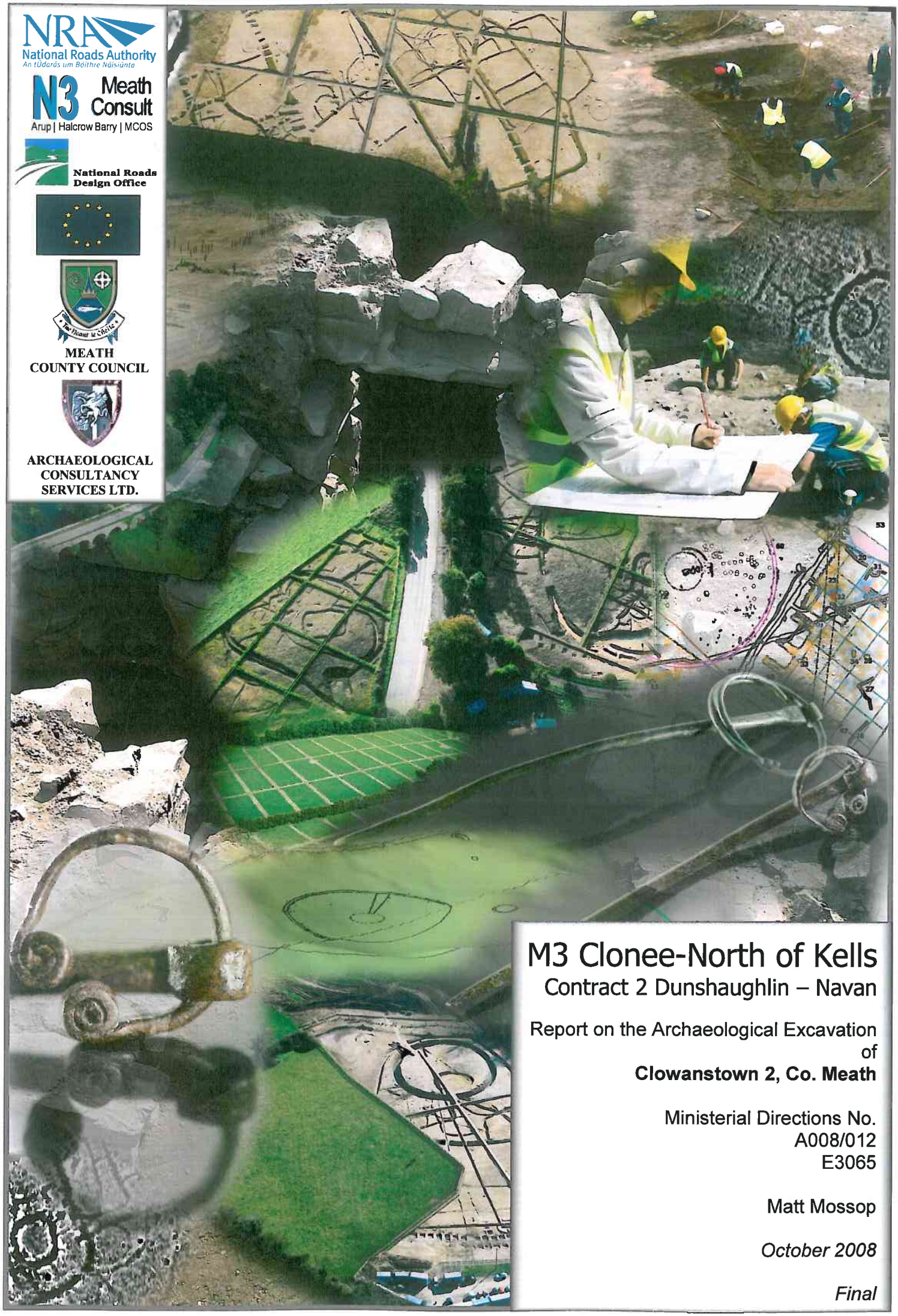

National Roads Authority
An tÚdarás um Bóithre Náisiúnta

N3 Meath Consult
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MEATH COUNTY COUNCIL

ARCHAEOLOGICAL CONSULTANCY SERVICES LTD.

M3 Clonee-North of Kells

Contract 2 Dunshaughlin – Navan

Report on the Archaeological Excavation of

Clowanstown 2, Co. Meath

Ministerial Directions No.
A008/012
E3065

Matt Mossop

October 2008

Final

PROJECT DETAILS

Project	M3 Clonee–Kells Motorway
Site Name	Clowanstown 2
Ministerial Direction Number	A008/012
Registration Number	E3065
Senior Archaeological Consultant	Donald Murphy
Site Director	Matt Mossop
Excavated	23 August to November 2006
Client	Meath County Council, National Roads Design Office, Navan Enterprise Centre, Navan, County Meath
Townland	Clowanstown
Parish	Clowanstown
County	Meath
National Grid Reference	295772 257211
Chainage	24100–23800
Height	125.87m OD
Report Type	Final
Report Status	Submitted
Date of Report	October 2008
Report by	Matt Mossop with Emma Ruddle

ACKNOWLEDGEMENTS

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 Direction Number 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

The site at Clowanstown 2 was excavated by Archaeological Consultancy Services Ltd (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council, NRDO and the NRA. The excavation was carried out between 23 August and November 2006 under Ministerial Direction Number A008/012 issued by the DoEHLG in consultation with the NMI. A number of burnt stone spreads and extant ridge and furrow were located in pasture at the southwest edge of a former bog. Four areas were excavated at Clowanstown 2 providing evidence of human activity from the Early Neolithic to the present day. Neolithic activity included a burnt stone spread and occasional lithic working associated with hunting, cooking and field clearance. The lithics included scrapers, blades and a hollow-based arrowhead. Early Bronze Age activity centred on three burnt stone spreads representing at least two classic type burnt mounds, with associated troughs, pits and a posthole. This activity was also apparently associated with field clearance.

An additional pit filled with burnt stone and charcoal returned a medieval date, while extensive ridge and furrow drained the margins of the bog, sometime between the 17th and 19th centuries AD. Stone-filled field drains probably date to the 19th century.

CONTENTS

FIGURE LIST

PLATE LIST

ILLUSTRATION LIST

1 INTRODUCTION

The site at Clowanstown 2 (Figures 1–6) was identified during advance testing carried out by Jonathan Dempsey between March and April 2004 under licence number 04E0418 (Dempsey 2004). Testing revealed three small spreads of burnt mound-like material, one definite and three possible pits and a charcoal spread. A Topsoil Assessment (metal detection, field walking, test pits) was conducted on the site and 10 modern finds were recovered along with four flint artefacts (Appendix 4). The archaeological resolution of the site occurred between August and September 2006 where the full resolution of three trenches occurred centred around the initial test areas. Area D was resolved in November 2006.

1.1 Development

Meath County Council is constructing 49km of two-lane, dual-carriageway motorway between Clonee and Kells and 10km of single carriageway from Kells to just north of Kells alongside additional road upgrades, realignments and associated ancillary works. The scheme has been subdivided into five separate sections as follows: Clonee to Dunshaughlin (Contract 1), Dunshaughlin to Navan (Contract 2), the Navan Bypass (Contract 3), Navan to Kells and the N52 Kells Bypass (Contract 4), and Kells to North of Kells (Contract 5). This section of the scheme (Contract 2) commences at Dunshaughlin (NGR 295567, 253082) and continues to Navan (NGR 287968 263697).

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 August and November 2006 under Ministerial Direction Number A008/012 issued to Meath County Council NRDO. The work was carried out by Matt Mossop on behalf of ACS. The topsoil (F5: 0.25m depth) consisted of a firm mid-brownish grey silt with moderate angular stones and was removed by machine equipped with a grading bucket. The subsoil (F4) was a compact, light-brownish-orange clay with occasional angular stones and patches of mid-brownish clayey grit.

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. All radiocarbon dates are quoted in calibrated form to two sigma.

2.1 Results

A total of 122 contexts were identified within four areas, of which 112 were of archaeological interest (Figures 7-17). Only the principal archaeological features of the areas will be discussed within this report; full details of all these, and further, contexts are located in Appendix 1.

Area A

Area A measured approximately 24m x 19m. This area revealed a burnt stone spread (F33: c. 4.50m x 3.00m) which included decayed sandstone and in-filled a former tree throw (F32). The basal layer (F69) contained fragments of decayed wood (Oak (*Quercus* sp.), O'Donnell, Appendix 6). The upper fill, (F33) consisted of a soft black, charcoal-stained clayey silt, with a moderate amount of burnt angular sandstone. A cattle molar was recovered from F33 (Foster; Appendix 10). This spread (F33) was located c. 0.50m to the north of a sub-oval, concave pit (F28: 1.95m x 0.81m x 0.31m). The pit was filled with a water-borne grey clay at the base (F71) and an overlying peaty clay which also contained inclusions of charcoal (F70). The charcoal was identified as ash, oak, hazel and alder with hazel being the most predominant (ASDU; Appendix 9). A sample of ash from F70 was dated to 2457–2026 BC (Beta 241290; Appendix 5). An uncharred white water-lily seed was also recovered from F70 (ASDU; Appendix 9). A soft black, charcoal-stained clayey silt, with a moderate amount of burnt angular sandstone (F29), lay above F70.

Five linear cuts (F66, F64, F62, F60, and F79) were confined mostly to the eastern side of the area, which represented different phases of modern field drains. These were filled with loose dark to mid-brown clayey silt with sub-angular stones at the base (F67, F65, F61, F63, and F80).

A flint blade, possibly used as a knife (F6: A008/012:6:1; Sternke, Appendix 7) was recovered from loose material and again which may have derived from the topsoil.

Area B

Area B measured approximately 22m x 25m. This area revealed a number of roots and small tree boles one of which had been used to form a shallow bowl-shaped hearth (F15: c. 1.70m diameter x 0.19m depth). F15 was filled with F85 and F16. F85, the primary fill of the hearth, consisted of a loose, black, charcoal-stained silt with lenses of dark grey clay. Frequent charcoal flecks were found throughout this fill with occasional small angular stones. 56g of charcoal was derived from sieving (Appendix 3). The upper fill consisted of a moderately compact brown silty clay with occasional small angular stones (F16). The base of this hearth had a reddish tinge suggesting burning in situ.

A flint flake (A008/012:7:1), a piece of flint debitage (A008/012:76:4), a retouched flint artifact (A008/012:76:1), two chert flakes (A008/012:76:1-2) and a fragment of calcined bone were found in a deposit (F76) at the base of one of the small tree boles. This bone could not be identified and it was not possible to ascertain if it was human or animal (ASDU; Appendix 9). The bone returned a date of 3496–3103 BC (Beta 241291, Appendix 5). Deposit F76 was a firm, mid to dark-grey, silty clay with a moderate amount of charcoal flecks and lumps and occasional small angular pebbles. The tree bole was typical of the others recorded on the site and measured 2m x 0.60m x 0.18m, consistent with scrub development on the margins of the bog. Other neighbouring tree boles contained similar burnt material (F18, F23, F24, F26, and F102).

Approximately 3.5m south and upslope of the hearth (F15), an east–west drainage gully (F13: 6.00m x 1.50m x 0.18m), ran to just beyond the hearth, defining its associated area of activity on this side and possibly providing water for the site. In the upper fill (F16) of the hearth, a small piece of flint debitage was found (A008/012:16:1). A chert hollow-based arrowhead (A008/012:5:1: 55mm long, 28mm wide, 6mm thick; Sternke, Appendix 7) was located 2m further south, which lay on the loose above an east–west field drain (F9).

The whole area was criss-crossed with a modern field drainage system (F21, F20, F10, F74, and F11). This was laid out in a grid like formation.

The most significant finds within Area B were recovered from the topsoil (F5) and consisted of retouched artefacts, a blade and a crystal core (see 2.2 finds for detailed discussion).

Area C

Area C (35m x 37.5m) consisted of a central area of burnt mound activity (F42) and a rooty area to the west with occasional lithics. A deep, sub-oval trough (F100: 2.30m x 1.20m x 0.41m) was also located within this area. This was filled with a dark grey/black silty clay (F47) which contained frequent burnt stones and charcoal. The charcoal was identified as ash, oak, hazel, elm and alder with ash being the most predominant (ASDU; Appendix 9). A sample of alder from F47 was dated to 2457–2026 BC (Beta 241289, Appendix 5). Charred remains were also recovered and consisted of oat species (3 grains), barley species (1 grain) and a fat-hen seed (ASDU; Appendix 9). To the immediate west of the trough F100 was a shallow bowl-shaped pit (F48). It had a maximum diameter 1.2m and was filled with a loose black charcoal stained silt with subangular stone (F48-upper fill) and a dark brown silty clay with angular stones (F101-primary). A possible posthole (F87) may have been associated with this pit, which lay to the west.

The low, crescent-shaped burnt stone mound (F42: 12m x 8m) had been deposited less than a metre up-hill (south-southwest) and surrounded these features (F48, F87 and F100), although only a 0.08m-thick spread survived. Three circular pits (F38, F40 and F93) were positioned on the other side (south-southeastern extent) of the mound varying from 0.6m to 1.65m in diameter and 0.12m to 0.33m in depth. Each of these pits had concave sides with flat bases and each contained dark charcoal-stained silty-clay with burnt angular stones (F95, F41 and F43 respectively). A soil sample was taken from the fill (F41) of the pit (F40). Charcoal, charred remains and uncharred remains were contained within this sample. The charcoal was identified as ash, oak, blackthorn, hazel, elm and alder with alder being the most predominant (ASDU; Appendix 9). A sample of alder was dated to 2576–2341 BC (Beta 241288, Appendix 5). The charred remains included grains and weed seeds and were identified as oat species (28 grains), barley (1 hulled grain, 7 grains of barley species), undetermined grains (5), fat-hen (1 seed), corn marigold (1 achene) whilst the uncharred remains were identified as a single white water-lily seed (ASDU; Appendix 9). A soil, geological, chemical and pollen sample was taken from the basal fill (F95) of the pit F93. Charcoal, charred remains and uncharred remains (ASDU; Appendix 9) were recovered although no pollen was present (ASDU; Appendix 8). The charcoal was identified as ash, oak, hazel, maloideae (hawthorn,

whitebeams, apple and pear), elm and alder with ash and alder being the most predominant, the charred remains included weed seeds and grains and included fat-hen (2 seeds), oat species (10 grains), barley species (1 grain), wheat species (1 grain), undetermined grains (3) and a hazel nut shell fragment whilst the uncharred remains included a single white water-lily seed and a elder fruitstone (ASDU; Appendix 9). A sample of oat grains from F95 were dated to AD 937–1213 (Beta 241293, Appendix 5). All three pits (F38, F40 and F93) and the posthole F87 lay underneath the burnt spread (F42), although it appears to have been heavily disturbed by ploughing and root activity.

To the western side of Area C, approximately 11m west of the central complex, another phase of activity was identified. A series of thin deposits characterized this area, which spread into irregular-shaped tree roots. The largest spread (F117) measured 7.5m x 7m x 0.05m depth and consisted of a dark grey silty-clay. Smaller associated spreads (F77, F78 and F115) filled small tree boles, each measuring on average 1.1m x 1.1m with a maximum depth of 0.14m. A soil sample was taken from spread (F78). Charcoal, which has been identified as oak, alder and willow/poplar and a single uncharred white water lily seed was recovered from this sample. A sample of willow/poplar was dated to 3948–3661 BC (Beta 241292, Appendix 5).

A hollow flint scraper (A008/012:77:1) and two pieces of flint debitage (A008/012:77:1–2) were recovered from the spread F77. A flint convex scraper (A008/012:78:1) and a single piece of flint debitage (A008/012:78:2) were recovered from F78 and a concave flint scraper (A008/012:8:2) was discovered in the loose (F8) near the concentration of spreads (F77, F78 and F115).

Other Features

A number of root boles were recorded in the vicinity suggesting that this area was heavily root disturbed. A regular field drain system consisting of at least two phases ran across the site. Running roughly east to west were F35, F50, F52, and F34, and running roughly north to south were F44, F72, F97, F81, and F111. A post-medieval field boundary (F34), which had a large number of placed angular stones on the base, ran diagonally along the southwestern edge of the trench. This measured 1.6m across and had a depth of 0.87m. A flint fragment (A008/012:35:1) was found in the upper fill (F35) of this boundary.

Area D

A narrow area approximately 1m wide x 17m long was excavated across an area of undulating ground believed to represent ridge and furrow activities. The crest of each ridge averaged 6.5m apart whilst the extant furrows averaged 0.2m deep on the surface.

2.2 Finds

The majority of the artefacts recovered from Clowanstown 2 were unstratified flint and chert implements in Areas A, B and C and were mainly found in topsoil, the base of small tree boles or root systems. A total of twenty-two lithic artefacts were recovered (eighteen were flint, three were chert and one was crystal) and were identified as eight retouched artefacts, two blades, five flakes, one core and six pieces of debitage. These pieces were classified and examined by Farina Sternke (for detailed analysis see Appendix 7). Sternke divided the retouched artefacts into four groups that consisted of three scrapers (from Area C) which included a classic flint concave scraper (A008/012:8:2), a classic flint hollow scraper (A008/012:77:1) and a classic flint convex scraper (A008/012:78:1), a chert arrowhead (A008/012:5:1-Area B), a possible flint plano-convex knife (A008/012:5:2-Area B) and three miscellaneous objects (Area B), which most likely formed some sort of flint scraper (A008/012:76:5) or naturally flint backed knives (A008/012:5:4a-d and A008/012:5:5). The flint blade A008/012:5:3 (Area B) displayed characteristics of bipolar technology whilst the flint blade A008/012:6:1 (Area A) was produced using the single platform technology and may have functioned as a knife. Two of the five flakes (Area B) were produced on single platform cores (A008/12:5:7 (flint) and A008/012:76:3 (chert)) whilst the remaining three were produced using the bipolar-on-an-anvil method (A008/012:7:1 (flint), A008/012:76:1 (flint) and A008/012:76:2 (chert)). The flake A008/012:5:7 was very broad and it may have been intended as a hollow scraper. The core (A008/012:5:6 (Area B)) was a crystal reduced using a bipolar-on-an-anvil technique whilst the six pieces of flint debitage (A008/012:16:1, A008/012:76:4 (Area B) and A008/012:35:1, A008/012:77:2, 3, A009/012:78:2 (Area C)) would suggest that limited knapping occurred within or within the vicinity of the site. These finds were probably associated with Neolithic hunting and food preparation (See Appendix 2 & Illustrations 1-2).

Two cattle molars were also recovered from the site-one from F33 and one from F31.

3 DISCUSSION

3.1 Form and function

The presence of so many small tree boles in Areas A–C is consistent with scrub development, rather than full forest cover. The discovery of relatively thick alluvial clays across the base of many of these features suggest that the clays formed when the features were open, rather than filtering down the root system. The similarity of the stratigraphical sequence in each tree bole and root system suggests a single event may have caused the up-rooting of many of these. Natural wind-fall is more common in larger specimens and is rarely so cataclysmic whereas

deliberate clearance is more likely to be systematic. The Neolithic tools found in and around the root systems were found in association with material dating from the Early Neolithic, demonstrating a use of the area and possibly the actual tree boles from this date. It may be that the scrub was ring-barked to facilitate its deliberate clearance to provide fuel and possibly for later agricultural practice. Either way the loosened soil in the root boles appears to have been exploited to create pits and hearths with relative ease.

Similar root systems have demonstrated trees and shrubs pre-dating numerous burnt mounds. Pollen studies, demonstrating related deforestation at a number of burnt mounds in the West of Ireland (Brown & Hatton 2004, 3) and the UK (Bates & Wiltshire 2001), suggest that these trees and shrubs may have been uprooted deliberately during field clearance to provide fuel for the burnt mound activity. The construction of this and many other burnt mound complexes, may be associated with the creation of agricultural or pastoral land close to water (Brown & Hatton 2004, 26), as well any functions related to cooking, washing and other more industrial processes.

The small lithics assemblage showed a prevalence of blades and scrapers as well as one arrowhead which, with the animal teeth and fragment of calcined bone, suggest that hunting, meat preparation and cooking were all activities likely to have taken place at Clowanstown 2. The survival of only the most durable or calcined parts of bone is likely due to its poor survival in a relatively free-draining environment, but may also indicate that only a relatively small amount of meat was processed on site. The marginal wetland scrub is likely to have proved a rich hunting ground with water birds and animals coming to water. The small number of flint and chert flakes and debitage appear consistent with repairs and replacement of existing tools.

The Neolithic burnt stone spreads are notably associated with a hearth rather than a trough, suggesting that they were used to create a dry heat, possibly to roast meat. The Early Bronze Age burnt mounds and spreads were associated with two troughs (Area C) and a relatively deep pit (F28, Area A). It is not certain if these would have held water, but it seems likely given their relative depth. This distinction between wet and dry hot-rock technologies is not borne out at Clowanstown 1 (A008/011), 600m to the NNW, where substantial troughs appear to have been a key element throughout the Neolithic period.

The ridge and furrow (Area D) appears to be consistent with the apparent shrinkage of the bog shown between the 1654 Down Survey and the 1st Edition OS map of 1836 (County

Meath Sheet 38), suggesting that it was constructed as an effective drainage feature at this time.

Analysis of the environmental remains also allows us a minor insight into the surrounding environment at Clowanstown during the time in which it was occupied. Analysis of the charcoal samples recovered would suggest that the local environment included similar species at various stages throughout prehistory and the medieval period. Oak, alder and poplar/willow were identified in the sample dated to the early Neolithic (F78), ash, oak, blackthorn, hazel, elm and alder were identified in the samples dating to the early Bronze Age (F41, F47 and F70) whilst oak, alder, ash, hazel and maloideae (hawthorns, whitebeams, apple and pear) were identified in the sample dated to the Medieval period (F95; ASDU; Appendix 9). The above species would suggest that the local landscape consisted of a mixed deciduous woodland of oak, ash and elm with hazel, blackthorn and maloideae growing as understorey trees or along the margins of the woodland (ibid). Alder, which favoured wet conditions would suggest the presence of a wetland nearby (typical of the location of burnt stone spreads and associated features) and would have grown as individual stands or in carr vegetation. The various changes in proportion and species identified within each identified time period may reflect changes in the local woodland. Oak and alder were the two species common to each identified period. This is not surprising as a recent study of charcoal recovered from similar Bronze Age sites in Central and Western Ireland would suggest that oak, alder, hazel and ash were the main species selected for fuel on burnt mound sites (Grogan *et al* 2007). It is significant to note that all four of these species were identified within the samples dated to the Bronze Age (ash, oak and hazel in F41 and ash, oak, alder and alder in F47 and F70). It has been suggested in Grogan 2007, that this choice of fuel reflects the marginal location of burnt mounds and associated features, between wet and dryland areas.

Charred seeds were absent from the clay spread dated to the Neolithic (F78). This is not surprising as this feature has been attributed to tree clearance. Charred grains and weed seeds were recovered from two (F41 and F47) of the three samples dated to the early Bronze Age and consisted of oat grains, barley grains (1 hulled), unidentified grains and fat-hen seeds and a corn mari-gold achene. An uncharred white water-lily was recovered from F47 and F70. A slightly more diverse range of uncharred grains and seeds were recovered from the Medieval context F95 - as with earlier contexts, oat, barley and unidentified grains and fat-hen seeds were identified. A single grain of wheat and a single hazelnut shell fragment were also identified. Uncharred remains from this context also included a white water-lily seed and a hazel fruitstone. For numerous reasons (poor condition, absence of diagnostic chaff and small quantity of grains), the barley grain could not be differentiated between the 6-row and 2-row

variety. O Brien (Appendix 9) has however pointed out that hulled barley has been cultivated in Ireland throughout prehistory (Monk 1986). It was also not possible to say if the oat species were wild or cultivated, although oat was not widely cultivated in Ireland until the early medieval period (Johnston 2007) so it is likely that the oat species recovered from the Bronze Age contexts were therefore wild. It was not possible to ascertain if the wheat grain from F95 was from a wild or cultivated species in the absence of diagnostic chaff. It has however been suggested that bread wheat was an important cereal crop during this period (Monk 1986) and therefore it is possible that cultivated wheat species were present. A small quantity of weed seeds were also recovered-fat-hen seeds were recovered from the Bronze Age contexts (F41, F47) and the Medieval contexts (F95), whilst a single corn marigold seed was also recovered from F41. It is likely that these weed seeds grew amongst the aforementioned cereal crops (ASDU; Appendix 9). The single hazel nut shell fragment recovered from F95 would suggest that wild foods were gathered as a source of food during the later phase of occupation of the site (ibid).

3.2 Date and sequence

The earliest activity recorded at Clowanstown 2 appears to be at the start of the Neolithic, 3948-3661 BC (Beta 241292), when some sort of scrub clearance is attested in Area C.

Later Neolithic activity (Area B) included a hearth and the use of a quantity of burnt stone, at least partly to roast meat 3496–3103 BC (Beta 241291: See Appendix 5). The wide spread of dates appears to show that the site was visited and returned to, over a long period. The worked flint and chert is associated with Neolithic and possibly Early Bronze Age activity (Sternke, Appendix 7), including probable hunting and meat preparation.

The burnt stone spreads and burnt mound (Area A and C) associated with pits and troughs appear to have had a long period of use in the Early Bronze Age sometime between 2576 and 2026 BC, although one pit (F38) produced a medieval date of AD 937–1213 (Beta 241293: Appendix 5). Pit F38 appeared to be similar to its neighbouring Early Bronze Age pits in form, fill and function and it is possible that the sample has become contaminated with more modern material though no origin for this is obvious.

The recovery of a significant quantity of flint/chert artefacts is also important with regard to dating this site and would correspond with the majority of radiocarbon dates recovered from various features within the site. It has been concluded by Sternke that the artefacts recovered from this site were typologically and technologically diagnostic (Appendix 7). She has noted that the hollow-based arrowhead, the plano-convex knife, the hollow and concave scrapers

and retouched artefacts all date to the second half of the Neolithic (O' Hare 2005, Woodman *et al* 2005) and that the use of the single platform and bipolar-on-an-anvil reduction technology supports this dating (ibid).

As has become increasingly well documented, the general lack of upstanding burnt mounds in Counties Meath and Louth appears to be more representative of intensive farming and development practice in the east than such a massive bias in the monuments distribution. The discovery of numerous ploughed-out burnt mounds in these counties in recent times has forced a new appraisal of the western bias of the monument in Ireland. With the discovery of a small number of Neolithic burnt mounds in the East (Clowanstown 1 (A008:11), Claristown 1 (Russell & Corcoran 2002) Lisdornan 3 (Russell & Corcoran 2001) Moorechurch 1 (Russell, 2001) and Cherryville 7 (Breen 2001)) the origins of the monument are brought into question, together with the date of many assumed Bronze Age monuments. In this light the importance of newly discovered burnt mounds in Co. Meath demonstrating such broad dates cannot be understated.
Scrub clearance may also be a feature of Late Neolithic and Early Bronze Age developments at Clowanstown 2.

The ridge and furrow (Area D) appears to be consistent with the apparent shrinkage of the bog shown between the 1654 Down Survey and the 1st Edition OS map of 1836 (County Meath Sheet 38), and maybe attributed to this period, while the stone-filled field drains are likely to have been constructed in the 19th century to drain the soil to allow its use as pasture.

4 CONCLUSIONS

Clowanstown 2, A008/012, was excavated from August to November 2006 by Matt Mossop (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council NRDO and the NRA. The marginal scrub at Clowanstown 2 appears to have attracted people from the Early Neolithic to the present day. The proximity to water, good hunting and possibly fishing grounds as well as the relatively easy clearance of the scrub all appear to have played a part in its use. The underlying pits and hearths appeared frequently to have reused root systems and small tree-boles and may be related to clearance in the Neolithic and Early Bronze Age.

5 REFERENCES

Bates, S & Wiltshire, P 2001 'Excavation of a burnt mound at Feltwell Anchor, Norfolk 1992', *Norfolk Archaeology* 153, 389–414.

Breen, T 2001 'Site 7, Cherryville, Kildare 2001:618', *in* I Bennett (ed.), *Excavations 2001*. Wordwell, Dublin.

Brown, AG & Hatton, J 2004 *Environmental Analyses of Samples from the BGE Gas Pipeline Excavations, Ireland*. Unpublished report prepared for Magaret Gowen & Co Ltd.

Down Survey 1654.

Dempsey, J 2004 *Report on Archaeological Assessment at Testing Area 4, Clowanstown, Trevet Co. Meath, Licence Number: 04E0418*. Unpublished report prepared for Archaeological Consultancy Services Ltd.

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

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

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

O' Hare, M.B., 2005 *The Bronze lithics of Ireland.* Unpublished PhD thesis. Queen's University of Belfast

Ordnance Survey six inch first edition of 1836, County Meath Sheet 38.

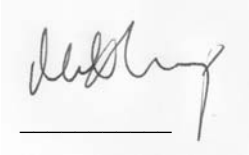
Russell, I 2001 *Moorechurch 1 Licence Number: 01E0385.* Unpublished report prepared for Archaeological Consultancy Services Ltd.

Russell, I & Corcoran, E 2001 *Lisdornan 3 Licence Number: 01E0415.* Unpublished report prepared for Archaeological Consultancy Services Ltd.

Russell, I & Corcoran, E 2002 *Claristown 1 Licence Number: 01E0038.* Unpublished report prepared for Archaeological Consultancy Services Ltd.

Woodman, P.C., Finlay, N. and E. Anderson, 2006 *The Archaeology of a Collection: The Keiller-Knowles Collection of the National Musuem of Ireland.* National Museum of Ireland Monograph Series 2. Wordwell, Bray

Signed:



Matt Mossop
October 2008

APPENDIX 1 *Context Details*

Clowanstown 2: A008/012											
No	**Type**	**Fill of/ Filled with**	**Strat above**	**Strat below**	**Description**	**Interpretation**	**Group**	**Artefacts**	**Animal bone**	**Cremated bone**	**Samples**
1-3					used previously during Topsoil Assessment		Areas A-C				
4	subsoil	N/A	N/A	5	Varied from a firm to a compact light brownish-orange silty clay to a mixed brownish grey gravely silty clay	subsoil	Areas A-C				
5	topsoil	N/A	4	N/A	loose, mid to dark-greyish brown silt. 0.30m depth	topsoil	Areas A-C	flint and quartz			
6	deposit	N/A	5	5	loose, mid to dark-greyish brown silt derived from topsoil stripping	loose/ cleaning layer	Area A	flint			
7	deposit	N/A	5	5	loose, mid to dark-greyish brown silt derived from topsoil stripping	loose/ cleaning layer	Area B	flint, pottery			
8	deposit	N/A	5	5	loose, mid to dark-greyish brown silt derived from topsoil stripping	loose/ cleaning layer	Area C	pottery			
9	cut	10	4	10	linear cut, sharp break of slope at top, vertical sides leading to a sharp break of slope to a flat base (21m x 0.50m x 20m). Runs E-W. Parallel to 19	cut of field drain	Area C				
10	deposit	9	9	5	compacted, dark-greyish brown gravely clay with orange redeposit. Occasional charcoal flecks and angular stones. 0.20m depth	deposit of field drain 9	Area B				
11	cut	12	4	12	linear cut, sharp break of slope at top, vertical sides leading to a sharp break of slope to a flat base (7m x 0.45m x 20m). Runs N-S.	cut of field drain	Area B				
12	deposit	11	11	5	firm, mid-greyish brown silty clay with moderate small angular stones. 0.20m depth	deposit of field drain 11	Area B				
13	cut	14	4	14	linear cut with gradual break of slope top, concave sides leading to gradual break of slope with a concave base (6.00m x 1.50m x 0.18m). Runs E-W.	cut of possible medieval field boundary	Area B				

14	deposit	13	13	5	loose, light-grey clay with moderate small sub rounded stones. 018m depth	deposit of possible medieval field boundary	Area B				
15	cut	85, 16	4	85	sub-circular cut with a gradual break of slope top, slightly concave sides with an imperceptible break of slope leading to an irregular base. (2.00m x 1.50m x 019m)	cut of hearth in former root bole	Area B				
16	deposit	15	85	5	moderately compact, mid-greyish brown silty clay with occasional small angular stones. 0.10m depth	upper fill of hearth 15	Area B	flint			
17	NON-ARCHAEOLOGICAL				sub-oval cut with irregular, undercut sides and uneven base. (1.00m x 2.00m x 0.20m)	cut of tree bole	Area B				
18	NON-ARCHAEOLOGICAL				Loose mid-brown silty clay with frequent charcoal flecks.(1.00m x 2.00m x 0.20m)	burnt spread within tree bole 17	Area B				
19	cut	20	4	20	linear cut, sharp break of slope at top, steep sides leading to a sharp break of slope to a flat base (7m x 0.35m x 20m). Runs E-W. Parallel to 9.	cut of field drain	Area B				
20	deposit	19	19	5	Compacted, mid orangy-brown, clayey silt with both angular and sub-rounded stones (7m x 0.35m x 0.20m)	fill of field drain 019	Area B				
21	cut	22	4	22	linear cut of field drain similar to 19 and 9. (21.65m x 0.45m). Runs E-W.	cut of field drain	Area B				
22	deposit	21	21	5	Moderately compact, mid greyish-brown with 5% angular stones (21.65m x 0.45m)	fill of field drain 21	Area B				
23	deposit	N/A	4	5	Irregular spread of moderately loose mid greyish-brown silty clay with frequent flecks of charcoal and frequent snail shells. (2.50m x 1.10m x 0.30m). Cut by field drain 19.	burnt spread in a tree bowl	Area B				
24	deposit	N/A	4	5	Irregular spread, firm, black to dark brown charcoal stained silty clay with lenses of mid orangey brown. Occasional flecks of charcoal and decomposed sandstone. Moderate angular to rounded stones. (2.50m x 2.20m x 0.10m)	burnt spread in a tree bowl	Area B				

25	NON-ARCHAEOLOGICAL				Sub-oval cut with irregular sides and base. (2.20m x 1.30m x 0.27m)	cut of tree bole	Area B				
26	NON-ARCHAEOLOGICAL				loose, light brownish-grey clay with occasional rounded stones (2.20m x 1.30m x 0.27m)	fill of tree bole 25	Area B				#26:1 nothing
27	deposit	34	98	36	loose, dark brownish-grey silty clay with small sub angular stones. (6.10m x 0.27m x 0.70m)	slump material of linear field boundary 34	Area C				
28	cut	29, 70, 71	4	71	sub-oval cut with concave sides and base. (1.95m x 0.81m x 0.31m)	cut of sub-oval pit	Area A				
29	deposit	28	70	5	friable, black/charcoal stained silt with moderate sub-angular stones. (1.90m x 0.81m x 0.05m)	upper fill of sub-oval pit 28	Area A				
30	NON-ARCHAEOLOGICAL				Irregular shaped pit with sharp sides leading to an irregular base. (1.98m x 1.10m x 0.88m)	cut of tree root	Area A				
31	NON-ARCHAEOLOGICAL				Friable, black/charcoal stained silt with occasional small pebbles, possibly derived from nearby hearth 28. (1.98m x 1.10m x 0.22m)	fill of tree root 30	Area A				
32	NON-ARCHAEOLOGICAL				Irregular shaped with rounded corners and an uneven base. (4.00m x 3.40m x 0.35)	cut of tree bole containing burnt material	Area A				
33	NON-ARCHAEOLOGICAL				Friable dark brown/charcoal stained clayey silt with moderate sub-angular stones and occasional charcoal flecks. (4.00m x 2.00m x 0.07m)	fill of tree bole 32	Area A				#33:1 nothing
34	cut	27, 35, 36, 98, 99	4	98	linear with sharp break of slope top, concave sides leading to a gradual break of slope with a flat base. Runs NW-SE. (6.10m x 1.60m x 0.87m)	cut of possible post medieval field boundary	Area C				
35	deposit	34	27	5	Loose, mid-brown silty clay. (6.10m x 0.90m x 0.27m)	upper fill of boundary 34	Area C	flint			
36	deposit	34	98	27	Mid brown grey silty clay with occasional sub-angular stones. (6.10m x 0.44m x 0.60m)	fill of boundary 34	Area C				
37	cut	109, 110, 113	4	113	linear with sharp sides leading to a flat base. (5.12m x 0.63m x 0.47m). Runs NE-SW.	cut of field drain	Area C				

38	cut	39, 95	4	95	Sub-circular with sloping sides leading to a flat base (1.80m x 1.50m x 0.33m)	cut of circular pit	Area C				
39	deposit	38	95	5	Loose, mid grey clay with 2% angular and sub-angular stones. (1.70m x 1.40m x 0.08m)	fill of circular pit 38	Area C				
40	cut	41	4	41	Sub-circular, with a gradual break of slope leading to a rounded base. (1.30m x 0.14m depth)	cut of circular pit	Area C				
41	deposit	40	40	5	Loose black/charcoal stained silty clay with frequent burnt sub-angular stones. (1.30m x 0.14m depth)	fill of circular pit 40	Area C				#41:1 4g charcoal, seeds
42	deposit	87	87, 4	5	Irregular spread of loose, dark grey silty clay with 1% sub-angular stones, occasionally burnt. Occasional charcoal flecks. (6.00m x 5.00m 0.08m)	irregular natural waterborne spread	Area C				
43	deposit	93	93	5	Loose, black/charcoal stained silt containing 10% burnt sub-angular stones. (diameter 0.97m x 0.20m depth)	fill of oval pit 93	Area C				
44	cut	45	4	45	Linear with a gradual break of slope top with concave sides leading to a rounded base. (22.70m x 0.38m x 0.16m). Runs NE-SW. Cuts 46, 50, 55 and 105	cut of field drain	Area C				
45	deposit	44	44	5	Moderately compacted, dark grey silty clay with frequent sub-angular stones. (22.70m x 0.38m x 0.16m)	fill of field drain 44	Area C				
46	deposit	105	105	5	Loose dark grey silty clay containing sub-angular burnt stones. (2.60m x 2.54m x 0.23m). Cut by 44	burnt deposit cut by 44, fills tree bowl 105	Area C		#1 animal bone		
47	deposit	100	100	5	Moderately compacted, black to dark grey silty clay with frequent angular burnt stones. (2.30m x 1.20m x 0.41m)	fill of possible pit/trough 100	Area C				#47:1 nothing
48	cut	49, 101	4	101	Sub-circular with a gradual break of slope top leading to a rounded base. (Diameter 1.20m x 0.15m depth)	cut of shallow circular pit	Area C				
49	deposit	48	101	5	Loose, black/charcoal stained silt with frequent sub-angular burnt stones. (Diameter 1.20m x 0.15m depth)	fill of circular pit 48	Area C				

50	cut	51, 84	4	84	Linear with vertical, slightly stepped sides with a sharp break of slope leading to a flat base. (22.40m x 0.45m x 0.32m). Runs NW-SE. Cut by 44 and cuts 54	cut of field drain	Area C				
51	deposit	50	84	5	Moderately compacted, brownish-grey silty clay with occasional sub-angular stones. (22.40m x 0.45m x 0.21m)	fill of field drain 50	Area C				
52	cut	53	4	53	Linear with vertical sides leading to flat base. (16.58m x 0.42m).Runs E-W. Unexcavated. Cut by 50.	cut of field drain	Area C				
53	deposit	52	52	5	Moderately compacted, dark brown silty clay with moderate angular stones. (16.58m x 0.42m). Unexcavated.	fill of field drain 52	Area C				
54	deposit	N/A	4	5	Firm, dark grey silty clay deposit, containing decomposed burnt sub-angular stones with occasional charcoal. (2.20m x 1.70m x 0.10m). Cut by 50.	dark grey burnt spread	Area C				
55	cut	56	4	56	Linear with stepped sides, sharp on the sw side and more gradual on the ne side. Flat base. (19.80m x 0.60m x 0.35m).Runs NW-SE. Cut by 44.	cut of field drain	Area C				
56	deposit	55	55	5	Loose, dark brown silty clay with frequent sub-angular stones at the base. (19.80m x 0.60m x 0.35m)	fill of field drain 55	Area C	green glass fragment			
57	deposit	N/A	4	5	Sub-circular deposit consisting of moderately compacted, dark greyish/black clayey silt. (1.45m x 0.62m x 0.30m)	dark grey spread	Area C				
58	cut	59	4	59	Linear field drain. Unexcavated. (9.20m x 0.41m). Runs NE-SW	cut of field drain	Area C				
59	deposit	58	58	5	Firm, mid brownish grey silt with frequent small angular stones. (9.20m x 0.41m).	fill of field drain 58	Area C				
60	cut	61	67	61	Linear cut of field drain. (21.50m x 0.40m). Unexcavated. Runs NE-SW. Cuts 064 and 079. Cut by 62.	cut of field drain	Area A				

61	deposit	60	60	5	Loose mid brown clayey silt containing occasional small sub-rounded and sub-angular stones. (21.50m x 0.40m).	fill of field drain 60	Area A				
62	cut	63	4	63	Linear cut of field drain (2.10m x 0.40m). Runs NW-SE. Cuts 60, 64 and 66. Unexcavated.	cut of field drain	Area A				
63	deposit	62	62	5	Loose, mid brown clayey silt with occasional sub angular stones (2.10m x 0.40m).	cut of field drain 62	Area A	orange ceramic pipe frag			
64	cut	65	4	65	Linear field drain.(9.70m x 0.40m). Runs E-W. Cut by 62 and 060. Runs parallel to 79.	cut of field drain	Area A				
65	deposit	64	64	5	Loose, mid brown silty clay with small sub-angular stones. (9.70m x 0.40m).	fill of field drain 64	Area A				
66	cut	67	4	67	Linear with sharp break of slope top, vertical sides leading to a concave base. (6.10m x 0.38m x 0.16m). Runs NE-SW. Cut by 61.	cut of field drain	Area A				
67	deposit	66	66	60	Loose, dark brown silt with 1% small sub-angular stones at the base.(6.10m x 0.38m x 0.16m).	fill of field drain 65	Area A				
68	NON-ARCHAEOLOGICAL				Friable, dark brown peaty silt with moderate charcoal and occasional small pieces of decomposed sandstone. 0.12m depth	fill of tree bole 32	Area A				
69	NON-ARCHAEOLOGICAL				Soft, light brownish grey silt. 0.05m depth	fill of tree bole 32	Area A				
70	deposit	28	71	29	Soft brown silty clay (1.90m x 0.81m x 0.17m)	fill of oval pit 28	Area A				#70:1 nothing
71	deposit	28	28	70	Soft grey clay (1.50m x 0.60m x 0.12m)	primary fill of oval pit 28	Area A				#71:1 <1g charcoal
72	cut	73, 92	4	92	Linear with sharp break of slope top and concave sides leading to a flat base. (5.60m x 0.36m x 0.20m). Runs N-S	cut of possible field drain or field boundary	Area C				
73	deposit	72	92	5	Loose, brown silty clay. (5.60m x 0.31m x 0.12m)	fill of field drain or boundary 72	Area C				
74	cut	75	4	75	Linear with vertical sides(20m x 0.45m) Runs N-S. Unexcavated. Cut by 9 and parallel to 11	cut of field drain	Area B				
75	deposit	74	74	5	Compact, dark brownish silty clay with frequent small stones and pebbles. (20m x 0.45m)	fill of field drain 74	Area B				

76	NON-ARCHAEOLOGICAL				Firm, mid to dark grey silty clay deposit with moderate charcoal lumps and flecks. Occasional angular pebbles. (2.00m x 0.60m x 0.18m)	dark grey clay deposit in tree root	Area B	flint debitage, chert			#76:1 6g charcoal
77	NON-ARCHAEOLOGICAL				Loose, light yellowish grey clay with 2% sub-angular and sub-rounded stones. (1.29m x 1.22m x 0.03m)	small natural waterborne clay deposit in small tree bole	Area B	flint scraper			
78	NON-ARCHAEOLOGICAL				Loose, light yellowish grey clay with 1% sub-rounded stones. (1.21m x 0.88m x 0.10m). Similar to 77	small natural waterborne clay deposit in small tree bole	Area B	flint			#78:1 1g charcoal
79	cut	80	4	80	Linear field drain parallel to 064. Runs E-W. (9.8m x 0.30m). Cut by 60	cut of field drain	Area A				
80	deposit	79	79	5	Loose, mid brown clayey silt with small sub-angular and sub-rounded stones (9.8m x 0.30m)	fill of field drain 74	Area A				
81	cut	82, 83	4	83	Linear with sharp break of slope top, concave side with a flat base.(2.54m x 0.79m x 0.40m). Runs NE-SW.	cut of field ditch	Area C				
82	deposit	81	83	5	Loose, mid brown clay with small angular stones (2.54m x 0.79m x 0.17m)	backfill of field dtich 81	Area C				
83	deposit	81	81	82	Compacted, dark grey silty clay (2.54m x 0.79m x 0.26m)	primary fill of field ditch 81	Area C				
84	deposit	50	50	51	Loose, mid brown silt (22.40m x 0.28m x 0.10m)	primary fill of field drain 50	Area C				
85	deposit	15	4	16	Firm, dark grey/charcoal stained silty clay, with 20% small angular stones and frequent flecks of charcoal. (1.70m x 1.50m x 0.09m)	primary fill of hearth in former root bole 15	Area B				#85:1 56g charcoal
86	NON-ARCHAEOLOGICAL				Loose, dark greyish black/charcoal stained clayey silt with 1% burnt stones. (0.55m x 0.26m x 0.03m)	burnt layer at base of tree bole	Area C				
87	cut	42	4	42	Keyhole shaped with a sharp break of slope top with concave sides and a slightly rounded base (1.20m x 0.48m x 0.16m)	cut of possible posthole/pit	Area C				
88	NUMBER NOT USED										
89	cut	90, 91	4	91	Sub-rectangular with rounded corners, sharp break of slope top with concave sides, more gradual on the SE and sharper on the NW. Flat base. (1.52m x 0.42m x 0.37m)	cut of rectangular pit	Area C				
90	deposit	89	91	5	Moderately compacted, dark grey clayey silt with occasional lumps of charcoal, shells, and small sub-angular stones. (1.52m x 0.42m x 0.15m)	upper fill of rectangular pit 89	Area C				

91	deposit	89	89	90	Very compacted, grey silty clay with occasional medium sub-angular stones. (1.39m x 0.42m x 0.21m)	primary fill of rectangular pit 89	Area C				
92	deposit	72	72	73	Compact, dark grey sandy-silt with very small angular pebbles and granules (5.60m x 0.27m x 0.11m)	primary fill of field drain or boundary 72	Area C				
93	cut	43	4	43	Oval with gradual break of slope and concave sides. Flat base. (0.87m x 0.49m x 0.12m)	cut of oval pit	Area C				
94	deposit	N/A	4	42	Loose, grey clay (1.17m x 0.55m x 0.16m)	grey deposit	Area C				
95	deposit	38	38	39	Firm, dark charcoal stained silty clay with 10% frequent sub-angular and sub-rounded burnt stones (1.65m x 1.55m x 0.30m)	primary fill of circular pit 38	Area C				#95:1 nothing
96	deposit	97	97	55	Loose, dark grey sandy silt with occasional small angular stones (7.81m x 0.60m x 0.16m)	fill of field drain/ boundary 97	Area C				
97	cut	96	4	96	Linear with sharp break of slope top with concave side on the west, irregular on the east. Gradual break of slope at bottom leading to a flat base. (7.81m x 0.60m x 0.16m). Cut by 55	fill of field drain/ boundary	Area C				
98	deposit	34	34	27	Loose, reddish clay with frequent large sub-angular stones (0.67m depth)	primary fill of medieval field boundary 34	Area C				
99	deposit	34	34	98	Sub-angular stones on base of field boundary (c0.30m x c0.30m)	stone deposit on base of medieval field boundary 34	Area C				
100	cut	47	4	47	Sub-oval with gradual break of slope on the SW side, sharper on the NW side with concave sides leading to a flat base (2.30m x 1.20m x 0.41m)	cut of possible pit/trough	Area C				
101	deposit	48	48	49	Loose dark brown clayey silt with 1% sub-angular stones. 0.02m depth	primary fill of 48	Area C				
102	cut	103,104	4	104	Sub-oval, with sharp sides on the west end, more gradual on the east. Slightly concave side on east, vertical on west with an uneven base.(0.90m x 0.50m x 0.15m)	cut of tree bowl	Area B				
103	deposit	102	104	24	Firm, black charcoal stained silt with moderate charcoal flecks and lumps. Very occasional cremated fragment. 0.09m depth	upper fill of tree bowl 102	Area B				

104	deposit	102	102	103	Firm but friable light orangey-grey silty clay with moderate root strands and occasional decayed twigs.0.13m depth	primary fill of tree bowl 102	Area B				
105	NON-ARCHAEOLOGICAL				Irregular in plan (2.0m x 2.00m x 0.52m). Filled with deposit 046. Cut by 44	cut of tree bole	Area C				
106	NON-ARCHAEOLOGICAL				Sub-oval with irregular sides and base. (1.17m x 0.55m x 0.16m)	cut of tree bole	Area C				
107	NON-ARCHAEOLOGICAL				Oblong with irregular sides and concave base. (2.50m x 0.80m x 0.30m)	cut of natural root	Area C				
108	deposit	107	107	5	moderately compacted, black charcoal stained silty clay with frequent small burnt angular stones (2.50m x0.80m x 0.12m)	burnt stone deposit	Area C				
109	deposit	37	113	5	Loose, dark grey clay (5.12m x 0.63m x 0.22m)	upper fill of field drain 37	Area C				
110	deposit	37	37	113	Medium sized sub-angular stone deposit on base of field drain 037. (c.0.17m xc 0.32m). 0.25m depth	stone deposit on base of field drain 47	Area C				
111	cut	112	4	112	Linear with sharp break of slope top, concave sides leading to a flat base. (9.50m x 0.75m x 0.27m)	cut of post-medieval boundary ditch	Area C				
112	deposit	111	111	5	Loose, brown silty clay with 1% sub-angular small stones (9.50m x 0.75m x 0.27m)	fill of post-medieval boundary ditch 111	Area C				
113	deposit	37	110	109	Loose, dark brown silty clay with occasional sub-angular stones at the sides and base (5.12m x 0.32m x 0.25m)	cut of field drain	Area C				
114	NON-ARCHAEOLOGICAL				Sub-circular with slightly concave side and an irregular base. Filled with 115. (0.90m x 0.88m x 0.30m)	cut of tree bole	Area C				
115	deposit	114	116	5	Loose dark brownish-grey silty clay with 1% sub-angular stones (0.90m x 0.88m x 0.14m)	fill of tree bole 114	Area C				
116	deposit	114	114	115	Loose, mid grey clay with 1% sub-angular stones. 0.10 depth	fill of tree bole 114	Area C				
117	deposit	N/A	4	5	Loose, dark brownish grey silty clay (7.5m x 7.00m x 0.05m)	loose deposit	Area C				
118	deposit	N/A	N/A	119	Firm and friable, mid brown clayey silt with occasional sub-rounded stones. 0.25m depth	topsoil across Area 4	Area D				
119	deposit	N/A	120	118	Firm, dark brown clayey silt with occasional lenses of light yellowish and light orangey brown silty clay. 0.20m depth	dark humified layer	Area D				
120	deposit	N/A	121	122	soft mid yellowish brown silty sand. 0.62m depth	subsoil in Area 4	Area D				
121	deposit	N/A	N/A	120	Stiff dark greyish brown clay	boulder clay deposit	Area D				

122	cut	N/A	120	119	Linear ridges and furrows running approx NE-SW across Area 22. 6.5m - 7.2m between ridge and furrow. 0.49m depth.	cut of ridge and furrow	Area D				

APPENDIX 2 *Finds List*

Find Number	Description
A008/012:5:1	Chert, hollow-based arrowhead
A008/012:5:2	Flint possible plano convex knife
A008/012:5:3	Flint blade
A008/012:5:4a-d	Flint retouched artefact
A008/012:5:5	Flint blade, naturally backed knife
A008/012:5:6	Quartz core
A008/012:5:7	Flint flake
A008/012:6:1	Flint blade
A008/012:7:1	Flint flake
A008/012:8:1	Modern pottery, glazed body sherd
A008/012:8:2	Flint double concave scraper
A008/012:16:1	Flint debitage
A008/012:35:1	Flint debitage
A008/012:56:1	Green glass bottle base
A008/012:76:1	Flint flake
A008/012:76:2	Chert flake
A008/012:76:3	Chert flake
A008/012:76:4	Flint debitage
A008/012:76:5	Flint retouched artefact
A008/012:77:1	Flint hollow scraper
A008/012:77:2	Flint debitage
A008/012:77:3	Flint debitage
A008/012:78:1	Flint convex end scraper
A008/012:78:2	Flint debitage

APPENDIX 3 *Sample List*

Sample No	Context No	Results
26:1	26	nothing
33:1	33	nothing
41:1	41	4g charcoal, seeds
47:1	47	nothing
70:1	70	nothing
71:1	71	<1g charcoal
76:1	76	6g cremated bones
78:1	78	1g charcoal
85:1	85	56g charcoal
95:1, 2	95	nothing

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

Project	Metal Detection: M3 Clonee to North of Kells, Contract 2
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 was achieved by a program of metal detecting at ploughed and pasture fields. As per the *Method Statement for Topsoil Assessment Including Metal Detection*, metal detection of the topsoil began within Contract 2 on June 13, 2005.

2. ARCHAEOLOGICAL ASSESSMENT

2.1 Metal Detection Methodology

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

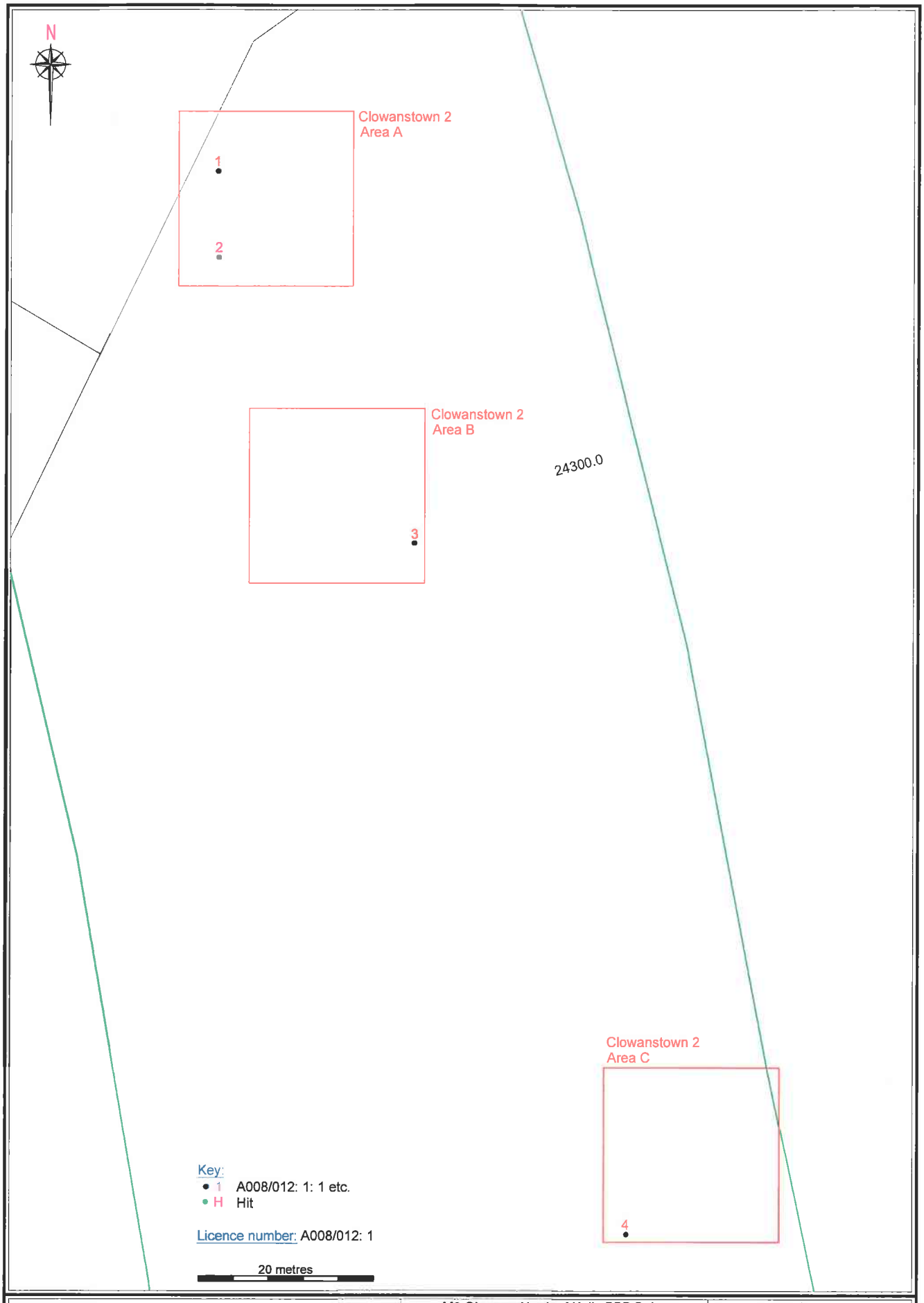
When deemed necessary, a number of pre-designated test pits were dug at various locations within the site. The test pits measured $1m^2$ and their precise position was surveyed. Each test pit was dug by hand to the depth of subsoil and the resulting loose topsoil was sifted on site for the recovery of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

2.4 Results

The first phase of metal detection dealt with the sod layer only and finds recovered were labelled as being from context 1. Initial metal detection of the Clowanstown 2 site produced a small number of 'hits' with a total of 4 'hits' recorded with 4 finds recovered. The second phase of metal detection was completed after the sod was removed and dealt with the topsoil layer only. These topsoil finds were recorded under context number 2. This second phase had a total of 6 'hits' with 6 finds collected. Field walking of Clowanstown 2 produced no further collection of finds. All of the finds recovered from metal detection were of modern date and consisted of items associated with a modern timeframe (horseshoe, a nail, etc…). A total of 27 test pits were completed with 4 flint finds recovered.

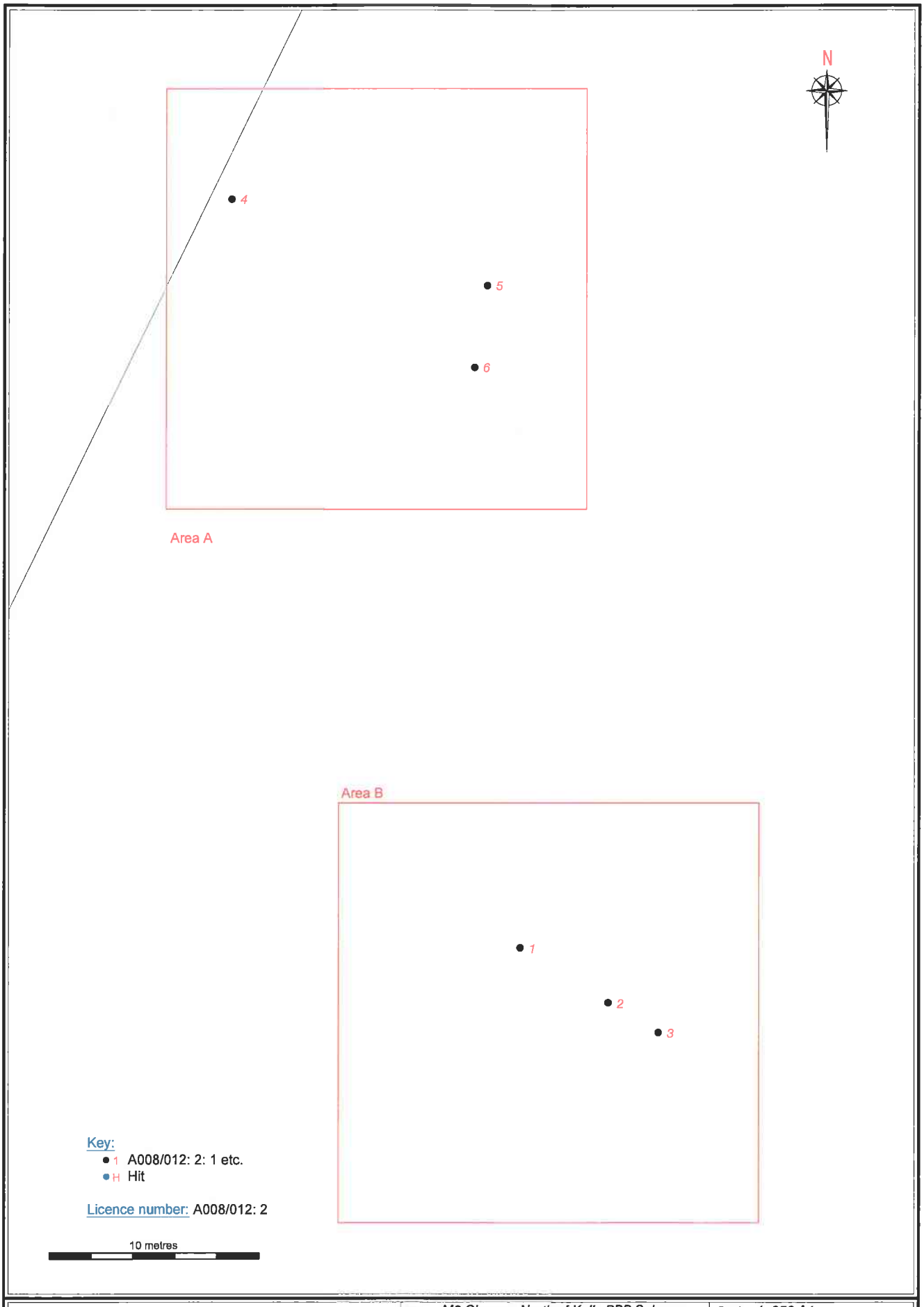
2.5 List of Finds

Find Number	Description
A008/012:1:1	Nail
A008/012:1:2	Machine part fragment
A008/012:1:3	Horseshoe fragment
A008/012:1:4	Machine part
A008/012:2:1	Nut
A008/012:2:2	Bullet cap
A008/012:2:3-5	Modern iron object/metal fragment
A008/012:2:6	Nail
A008/012:3:1	Flint
A008/012:3:2	Flint nodule
A008/012:3:3-4	2 Flint



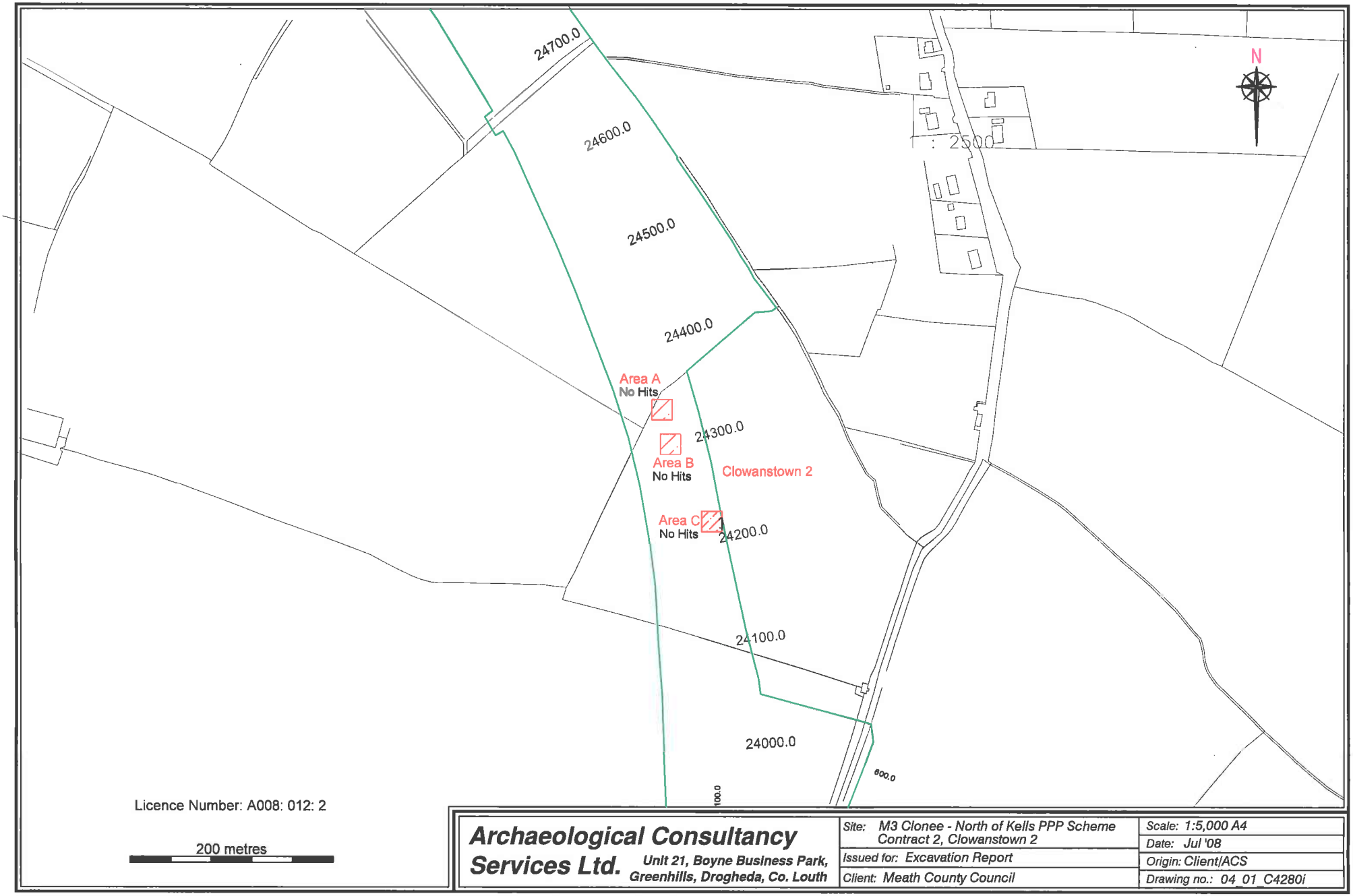
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee - North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1: 600 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C4278i

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

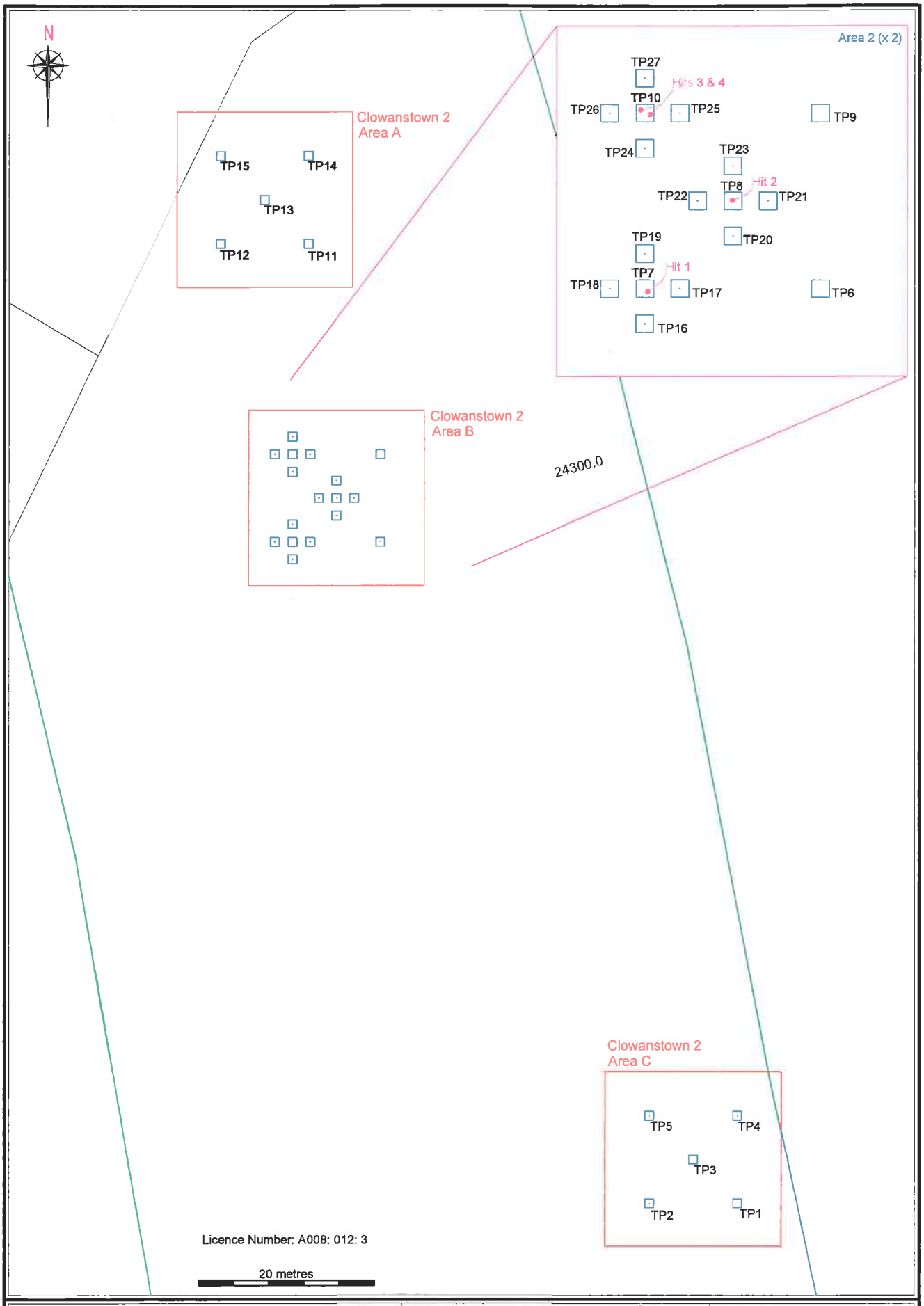


Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee - North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1: 250 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C4279i

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



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



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee - North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1: 600 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C4281i

Appendix 4, Topsoil Assessment, Figure 4: Test Pit 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
41	1	Charred material	Alder (758mg)	Beta	241288	AMS(Std)	2576-2341 BC two sigma	3960±40	-27.4
47	1	Charred material	Alder (113mg)	Beta	241289	AMS(Std)	2457-2026 BC two sigma	3770±60	N/A
70	1	Charred material	Ash (252mg)	Beta	241290	AMS(Std)	2457-2026 BC two sigma	3760±60	-24.6
76	1	Cremated bone	Osteo two small to positively identify though only small fragments suitable for dating (1843mg)	Beta	241291	AMS(Std)	3496-3103 BC two sigma	4570±40	-25.9
78	1	Charred material	Salicaceae (59mg)	Beta	241292	AMS(Std)	3948-3661 BC two sigma	5000±60	-28.1
95	2	Grains	Oat grains	Beta	241293	AMS(Std)	AD 937-1213 two sigma	970±60	-22.8

APPENDIX 6 *Wood Report: Lorna O'Donnell*

Analysis of the wood

Clowanstown 2

Co. Meath

Licence No. A008/012

By
Lorna O' Donnell
Margaret Gowen and Co. Ltd.
Job No. 06269-R1

For
Archaeological Consultancy Services Ltd.

27th July 2007

1 Introduction

1.1 One wood sample was examined from Clowanstown 2, Co. Meath. It is likely that the site dates to the prehistoric period.

2 Methodology

2.1 *Identification*

Each wood piece was identified by a first selection under a binocular microscope at a magnification of 10x-40x. This was used to discern features such as ring growth or insect channels. Samples one cell thick was taken with a razor blade from the transverse, radial and tangential planes of the wood. Analysis of thin sections was completed under a transmitted light microscope, at magnifications of 100x, 200x and 400x. The anatomical structure of the wood samples was compared to a reference collection supplied by the National Botanic Gardens and keys (Schweingruber 1978; Hather 2000).

3 Discussion

3.1 *Sample 1 Feature 69 Timber 1*

This is a tangentially split slow grown oak (*Quercus* sp.) piece, with thirteen annual rings remaining. Sapwood had been trimmed off, and only heartwood remained. It was 225mm long, 47mm wide and 10mm in depth. The piece may represent either pedunculate (*Quercus robur*) or sessile (*Quercus petraea*) oak. The pedunculate oak prefers more wet, heavier clays than the sessile (*Quercus petraea*) (Beckett 1979). Oak has also been identified in the nearby site of Clowanstown 1 (A008/011) although it is not the dominant taxa there (O'Donnell forthcoming). Oak was frequently chosen for structural material and fuel during the Neolithic and Bronze Age in Ireland, because of its strength, durability and high calorific value when burning.

References

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

Hather, J.G., 2000. *The Identification of the Northern European Woods. A guide for archaeologists and conservators*. London: Archetype Publications Ltd.

O'Donnell, L. forthcoming. Analysis of the Wood from Clowanstown 1 A008/011. Unpublished technical report for Archaeological Consultancy Services Ltd.

Schweingruber, F.H., 1978. *Microscopic wood anatomy*. Birmensdorf: Swiss Federal Institute for Forest, Snow and Landscape Research.

APPENDIX 7 *Lithic Report: Farina Sternke*

M3 Road Scheme

Farina Sternke

MA, PhD

Introduction

Twenty-two lithic finds from the archaeological investigations of a prehistoric site at Clowanstown 2, Co. Meath were presented for analysis (Table 1). The finds are associated with the remains of number of burnt spreads, pits, a hearth and a field ditch.

Methodology

All lithic artefacts are examined visually and catalogued using Microsoft Excel. The following details are recorded for each artefact which measures at least 2 cm in length or width: context information, raw material type, artefact type, the presence of cortex, artefact condition, length, with and thickness measurements, fragmentation and the type of retouch (where applicable). The technological criteria recorded are based on the terminology and technology presented in Inizan *et al.* 1999. The general typological and morphological classifications are based on Woodman *et al.* 2006. Struck lithics smaller than 2 cm are classed as debitage and not analysed further. The same is done with natural chunks.

Quantification

The lithics are eighteen worked flints, three worked pieces of chert and one worked piece of quartz crystal. Sixteen artefacts are larger than 2 cm in length and width and were therefore recorded in detail.

Provenance

The lithics were recovered from the topsoil, a ditch fill, a pit fill, root fills and spreads (Table 2).

Condition:

The lithics survive in variable condition (Table 3). Eight artefacts are incomplete and eight bear the remnants of cortex (Table 1).

Technology/Morphology:

The assemblage comprises four types of flaking products and eight retouched artefacts (Table 4).

Find No.	Context	Material	Type	Cortex	Condition	Length (mm)	Width (mm)	Thickn. (mm)	Complete	Retouch
A008/012:5:1	5	Chert	Retouched Artefact	No	Slightly Rolled	53	28	6	Yes	bifacial
A008/012:5:2	5	Flint	Retouched Artefact	Yes	Heavily Patinated	52	31	10	Yes	bifacial
A008/012:5:3	5	Flint	Blade	No	Patinated	30	11	4	No	No
A008/012:5:4a-d	5	Flint	Retouched Artefact	Yes	Burnt	55	36	10	No	left edge direct semiabrupt
A008/012:5:5	5	Flint	Retouched Artefact	Yes	Patinated	36	13	6	Yes	right edge direct semiabrupt
A008/012:5:6	5	Quartz Crystal	Core	No	Reasonably Fresh	46	18	12	Yes	No
A008/012:5:7	5	Flint	Flake	No	Patinated	24	43	4	No	No
A008/012:6:1	6	Flint	Blade	No	Burnt	47	21	8	No	No
A008/012:7:1	7	Flint	Flake	Yes	Patinated	30	17	6	Yes	No
A008/012:8:2	8	Flint	Retouched Artefact	No	Heavily Patinated	30	22	5	No	left edge direct semiabrupt, right edge inverse semiabrupt
A008/012:16:1	16	Flint	Debitage							
A008/012:35:1	35	Flint	Debitage							
A008/012:76:1	76	Flint	Flake	No	Burnt	28	21	5	Yes	No
A008/012:76:2	76	Chert	Flake	Yes	Burnt	33	25	7	No	No
A008/012:76:3	76	Chert	Flake	Yes	Reasonably Fresh	60	37	13	No	No
A008/012:76:4	76	Flint	Debitage							
A008/012:76:5	76	Flint	Retouched Artefact	Yes	Burnt	28	13	9	No	right edge direct semiabrupt
A008/012:77:1	77	Flint	Retouched Artefact	No	Heavily Patinated	25	28	4	Yes	distal direct semiabrupt
A008/012:77:2	77	Flint	Debitage							
A008/012:77:3	77	Flint	Debitage							
A008/012:78:1	78	Flint	Retouched Artefact	Yes	Heavily Patinated	37	29	6	Yes	distal direct semiabrupt
A008/012:78:2	78	Flint	Debitage							

Table 1 Composition of the Lithic Assemblage from Clowanstown 2 (E3065)

Find Number	Context	Description	Type
A008/012:5:1	5	Topsoil.	Retouched Artefact
A008/012:5:2	5	Topsoil.	Retouched Artefact
A008/012:5:3	5	Topsoil.	Blade
A008/012:5:4a-d	5	Topsoil.	Retouched Artefact
A008/012:5:5	5	Topsoil.	Retouched Artefact
A008/012:5:6	5	Topsoil.	Core
A008/012:5:7	5	Topsoil.	Flake
A008/012:6:1	6	Loose soil	Blade
A008/012:7:1	7	Loose soil	Flake
A008/012:8:2	8	Loose soil	Retouched Artefact
A008/012:16:1	16	Fill of large pit	Debitage
A008/012:35:1	35	Fill of ditch	Debitage
A008/012:76:1	76	Fill of root disturbance	Flake
A008/012:76:2	76	Fill of root disturbance	Flake
A008/012:76:3	76	Fill of root disturbance	Flake
A008/012:76:4	76	Fill of root disturbance	Debitage
A008/012:76:5	76	Fill of root disturbance	Retouched Artefact
A008/012:77:1	77	Spread	Retouched Artefact
A008/012:77:2	77	Spread	Debitage
A008/012:77:3	77	Spread	Debitage
A008/012:78:1	78	Spread	Retouched Artefact
A008/012:78:2	78	Spread	Debitage

Table 2 Context Information for the Assemblage from Clowanstown 2 (E3065)

CONDITION	AMOUNT
Reasonably Fresh	2
Patinated	4
Heavily Patinated	4
Slightly Rolled	1
Burnt	5
Total	**16**

Table 3 Assemblage Condition from Clowanstown 2 (E3065)

CORES

The identified core (A008/012:5:6) is made of rock crystal. The crystal was reduced using the bipolar-on-an-anvil technique. It measures 46 mm long, 18 mm wide and 12 mm thick.

TYPE	AMOUNT
Core	1
Blade	2
Flake	5
Retouched Artefact	8
Debitage	6
Total	**22**

Table 4 Assemblage Composition from Clowanstown 2 (E3065)

BLADES

Two flint blades (A008/012:5:3 and A008/012:6:1) were recovered from the topsoil. Blade (A008/012:5:3) bears the distinctive characteristics of the use of a bipolar technology for its production. It measures 30 mm long, 11 mm wide and 4 mm thick.

Blade (A008/012:6:1) was produced using the single platform technology and measures 30 mm long, 11 mm wide and 4 mm thick. It displays use-wear on its left and right edges and appears to have been used as knife.

FLAKES

Two of the five flakes are made of chert and the remaining three are made of flint.
Two flakes (A008/012:5:7 and A008/012:76:3) were produced on single platform cores. Flake A008/012:5:7 is very broad and it was perhaps intended to become a hollow scraper, but it is missing its distal end. The remaining three flakes (A008/012:7:1, A008/012:76:1 and A008/012:76:2) were produced using the bipolar-on-an-anvil method.

The flakes rarely exceed 30 mm in length (Fig. 2), the majority measuring between 20-30 mm long.

DEBITAGE

The presence of six pieces of debitage and the occurrence of cortex on some artefacts suggests that a limited amount of knapping took place at or in the vicinity of the site.

Retouched Artefacts:

The eight retouched artefacts can be divided into four main groups: three scrapers, one arrowhead, one possible plano-convex knife and three miscellaneous retouched artefacts.

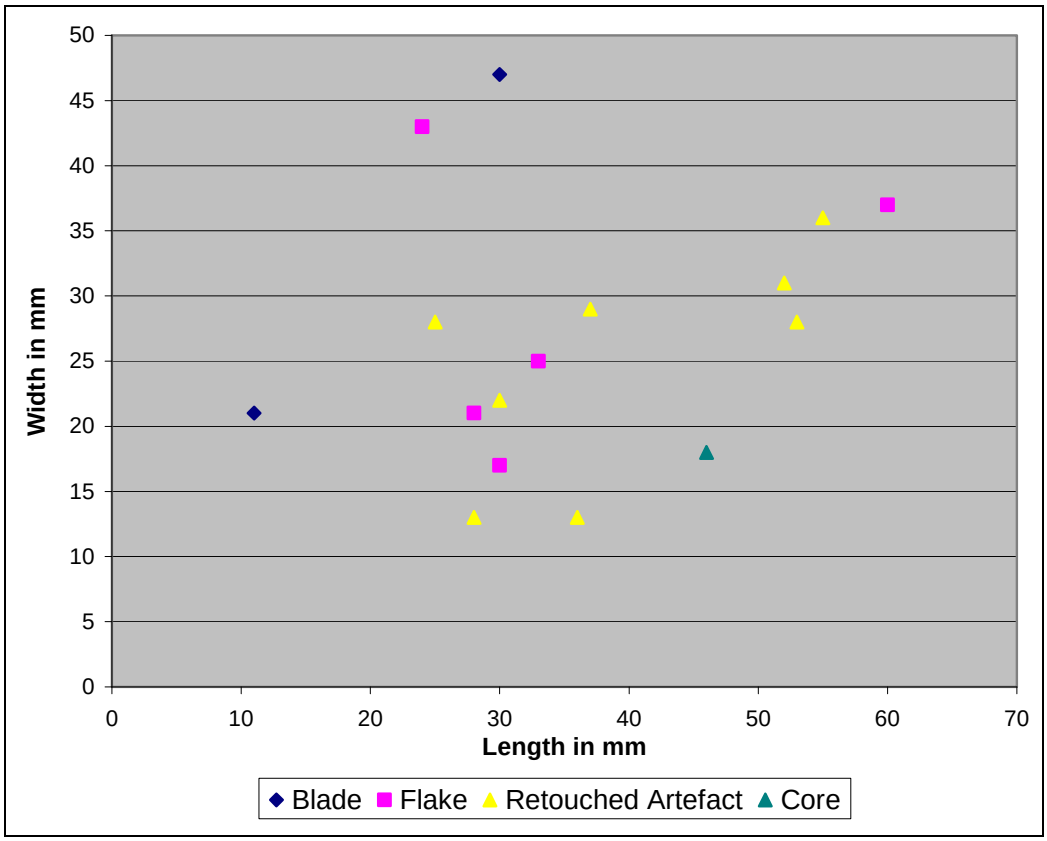


Figure 1 Dimensions (mm) of the Assemblage Components from Clowanstown 2 (E3065)

SCRAPERS

The three scrapers are a classic double concave scraper (A008/012:8:2), a classic hollow scraper (A008/012:77:1) and a classic convex end scraper (A008/012:78:1).

ARROWHEADS

The arrowhead (A008/012:5:1) is the only retouched artefact made of festooned chert. It is a fine, large hollow-based example which may have been abandoned due to a few hinges on its two surfaces. It measures 53 mm long, 28 mm wide and 6 mm thick.

PLANO-CONVEX KNIFE

Artefact A008/012:5:2 is a possible plano-convex knife which measures 52 mm long, 31 mm wide and 10 mm thick.

MISCELLANEOUS RETOUCHED ARTEFACTS

The three miscellaneous retouched artefacts contain artefacts which were most likely used as some forms of scrapers (A008/012:76:5) or naturally backed knife (A008/012:5:4a-d and

A008/012:5:5). Artefact A008/012:5:4a-d was produced on a large beach flint pebble, but is now broken into four pieces. Naturally backed knife A008/012:5:5 is a bipolar blade which was produced on a remanie flint pebble. The possible scraper (A008/012:76:5) was also produced on a bipolar blade.

As can be expected, the size of the retouched artefacts generally corresponds to the measured blade and flake sizes in the assemblage (Fig. 1).

Dating:

The assemblage from Clowanstown 2 is typologically and technologically diagnostic. The hollow-based arrowhead, the plano-convex knife, the hollow and concave scrapers and retouched bipolar blades artefacts date to the second half of the Neolithic period (O'Hare 2005, Woodman *et al.* 2006). The use of the single platform and bipolar-on-an-anvil reduction technique supports this dating (O'Hare 2005; Woodman *et al.* 2006).

Conservation

Lithics do not require specific conservation, but should be stored in a dry, stable environment. Preferably, each lithic should be bagged separately and contact with other lithics should be avoided, so as to prevent damage and breakage, in particular edge damage which could later be misinterpreted as retouch. Larger and heavier items are best kept in individual boxes to avoid crushing of smaller assemblage pieces.

Discussion

Flint in this region is available in smaller nodules on the eastern coast or locally in the form of remanié pebbles. The use of chert and a limited single platform as well as the bipolar technology is a direct result of a scarcity of flint in Co. Meath. The majority of flint nodules were brought from the coast and are rather small pebbles with an average dimension of less than 5 cm. They often only permit the use of a limited single platform and bipolar technology to efficiently reduce the nodule achieving a maximum outcome, i.e. the largest possible amount of suitable and usable blanks. The result is the regionally dominant split pebble bipolar-on-an-anvil technology which was most prominent during the second half of the Neolithic and the Early Bronze Age (O'Hare 2005). The lithics at Clowanstown 2 were produced on split beach flint pebble flakes and worked using both, the single platform and the bipolar-on-an-anvil technology. It is most probable that the larger flakes and blades were introduced as blanks to the site, rather than knapped *in situ*.

Conclusion

The lithic finds from the archaeological investigations at Clowanstown 2, Co. Meath are two flint cores, a chert core, a chunk of chert and two pieces of flint debitage. The assemblage is typologically undiagnostic, but may date to the Late Neolithic or Early Bronze Age based on its technological characteristics. All finds appear to derive from disturbed contexts, but represent prehistoric activity at the site or in the immediate vicinity.

This site makes a minor contribution to the evidence for Late Neolithic settlement in Co. Meath.

Recommendations for Illustration

- Hollow-Based Arrowhead (A008/012:5:1)
- Possible Plano-Convex Knife (A008/012:5:2)
- Naturally Backed Knife (A008/012:5:5)
- Double Concave Scraper (A008/012:8:2)
- Hollow Scraper (A008/012:77:1)
- Convex End Scraper (A008/012:78:1)

Bibliography

Inizan, M.-L., M. Reduron-Ballinger, H. Roche and J. Tixier, 1999. *Technology and Terminology of Knapped Stone* 5. CREP, Nanterre.

O'Hare, M. B., 2005. *The Bronze Age Lithics of Ireland.* Unpublished PhD Thesis. Queen's University of Belfast.

Woodman, P. C., Finlay, N. and E. Anderson, 2006. *The Archaeology of a Collection: The Keiller-Knowles Collection of the National Museum of Ireland*. National Museum of Ireland Monograph Series 2. Wordwell, Bray.

APPENDIX 8 *Pollen Analysis: Archaeological Services Durham University*

Archaeological Services
University of Durham

Clowanstown 2, M3 Motorway Project, Co Meath, Ireland

pollen assessment

on behalf of
Archaeological Consultancy Services Ltd

Report 1917

April 2008

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Clowanstown 2, M3 Motorway Project, Co Meath, Ireland

pollen assessment

Report 1917

April 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 Clowanstown 2, Co Meath, Ireland. This report presents the results of pollen assessment of one sample taken from the site.

Results

1.2 The prepared sample contained abundant microscopic charcoal but there was no pollen present.

Recommendations

1.3 No further pollen analysis is recommended due to the absence of pollen.

2. Project background

Location and background

2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Clowanstown 2, Co Meath, Ireland. The site consists of a range of features including burnt spreads, pits, a hearth and a shallow field ditch; some flint debris suggests late Neolithic flint/chert working on the site. This report presents the results of pollen assessment of one sample taken from a circular pit.

Objective

2.2 The objective was to assess the preservation of pollen in the context sampled, and to establish the potential to provide palaeoenvironmental information if fully analysed.

Dates

2.3 The sample were received by Archaeological Services Durham University in February 2008. Analysis and report preparation were conducted between February and April 2008.

Personnel

2.4 Sample preparation was undertaken by Mr Bryan Atkinson. Dr Helen Ranner carried out the pollen assessment and compiled the report.

Archive

2.5 The licence number is A008/012 (E3065). The samples are currently at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Method

3.1 Pollen was extracted from one ml of the sediment sample. In order to facilitate the calculation of total pollen concentration, a single *Lycopodium* spore tablet from batch 307862 was added to the sample before processing (the average number of spores per tablet from this batch is 13,500). The sample was pre-treated with 10% hydrochloric acid to remove any carbonates before undergoing sodium hydroxide digestion. The residue was then sieved through a 125 µm sieve and over a 10 µm mesh. After being washed in distilled water, the sample was heated in an acetylation mixture of acetic anhydride and sulphuric acid. The sample was washed again before the pollen was separated from the mineral matrix using a heavy liquid technique, with sodium polytungstate at a density of 1.95 g/l. The extracted pollen was then dehydrated using industrial methalated spirits followed by tertiary butyl alcohol. The pollen was mounted in silicone fluid and examined at ×500 magnification.

4. Results

4.1 The prepared sample contained abundant microscopic charcoal but there was no pollen present. The results of the pollen assessment are presented in Table 1.

Table 1: Data from pollen assessment [frequency: a – abundant]

Fill	pit
Context	95
Sample	4
Volume processed (ml)	1
Charcoal	a
Lycopodium spores	4
Pollen/spores (absolute counts)	0

5. Discussion

5.1 These results indicate that the preservational environment associated with this context is poor. This is likely to be as a result of aerobic soil conditions where the pollen grains would have been oxidised and degraded by microbial activity.

6. Recommendations

6.1 No further pollen analysis is recommended due to the absence of pollen.

APPENDIX 9 *Environmental Analysis-Archaeological Services Durham University*

Archaeological Services
University of Durham

Clowanstown 2, M3 Motorway Project, Co Meath, Ireland

plant macrofossil, charcoal and cremated bone analysis

on behalf of
Archaeological Consultancy Services Ltd

Report 1933

September 2008

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plant macrofossil, charcoal and cremated bone analysis

Report 1933

September 2008

Archaeological Services Durham University

on behalf of

Archaeological Consultancy Services Ltd

Unit 21 Boyne Business Park, Greenhills, Drogheda, Co. Louth, Ireland

Contents

1. Summary

The project

1.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Clowanstown 2, Co Meath, Ireland. Neolithic, Bronze Age and medieval features were identified on the site. This report presents the results of plant macrofossil, charcoal and cremated bone analysis of pit fills (contexts 41, 70 and 95), burnt deposits (context 47 and 76) and a clay spread (context 78).

Results

1.2 Barley was used by the Bronze Age inhabitants of the site, while barley, wheat gathered wild foods, and possibly also oats, formed a part of the diet during the medieval occupation. Unfortunately, the analysis provides little information about the Neolithic inhabitants, due to the absence of charred plant macrofossils in context (78). The charcoal assemblages suggest the presence of mixed, deciduous woodland near the site throughout its occupation.

1.3 A small amount of cremated bone, weighing 1.9g, was recovered from context (76). Fragmentation was relatively severe, with the largest fragment measuring 19.2mm. All fragments were too small and broken to be identified, and they could not be differentiated between human or animal bone. The white colour of the bone suggested the material had been exposed to a high temperature in excess of *c.* 600ºC (McKinley 2004).

2. Project background

Location and background

2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Clowanstown 2, Co Meath, Ireland (NGR 295772 257211). Features revealed by the excavation included four burnt spreads, six pits, a sub-circular hearth, and a shallow field ditch. A hollow-based chert arrowhead and core, as well as flint debris, appear to demonstrate flint/chert working on site in the late Neolithic. A further three shallow pits were identified and these appear to have been used for flint knapping. Two concave and one convex scrapers were recorded in this location. This report presents the results of plant macrofossil, charcoal and cremated bone analysis of pit fills (contexts 41, 70 and 95), burnt deposits (context 47 and 76) and a clay spread (context 78). Radiocarbon dating indicated an early Neolithic date for contexts (76 and 78), an early Bronze Age date for contexts (41), (47) and (70) and a medieval date for context (95).

Objective

2.2 The objective was to analyse the plant macrofossils, charcoal and bone from the site, in order to provide information about the diet, land use and local environment.

Dates

2.3 Samples were received by Archaeological Services Durham University in November 2007. Analysis and report preparation was conducted between November 2007 - September 2008.

Personnel

2.4 Sample processing was undertaken by Archaeological Consultancy Services Ltd. The environmental analysis and report preparation was carried out by Dr Charlotte O'Brien. Cremated bone was analysed by Dr Anwen Caffell and the residues were sorted by Mr Lorne Elliott.

Archive

2.5 The licence number is A008/012. The charred seeds, flots, charcoal samples and cremated bone are currently at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Plant macrofossil and charcoal analysis

Methods

3.1 The residues were examined for plant remains, shells, bones, pottery sherds and metalworking debris. The charred remains were scanned at up to x60 magnification using a Leica MZ7.5 stereomicroscope and charred seeds were identified 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 flots and residues 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. Charcoal, charred grain and cremated bone were provided for radiocarbon dating.

Results

3.3 Charcoal and possible fire-cracked stones were present in all of the contexts. Roots and uncharred seeds were occasionally recorded, and a few wood flecks and insect fragments were present in context (70), in addition to a willow leaf in context (47). The presence of these remains may reflect a degree of waterlogging at the site, or they may be later intrusive material. The results of the environmental analysis are listed in Table 3.1. The proportions of identified charcoal species in contexts (41), (47), (70) and (95) are presented in Figure 3.1.

Neolithic (context 78)

3.4 Charred seeds were absent from the clay spread (context 78), and only a few fragments of charcoal were present. These were 4 fragments of oak, 7 fragments of alder and 1 fragment of willow/poplar.

Bronze Age (contexts 41, 47 and 70)

3.5 Low numbers of charred plant macrofossils were present in contexts (41) and (47), but were absent from context (70). These included barley grains, oat grains, and seeds of the arable weed, fat-hen. In addition, a corn marigold achene was recorded in context (41). The species of charcoal recorded in all three contexts were similar, although the relative proportions of each varied. Ash and hazel were abundant in contexts (47) and (70), while alder and oak were the main taxa in context (41). Elm was recorded in contexts (41) and (47), and a few fragments of blackthorn were also present in context (41). It should be noted that many of the charcoal fragments were in a poor condition which prevented their identification, and therefore the exact proportions of each of the taxa is uncertain.

Medieval (context 95)

3.6 The few charred plant macrofossils in the pit fill (context 95) were oat grains, a barley grain, a wheat grain, and a hazel nutshell fragment. The charcoal assemblage was dominated by ash and alder, with lesser proportions of elm, hazel, oak and Maloideae (Hawthorns, whitebeams, apple and pear). Again, the charcoal in this context was poorly preserved.

Table 3.1: Plant macrofossils and charcoal from Clowanstown 2

Context		41	47	70	78	95
Sample		1	1	1	1	1, 2
Feature		Pit	Burnt Spread	Pit	Clay Spread	Pit
Material available for radiocarbon dating		✓	✓	✓	✓	✓
Volume of flot (ml)		2	50	3	2	30
Residue matrix (relative abundance)						
Charcoal		4	4	2	1	3
Cracked/angular stones		3	3	1	1	4
Flot matrix (relative abundance)						
Charcoal		1	3	1	2	2
Insect (beetle elytra)		-	-	1	-	-
Leaf (modern cf. *Salix*)		-	1	-	-	-
Roots (modern)		1	1	1	-	2
Wood (flecks)		-	-	1	-	-
Charcoal (g/number of fragments)						
Total charcoal (g)		10.709	25.984	4.682	1.024	20.097
Percentage of sample analysed		100	100	100	100	100
Total charcoal analysed >4mm (g)		9.223	25.984	3.621	0.511	10.095
Number of analysed fragments >4mm		41	67	46	12	43
Fraxinus excelsior (Ash)		0.435 (2F)	8.745 (28F)	0.650 (8F)	-	3.390 (18F)
Quercus sp (Oak)		2.660 (16F)	3.700 (8F)	0.140 (2F)	0.170 (4F)	0.610 (3F)
Prunus spinosa (Blackthorn)		0.451 (2F)	-	-	-	-
Corylus avellana (Hazel)		1.084 (5F)	3.512 (9F)	1.635 (19F)	-	0.188 (1F)
Maloideae (Hawthorn, whitebeams, apple, pear)		-	-	-	-	0.756 (2F)
Ulmus sp (Elm)		0.649 (2F)	3.085 (8F)	-	-	0.675 (3F)
Alnus glutinosa (Alder)		3.788 (13F)	0.810 (1F)	0.208 (3F)	0.282 (7F)	3.224 (12F)
Salicaceae (Willow or poplar)		-	-	-	0.059 (1F)	-
Corylus/Alnus sp (Hazel/Alder)		-	2.940 (5F)	0.988 (14F)	-	0.252 (1F)
Diffuse porous		0.156 (1F)	1.511 (4F)	-	-	0.290 (1F)
Indeterminate fragments >4mm fraction		-	1.681 (4F)	-	-	0.710 (2F)
Indeterminate fragments <4mm fraction		1.486	-	1.061	0.513	10.002
Charred remains (total counts)						
(a) *Chenopodium album* (Fat-hen)	seed	1	1	-	-	2
(a) *Chrysanthemum segetum* (Corn marigold)	achene	1	-	-	-	-
(c) *Avena* spp (Oat species)	grain	28	3	-	-	10
(c) *Hordeum* spp (Hulled barley)	grain	1	-	-	-	-
(c) *Hordeum* spp (Barley species)	grain	7	1	-	-	1
(c) *Triticum* sp (Wheat species)	grain	-	-	-	-	1
(c) Cerealia indeterminate	grain	5	-	-	-	3
(t) *Corylus avellana* (Hazel)	nutshell frag.	-	-	-	-	1
Uncharred remains (total counts)						
(q) *Nymphaea alba* (White Water-lily)	seed	1	-	1	1	1
(t) *Sambucus nigra* (Elder)	fruitstone	-	-	-	-	1

[a-arable weed; c-cultivated plant; q-aquatic; t-tree/shrub]. F = number of charcoal fragments
Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

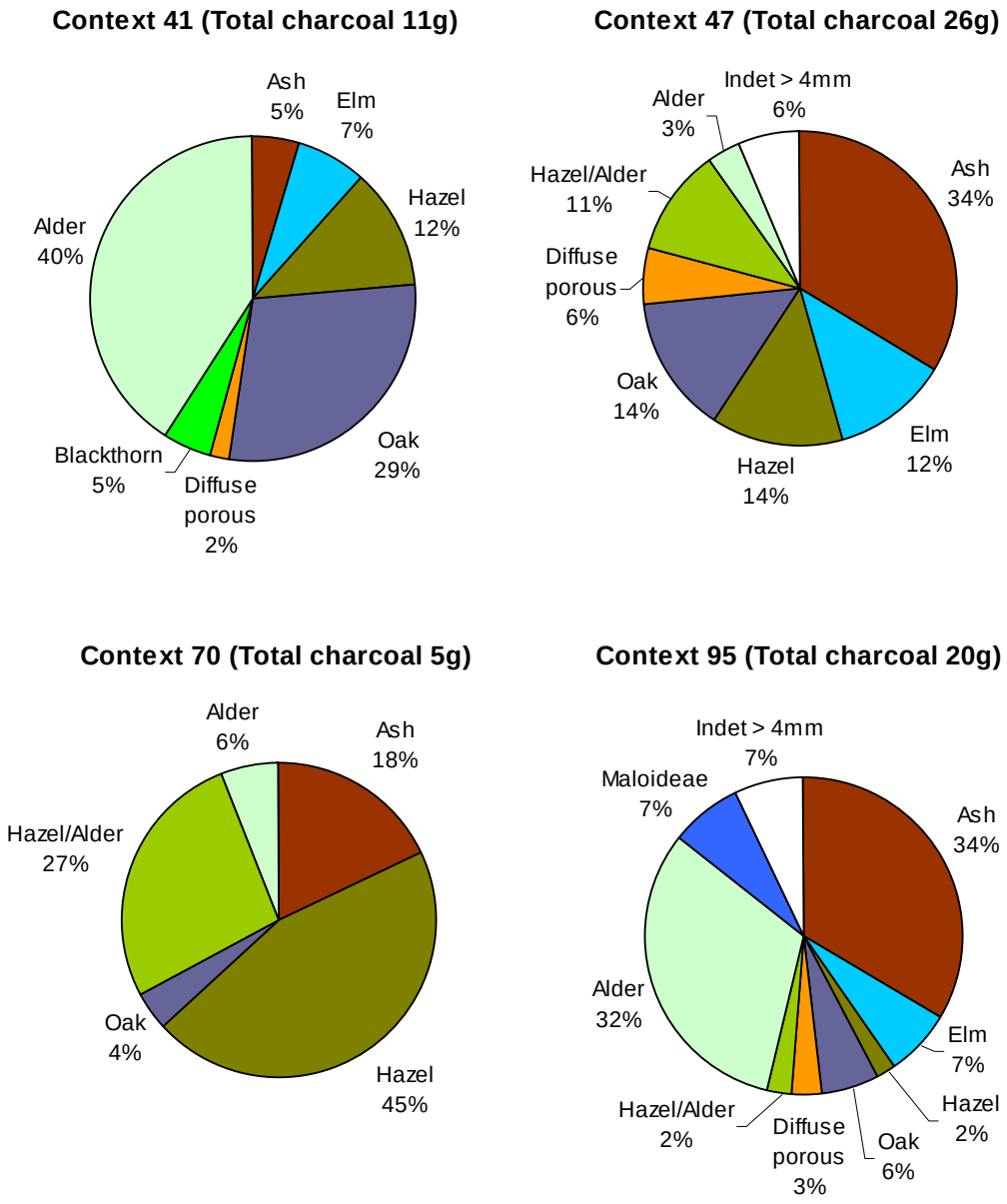


Figure 3.1: Proportions of identified charcoal from Clowanstown 2

Discussion

Diet

3.7 The analysis does not provide information about the diet of the Neolithic inhabitants of the site, due to the absence of charred plant remains in context (78). However, a few barley grains were recorded in the Bronze Age and medieval deposits (contexts 41, 47 and 95). Although they were badly degraded, one in context (41) was identified as hulled. The poor condition, low number of grains and absence of diagnostic chaff prevented their differentiation between the 6-row and 2-row varieties. Hulled barley has been cultivated in Ireland throughout prehistory (Monk 1986), and recent studies

indicate that barley was the dominant crop used from the mid Bronze Age through the early medieval period (Johnston 2007).

3.8 Oat grains were also recorded in the Bronze Age and medieval deposits (contexts 41, 47 and 95). Without the diagnostic floret bases, it is not possible to say if these were from the cultivated or wild species. Although oats has been recorded from late Bronze Age and Iron Age contexts, it was not widely cultivated in Ireland until the early medieval period (Johnston 2007). A single wheat grain was also recorded in context (95), suggesting the use of this crop during the medieval period, but again, the diagnostic chaff was absent. Studies suggest that bread wheat was an important cereal crop at that time (Monk 1986).

3.9 The presence of a charred hazel nutshell fragment in context (95) suggests that gathered wild foods formed a part of the diet of the site, at least during the medieval. These were probably gathered from nearby woodland, the nature of which is discussed below.

The palaeoenvironment

3.10 The results of the charcoal analysis suggest that the local woodland resources included similar species throughout the occupation of the site. However the proportions of the charcoal taxa varied, which may reflect changes in woodland composition, or variations in the patterns of wood collection. The local landscape appears to have comprised a mixed deciduous woodland of oak, ash and elm, with hazel, blackthorn and Maloideae growing in the understorey or by the woodland margins. Alder was also present, and would have inhabited wetland areas, either growing as individual stands or in carr vegetation. Willow and poplar charcoal cannot be differentiated with certainty, and therefore the fragment of Salicaceae charcoal in context (78) may derive from a willow tree growing in similar wetland areas to the alders, or a poplar tree which would have thrived on rich, alluvial soils.

3.11 A few charred seeds of the arable weeds fat-hen and corn marigold were recorded in the Bronze Age deposits (contexts 41 and 47). These are likely to have grown with the cereal crops, although these weeds can also be found on other areas of nutrient-rich, disturbed ground (Preston *et al* 2002).

The features

3.12 The presence of charred cereal grains in contexts (41), (47) and (95) may indicate that the pits and spreads contained waste from general domestic activities such as cooking or grain-drying. The charcoal probably therefore represents fuel used for these activities. The heterogeneity of the charcoal assemblages may indicate that wood was collected on a random basis reflecting availability in the local woodland, rather than a targeted selection process having been employed.

4. Cremated bone analysis

Methods

4.1 One sample from context (76) was presented for analysis, and the bone 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 are given in Table 4.2.

4.3 Context (76) contained a small amount of cremated bone, weighing just 1.9g. Although all the bone was located in the largest sieved fraction, the maximum fragment size was only 19.2mm (Table 4.2).

Table 4.1: Summary of cremated remains

Context	Context Detail	Bone Colour	Species	Weight (g)
76	Dark greyish black deposit	White	Unknown	1.9

4.4 The white colour of the bone implied it was exposed to temperatures in excess of *c.* 600ºC (McKinley 2004).

4.5 The fragments were examined with a view to identification, but given the small fragment size and the lack of recognisable features none could be identified; it was not possible to ascertain whether the bone was human or 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
76	1.9	1.9	100.0	0.0	0.0	0.0	0.0	19.2

5. Sources

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

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

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

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, MA, 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

APPENDIX 10 *Faunal remains Analysis: Hayley Foster*

04_01, M3 Clonee to North of Kells Road Scheme

Analysis of mammalian bone remains from Clowanstown, Co. Meath

(A008/015)

1st September 2008

Hayley Foster

04_01 Clowanstown 2 (A008/012) results of mammal bone analysis:

1. Introduction

This report details the findings from analysis of the animal bone from Clowanstown 2, County Meath. Excavation was carried out as part of the M3 Clonee-North of Kells Motorway Project. Clowanstown 2 is a Bronze Age site made up of 4 burnt spreads, six pits, a sub-circular hearth, and a shallow ditch. The only species represented at Clowanstown 2 was cattle (*Bos taurus*).

2. Methodology

The method used to quantify this assemblage was based on that used for Knowth by McCormick and Murray (2007) which is modified from Albarella and Davis (1996). This method involves analysing and recording bones from the assemblage, but omitting those fragments that are considered 'low grade' and not worthy of being counted. In order for an element to be recorded 50% of the diagnostic zone on a bone must be present. This method narrows down the assemblage so that fragmented elements are not counted multiple times. Elements that were quantified and recorded included:

- Loose mandibular teeth and loose teeth (which include loose maxillary teeth and teeth that could not be identified as maxillary or mandibular).

3. Results of findings

Only 2 animal bone fragments were identified from Clowanstown 2, these fragments were both cattle molars (M12). One molar is from an irregular shaped pit and is a maxillary molar, while the other is from the fill of a sub-circular pit and cannot be classified as mandibular or maxillary molar, as it is partially broken. Higham tooth wear stages cannot be used because the teeth are not mandibular; therefore assigning an age to the specimens is impossible. There were no signs of butchery, gnawing, burning, pathology or injury.

4. Conclusions

As there were only 2 cattle teeth that were recordable from Clowanstown 2, no significant conclusions can be drawn from the findings. No ageing or sexing could be carried out and therefore the only conclusion to be made is to acknowledge the presence of cattle on the site, whether consumed or used for secondary products.

5. Recommendations

The Clowanstown 2 assemblage has not provided any ageing data, metric data, or other such evidence such as sexing and palaeopathology, yet as it is a Bronze Age assemblage it should be deemed worthy of curation. The final decision on the permanent storage of the assemblage should be made by the NMI following discussion with the excavation license holder. Accepted material should be stored in museum approved low-acid boxes and be left for collection by the museum.

6. Bibliography

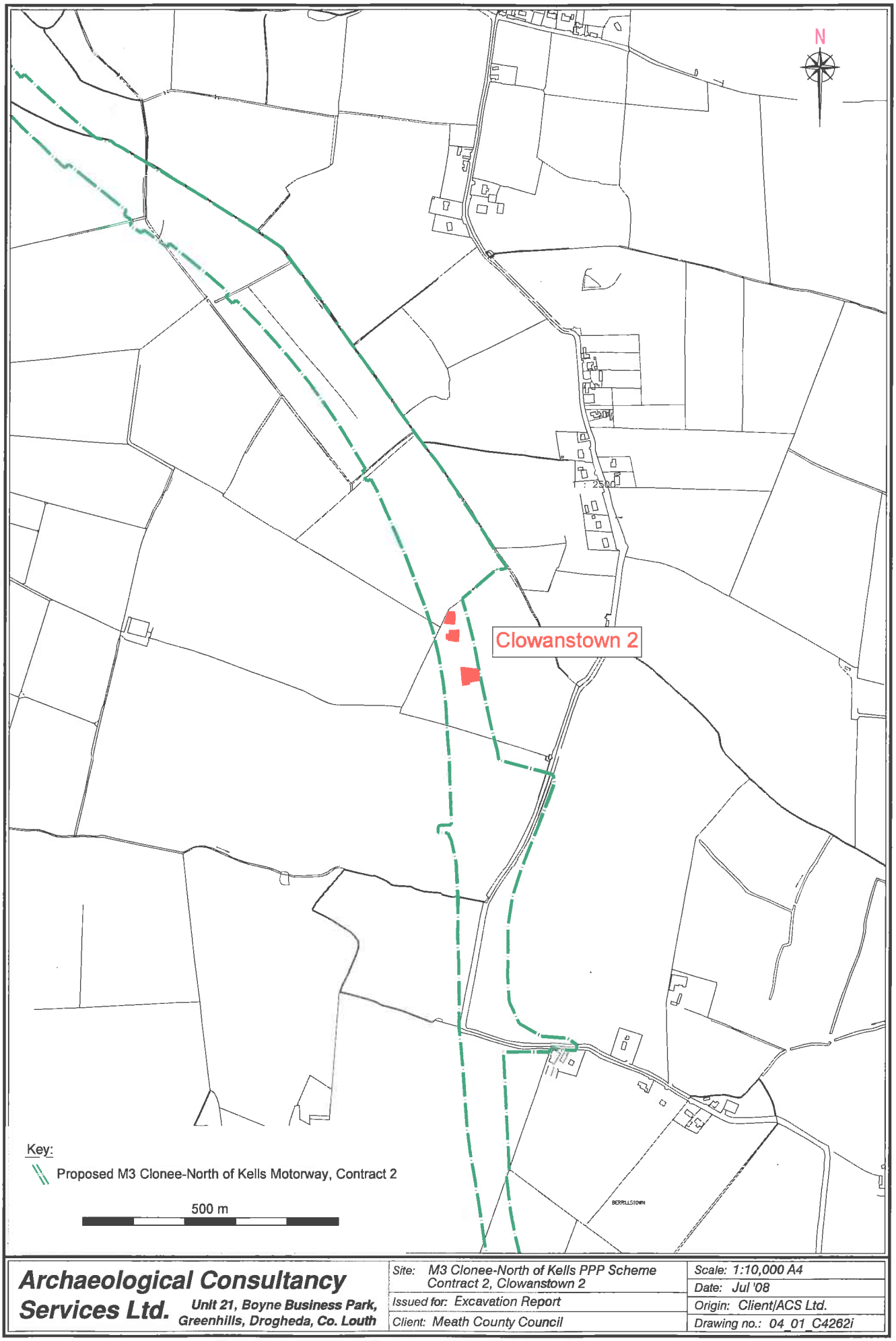
Albarella, U. and Davis, S.J. 1996. 'Mammals and birds from Launceston Castle, Cornwall: decline in status and the rise of agriculture', *Circaea* 12 (1), 1-156.

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

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

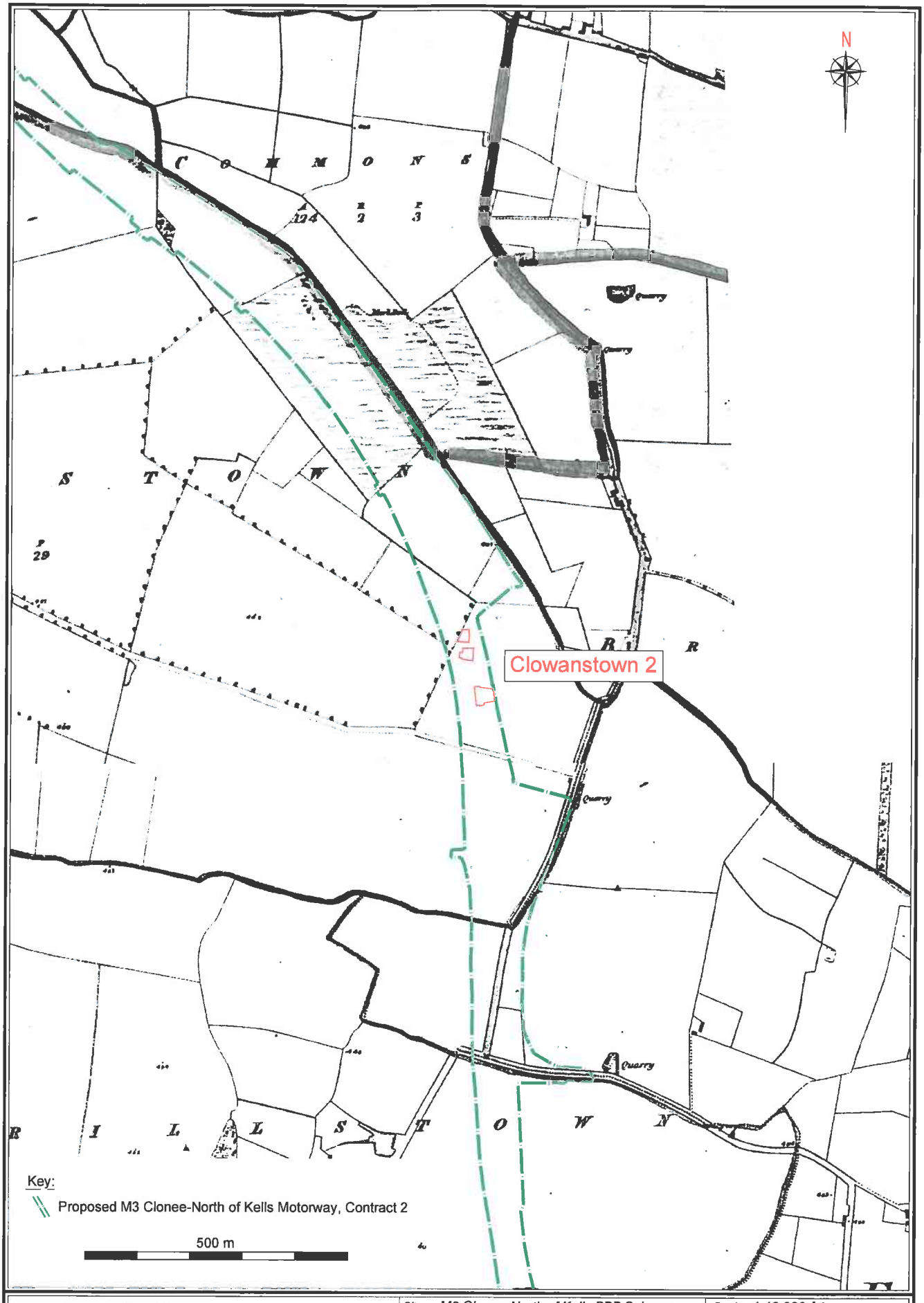
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:60,000 A4
	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: OSi Discovery Series
		Drawing no.: 04_01_C4261i

Figure 1: Location of Clowanstown 2



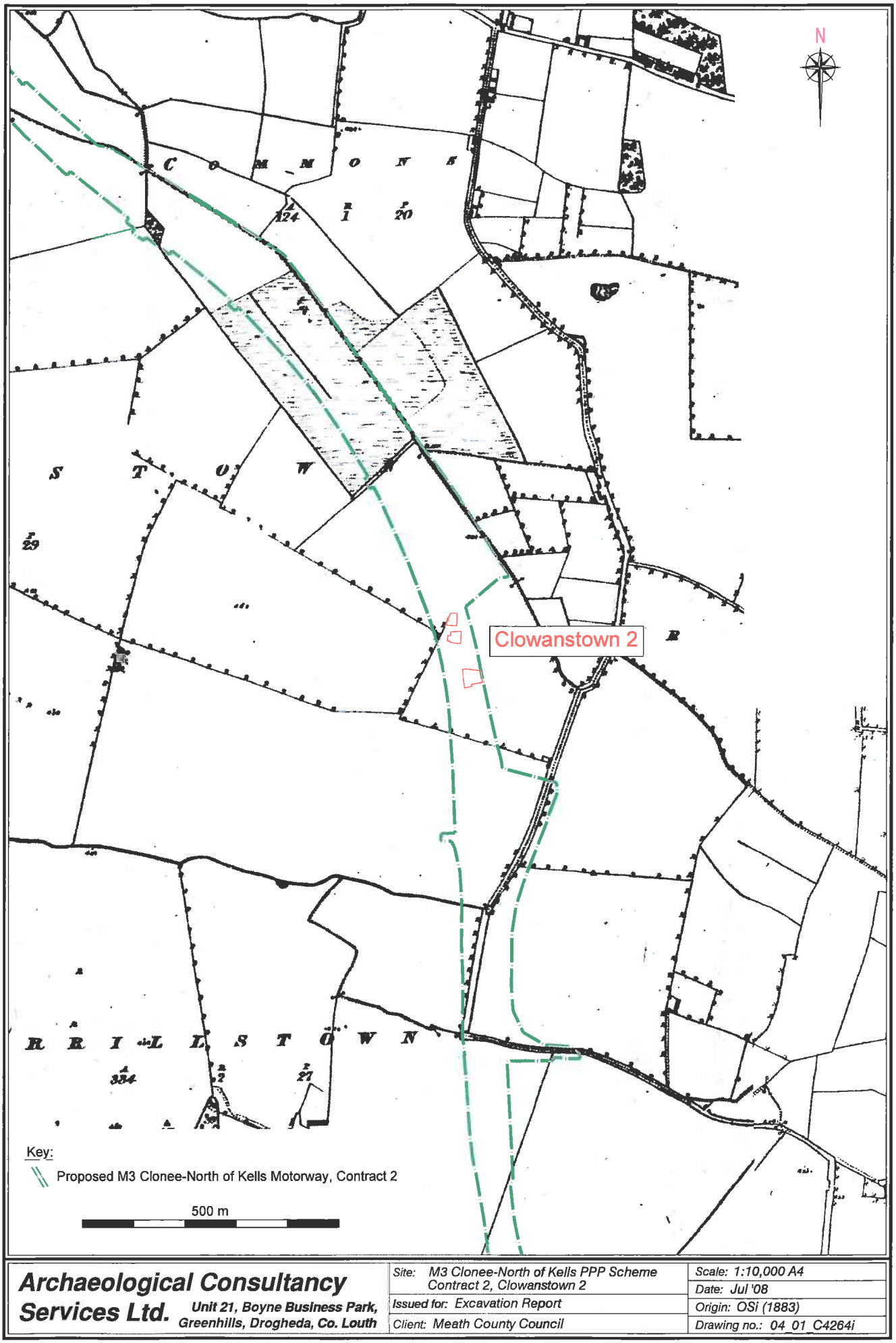
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: Client/ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C4262i

Figure 2: Location of Clowanstown 2 on current OS background



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: OSi (1836)
	Client: Meath County Council	Drawing no.: 04_01_C4263i

Figure 3: Clowanstown 2, extract from 1st edition OS map, Meath sheet 38



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:10,000 A4
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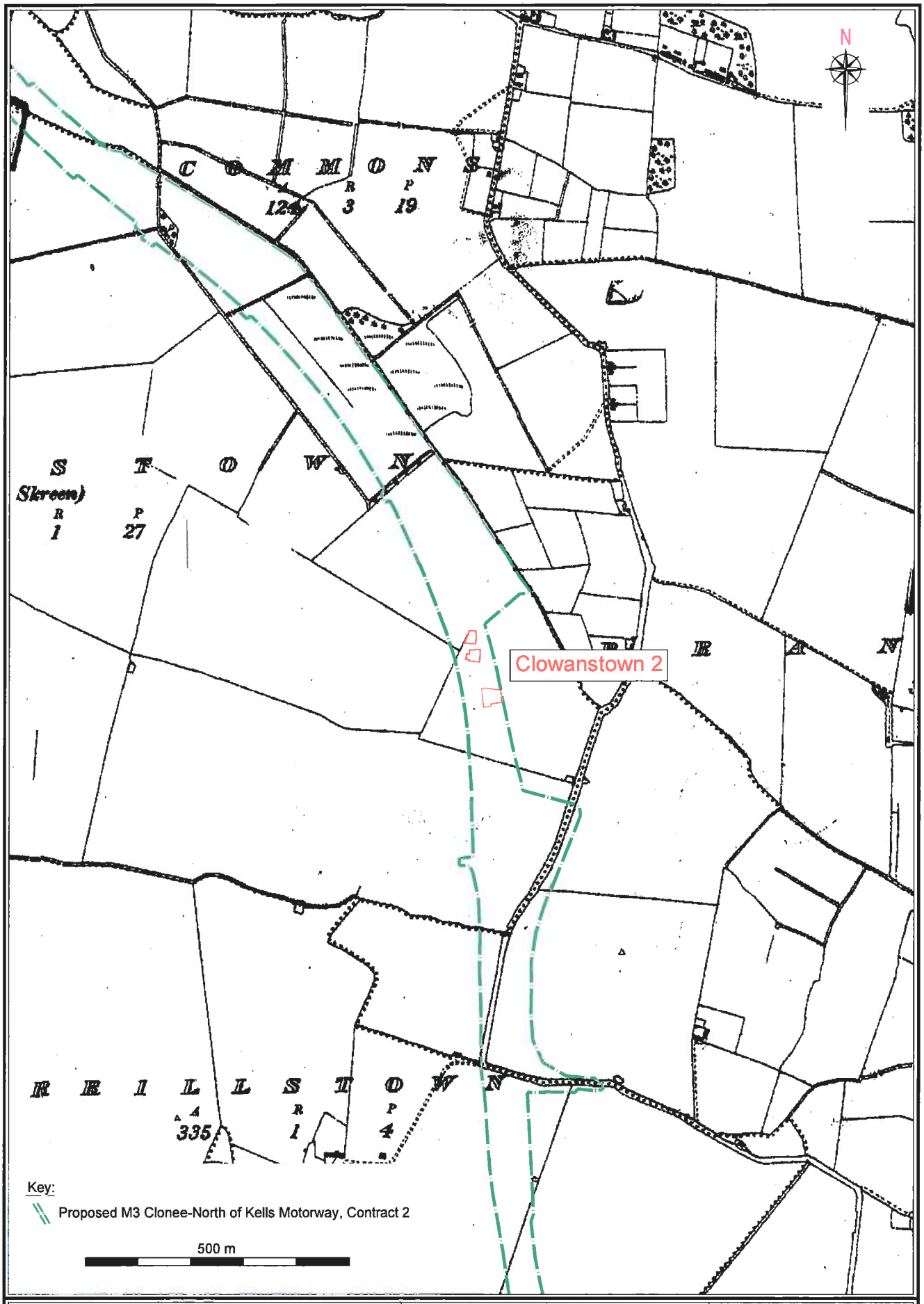
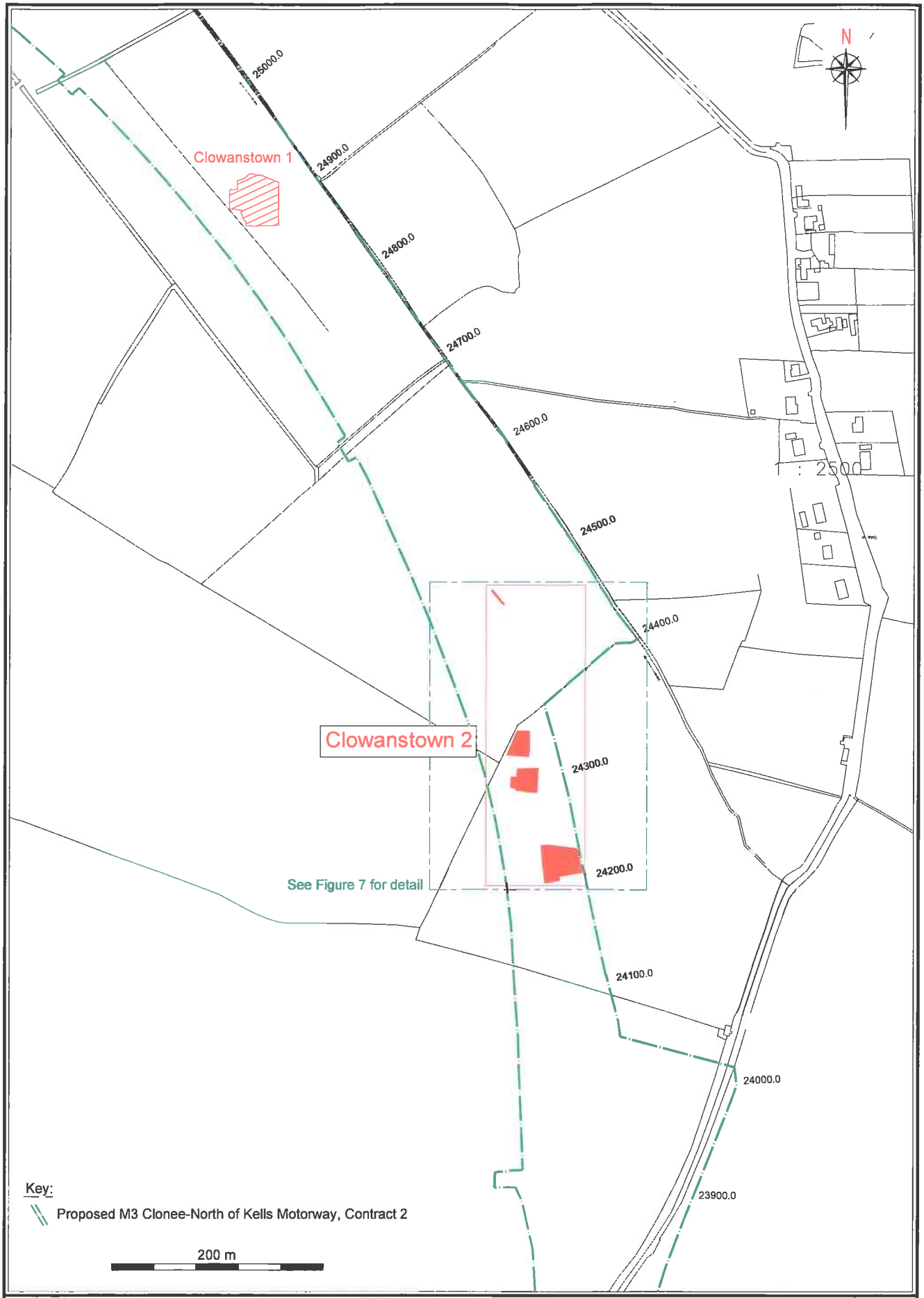
	Issued for: Excavation Report	Origin: OSi (1883)
	Client: Meath County Council	Drawing no.: 04_01_C4264i

Figure 4: Clowanstown 2, extract from 2nd edition OS map, Meath sheet 38



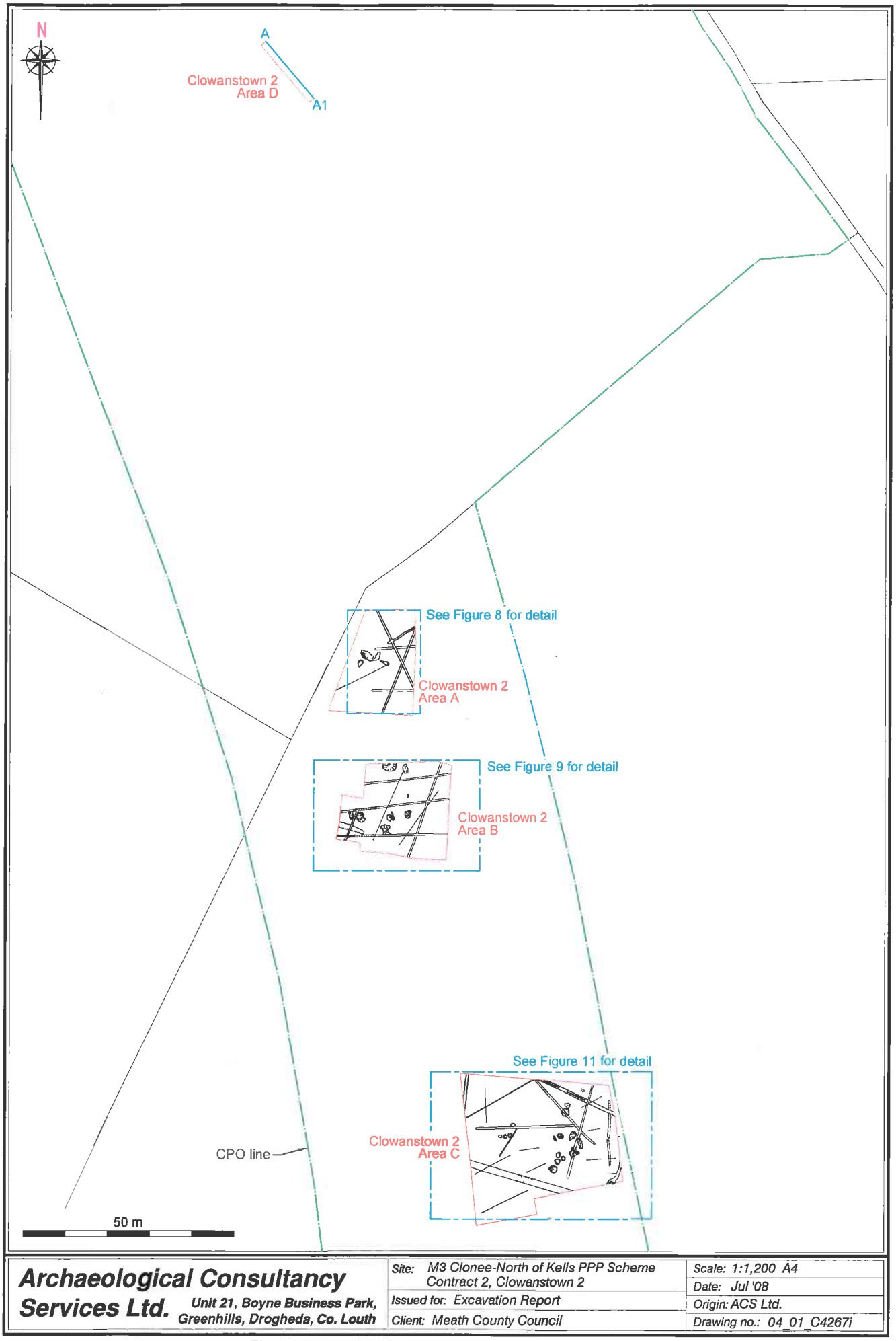
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:10,000 A4
		Date: Jul '08
	Issued for: Excavation Report	Origin: OSi (1909)
	Client: Meath County Council	Drawing no.: 04_01_C4265i

Figure 5: Clowanstown 2, extract from 3rd edition OS map, Meath sheet 38



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:5,000 A4
	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: Client/ACS Ltd.
		Drawing no.: 04_01_C4266i

Figure 6: Detailed location of Clowanstown 2



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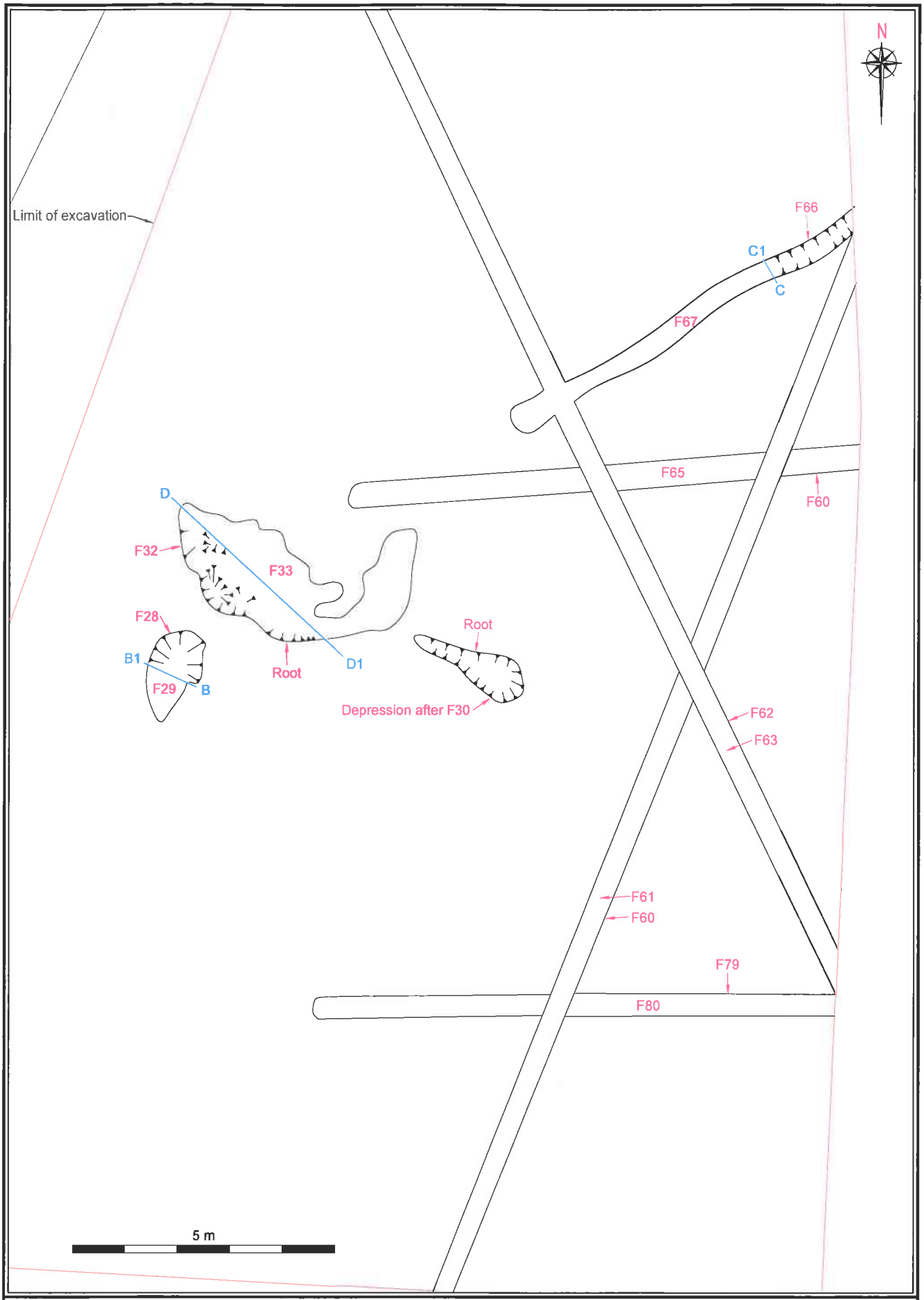
	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: ACS Ltd.
		Drawing no.: 04_01_C4267i

Figure 7: Detail of Clowanstown 2, showing Areas A-D



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	Issued for: Excavation Report	Date: Jul '08
	Client: Meath County Council	Origin: Client/ACS Ltd.
		Drawing no.: 04_01_C4268i

Figure 8: Post-excavation plan of Area A, showing location of sections

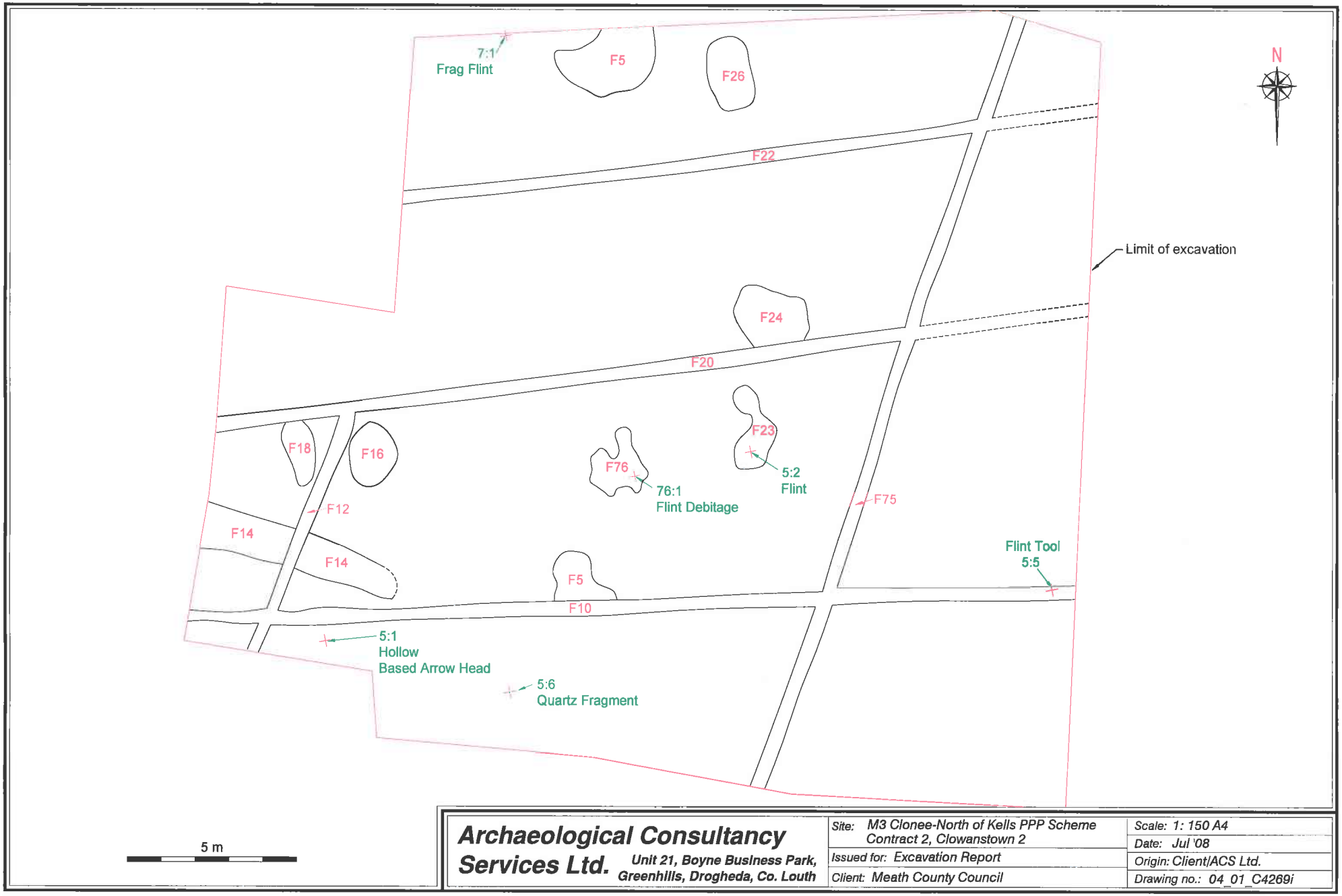


Figure 9: Pre-excavation plan of Area B

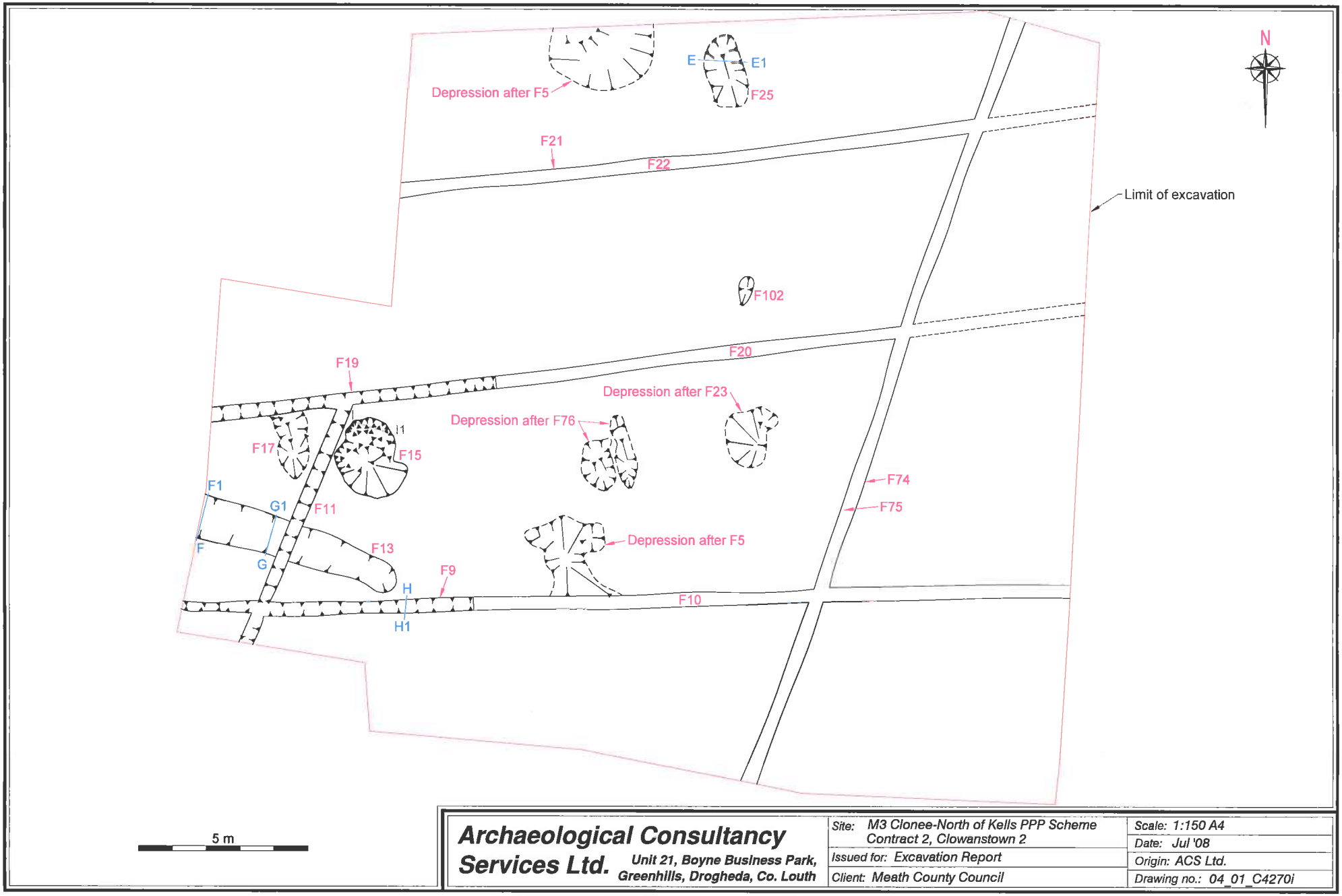


Figure 10: Post-excavation plan of Area B, showing location of sections

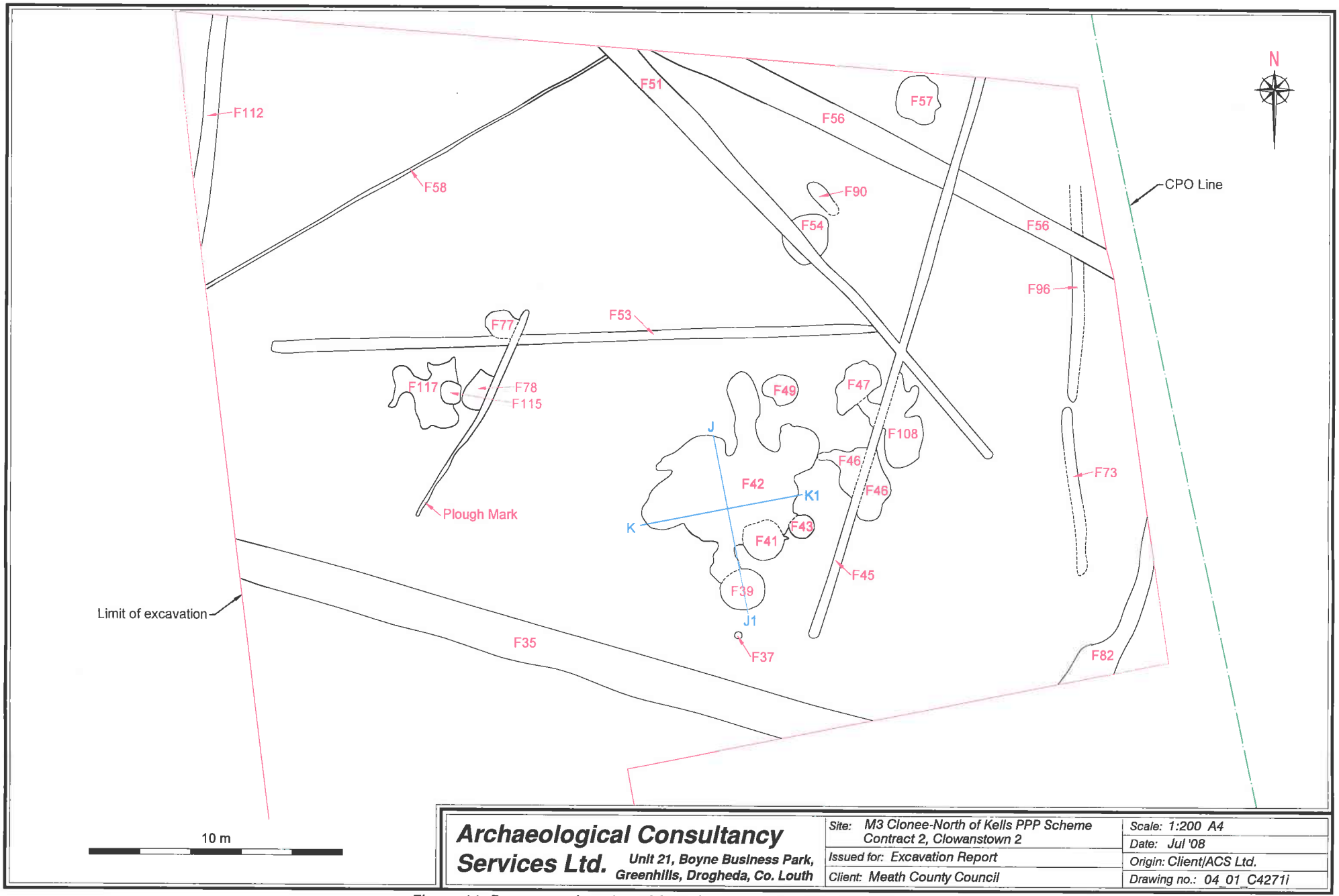
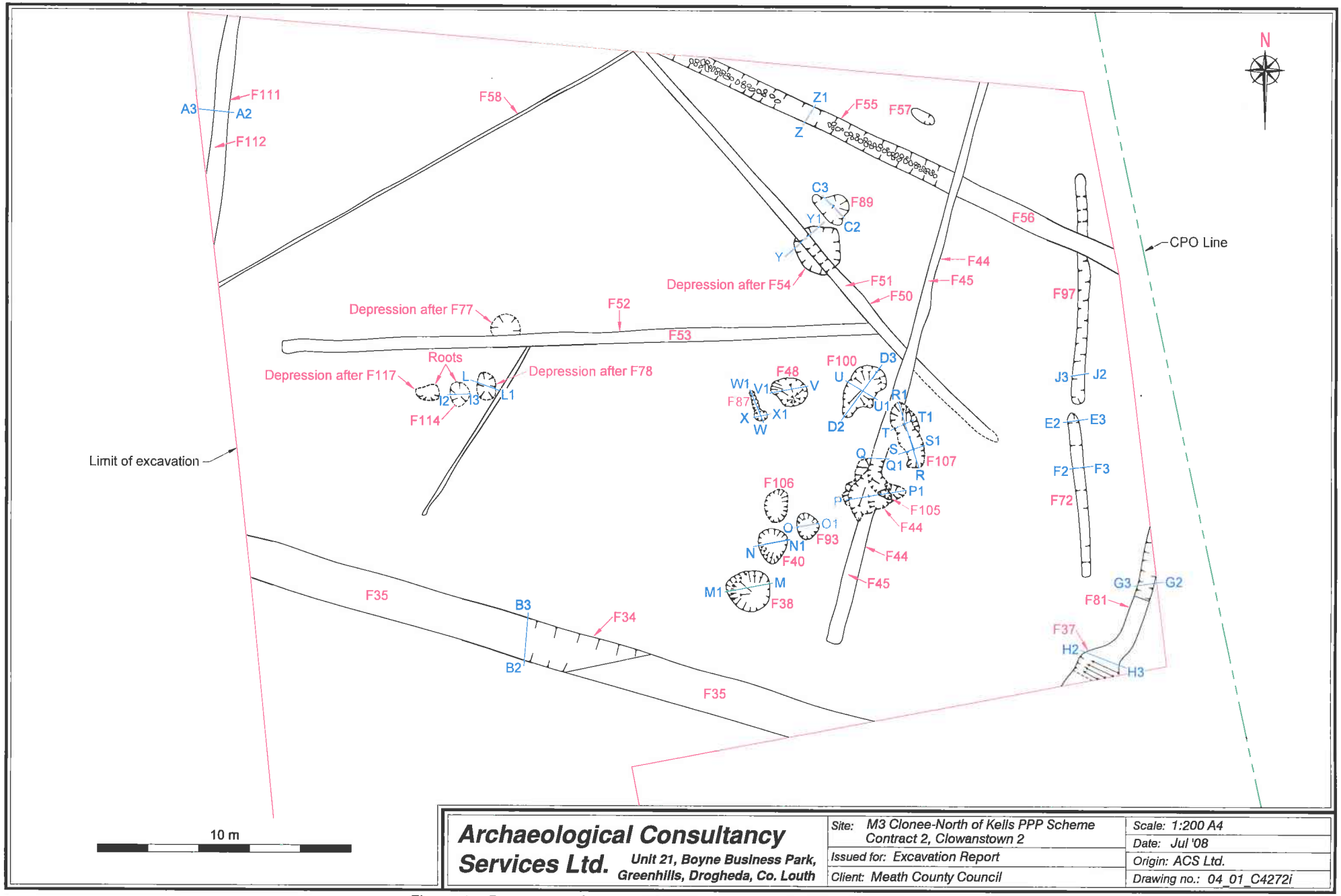


Figure 11: Pre-excavation plan of Area C, showing location of sections



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	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C4272i

Figure 12: Post-excavation plan of Area C, showing location of sections

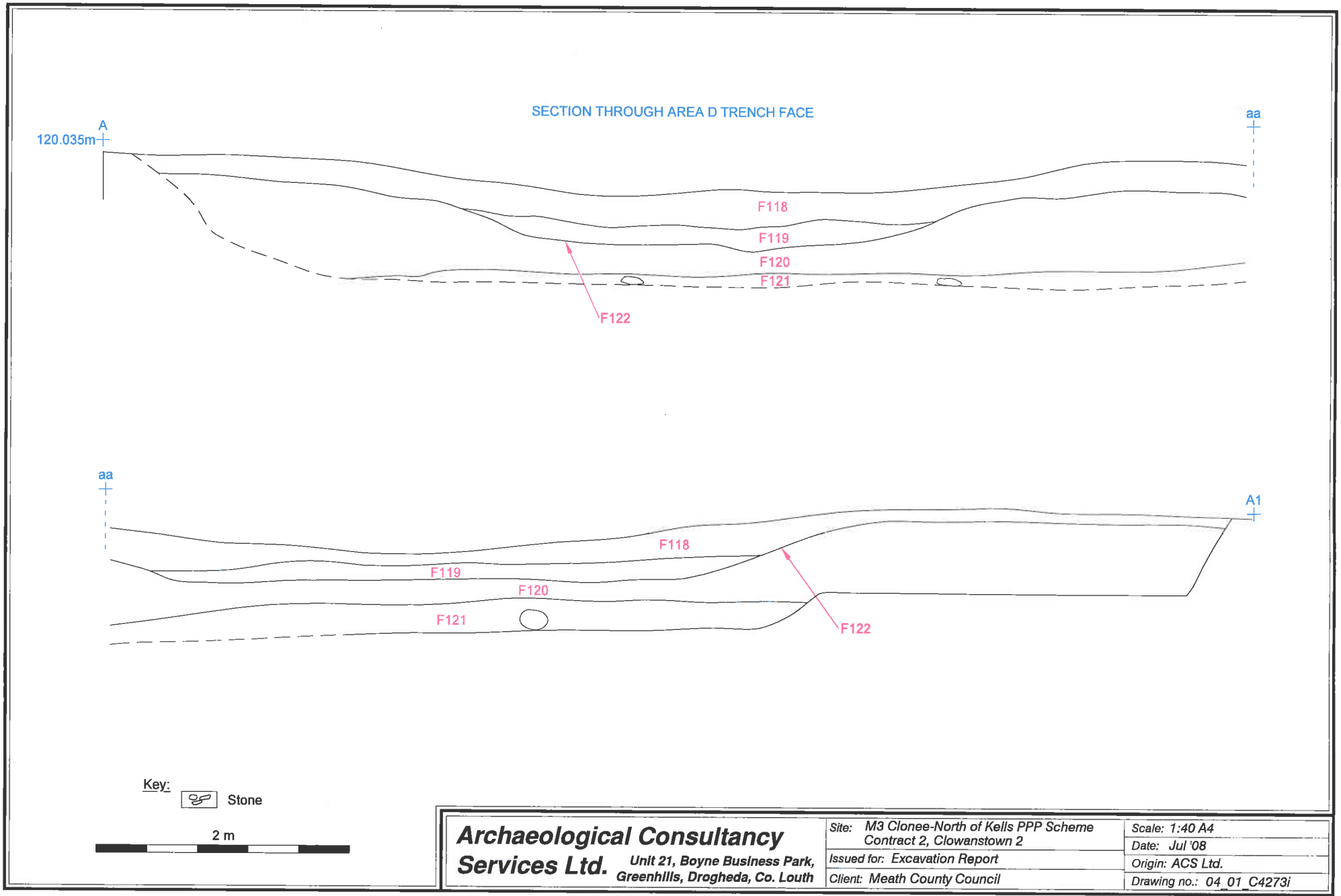


Figure 13: Section of Clowanstown 2, Area D

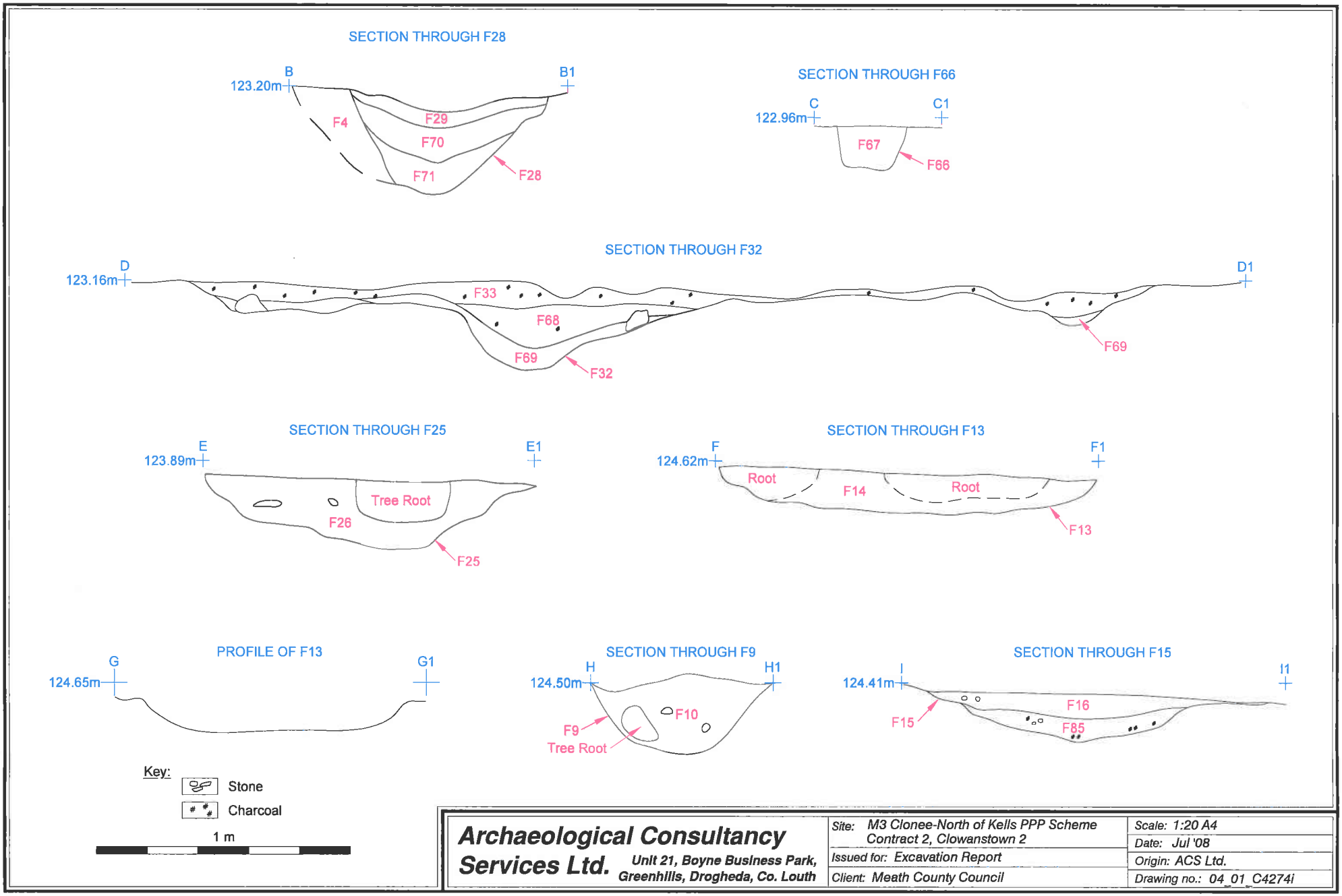
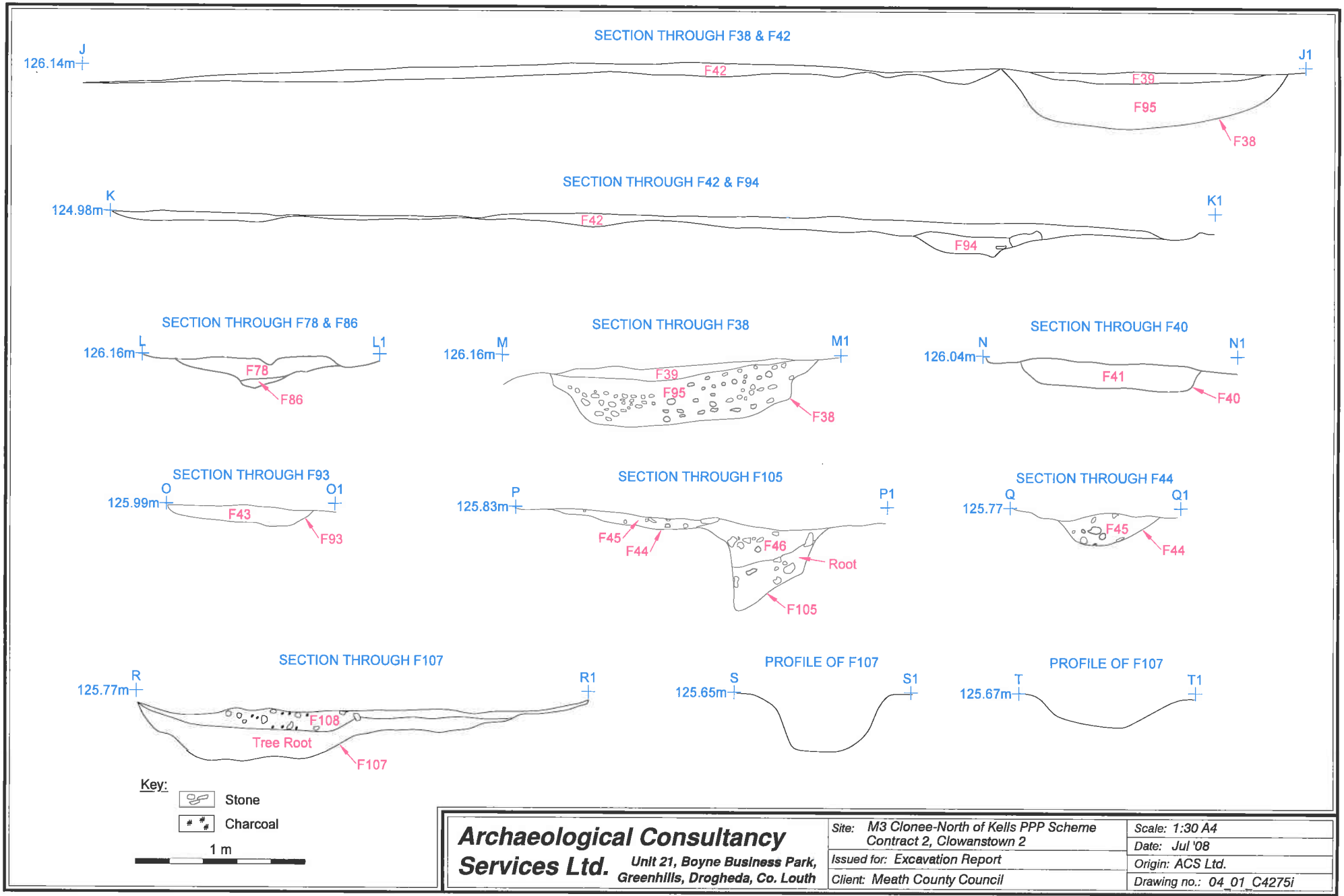


Figure 14: Sections and profile of Clowanstown 2



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		Date: Jul '08
	Issued for: Excavation Report	Origin: ACS Ltd.
	Client: Meath County Council	Drawing no.: 04_01_C4275i

Figure 15: Sections and profiles of Clowanstown 2

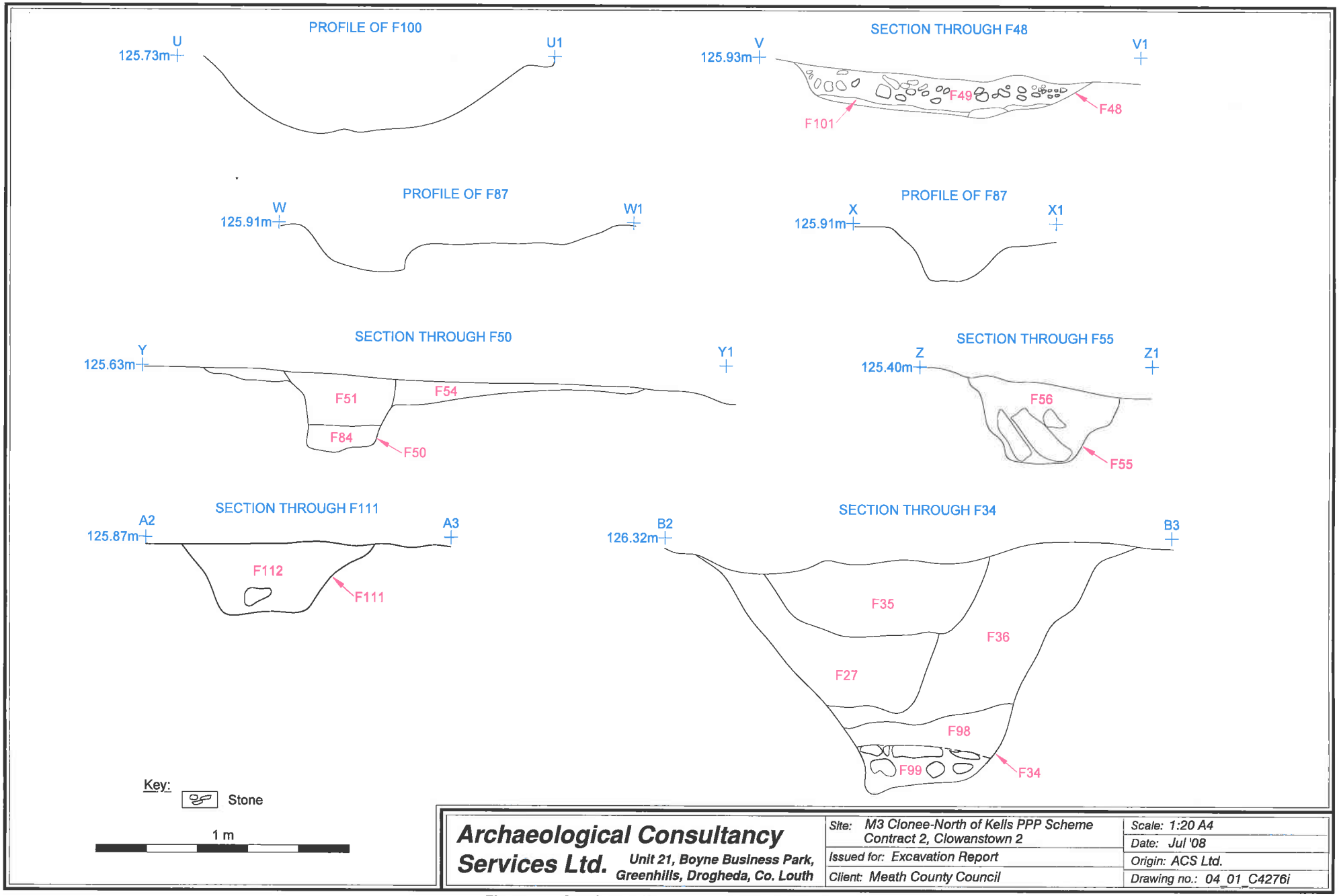


Figure 16: Sections and profiles of Clowanstown 2

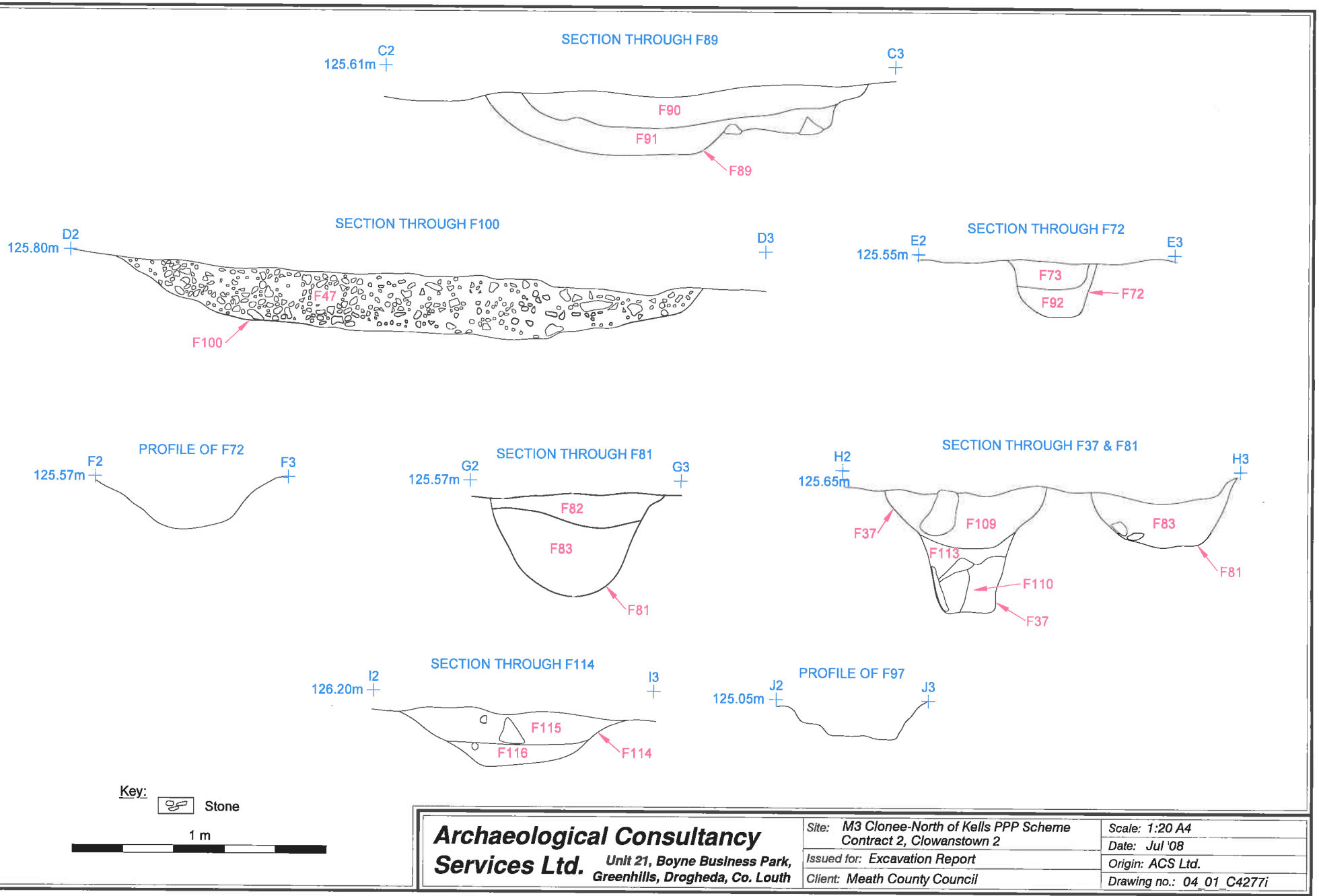


Figure 17: Sections and profiles of Clowanstown 2

Plate 1: Burnt spread F31 in root bole from south (04_01_Clowanstown 2_CP1_2)

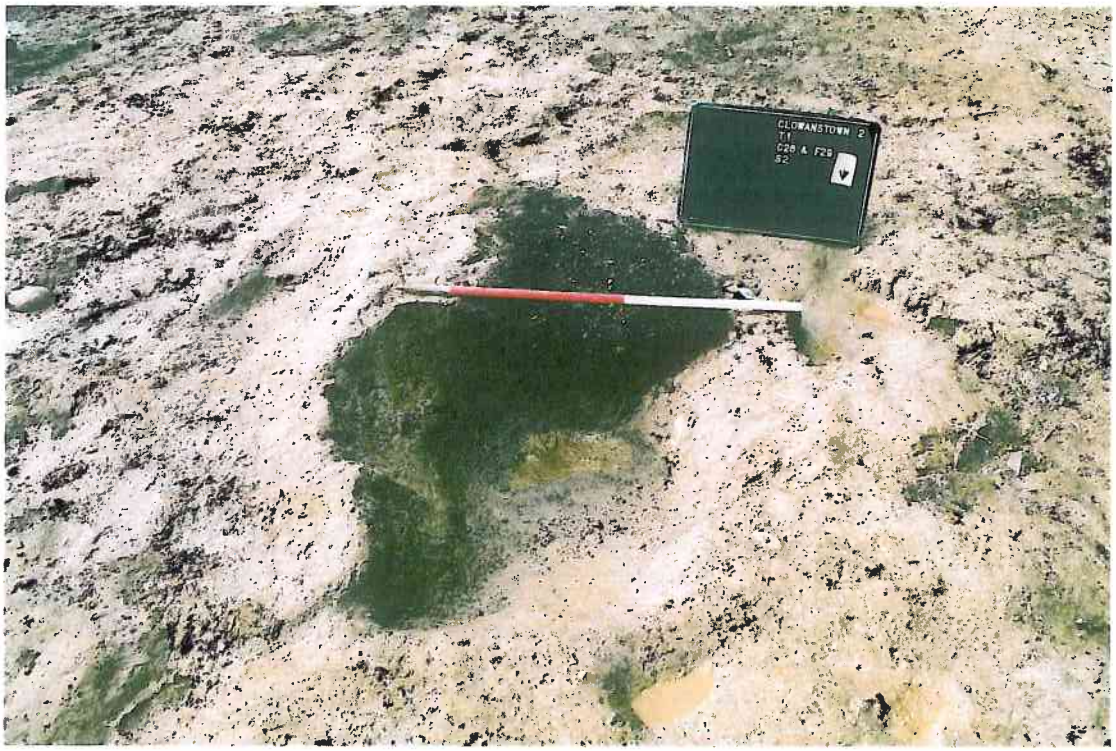


Plate 2: Section through pit F28 from north (04_01_Clowanstown 2_CP1_8)

Plate 3: Burnt spread F33 in root bole from south-west (04_01_Clowanstown 2_CP1_9)

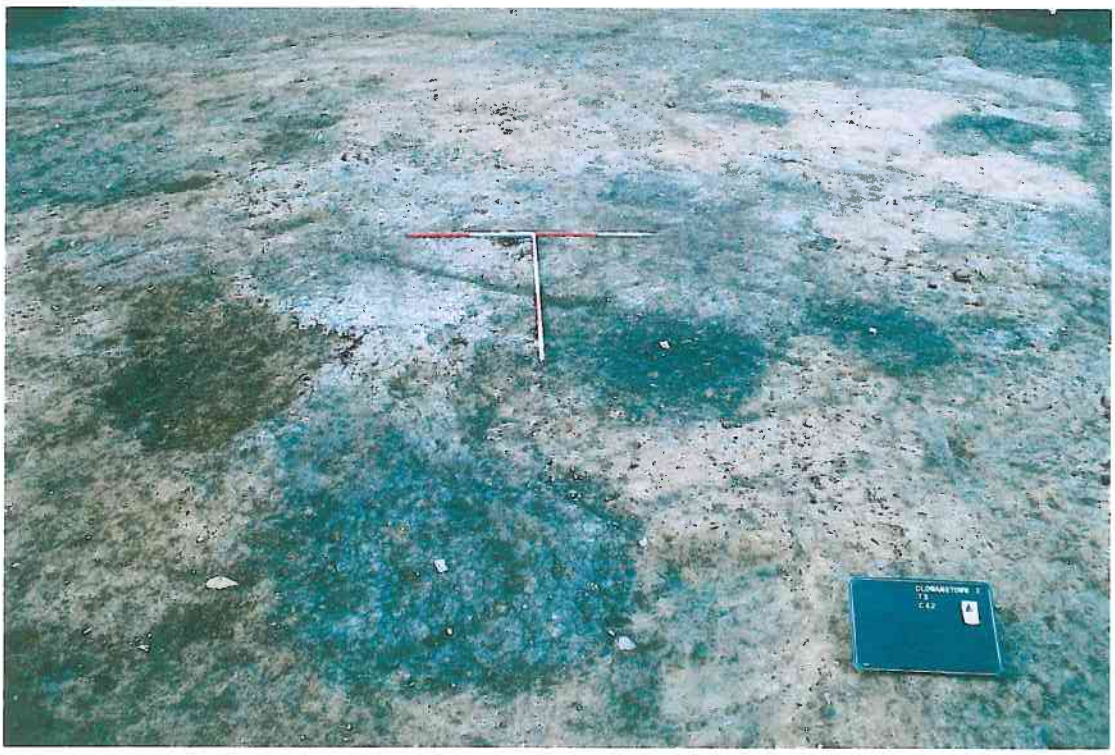


Plate 4: Burnt spread F42 and pits F8, F40 and F93 pre-excavation from south (04_01_Clowanstown 2_CP1_11)

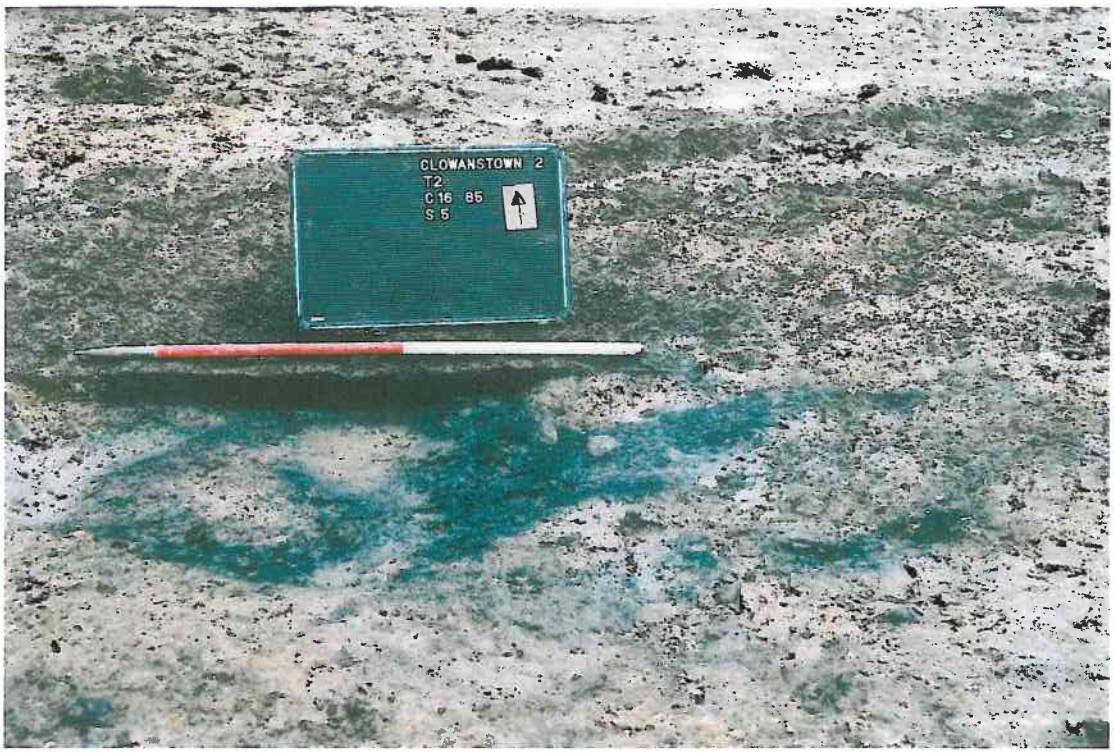


Plate 5: Hearth F15 from south (04_01_Clowanstown 2_CP1_14)

Plate 6: Field drain F55 from north-west (04_01_Clowanstown 2_CP1_17)

Plate 7: Pits F38, F40 and F93 beneath burnt spread F42 from east (04_01_Clowanstown 2_CP2_4)

Plate 8: Section through pit F38 from north (04_01_Clowanstown 2_CP2_5)

Plate 9: Section through pit F48 from south (04_01_Clowanstown 2_CP2_14)

Plate 10: Section through trough F100 from east (04_01_Clowanstown 2_CP3_3)

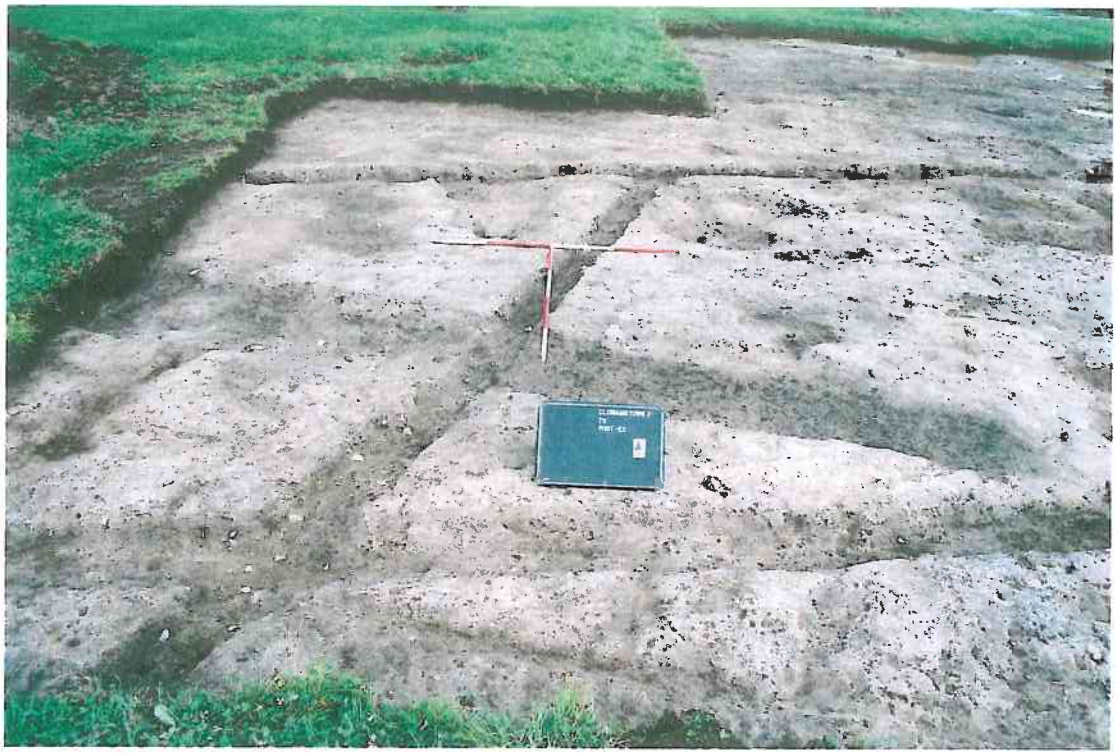
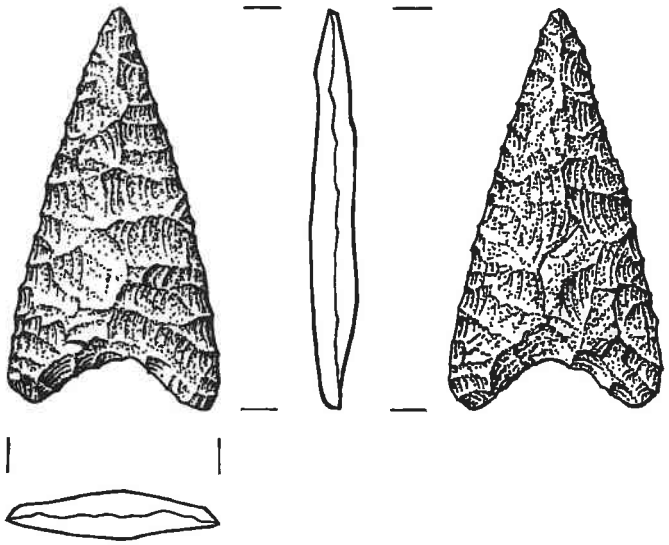
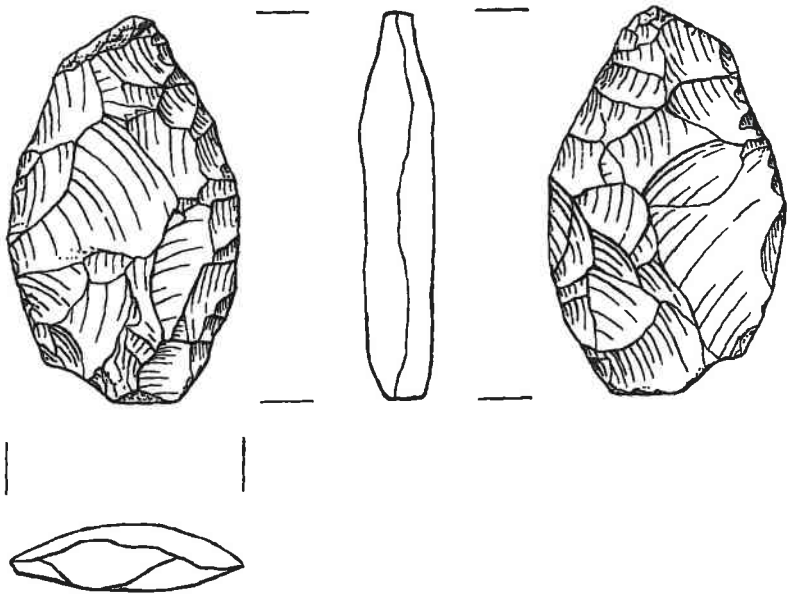


Plate 11: Gully F13 above hearth F015 from south (04_01_Clowanstown 2_CP3_4)

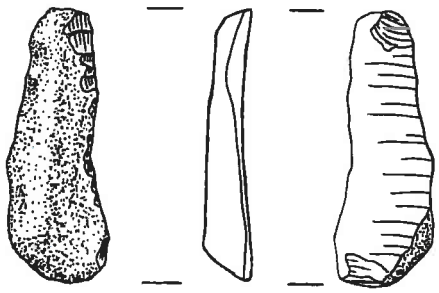
Plate 12: Area C pits post-excavation looking north (04_01_Clowanstown 2_CP3_8)



A008/012:5:1 Chert arrowhead



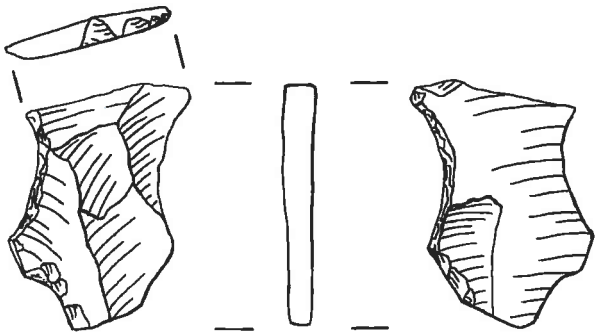
A008/012:5:2 Possible plano-convex knife



A008/012:5:5 Naturally backed knife

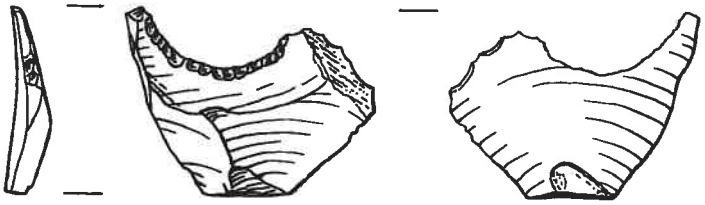
Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site: M3 Clonee-North of Kells PPP Scheme Contract 2, Clowanstown 2	Scale: 1:1 A4
	Issued for: Excavation Report	Date: October 2008
	Client: Meath County Council	Origin: Kurkowicz & Wolff
		Drawing no.: 04_01_C3912

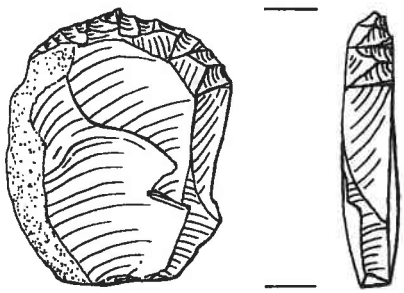
Illustration 1: Finds illustrations



A008/012:8:2 Double concave scraper

A008/012:77:1 Hollow scraper





A008/012:78:1 Convex end scraper

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	Client: Meath County Council	Origin: Kurkowicz & Wolff
		Drawing no.: 04_01_C3913

Illustration 2: Finds illustrations