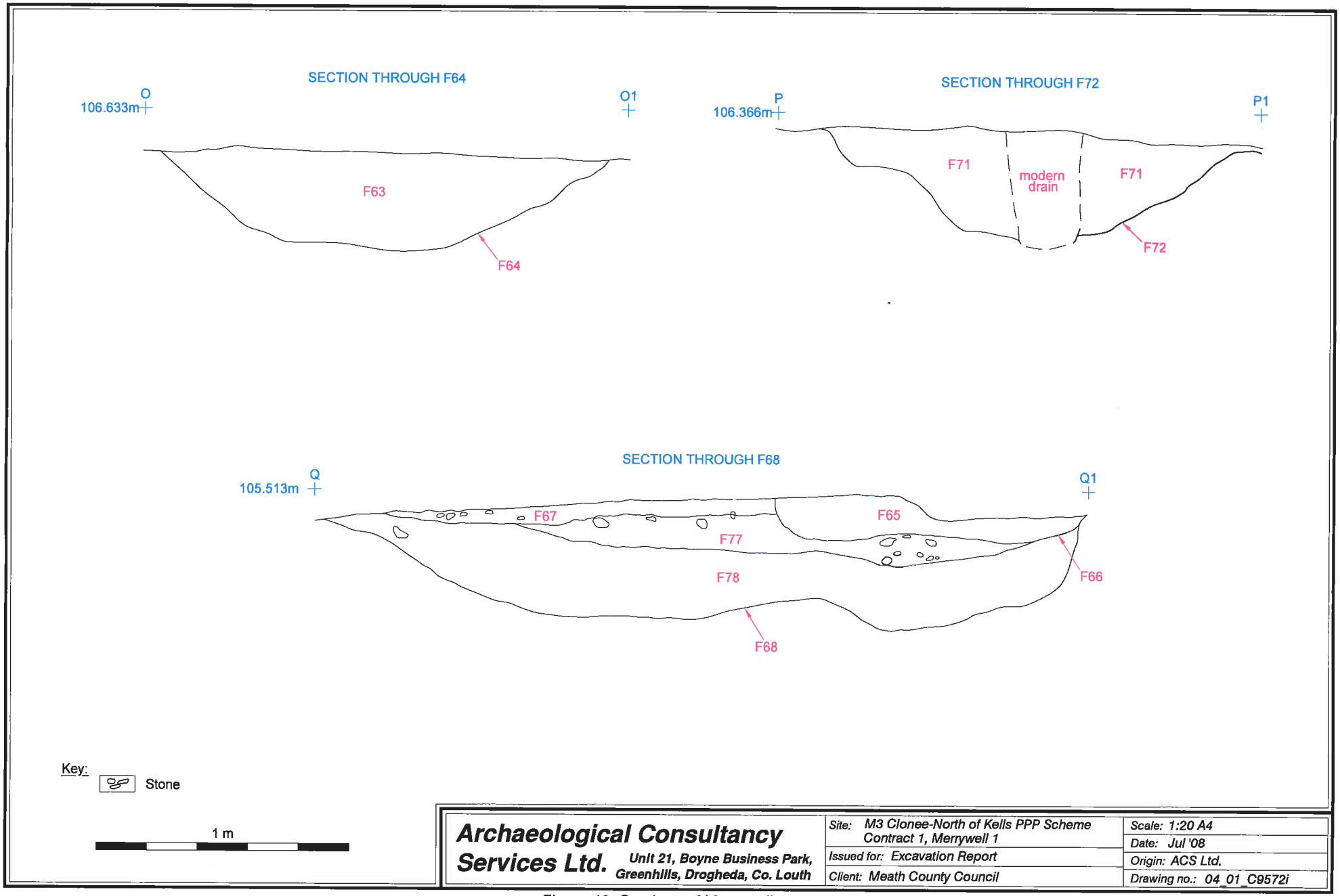


Figure 11: Sections of Merrywell 1



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		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C9572i

Figure 12: Sections of Merrywell 1

Plate 1: General view of site from the northwest (04_01_Hawkeye_Merrywell 1_2)

Plate 2: General view of site from the west (04_01_Hawkeye_Merrywell 1_3)

Plate 3: Well F54, post-excavation, from the southeast (04_01_Merrywell 1_CP6_1)

Plate 4: Well F54 from the southwest (04_01_Hawkeye_Merrywell1_24)

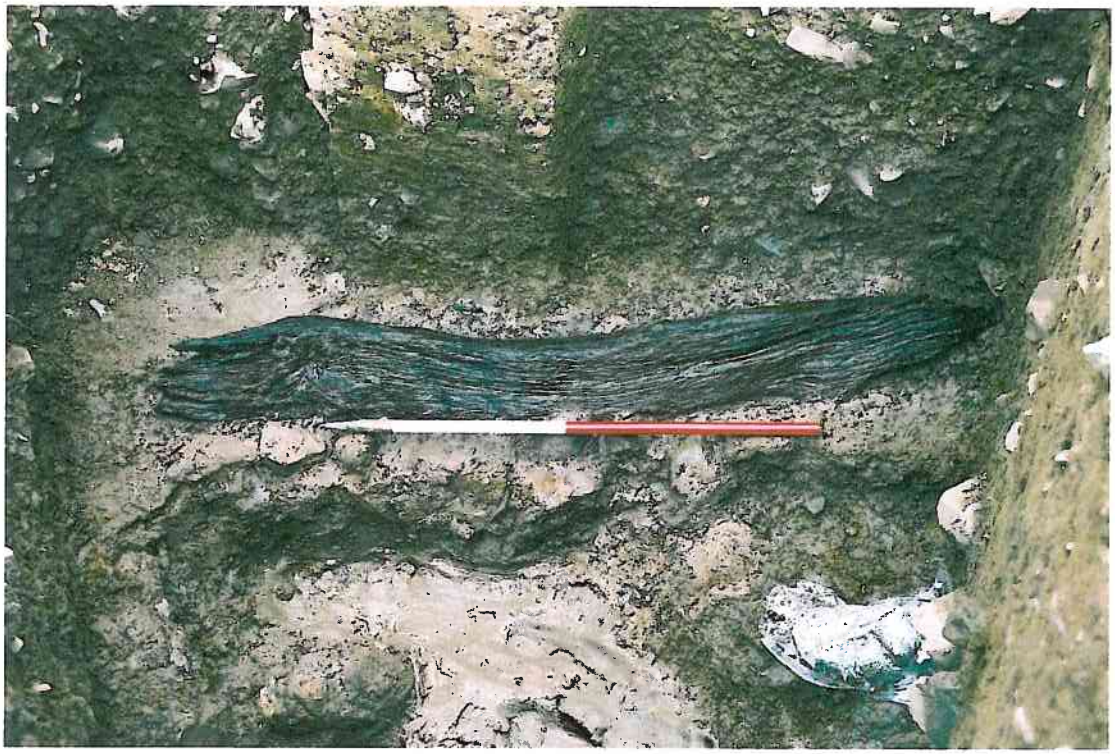


Plate 5: Wooden yoke in base of well F54, from the southeast (04_01_Merrywell 1_CP1_10)

Plate 6: Section of pit F68, from the east (04_01_Merrywell 1_CP7_8)

Plate 7: Wall F34, from the north (04_01_Merrywell 1_CP1_20)

Plate 8: Linear features F6 and F20, mid excavation, from the southeast (04_01_Merrywell 1_CP2_3)

Plate 9: Linear feature F19, from the southeast (04_01_Merrywell 1_CP4_23)

Plate 10: Linear feature F19, from the northwest (04_01_Merrywell 1_CP4_24)

Plate 11: F23, north facing section (04_01_Merrywell 1_CP2_10)

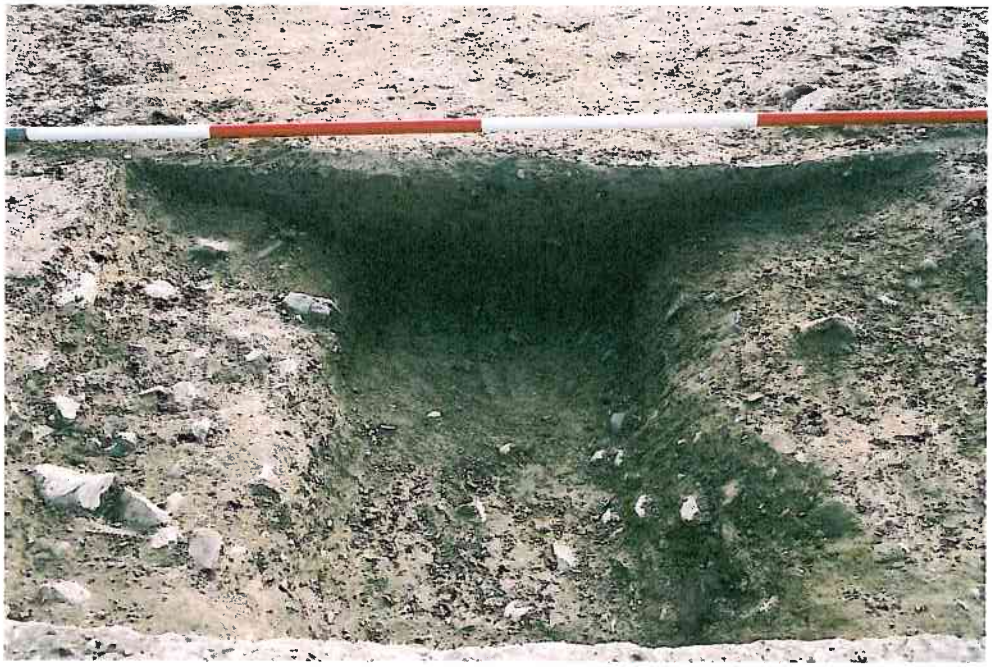
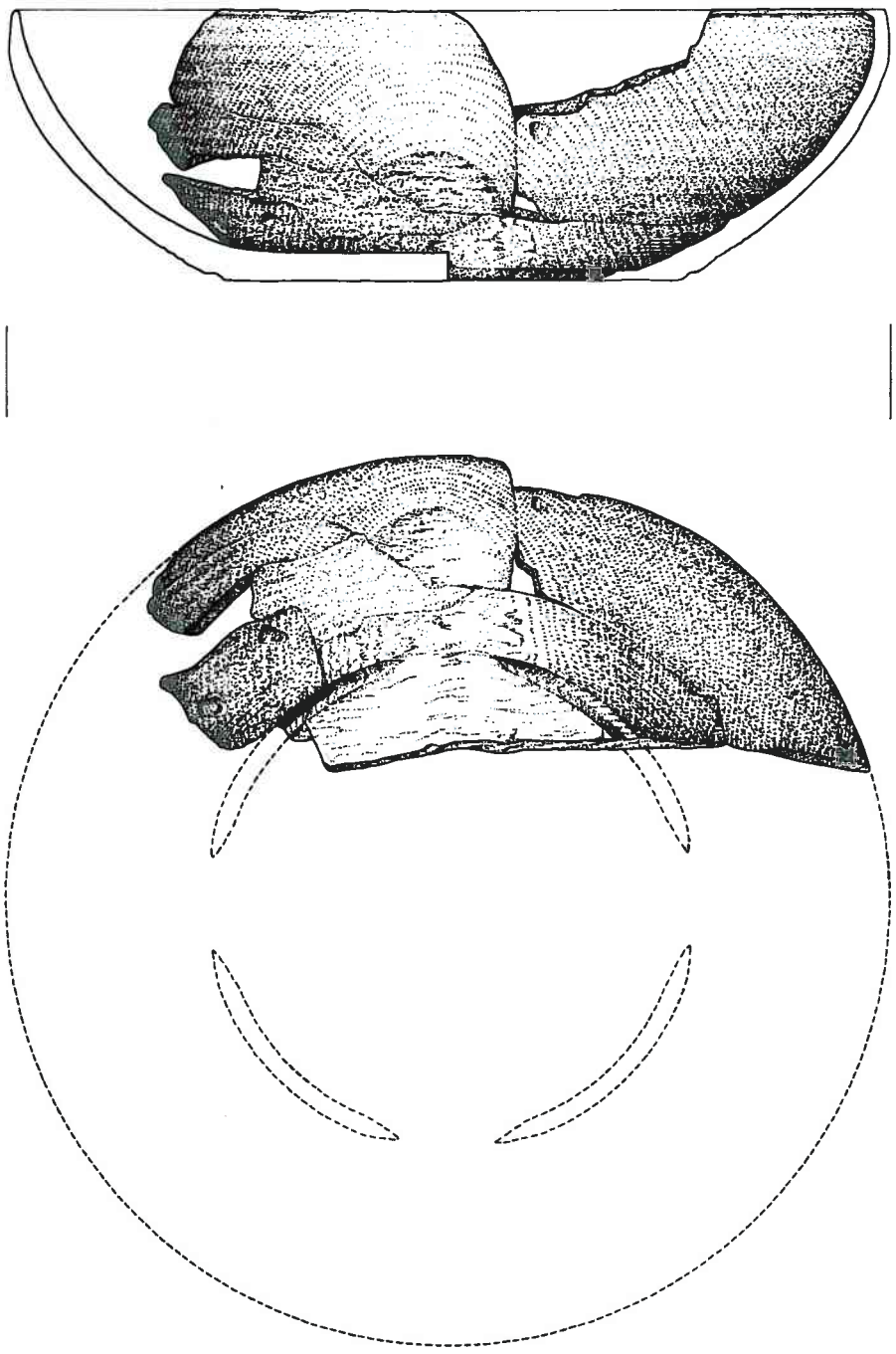


Plate 12: F41, south facing section (04_01_Merrywell 1_CP5_22)

Plate 13: F73 pre-excavation, from the southeast (04_01_Merrywell 1_CP7_3)

Plate 14: F73, southwest facing section (04_01_Merrywell 1_CP8_21)

Plate 15: Metal finds recovered

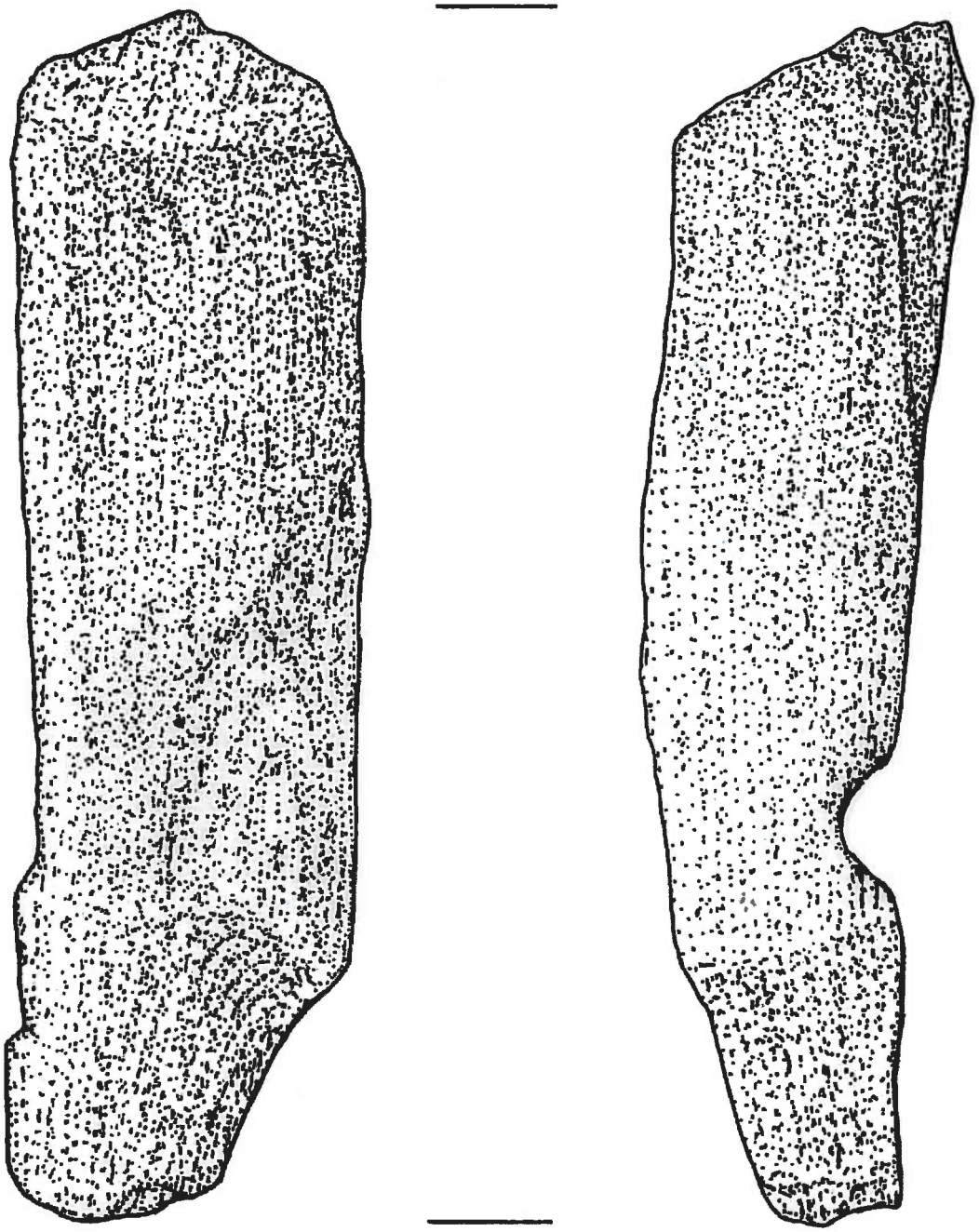


A017/029:36:1

10 cm

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 1, Merrywell 1	Scale: 1:2 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C9577

Illustration 1: Wooden bowl (A017/029:36:1)



A017/029:36:2

5 cm

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 1, Merrywell 1	Scale: 1:1 A4
		Date: Jul '08
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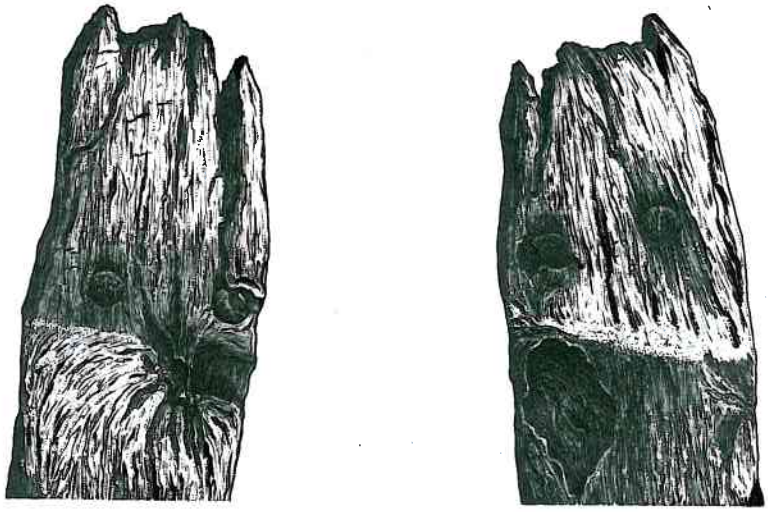
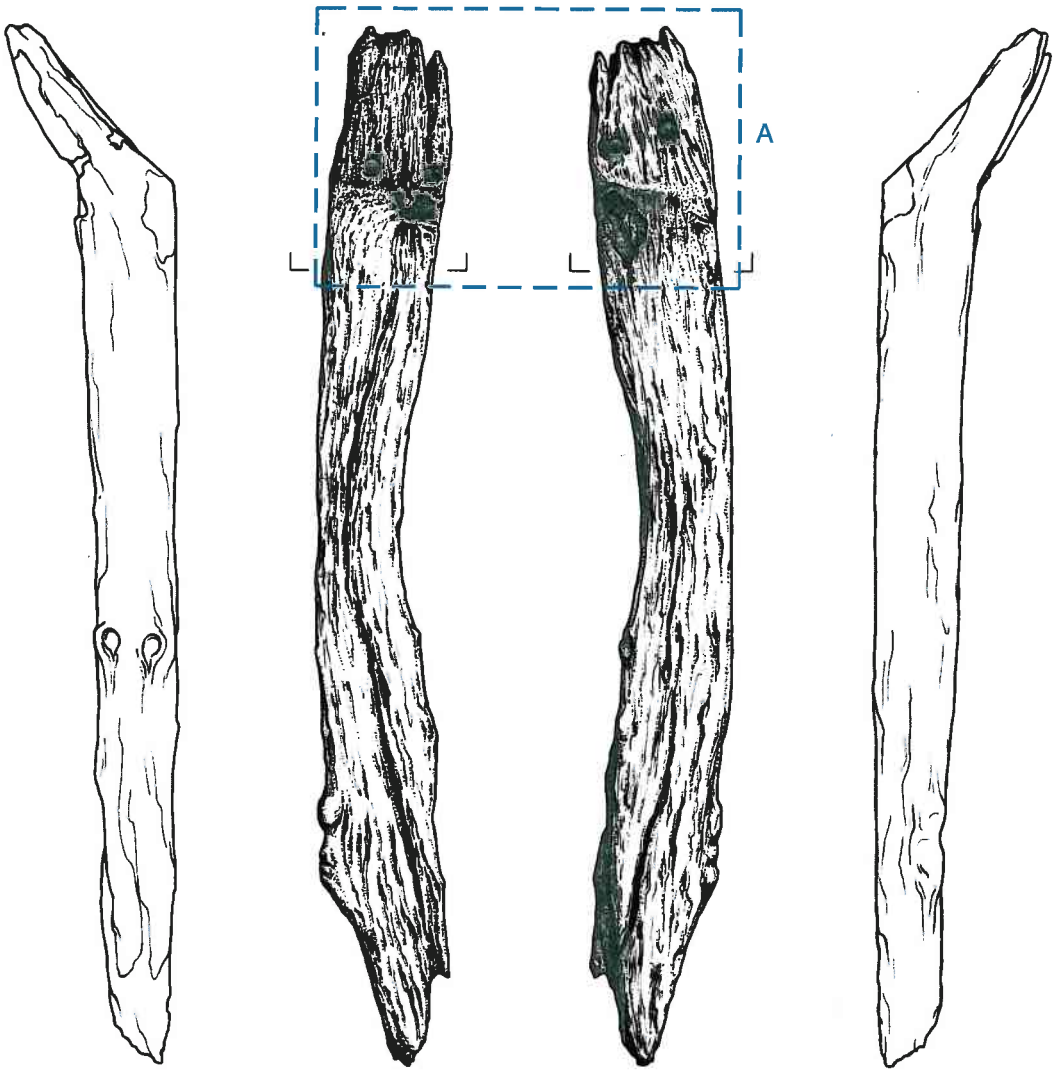
	Client: Meath County Council	Drawing no.: 04_01_C9578

Illustration 2: Notched oak fragment (A017/029:36:2)



Detail A

25 cm



A017/029:35:42

50 cm

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 1, Merrywell 1	Scale: As scalebar
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C9579

Illustration 3: Wooden Yoke (A017/029:35:42)