

M3 Clonee-North of Kells Contract 3 Navan Bypass

**Report on the Archaeological Excavation
of
Gainstown 1, Co. Meath**

**Ministerial Directions No.
A023/009
E3101**

Stephen J. Linnane

December 2008

Final

PROJECT DETAILS

Project	M3 Clonee–North of Kells Motorway Scheme
Site Name	Gainstown 1
Ministerial Direction Number	A023/009
Registration Number	E3101
Senior Archaeological Consultant	Donald Murphy
Site Director	Stephen J. Linnane
Excavated	31 July – 31 August 2006
Client	Meath County Council, National Roads Design Office, Navan Enterprise Centre, Navan, County Meath
Townland	Gainstown
Parish	Ardbraccan
County	Meath
National Grid Reference	Area A 285084 264615 Area B 285036 264622
Chainage	44300
Height	61.39m OD
Report Type	Final
Report Status	Submitted
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This report has been prepared by Archaeological Consultancy Services Ltd on behalf of Meath County Council National Roads Design Office (NRDO) and the National Roads Authority (NRA). The excavation was carried out under Ministerial 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 Gainstown 1 was excavated by Archaeological Consultancy Services Ltd (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council, NRDO and the NRA. The excavation was carried out between 31 July and 31 August 2006 under Ministerial Direction Number A023/009 issued by the DoEHLG in consultation with the NMI. Testing in 2004 by Aidan O’Connell had previously discovered archaeological features in two adjacent fields separated by a bank and ditch field boundary; namely the burnt stone spread in Area B of this report and a pit in Area A of this report (numbered F606). These features were located again and excavated during resolution of this site. Area A contained four pits and two depressions all of which were filled with burnt mound material. A pit within this section of the site was dated to the early Bronze Age. A heavily ploughed out and dispersed burnt stone spread, six depressions, seven pits and two postholes were contained within Area B. The majority of these features were also filled with burnt mound material. A pit contained within this section of the site was dated to the late Neolithic period. A classic convex end scraper was also recovered from this feature.

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1 INTRODUCTION

The site at Gainstown 1 (Figures 1–7) was identified during advance testing carried out by Aidan O’Connell during May 2004 under licence number 04E0578 (O’Connell 2004). A spread with a maximum depth of 0.20m consisting of fire-cracked sandstone, charcoal-stained clay and charcoal flecks was identified as the remnants of a burnt mound. An oval pit was also identified filled with similar burnt mound material which may have been a trough. These features were located again during full archaeological resolution of the site in 2006 along with numerous other pits, possible troughs and recent linear features, including drains, ditches and furrows.

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 3) represents the Navan By-pass.

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 31 July and 31 August 2006 under Ministerial Direction Number A023/009 (Reg No. E3101) issued to Meath County Council NRDO. The work was carried out by Stephen J. Linnane on behalf of ACS. The site was found in two fields separated by a hedge and ditch and consequently excavated as two separate sites; Sites A and B. Site A was located to the east of site B. The topsoil was removed to the top of the natural subsoil by a tracked excavator equipped with a toothless grading bucket (details below) under strict archaeological supervision.

All archaeological features exposed were recorded and excavated by hand using the single context method whereby each feature and fill was assigned an individual context number. Where appropriate, samples were retrieved in an attempt to obtain evidence for the date and function of these features. 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 NMI from 1 onwards consistent with licence and feature number. The artefacts recovered from the site underwent an initial archaeological assessment and where deemed appropriate further specialist analysis was carried out on each artefact type.

2.1 Results

Archaeological features were located within two fields separated by a ditch and hedges and subsequently the site was divided into two areas, Area A and Area B. There were 118 contexts identified within the excavation area (context numbers 601–620 in Area A and 701–804 in Area B). All the principal archaeological features of Gainstown 1 will be discussed within this report. Fuller details of these, including stratigraphic relationships, are located in Appendix 1.

Area A (Figures 8–9, Plate 1)

The field had most recently been used as pasture and sloped gently down from east to west. The topsoil (F601) was, on average, 0.50m deep and consisted of medium-brown, clay loam with some small stone inclusions. The natural subsoil (F602) consisted of orange/brown boulder clay with some shattered limestone inclusions.

A series of pits (F604, F606, F608, F618) and shallow depressions (F612, F616) that all contained a fill of near-black, silty clay with burnt mound material including fire-shattered sandstone and occasional charcoal flecks were contained within Area A. The shallow features may be the remnants of a burnt mound which has since been ploughed away or fill from the

truncated pits being spread across the site by such ploughing. The deposits tended not to be mixed with topsoil and the former suggestion seems most probable.

Four pits were located in Area A (F604, F606, F608, F618). Pit F604 (2.64m west–east x 1.64m x 0.63m; Figure 13; Plates 4 and 5) had gently sloping sides which became steeper towards the central part of the western end where a sub-circular pit of 0.50m diameter was formed. The pit contained one fill with occasional charcoal flecks and frequent burnt sandstone (F603). A tooth (cattle) was recovered from F603 (Sloane; Appendix 6). Pit F606 (0.89m diameter x 0.20m depth; Figure 13; Plates 6–7) had steeply sloping sides leading to a flat base. The primary fill (F619) consisted of medium-grey, plastic clay with occasional charcoal flecks and burnt stone while the secondary fill (F605) consisted of near-black, silty clay with occasional charcoal flecks and frequent heat-shattered sandstone. The third pit was rectangular F608 (1.89m x 0.45m x 0.23m; Figure 14; Plates 8–10) with near-vertical sides leading to a flat base. The fill (F607) contained occasional charcoal flecks and frequent burnt sandstone. The charcoal was identified as alder, oak and elm with alder being the most predominant (ASDU; Appendix 5). A sample of alder was dated to Cal 1963-1745 BC (BETA 247095; Appendix 4). The eastern corner had been disrupted by root action while the western end was cut by drain F610. Rectangular pit F618 (1.00m x 0.24m x 0.18m; Figure 14; Plate 11) contained one fill (F617). The southern portion of the pit had been cut away by drain F610 and the pit could have been as wide as 0.50m. Where they survived the sides dropped steeply to a flat base.

Two depressions were identified (F612 and F616) and a single spread F620 (1.25m x 0.35m x 0.02m) was also noted. The depression F612 (0.87m x 0.80m x 0.10m; fill F611; Figure 14; Plate 12) was irregular and may have been caused by root action. The depression F616 (1.26m x 0.60m x 0.05m; fill F615) was also irregular and may have been a natural depression.

A single field drain F610 (0.40m wide x 0.20m deep; fill F609; Plate 2) was also identified and had vertical sides leading to a flat base. A well built stone-slab drain was constructed within the cut which truncated pits F608 and F618. A curvilinear slot F614 (3.20m x 0.42m x 0.30m; Plate 3) contained one fill (F613) of compact pale grey clay with only very occasional inclusions of burnt sandstone. The feature had very irregular, occasionally undercut sides and base and was most likely to be the result of tree root activity.

Area B (Figures 10–12, Plates 13 and 36)

The centre of activity within Area B was located 45m to the west of that in Area A and was separated from it by a field boundary consisting of a substantial ditch with bank and hedge. The site was triangular bounded by field boundaries to the north and east and by the edge of the road-take to the south and west. The field had most recently been used as pasture. The topsoil (F701) was, on average, 0.50m deep and consisted of medium brown clay loam with some small stone inclusions. The natural subsoil (F702) consisted of yellow boulder clay with shattered limestone inclusions overlying soft pale grey sand which formed the ground surface to the west of the site.

The natural subsoil sloped down to the south where a large depression had once been. A plastic pale grey clay/gley (F705) had formed within this hollow and there was some slight survival of a peat deposit (F706) overlying it. Probably, at the time of occupation when the pits and burnt stone spreads were created, the depression would have been, at least seasonally, water-filled.

A large ploughed out and dispersed burnt stone spread (F719) dominated this portion of the site. Numerous associated features which were archaeological in nature (filled with burnt mound material/sealed by spread) were identified and consisted of six depressions (F747/F796, F754, F758, F802, F804 and F772), seven pits (F722, F724, F756, F762, F764, F768 and F776) and two associated postholes (F771 and F798). Non archaeological features were also identified and consisted of post medieval drainage features (F708, F730, F710, F714), plough furrow (F712) and rubble (F715). Various interconnecting post medieval to modern features were also identified and consisted of ditches (F704, F716 and F726), pits (F748, F760), a depression (F744) and ditches/gullies (F752, F736 and F774).

Although the burnt stone spreads (F719 etc.) may once have formed a mound this had been levelled by ploughing and its original size could not be estimated. The survival of undisturbed patches of the burnt stone deposit indicated that negative features such as pits may not have been significantly affected by such ploughing. A substantial area of burnt stone contaminated with topsoil (F719) overlay the surviving undisturbed burnt stone spreads.

The following contexts consisted of spreads and shallow or irregular depressions without any pretence to structure. Their common theme was the un-contaminated nature of their fills which generally consisted of near-black, silty clay with frequent burnt stone inclusions. These features possibly represented undisturbed remnants of the original burnt mound. Six depressions filled with this material were identified (F747/F796, F754, F758, F802, F804 and

F772). The depression F747 (northern part) / F796 (southern part) (fill F746/F795) (5.25m x 3.30m x 0.20m; Figure 16, Plates 21–22) had irregular sides and base. F754 (1.70m x 1.20m x 0.15m; Figure 16, Plate 23) contained one fill, F753, and was cut by the linear ditch F714. F758 (2.45m x 0.90m x 0.08m; Figure 16, Plate 24) was filled with F757, F802 (3.00m x 3.00m x 0.10m; Plate 26) was filled with F747, F804 (0.40m diameter x 0.05m depth; Figure 16, Plate 27) was filled with F803, and F772 (2.30m x 0.80m x 0.06m; Figures 16–17, Plate 25) was filled with F773, F786, and F787 and all represented depressions. The fills of F772 were characterised by having a peat-like texture and this feature may be a natural depression occurring at the edge of the water-filled hollow around which this site was centred. F802 may have been contaminated by ploughing.

All the pits within this section contained burnt stone within their fills and may have functioned as troughs for heating water. The survival of remnants of the undisturbed burnt stone mound around them would indicate that the pits had not been excessively truncated by ploughing and therefore some may have been too shallow for such a purpose. Seven pits (F722, F724, F756, F762, F764, F768 and F776) and two associated postholes (F771 and F798) have been included within this group, forming a linear spread running from northwest to southeast over a distance of 16.00m. The pits were clustered between the 61.30m and 61.65m contour lines and represented by the irregular pit F722 (1.20m diameter x 0.15m depth; Figure 17, Plate 28), the square pit F724 (0.60m square x 0.20m deep; Figure 17, Plate 29) which had an irregularly terraced base and was disrupted by root activity, the circular pit F756 (1.40m diameter x 0.30m depth, Figure 17) which was disturbed by tree roots, the circular shaped pit F762 (1.20m diameter x 0.47m depth; Plate 31), the bowl-shaped pit F764 (1.40m diameter x 0.40m depth; Figure 17, Plate 32) that contained an oval posthole (F771: 0.35m x 0.25m x 0.53m), in the southwestern corner (and may have been related to a second possible posthole F798), the circular pit F768 (1.20m diameter x 0.45m depth; Figure 17, Plate 33), and the oval pit F776 (1.30m x 1.00m x 0.15m; Figure 17, Plate 34). Burnt stone was recovered from the fill of each pit-F723 (of F722), F725 (of F724), F755 and F780 (of F756), F770 (of F762-also filled with F761 and F769), F763, F778 and F779 (of F764), F784 (of F776-also filled with F784) and F767 and F788 (of F768). The charcoal recovered from the fill (F770) of the pit F762 was identified as alder, hazel, ash, maloideae and oak with ash being the most predominant (ASDU; Appendix 5) A sample of maloideae was dated to Cal 2833-2466 BC (BETA 247096; Appendix 4). F798 (0.40m x 0.18m x 0.32m; Figure 17, Plate 35) may have been a posthole but if so it is isolated, the only other possible posthole being F771 (Figure 17) some 5.30m to the east. The fill (F797) of F798 contained burnt stone and appeared to be contemporary with the surrounding pits. A single artefact was recovered from

one of the above identified features - a classic convex end scraper (A023/009:761:1) was recovered from the upper fill (F761) of the pit F762.

Due to its wet nature, the site was crossed by a number of post-medieval drainage features (F708, F730, F710, F714) and was also crossed by furrows from ploughing (F712) (Figures 10–11 & 15). In the north-western corner of the site a gate led into the next field, to the north. A substantial deposit of limestone and brick rubble (F715) had been laid here in order to provide a firm surface. An extensive spread (F719; Figure 11) consisted of compact medium grey/brown clay loam with varying quantities of burnt stone inclusions. The spread resulted from ploughing of the underlying burnt mound and mixing of the burnt stone with topsoil.

The fills of the following, inter-connected features tended to have only slight inclusions of burnt stone material and they were all later than the levelling process which created spread F719 but pre-dated the modern ditches and drains. No finds or deposits were retrieved that might assist in dating these features but they would appear to have been post-medieval to modern in date.

Ditches F704, Fill F721 (Plates 15 and 16)

F716, Fills F718 and F717

F726, Fills F728, F727 and F703

A 4.00m wide band of medium brown silty clay ran from north to south along the eastern part of the site. On excavation this proved to be the top fill of a series of three inter-cutting ditches (F704, Plates 15–16, F716, F726) of varying lengths, widths and depths (Figure 15). Although there was some variation in fill the only notable characteristic was the metalling which occurred sporadically along the base of the ditches. No logical sequence was constructed for the various ditch cuttings and it seems probable that they were intended to act as drainage channels leading water into the wetter area to the south of the site and that the metalling was a product of water action on the natural subsoil. All the ditches tended to peter out when they reached the boggy, southern part of the site. Modern pottery sherds were obtained from the ditch fills and as F716 cut pit F722 and the fills were similar to the topsoil the ditches have been attributed to this later period.

Two pits (F748: 2.05m x 1.30m x 0.20m; Plate 20; F760: 4.00m x 2.50m x 0.50m; Plate 19), a single depression (F744; Plates 17–18) and three ditches/channels/gullies (F752: 1.50m wide x 0.15m deep (allowed water to run from F748 into F760 which would have acted as a sump); F736: 0.60m wide x 0.45m deep; Figures 15–16, (drained into pit F760) and ditch F774 (continuation of F736)) were all interconnected (Figure 15) and appeared to have formed a

drainage system but for what purpose was not ascertained. The fills within the features would suggest that they were open for only a very short time.

2.2 Finds

A single fragment of flint (A023/009:761:1) was the most notable find from this site. This was a classic convex end scraper produced on a single platform core. Scrapers of this type typically date to the Neolithic period, and almost certainly to the first half of this period (Woodman et al 2006). The scraper was recovered from the pit F762. A radiocarbon date recovered from the primary fill (F770) of this feature dated it to the late Neolithic period (Cal 2833-2466 BC; BETA 247096; Appendix 4). A clay pipe bowl and some post-medieval pottery sherds were also recovered. All finds are listed in Appendix 2.

3 DISCUSSION

3.1 Form and function

All features identified within this site were indicative of burnt mound activity. Two separate areas of activity were identified-Area A and Area B. The centre of activity within Area B was located 45m to the west of that in Area A and was separated from it by a field boundary consisting of a substantial ditch with bank and hedge. A total of four pits and two depressions were contained within Area A and a dispersed and ploughed out burnt mound spread, six depressions, seven pits and two postholes were contained within Area B. The majority of these features were filled with burnt mound material-fire cracked sandstone, charcoal stained clay and flecks of charcoal and are therefore indicative of burnt mound activity which would suggest the former presence of a *fulacht fiadh* within/or in the vicinity of the site.

The debate concerning the purpose of burnt mounds (*fulacht fiadh*) and their associated troughs is ongoing but the remains would usually indicate that the purpose of such sites was the heating of water in a controlled manner by placing heated rocks into a water-filled trough. Experiments have proven this to be an efficient method of obtaining boiling water, perhaps most significantly in 1954 when O’Kelly cooked a 4.5kg leg of lamb in such a manner (O’Kelly 1954). Most often on excavated sites there is little evidence to discern what the boiling water was used for. The most frequent assertion has been for cooking (O’Kelly 1954), followed by bathing saunas or sweat lodges (Barfield & Hodder 1987), cloth manufacture (Lucas 1965; Jeffrey 1991) and, more recently, the brewing of beer (Quinn & Moore 2007). Certainly, as at Gainstown 1, most sites present scant evidence of food remains even where soil conditions have been analysed to suggest that there should be good bone preservation. This particular site presents little to progress the debate. The remains of the burnt stone

mound, and the possible troughs, unaccompanied by any subsidiary features, allow little room to speculate further on use.

Four of the features in Area A appear to have been purposefully constructed; two of the pits with straight sides (F608 and F618) may have functioned as troughs but appeared too shallow, for such a function. The largest feature (the pit F606) was also too shallow and the deeper part at its western end may have been a post pit; although the post would have been totally isolated. The fourth feature (F604) may have been re-cut, although no variation in fills was noted, and consequently in its original form may have been more regular in shape.

Within Area B amidst the various depressions and pits only four features (pits) appeared to be capable of functioning as troughs (F756, F762, F764 and F768). The typical or average shape of these potential troughs tended to be 1.30m in diameter by 0.44m deep with steeply sloping sides leading to a flat base. None of the pits showed any evidence for an internal lining and it is possible that an animal hide was used or that the pits filled naturally with groundwater. The approximate quantity of liquid that such a pit would hold would have been 550 litres, a substantial quantity. The two possible postholes (F771 and F768) were substantial but isolated, being 5.30m apart. It is just possible that they were connected and once supported a shelter or a wind-break although such a feature would have disrupted at least one of the possible troughs (F756) indicating that it was not contemporary with that particular feature.

Burnt mounds are the most common field monument identified in this country and have been identified on numerous sites along the proposed M3 Motorway Scheme. A total of sixty-one such sites were identified along this project and it is likely that this predominance would have been reflected throughout the entire surrounding landscape. Thirty-eight of the identified sites were similar to that of Gainstown 1 Area B and contained the remains of a burnt mound and associated pits/hearths/troughs and a total of fourteen of the sites were similar to that of Gainstown 1 Area A and consisted of pits etc filled with burnt mound material but with no associated spread. A total of sixteen sites in addition to Gainstown 1 which displayed evidence of burnt mound activity were identified along this section (Section 3) of the proposed route and included Ardbracon 1, 2 and 3 (A023/023, A023/024, A023/025), Boyerstown 2, 5, 7 and 8 (A023/014, A023/017, A023/020, A023/018), Gainstown 2, 3 (A023/010, A023/011), Kennastown 1, 3 (A023/001, A023/003), Townparks 1, 2 (A023/021, A023/022), Willaimstown or Bawn 1, 2 (A023/005, A023/006) and Philpotstown 1 (A023/007). Two of these (Gainstown 1 and 2) were located in relatively close proximity to Gainstown 1. Gainstown 2 was located 400m to the southeast whilst Gainstown 3 was located 100m to the northwest.

Burnt mounds and associated activity were typically located in close proximity to a water source and/or in wet/boggy/marshy landscape. Streams were noted during the course of the excavation in the vicinity of Gainstown 1 and the surrounding landscape was boggy and wet. The underlying natural subsoil was particularly marly which is also indicative of a wetland terrain.

Surrounding environment

The analysis of the charcoal recovered from various features within the site allows us to formulate an insight into the landscape surrounding Gainstown in the prehistoric period. Although these sites both contained evidence of burnt mound activity and were located adjacent to each other, they were not dated to the same period—Area A was dated to the early Bronze Age whilst Area B was dated to the late Neolithic period. Alder, oak and elm were contained within the charcoal samples identified in Area A whilst a more diverse range of species was identified in Area B—alder, hazel, ash, malvaceae and oak. All species identified would suggest that a mixed deciduous woodland existed locally, containing a high canopy of ash, oak and elm, with hazel and malvaceae growing as an understorey/by woodland margins and alder in areas of wetland (ASDU; Appendix 5). The predominance of alder, oak, ash and hazel is in line with studies recently carried by O’ Donnell (2007) out on similar burnt mound sites in central and western Ireland (ibid). The woodlands surrounding Gainstown were an important source of fuel for burnt mound activities.

3.2 Date and sequence

Burnt mounds are commonly dated to the Bronze Age (Brindley & Lanting 1990, 55–6). Recently, aided by the increased use of radiocarbon analysis, it has become apparent that burnt mounds have a much longer life span and can be dated from the early Neolithic (Russell 2001) to the medieval period (Walsh 1990). The frequent lack of associated artefacts makes a burnt mound site often reliant on either dendrochronology or radiocarbon dating. Two separate phases of burnt mound activity were identified within this site and can be assigned to the late Neolithic (Area B) and the early Bronze Age (Area A). The first phase of activity was represented by a pit in Area B (F762—a possible trough) which was dated to Cal 2833–2466 BC (BETA 247096; Appendix 4) and would place it in the late Neolithic period. This feature along with the majority of the features contained within Area B were sealed by a ploughed out and dispersed burnt stone spread and it is likely that they were all contemporary and dated to this period.

The recovery of a Neolithic date from a feature associated with burnt mound activity is significant. At present and in addition to Gainstown 1, a further six sites (Clowanstown 1

(A008/011), Pottlebane 3 (A030/017), Boyerstown 8 (A023/018), Ballinter 2 (A008/031), Kennastown 2 (A023/002) and Clowanstown 2 (A008/012)) along this project have returned dates that provide evidence of burnt mound activity within the Neolithic period. Radiocarbon dates recovered from the burnt mounds at Clowanstown 1 and Pottlebane 3 were broadly contemporary and proved to be the earliest dates obtained to date for burnt mound activity along the proposed M3 route– the burnt mound D at Clowanstown 1 was dated to Cal BC 3940-3660 (BETA 246995; see report A008/031) and a trough sealed by a burnt mound at Pottlebane 3 was dated to Cal BC 3770-3647 (BETA 247182; Appendix 4; see report A030/017). These dates were also similar to that recovered by Russell (2001) from a burnt mound at Moorechurch, Co. Meath (Cal BC 3980-3660). The remaining sites that, displayed evidence of burnt mound activity dating to the Neolithic period included Boyerstown 8 (A023/018), Ballinter 2 (A008/031), Kennastown 2 (A023/002) and Clowanstown 2 (A008/012) and were broadly contemporary with the date recovered from Area B at Gainstown 1. Activity on these sites was however significantly later than Pottlebane 3 and Clowanstown 1 (although still significantly earlier than the typically recognised Bronze Age date) and dated to the late Neolithic. The pit filled with burnt mound material at Gainstown 1 Area B (associated mound) was dated to Cal 2833-2466 BC (BETA 247096), a pit filled with burnt mound material at Boyerstown 8 was dated to Cal 2840-2480 BC (BETA 241322; see report A023/018), a pit filled with burnt stone material (no associated mound) at Ballinter 2 was dated to Cal 2875-2500 BC (BETA 237583; see report A008/031), a burnt spread at Kennastown 2 was dated to Cal 2852-2476 BC (BETA 247083; see report A023/002) and a pit sealed by a burnt mound at Clowanstown 2 returned a date of Cal BC 2570-2340 (BETA 241288; see report A008/012).

The second phase of activity was represented by a pit (F608) in Area A which was dated to Cal 1963-1745 BC (BETA 247095; Appendix 4) and would place this feature in the early Bronze Age. It is likely that the surrounding and associated features date to this period (an additional three pits and two depressions). The Bronze Age date recovered from this feature is more in line with dates typically associated with burnt mound activity. Burnt mound activity dated to the early Bronze Age was noted on ten (Gainstown 1 Area A, Gainstown 2, Ardbraccan 1, 3, Boyerstown 5, 7, Kennastown 3, Townparks 2, Williamstown or Bawn 1 and 2) of the seventeen identified sites along this section of the proposed motorway.

4 CONCLUSIONS

Gainstown 1 (A023/009) was excavated from the 31st July to the 31st August 2006 by Stephen J. Linnane (ACS) as part of the M3 Clonee–North of Kells Motorway Scheme on behalf of Meath County Council NRDO and the NRA. Two separate areas of archaeological significance were contained within this site -Areas A and B which were nearly 50m apart. A total of four pits and two depressions were contained with Area A and a dispersed and ploughed out burnt mound spread, six depressions, seven pits and two postholes were contained with Area B. The majority of these features were filled with burnt mound material. This would suggest the former presence of a burnt mound (*fulacht fiadh*) in/within the vicinity of the site and that burnt stone technology was being used in both parts of the site (presumably for boiling water). A slight difference in pit type was detected in each area; the most purposeful ones in Area A being straight edged while those at Area B tended to be circular. This could be explained by differing functions while an alternative interpretation could be that they date from different periods. Radiocarbon dating would suggest two separate phases of activity-Area A was dated to the early Bronze Age whilst Area B was dated to the late Neolithic period.

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Signed:



Stephen J. Linnane

December 2008

APPENDIX 1 *Context Details*

Gainstown 1: A023/009											
No	Type	Fill of/ Filled with	Strat above	Strat below	Description	Interpretation	Group	Artefacts	Animal bone	Cremated bone	Samples
1-600	NOT ASSIGNED										
601	topsoil	N/A	All	N/A	topsoil, medium brown clay loam with some small stone inclusions (0.50m deep)	topsoil		pottery	tooth		
602	subsoil	N/A	N/A	All	subsoil, orange/brown boulder clay with some shattered limestone inclusions	subsoil					
603	fill	604	604	601	near black silty clay with occasional charcoal flecks and frequent burnt sandstones inclusions	fill of pit 604			tooth		#3 charcoal
604	cut	603	602	603	sub-oval, west-east cut with a gentle break of slope, vertical sides and a gentle break of slope leading to flat base (2.64m x 1.64m x 0.63m)	pit					
605	fill	606	619	601	mid-black, silty clay with occasional charcoal flecks and frequent heat-shattered sandstones. Dimensions unknown	upper fill of pit 606					#1 charcoal
606	cut	605, 619	602	619	sub-circular cut with steeply sloping sides leading to a flat base (0.89m diameter x 0.20m)	pit					
607	fill	608	608	610	firm fill with occasional charcoal flecks and frequent burnt sandstones, cut by 610	fill of pit 608					#5 charcoal
608	cut	607	602	607	rectangular, west-east cut with a sharp break of slope, vertical sides and a sharp break of slope leading to a flat base. Cut by 610 (2.64m x 1.64m x 0.63m)	pit					
609	fill	610	610	601	well built stone slab field drain	fill of drain 610					
610	cut	609	607, 617	609	field drain running from west to east with vertical sides leading to a flat base (0.40m wide x 0.20m)	field drain					
611	fill	612	612	601	black, silty clay with frequent burnt and fire-shattered sandstones	fill of pit 612					

612	cut	611	602	611	sub-circular, east-west cut with a gentle break of slope, gently sloping sides and a gradual break of slope leading to an irregular base (0.80m x 0.87m x 0.10m)	possible natural depression					
613	fill	614	614	601	compact, pale-grey clay with occasional fire-shattered stone and occasional charcoal flecks	fill of cut 614					
614	cut	613	602	613	curvilinear cut with an irregular break of slope, irregular sides and an irregular break of slope leading to an irregular base (3.20m x 0.42m x 0.30m)	tree root					
615	fill	616	616	601	compact, mid-grey clay with occasional burnt stone and very occasional charcoal flecks	fill of depression 616					
616	depression	615	602	615	irregular depression (1.26m west to east x 0.60m x 0.05m)	possible natural depression					
617	fill	618	618	610	black, silty clay with frequent burnt sandstones and very occasional charcoal flecks, cut by drain 610	fill of pit 618					
618	cut	617	602	617	rectangular pit with steeply sloping sides, cut by drain 610 and could have been up to 0.50m wide (1.00m x 0.24m x 0.18m)	pit					
619	fill	606	606	605	medium-grey, plastic clay with occasional charcoal flecks and burnt stone	primary fill of pit 606					
620	spread	N/A	602	601	near black silty clay containing occasional burnt stones and charcoal flecks (1.25m northwest-southeast x 0.35m x 0.02m)	spread					
621-700	NOT ASSIGNED										
701	topsoil	N/A	All	N/A	medium brown clay loam with occasional small stone inclusions, on average 0.50m deep	topsoil					
702	subsoil	N/A	N/A	All	the natural subsoil consisting of yellow boulder clay with shattered limestone inclusions overlying soft pale grey sand	subsoil					
703	fill	704	727	701	medium brown silty clay with frequent small stone inclusions, this deposit was the top fill of 704 complex and was probably topsoil	upper fill of ditch 704		pottery			
704	cut	721	702, 725	721	principal number allocated to a series of intercutting ditches running from north-south and petering out to the south (4.00m wide x 0.60m max. deep)	ditch complex					
705	deposit	N/A	702	706	pale-grey clay with occasional burnt stone inclusions found in the southern part of the site	naturally formed gley					

706	deposit	N/A	705	701	very thin patchy layer of peat found in the southern part of the site	peat					
707	fill	708	730	701	mottled, brownish-grey clay with very occasional stone inclusions	upper fill of ditch 708					
708	cut	707, 731, 730, 729	705	729	ditch running from west to east, 0.90m wide by 0.50m deep with steep sides leading to a flat base of 0.30m width	ditch					
709	fill	710	710	701	greyish-brown, silty clay with frequent angular and rounded stones	fill of field drain 710					
710	cut	709	713	709	linear, west-east cut (0.36m wide x 0.17m deep)	field drain					
711	fill	712	712	701	medium brown silty clay	fill of furrow 712					
712	cut	711	702	711	linear, north-south cut, 0.50m wide x 0.06m deep	furrow					
713	fill	714	740	701	medium yellow brown silty clay	upper fill of ditch 714		iron object			
714	cut	713, 740, 741	719	741	linear, north-south cut, 1.30m wide x 0.50m deep	ditch					
715	spread	N/A	702	701	compact limestone rubble with occasional broken brick	hard-standing at gateway					
716	cut	717	702	718	part of 704, first re-cut of the ditch to the west	ditch					
717	fill	716	718	703	fill of 716	fill of ditch 716					
718	spread	716	716	717	intermittent metalled surface at base of 716	metalling? At base of 716					
719	spread	N/A	All arch features	712, 714, 736, 760, et al	extensive spread of greyish-brown loam with frequent heat-shattered stones caused by intermingling of topsoil and burnt stone through ploughing	result of ploughing of burnt mound material		clay, pottery			
720	spread	N/A	702	701, 744	near black, silty clay with moderate inclusions of heat-shattered stone	see 746/747					
721	fill	704	704	726	medium brown clay loam	fill of ditch 704					
722	cut	723	702	723	irregular pit, 1.20m in diameter by 0.25m deep, cut by furrow 732	pit					
723	fill	722	722	732	near black silty clay with burnt stone inclusions	fill of pit 722					

724	cut	725	702	725	square pit with sides of 0.60m and potential maximum depth of 0.20m	pit					
725	fill	724	724	704	near black silty clay with burnt stone inclusions	fill of pit 724					
726	cut	727, 728	721	727	part of 704, second re-cut of ditch, central part	re-cut of ditch 704					
727	fill	726	728	703, 707	medium brown silty clay with occasional small stone inclusions	fill of re-cut 726					
728	fill	726	726	727	base fill of 726 possible metallised surface	metallised surface					
729	fill	708	708	730	pale-yellowish-grey, sandy silt. Dimensions unknown	primary fill of ditch 708					
730	field drain	731	729	731	stone slab field drain inserted into ditch 708	stone field drain within ditch 708					
731	fill	730	730	707	fine, medium-grey, sticky, silty clay	fill of stone field drain 730					
732	cut	733	723	733	linear, north-south cut. (0.70m wide by 0.12m deep) cut pit 722	furrow					
733	fill	732	732	701	compact, medium-grey, silty clay with very occasional small stones. Cuts 722	fill of furrow 732					
734	not used										
735	not used										
736	cut	737, 738, 739, 789- 791	702	739	linear, east-west cut, V-shaped in profile with a rounded western terminal (0.60m wide x 0.45m deep x 6.00m long) to the west the ditch feeds into pit 760, equals 774	ditch					
737	fill	736	738	745	medium-pale-grey clay with occasional black silty clay lenses and burnt stone inclusions	upper fill of ditch 736					
738	fill	736	739	737	medium-grey clay with occasional burnt stone inclusions	second fill of ditch 736					
739	fill	736	736	738	pale-grey, plastic clay with frequent burnt stone inclusions	primary fill of ditch 736					
740	fill	714	741	713	orange sandy clay	lens within ditch 714					
741	fill	714	714	740	medium orange/brown silty clay with frequent small stone inclusions	primary fill of ditch 714					
742	cut	743	719	743	test pit excavated into 720/746 in 2204 (2.00m x 0.60m x 0.20m)	test pit					
743	fill	742	742	701	admix of topsoil and burnt mound material	fill of test pit					
744	cut	745	720	745	depression running from west to east caused by slumping of fills in 736	pit					

745	fill	744	744	719	loose, fine, dark-grey, silty clay with no stone inclusions	fill of depression 744					
746	fill	747	747	742, 719	near black silty clay with frequent burnt stone inclusions	fill of depression 747					#4 charcoal
747	cut	746	702	746	very irregular depression oriented north - south (5.25m x 3.30m x 0.20m) equals 796	depression					
748	cut	749, 750, 781	702	781	oval cut with steep sides leading to a flat base (2.05m northwest-southeast x 1.30m x	pit					
749	fill	748	750	719	dark-grey, silty clay with occasional burnt stone inclusions	upper fill of pit 748					
750	fill	748	781	749	compact, pale-grey clay with frequent burnt stone inclusions	second fill of pit 748					
751	fill	752	752	701	pale-grey clay with occasional burnt stone inclusions. 0.06m depth	fill of ditch 752					
752	cut	751	719	751	linear, north-south cut joining pits 748 and 760 (1.50m wide x 0.15m deep)	ditch					
753	fill	754	754	714	near black silty clay with frequent burnt stone inclusions	fill of depression 754					
754	depression	753	702	753	very irregular depression oriented west -east (1.70m x 1.20m x 0.16m)	depression					
755	fill	756	780	719	near black silty clay with inclusions of burnt stone	upper fill of pit 756					#6 charcoal
756	cut	755, 780	702	780	circular cut with steeply sloping sides and a northeast-southwest inclined base (1.50m x 1.40m x 0.30m)	pit					
757	fill	758	758	719	near black silty clay with frequent burnt stone inclusions	fill of 758					
758	depression	757	702	758	irregular depression (2.45m west-east x 0.90m x 0.08m)	depression					
759	fill	760	783	782	medium-grey, sandy silt with very occasional burnt stone	upper fill of pit 760					
760	cut	759, 782, 783	702	782	oval pit with varying sides and a flat base; ditch 736 ran into it from the east , ditch 774 exited to the west and 752 fed in from the north (4.00m west to east x 2.50m x 0.50m	pit					
761	fill	762	769	719	black, silty clay. 1.30m length x 1.15m width	upper fill of pit 762		flint			
762	cut	761, 769, 770	702	770	circular cut with gently sloping east sides and steeply sloping western sides (1.20m diameter x 0.47m depth)	pit					
763	fill	764, 771	771, 778	719	black, silty sand with frequent stones (0.04m diameter). 0.29m depth	upper fill of pit 764 and posthole 771					
764	cut	763, 778, 779	702	771, 779	circular bowl-shaped cut with gently sloping sides (1.40m diameter x 0.40m deep). Posthole 771 located in southwest corner	pit					

765	not used										
766	not used										
767	fill	768	788	714	loose burnt mound material with small stones (0.04m diameter) frequent limestone (50%), sandstone (50%) and very occasional charcoal flecks. Cut by 714	upper fill of pit 768					
768	cut	767, 788	702	788	circular pit with steeply sloping sides leading to a flat base (1.20m diameter x 0.45m)	pit					
769	fill	762	770	761	silty clay with occasional small pebbles	second fill of pit 762					
770	fill	762	762	769	grey, sandy clay with frequent burnt stone inclusions	primary fill of pit 762					#2 charcoal
771	cut	763	764	763	oval, northeast-southwest cut with a sharp break of slope, steep sides and a sharp break of slope leading to a tapered base with an east-west inclination (0.35m x 0.25m x 0.53m deep)	post-hole in pit 764					
772	depression	773, 786, 787	702	787	irregular depression with gently sloping sides leading to an undulating base. 2.30m, west-east x 0.80m x 0.30m	depression					
773	fill	772	786	719	burnt mound material with frequent decayed and burnt stones (0.04m diameter). 2.30m x 0.70m x 0.06m	upper fill of linear 772					
774	cut	775	719	775	continuation of drain736, running from west -east from pit 760 the ditch an for 16.00m before turning to the south and petering out	ditch					
775	fill	774	774	701	fine, medium-grey, sandy silt	fill of ditch 774					
776	cut	777, 784	702	784	oval, east-west cut with a sharp break of slope, steep sides and a steep break of slope leading to a flat base, (1.30m x 1.00m x 0.15m)	pit					
777	fill	776	784	719	loose, black, sandy silt	upper fill of pit 776					
778	fill	764	779	763	moderately compact, greyish-black, silty sand with frequent burnt sandstones and occasional decayed stones.	second fill of pit 764					
779	fill	764	764	778	loose, yellowish-grey, silty clay with frequent large burnt and unburnt sandstones (0.06m diameter)	primary fill of pit 764					
780	fill	756	756	755	grey, silty sand with frequent burnt stone inclusions	primary fill of pit 756					
781	fill	748	748	750	compact, pale-grey clay with frequent large stone inclusions	primary fill of pit 748					
782	fill	760	760	759	grey stony layer	primary fill of pit 760					
783	fill	760	759	719	grey layer with occasional burnt stones	upper fill of pit 760					

784	fill	776	776	777	grey, silty sand with tightly compact, large burnt limestones (0.10m diameter)	primary fill of pit 776					
785	not used										
786	fill	772	787	773	grey, with yellow mottling, clay	second fill of depression 772					
787	fill	772	772	786	peaty layer. 1.80m x 0.38m x 0.07m	primary fill of depression 772					
788	fill	768	768	767	medium grey clay with occasional burnt stone inclusions	fill of pit 768					
789	fill	736	791	701	grey, sandy clay. Visible only in the western sections	upper fill of ditch 736					
790	fill	736	736	791	peat with occasional flecks of decayed stone. Visible only in western sections	primary fill of ditch 736					
791	fill	736	790	789	sandy-grey-brown silt with occasional small pebbles. Visible only in western sections	second fill of ditch 736					
792	not used										
793	not used										
794	not used										#7 charcoal
795	fill	796	796	744	firm, dark-brown, peaty burnt mound material with frequent burnt and decayed stone	fill of 796					
796	depression	795	747	795	equals 747, located to the south of 736	depression					
797	fill	798	798	757	near black silty clay with occasional burnt stone inclusions	fill of posthole 798					
798	cut	797	702	797	oval cut, 0.40m from north to south by 0.18m with a maximum depth of 0.32m. Possible post-hole with steep sides leading to a pointed base	posthole					
799	not used										
800	not used										
801	fill	801	802	711	near black silty clay with burnt stone inclusions	fill of 802					
802	depression	747	747	746	irregular depression with gently sloping sides leading to an undulating base (3.00m x 3.00m x 0.10m)	depression					
803	fill	804	804	801	near black sandy clay with burnt stone inclusions	fill of 804					
804	depression	803	702	803	shallow circular depression (0.45m in diameter x 0.04m deep)	depression					

APPENDIX 2 Finds List

Find No	Description
A023/009:601:1	modern pottery
A023/009:703:1-3	3 sherds of modern blue, white and buff pottery, intrusive
A023/009:707:1	Modern brick (Intrusive and considered non-archaeological and therefore not retained)
A023/009:713:1	Unidentifiable iron fragment – Post-medieval to modern
A023/009:719:1	fragment of clay pipe bowl
A023/009:719:2	sherd of white glazed pottery
A023/009:743:1	broken tape (Remains from testing phase and therefore not retained)
A023/009:761:1	flint flake

APPENDIX 3 *Sample List*

Sample No	Context No	Results
1	605	25g charcoal flecks
2	770	9g charcoal
3	603	12g charcoal
4	746	13g charcoal
5	607	13g charcoal
6	755	charcoal flecks
7	794	4g charcoal

APPENDIX 4 *Radiocarbon dates*

Context	Sample No	Material	Species id/Weight	Lab	Lab Code	Date Type	Calibrated Date	Conventional Date (BP)	13C/12C Ratio ‰
607: fill of possible pit/posthole 608	3	Charcoal	Alder (61mg)	Beta	247095	AMS (Std)	Cal 1963-1745 BC	3530 +/- 40 BP	-25.9
770: fill of pit 762	1	Charcoal	Maloideae (282mg)	Beta	247096	AMS (Std)	Cal 2833-2466 BC	4020 +/- 40 BP	-25.7

APPENDIX 5 *Environmental Analysis*



Archaeological Services
University of Durham

Gainstown 1, M3 Motorway Project, Co Meath, Ireland

charcoal analysis

on behalf of

Archaeological Consultancy Services Ltd

Report 2060
December 2008

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Gainstown 1, M3 Motorway Project, Co Meath, Ireland

charcoal analysis

Report 2060

December 2008

Archaeological Services Durham University

on behalf of

Archaeological Consultancy Services Ltd

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

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3. Charcoal analysis	2
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1. Summary

The project

- 1.1 A probable burnt mound complex was excavated by Archaeological Consultancy Services Ltd at Gainstown 1, Co Meath, Ireland. This report presents the results of charcoal analysis of the fills of two pits.

Results

- 1.2 The charcoal analysis suggests that deciduous woodland grew locally, which would have provided an important source of fuel for the burnt mound activities. The species selected were ash, oak, alder, hazel, elm and Maloideae.

2. Project background

Location and background

- 2.1 An excavation was undertaken by Archaeological Consultancy Services Ltd at Gainstown 1, Co Meath, Ireland (NGR 285053 264640). The site featured a series of pits and spreads, and appears to have been a burnt mound complex. Many of the pits contained burnt stones, and some may have functioned as troughs. Radiocarbon analysis provided an early Bronze Age date for the site. This report presents the results of charcoal analysis of the fill of a possible pit C608 (context 607), and the fill of pit C762 (context 770).

Objective

- 2.2 The objective was to analyse the charcoal from the site, in order to provide information about the local environment and the use of woodland resources at the site.

Dates

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

Personnel

- 2.4 Sample processing was undertaken by Archaeological Consultancy Services Ltd. The residues were sorted by Mr Bryan Atkinson. Charcoal analysis and report preparation were carried out by Dr Charlotte O'Brien.

Archive

- 2.5 The licence number is A023/009. The charcoal samples are currently held at the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return.

3. Charcoal analysis

Methods

- 3.1 The residues were examined for charcoal, seeds, shells, bones, pottery sherds and metalworking debris. Charcoal was collected from the 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 Schweingruber (1978), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant taxonomic nomenclature follows Stace (1997). A single entity of alder charcoal from context (607), and Maloideae charcoal from context (770), (weighing 61mg and 282mg respectively), were provided for radiocarbon dating.

Results

- 3.2 The residues contained charcoal and burnt stones, and a few flecks of calcined bone were noted in context (770). Charred and waterlogged plant macrofossils were absent from the residues and the charcoal samples. A crinoid (Pre-Quaternary fossil) was recorded in the charcoal sample of context (770), which will have derived from the Carboniferous limestone bedrock of the area.
- 3.3 The charcoal assemblage in context (607) comprised alder, oak and elm, while context (770) contained alder, hazel, Maloideae (hawthorn, whitebeams, apple or pear), ash and oak. The results are presented in Table 3.1 and Figure 3.1.

Table 3.1: Charcoal results from Gainstown 1

Context	607	770
Sample	3	1
Feature	Pit	Pit
Material available for radiocarbon dating	✓	✓
Volume of flot (ml)	-	10
<i>Residue matrix (relative abundance)</i>		
Bone (calcined)	-	1
Burnt stones	3	2
Charcoal	2	2
<i>Flot matrix (relative abundance)</i>		
Charcoal	-	2
Crinoid (Pre-Quaternary fossil)	-	1
Roots (modern)	-	1
<i>Charcoal (g/number of fragments)</i>		
Total charcoal (g)	12.371	8.760
Percentage of sample analysed	100	100
Total charcoal analysed >4mm (g)	2.204	2.307
Number of analysed charcoal fragments >4mm	42	29
<i>Alnus glutinosa</i> (Alder)	1.195 (23F)	0.078 (2F)
<i>Corylus avellana</i> (Hazel)	-	0.274 (5F)
<i>Fraxinus excelsior</i> (Ash)	-	0.362 (4F)
Maloideae (Hawthorn, whitebeams, apple, pear)	-	0.282 (1F)
<i>Quercus</i> sp (Oak)	0.658 (14F)	0.131 (2F)
<i>Ulmus</i> sp (Elm)	0.351 (5F)	-
Ring porous	-	0.408 (6F)
Unidentified >4mm fraction	-	0.772 (9F)
Unidentified <4mm fraction	10.167	6.453

F = number of charcoal fragments. Relative abundance is based on a scale from 1 (lowest) to 5 (highest)

Discussion

- 3.4 The charcoal in context (770) was in a poor condition, with many fragments being orange-stained and partially mineralised, and for this reason it was not possible to identify some of the >4mm fragments. This is a common phenomenon of features associated with burnt mounds, as the waterlogged conditions can result in the charcoal incorporating minerals such as calcium and iron, which hinders identification (Stuijts 2007).

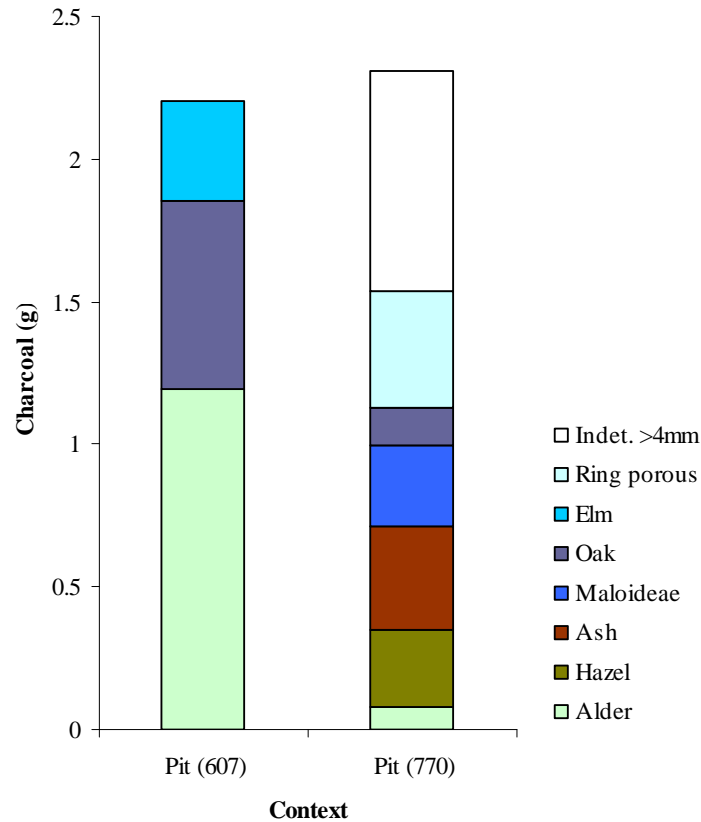


Figure 3.1: Proportions of identified charcoal from Gainstown 1

- 3.5 If the wood was collected locally, the results of the charcoal analysis suggest that the landscape included mixed deciduous woodland. This comprised a high canopy of ash, oak, and elm, with hazel and Maloideae growing in the understorey or by the woodland margins. Alder would have favoured wetland areas, for example along riverbanks or in carr vegetation.
- 3.6 The charcoal species are likely to reflect the fuels being used for activities associated with the burnt mound. The predominance of alder, oak, ash and hazel is in line with a recent study of charcoal from Bronze Age sites in central and western Ireland, which has provided evidence that these were the main trees selected for fuel on burnt mound sites (O'Donnell 2007). It has been suggested that this choice of fuel reflects the marginal situation of most burnt mounds, between wet and dryland areas (ibid.). Elm and Maloideae were also used at Gainstown 1. This pattern of fuel selection has been noted at other burnt mound sites along the route of the M3 motorway, for example at Drumbaragh 3, Ardracran 3 and Boyerstown 5 (Archaeological Services 2008abc).
- 3.7 The small size of the charcoal fragments prevented their differentiation between roundwood (branchwood) and timber (stemwood). Tyloses, which commonly occur in the heartwood of some trees (particularly oak), were not observed.

4. Sources

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APPENDIX 6 *Animal Bone Report*

04_01, M3 Clonee to North of Kells Road Scheme

**Analysis of mammalian bone remains from Gainstown 1,
Co. Meath**

(A023/009)

24th January 2008

Rachel Sloane

04_01, Gainstown 1 (A023/009), results of mammal bone analysis:

Two small samples of animal bone remains, one from F601 (turf and topsoil) and one from F603 (fill of 604, a pit or possible trough) were presented for analysis. They were both from the area designated Gainstown 1A. The remains were in a very fragmented state and following thorough inspection no recordable material was identified. A number of fragments of cattle teeth were observed for both samples but under the criteria of the applied methodology, the Gainstown 1 assemblage consists entirely of low-grade material. Consequently no animal bone remains from this site are worthy of recording.

APPENDIX 7 *Lithics Analysis*

Lithics Finds Report for A023/009 Gainstown 1 (E3101), Co. Meath
M3 Road Scheme

Farina Sternke

MA, PhD

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Introduction

One lithic find from the archaeological investigations of a prehistoric site at Gainstown 1, Co. Meath was presented for analysis (Table 1). The find is associated with a pit.

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, width 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 lithic is a worked flint.

Provenance

It was recovered from an upper fill (c. 761) of a pit (c. 762).

Condition:

The lithic survives in burnt and incomplete condition.

Technology/Morphology:

The artefact is a retouched flaked which was produced on a single platform core. It measures 33 mm long, 25 mm wide and 6 mm thick and is retouched on its distal, proximal and left edge. It is a classic convex end scraper.

Dating:

The lithic artefact from Gainstown 1 is typologically diagnostic. The classic convex end scraper dates to the Neolithic period, almost certainly to the first half of that period (Woodman *et al.* 2006). The single platform technology used for its production

Find Number	Context	Material	Type	Condition	Cortex	Length (mm)	Width (mm)	Thickness (mm)	Complete	Retouch
A023/009:761:1	761	Flint	Retouched Artefact	Burnt	No	33	25	6	No	distal and proximal direct abrupt, left edge direct semiabrupt

Table 1 Composition of the Lithic Assemblage from Gainstown 1 (E3101)

supports this dating.

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.

Conclusion

The lithic find from the archaeological investigations at Gainstown 1, Co. Meath is a classic convex end scraper made of flint. It is typologically and technologically diagnostic and almost certainly dates to the first half of the Neolithic period. The find most likely represents waste from domestic activities carried out at or in the vicinity of the site.

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

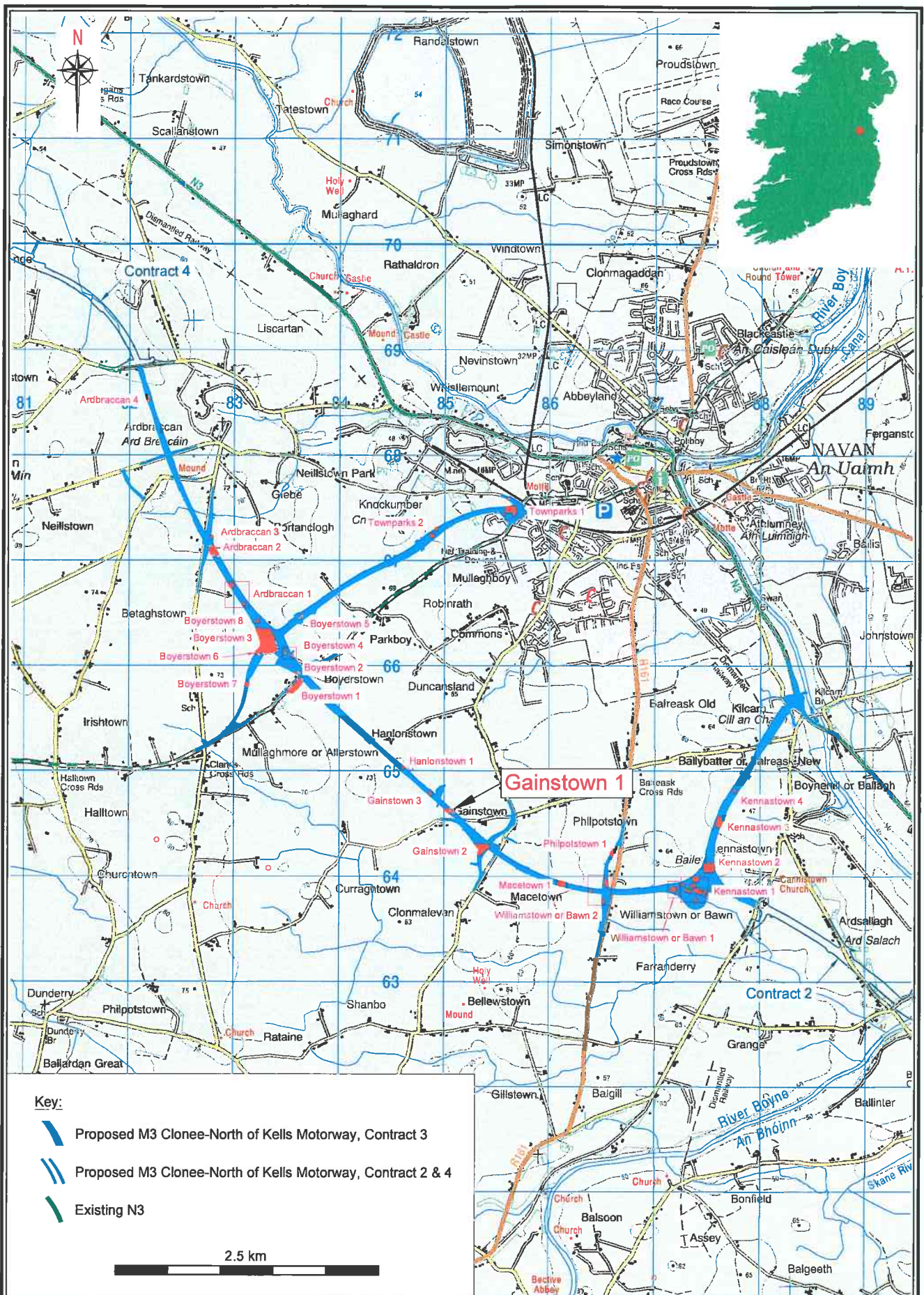
Recommendations for Illustration

- Convex End Scraper (A023/009:761:1)

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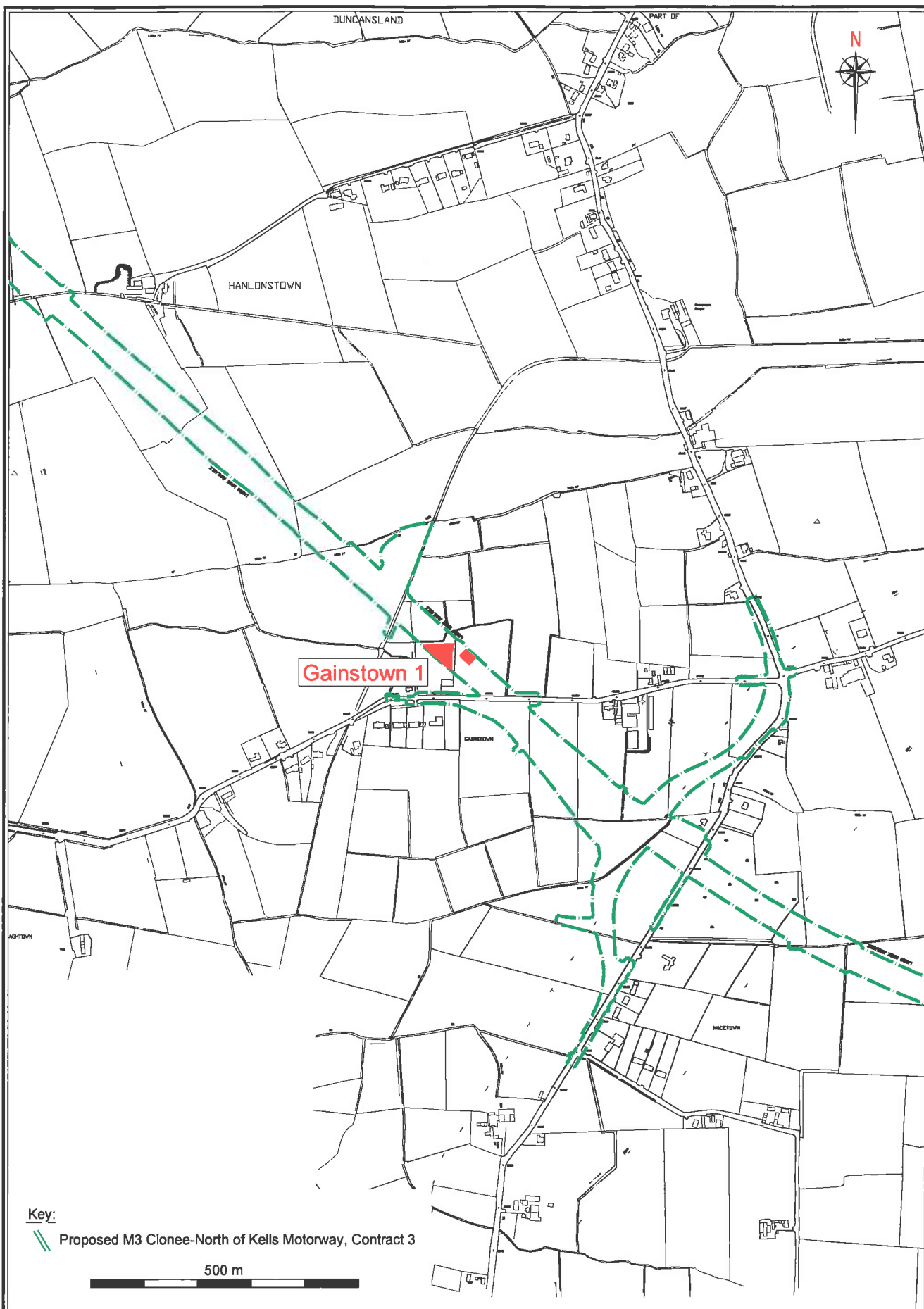


Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth

Site: M3 Clonee-North of Kells PPP Scheme
Contract 3, Gainstown 1
Issued for: Excavation Report
Client: Meath County Council

Scale: 1:50,000 A4
Date: Jul '08
Origin: OSI Discovery Series
Drawing no.: 04 01 C27411

Figure 1: Location of Gainstown 1



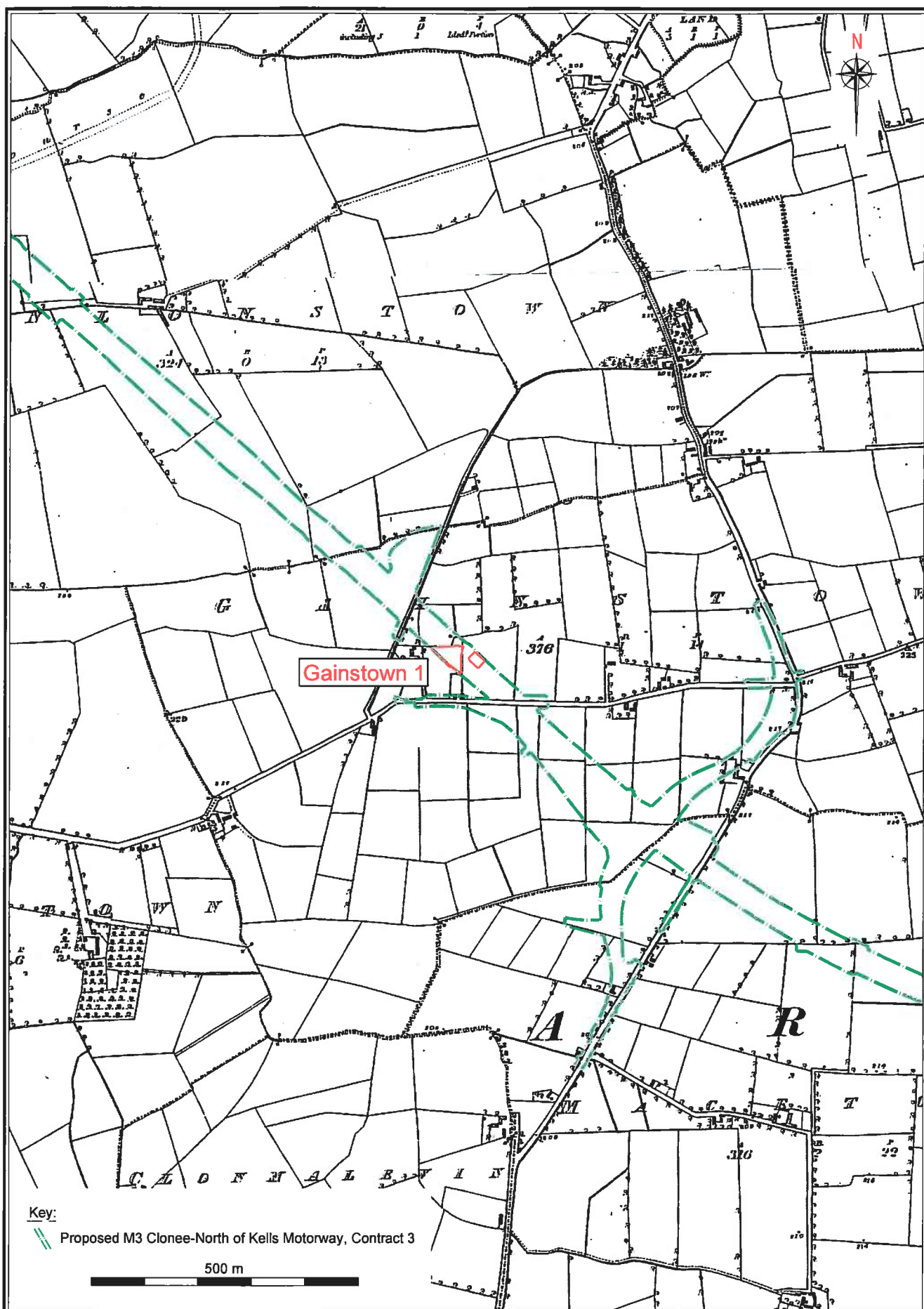
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Scale: 1:10,000 A4
Date: Jul '08
Origin: Client/ACS Ltd.
Drawing no.: 04_01_C2742i

Figure 2: Location of Gainstown 1 on current OS background

Figure 3: Gainstown 1, extract from 1st edition OS map, Meath sheets 25 & 31



Key:

Proposed M3 Clonee-North of Kells Motorway, Contract 3

500 m

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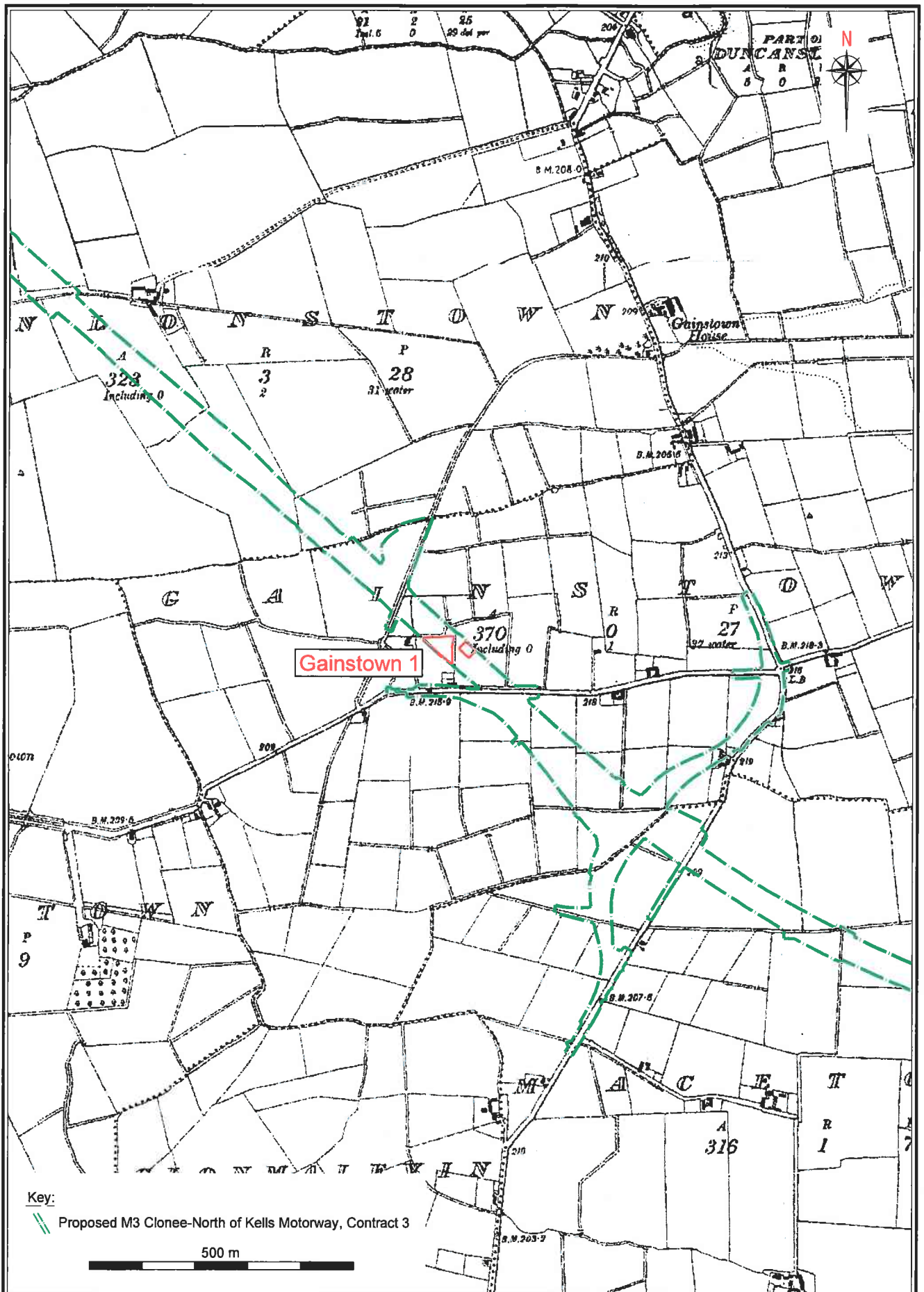
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Date: Jul '08

Origin: OSI (1882)

Drawing no.: 04_01_C2744i

Figure 4: Gainstown 1, extract from 2nd edition OS map, Meath sheets 25 & 31



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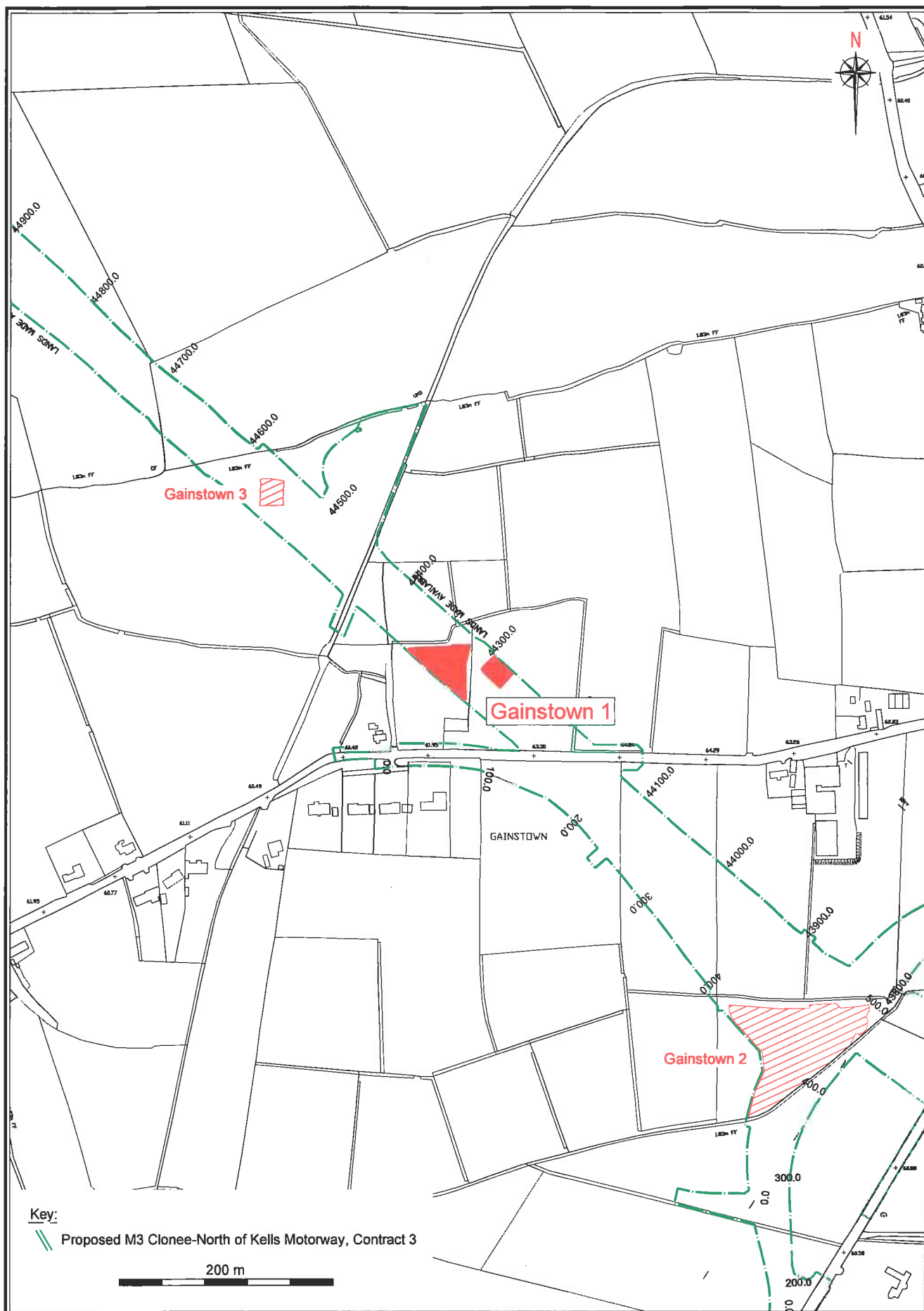
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Date: Jul '08

Origin: OSI Sheets 25(1955) & 31(1909)

Drawing no.: 04_01_C2745i

Figure 5: Gainstown 1, extract from 3rd edition OS map, Meath sheets 25 & 31



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Scale: 1:5,000 A4
Date: Jul '08
Origin: Client/ACS Ltd.
Drawing no.: 04_01_C2746i

Figure 6: Detailed location of Gainstown 1

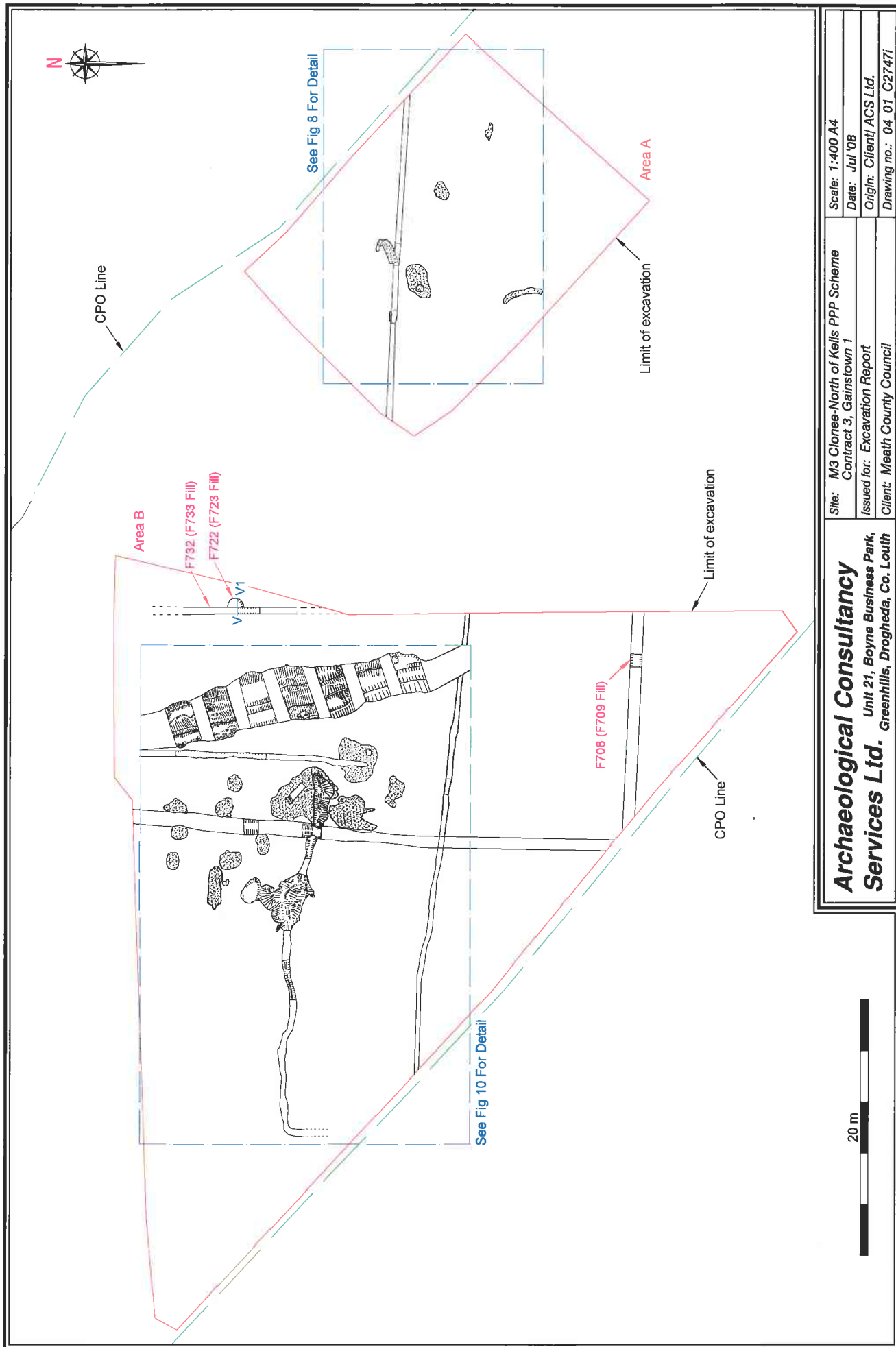
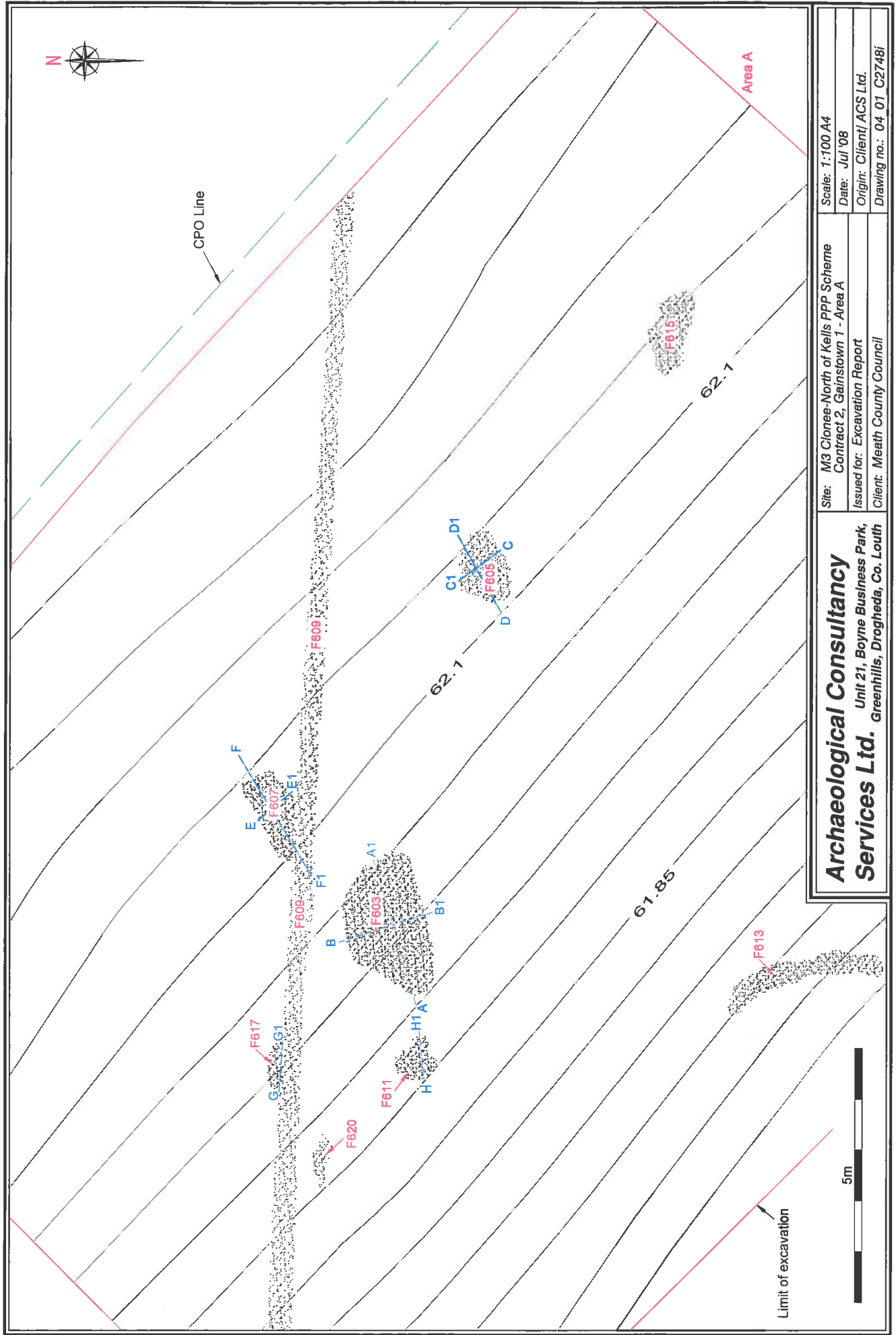
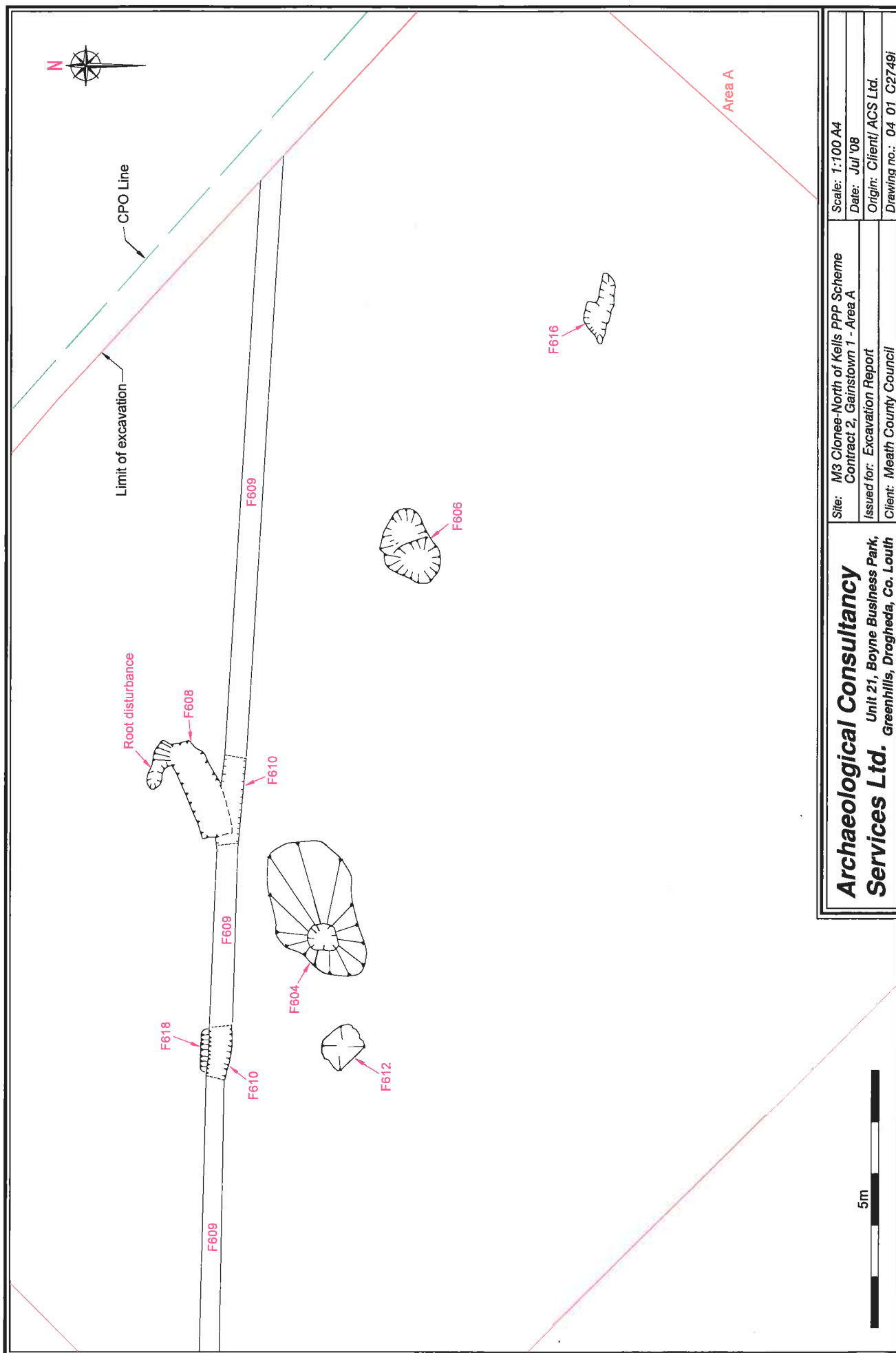


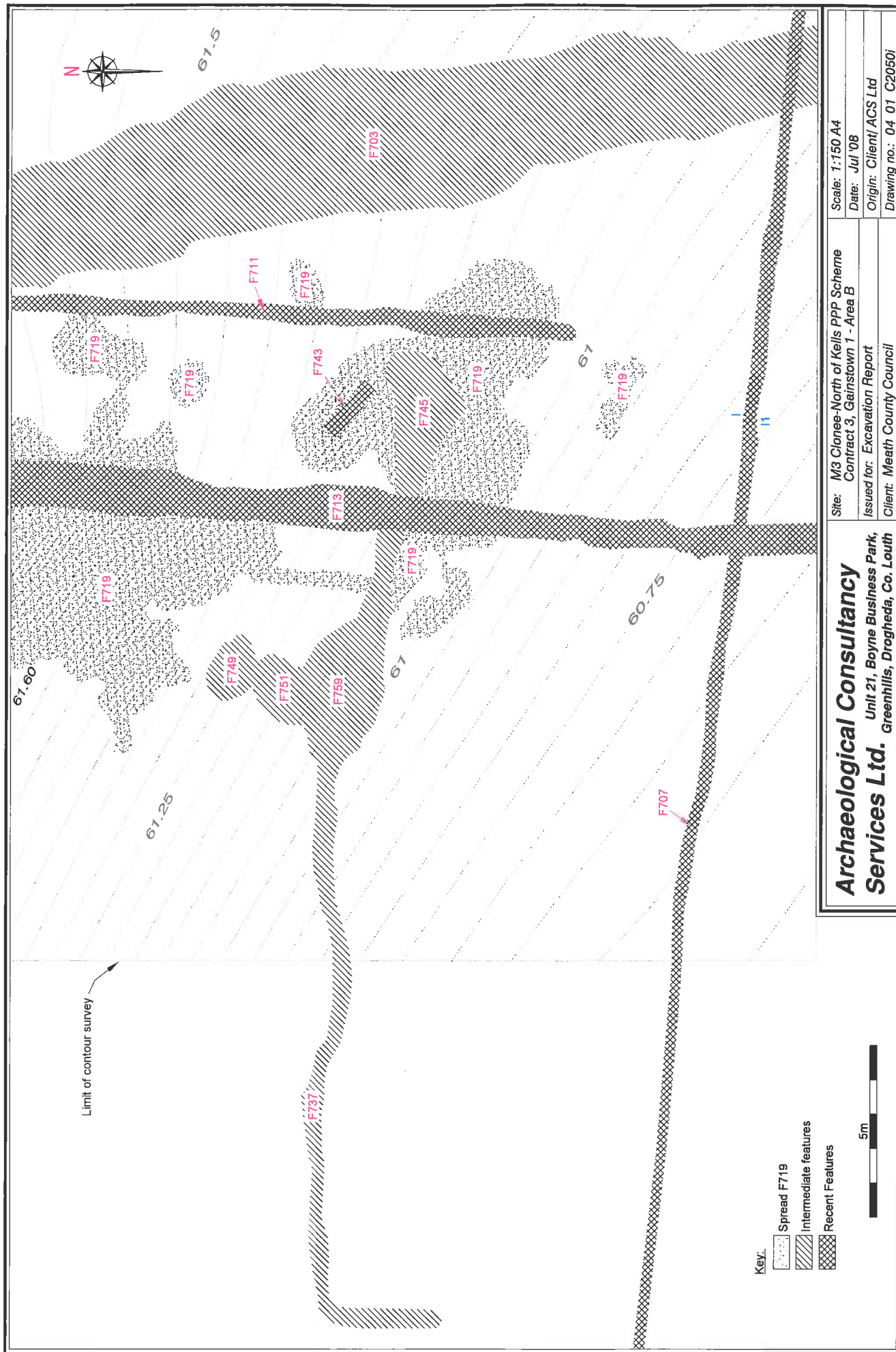
Figure 7: Gainstown 1, location of Areas A and B



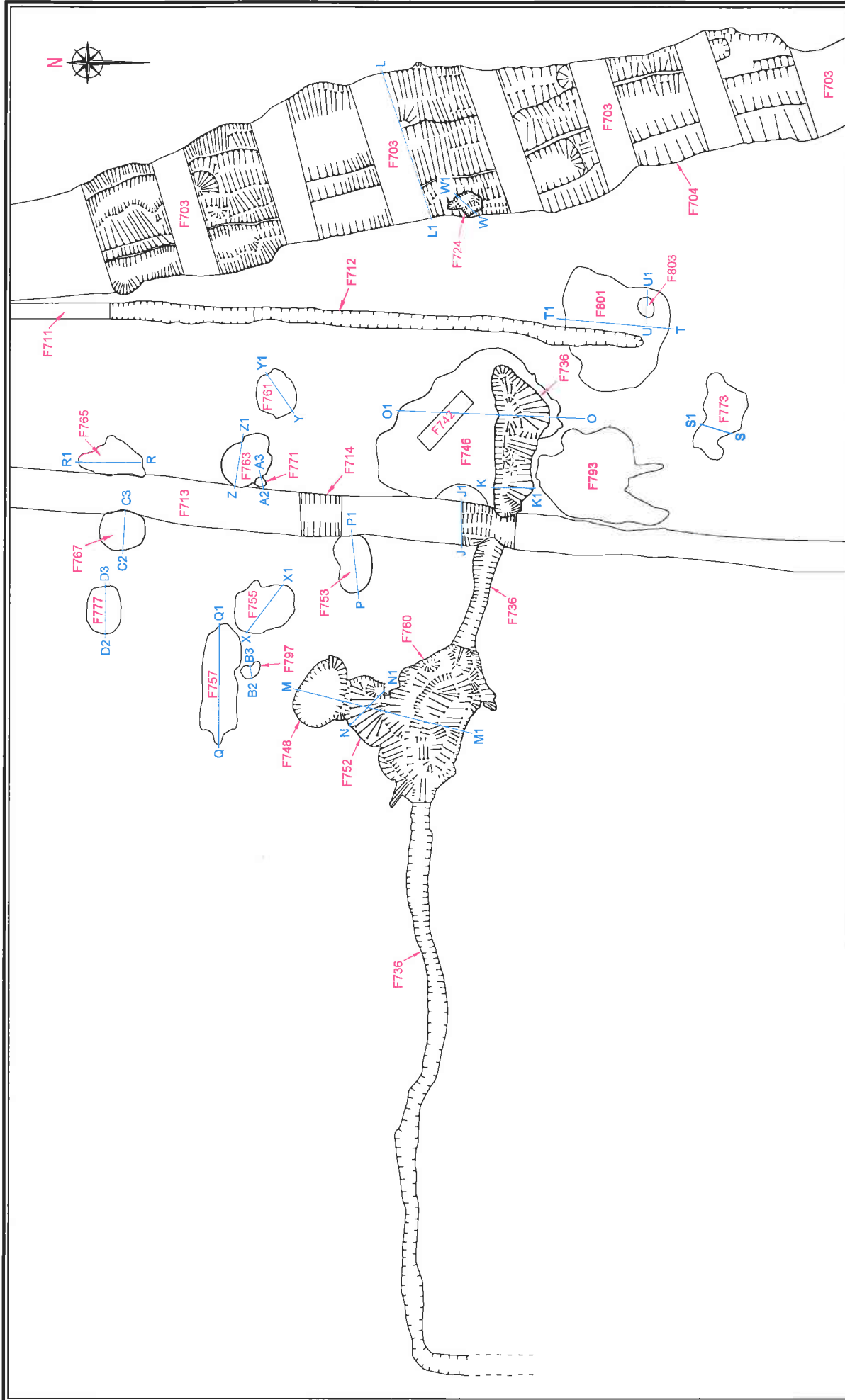


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Services Ltd.		Drawing no.: 04 01 C2749f
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Figure 9: Post-excavation plan of Gainstown 1 - Area A



Archaeological Consultancy		Site: M3 Clonee-North of Kells PPP Scheme	Scale: 1:150 A4
Services Ltd.		Contract 3, Gainstown 1 - Area B	Date: Jul '08
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Figure 11: Mid-excavation plan of Gainstown 1 - Area B

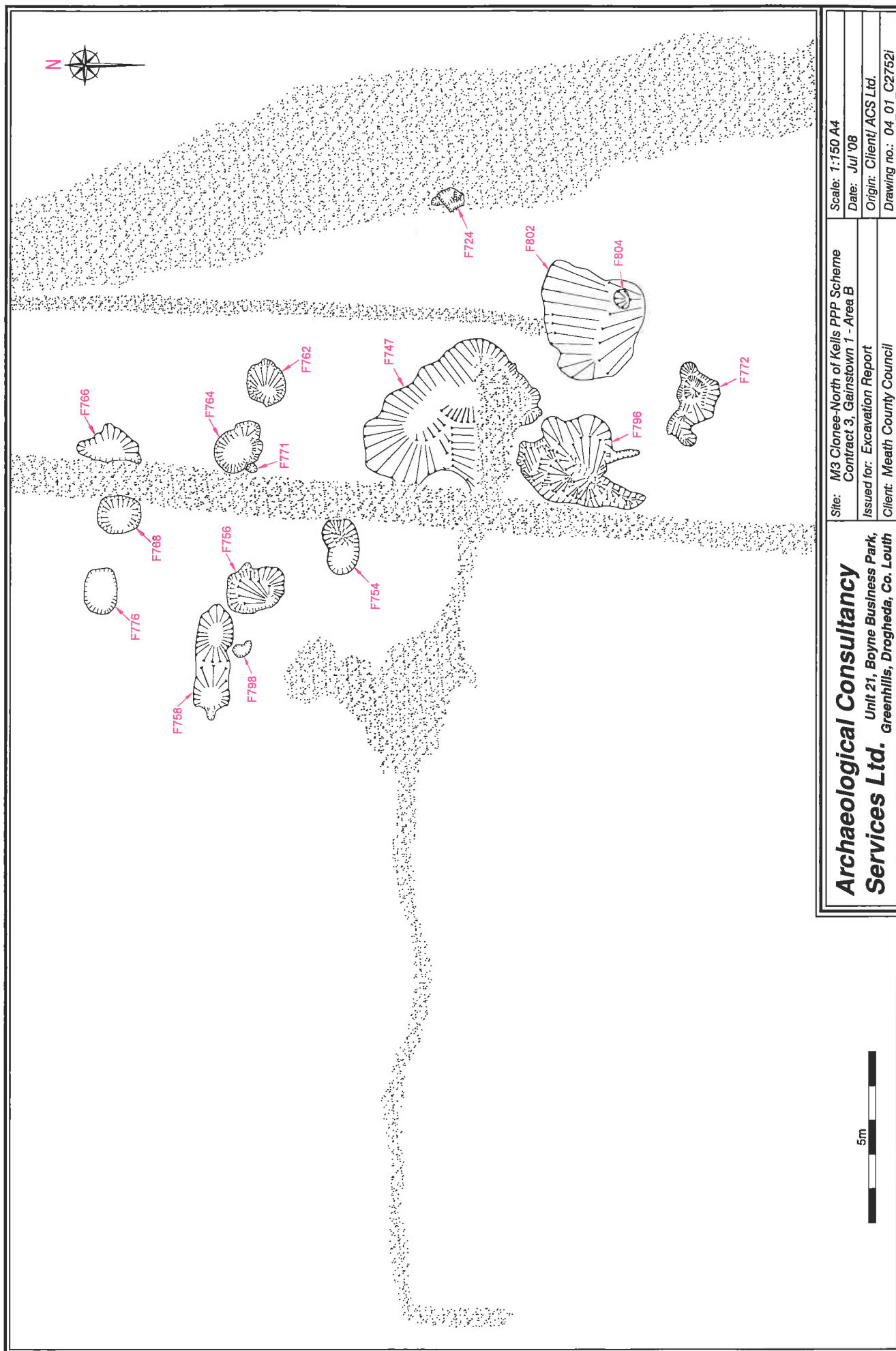


Figure 12: Post-excavation plan of Gainstown 1 - Area B

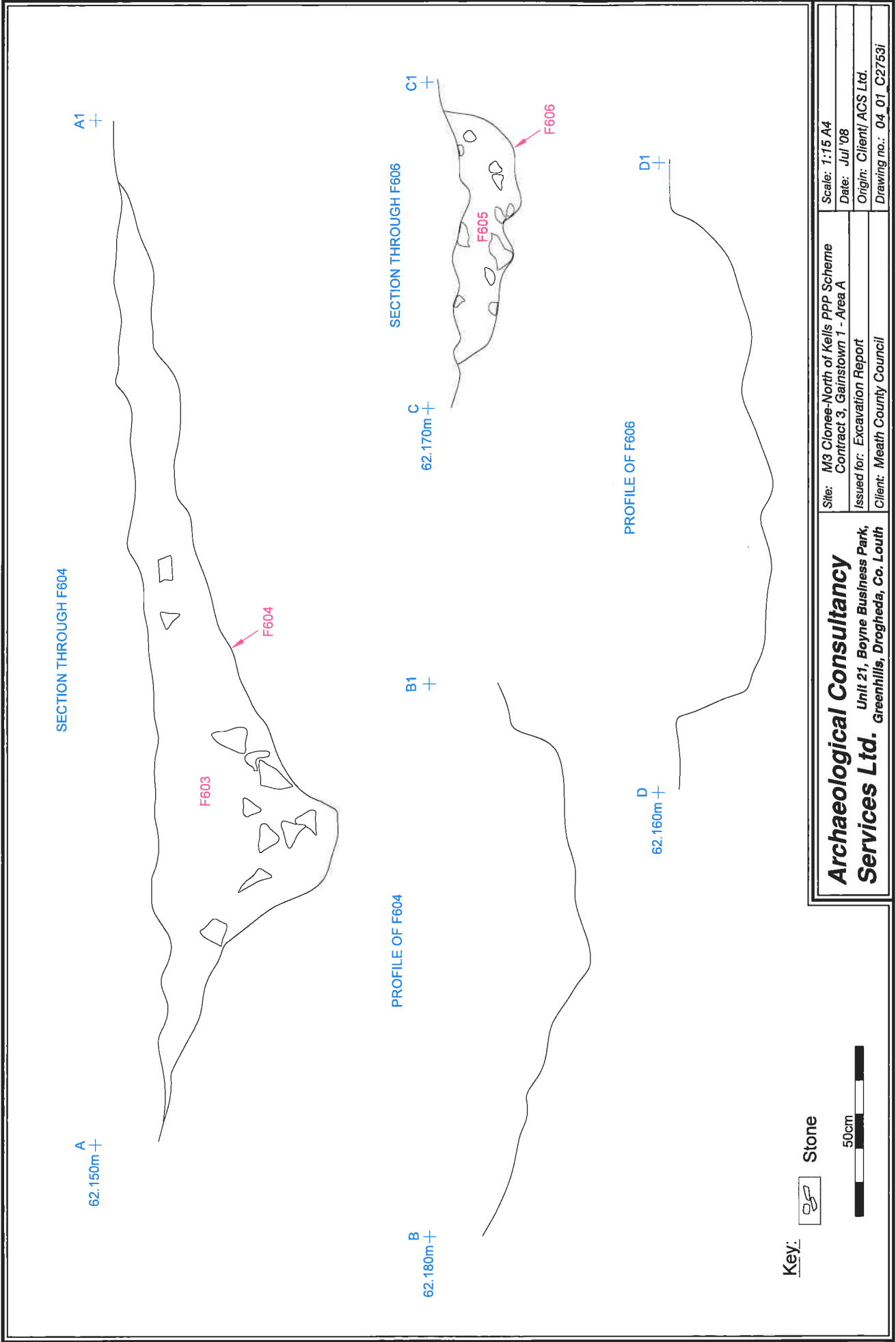
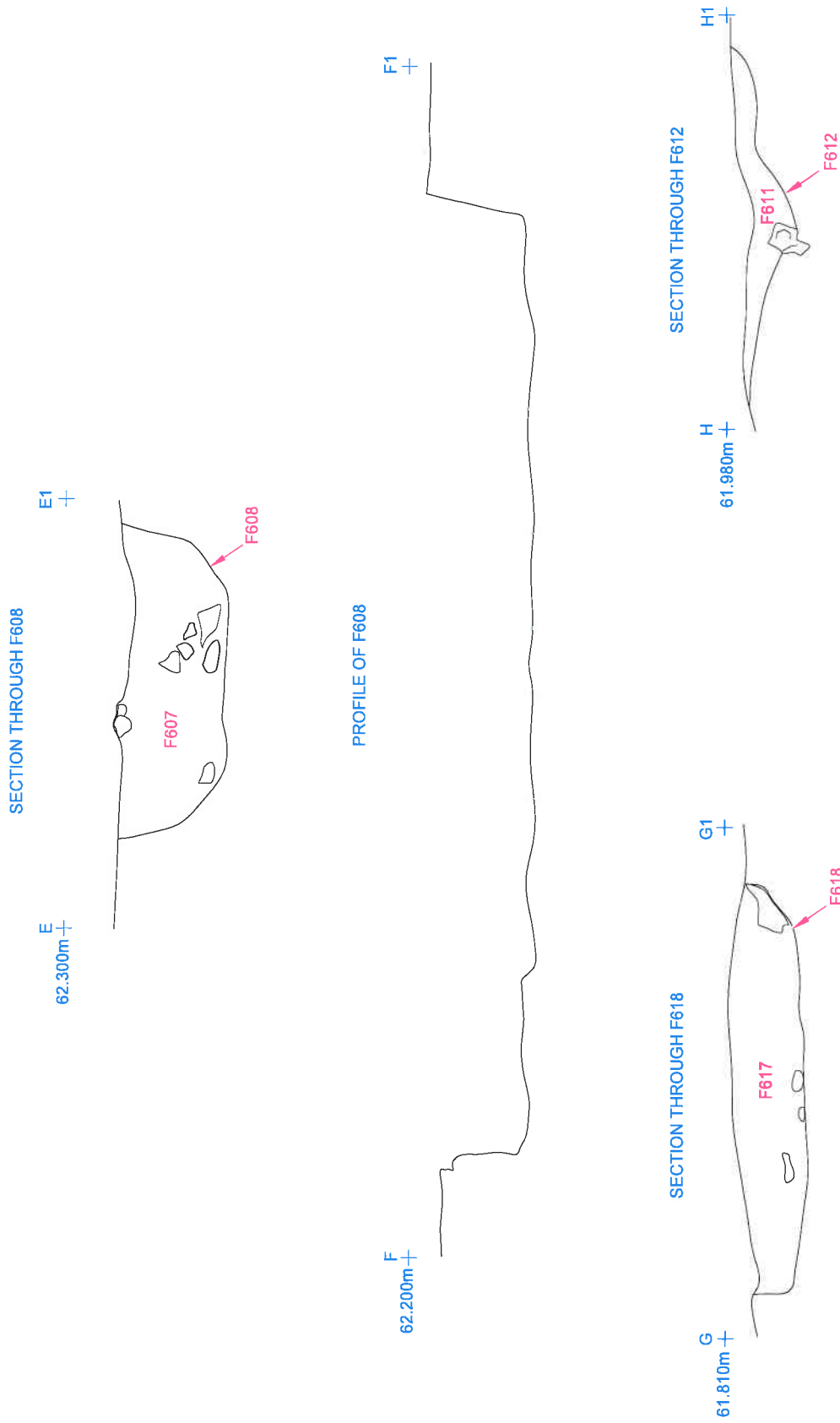


Figure 13: Sections and profiles of Gainstown 1 - Area A

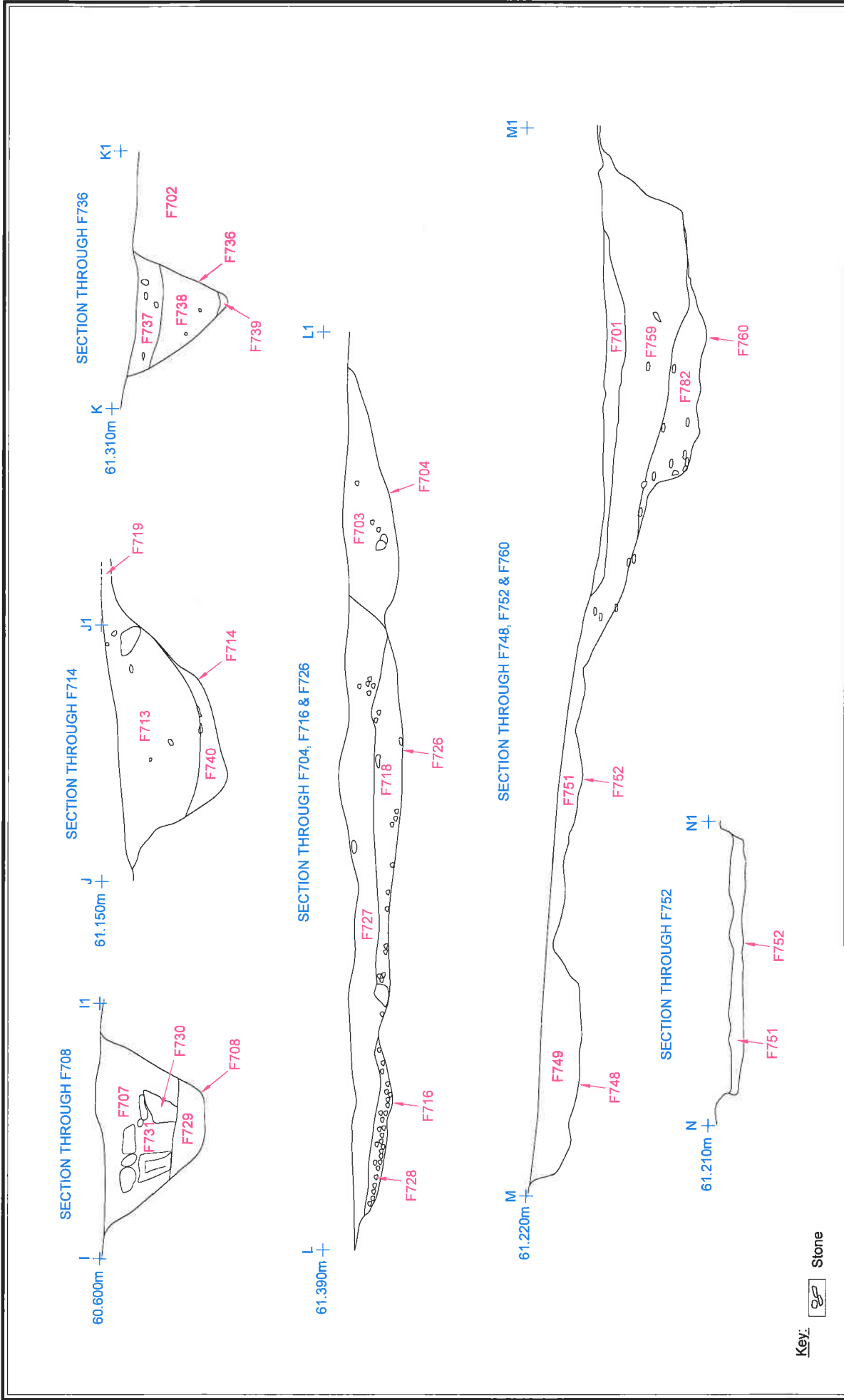


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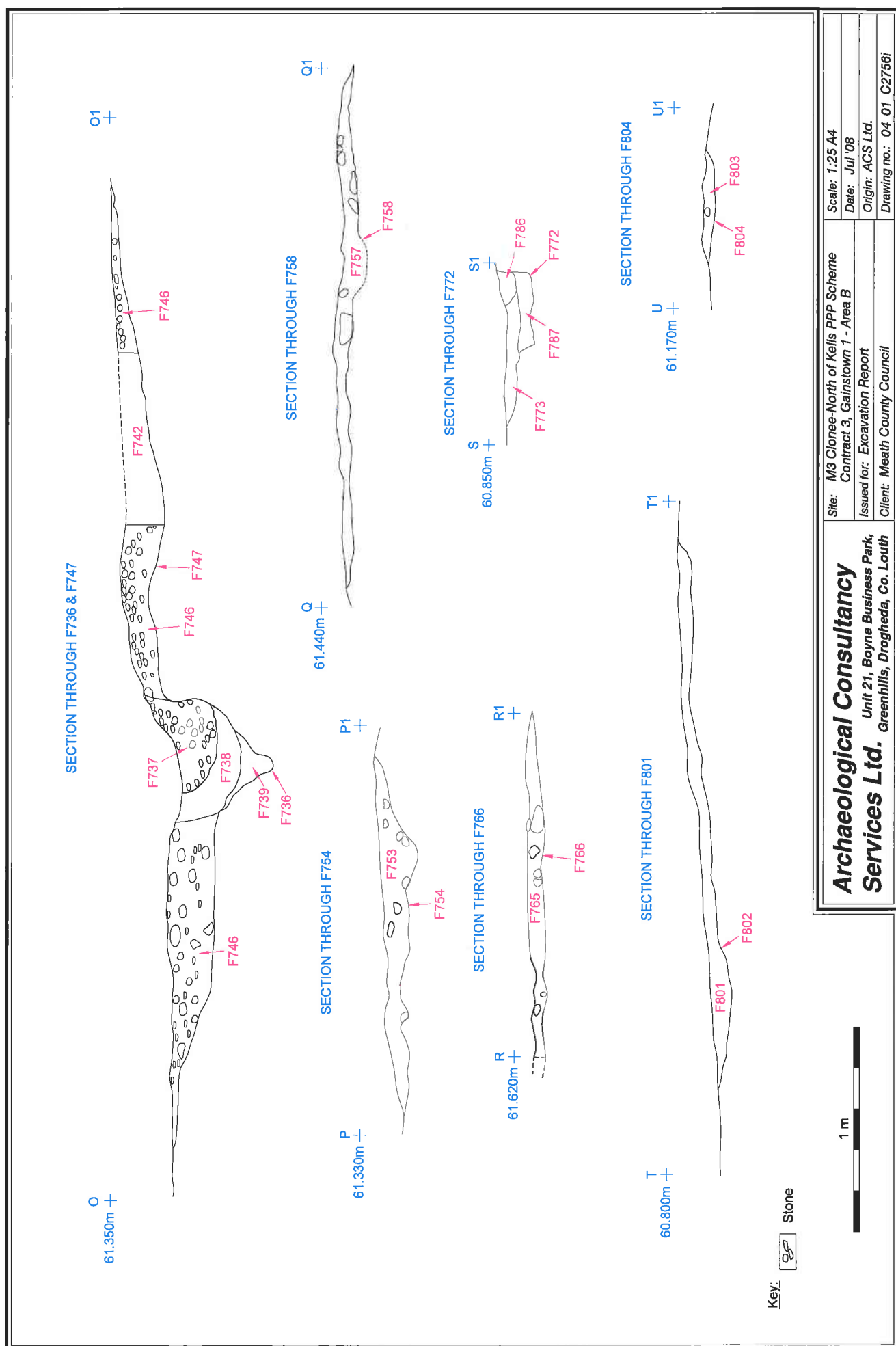
Scale: 1:15 A4
Date: Jul '08
Origin: Client/ ACS Ltd.
Drawing no.: 04_01_C2754i

Figure 14: Sections and profile of Gainstown 1 - Area A



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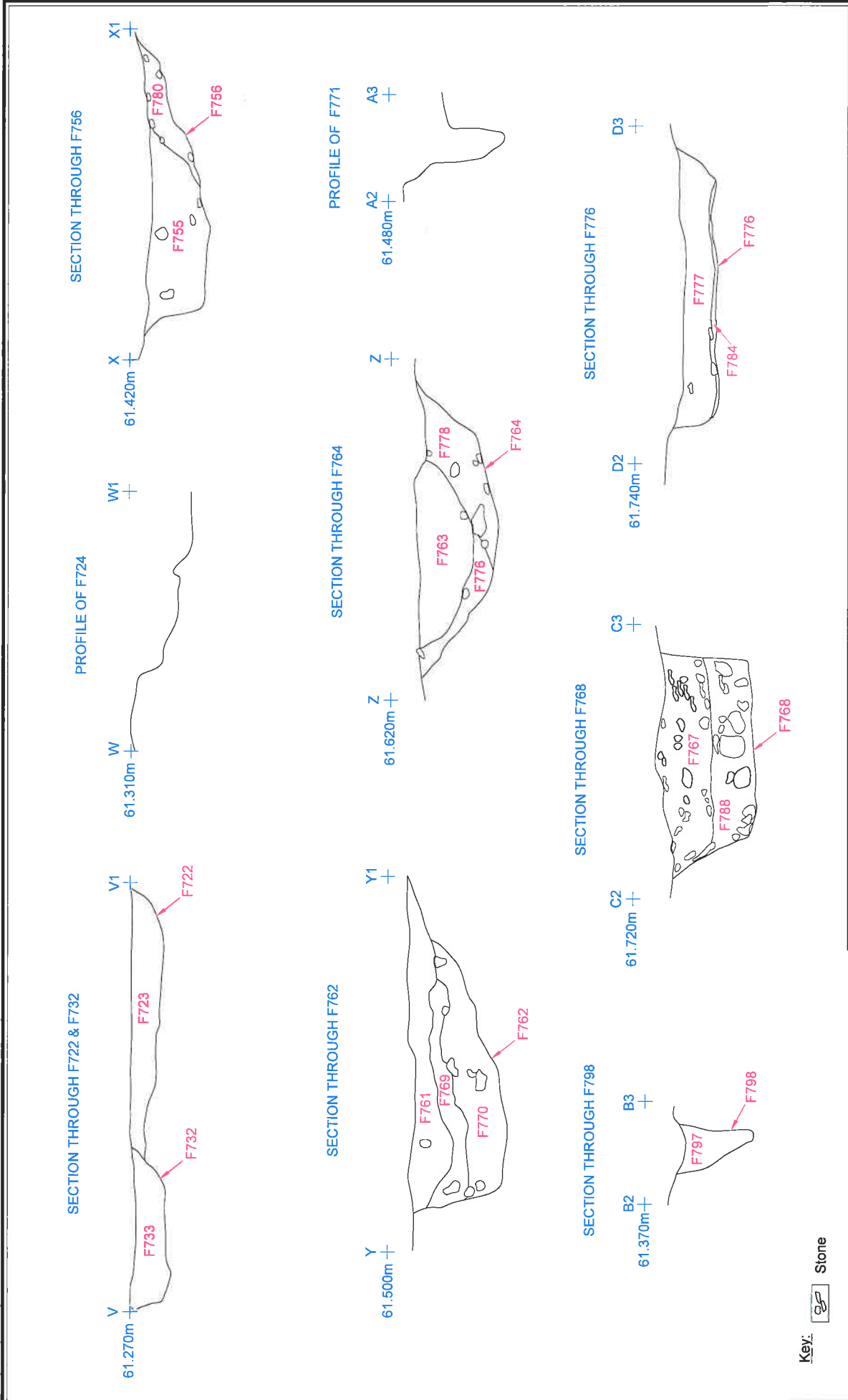
Figure 15: Sections of Gainstown 1 - Area B



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Figure 16: Sections of Gainstown 1 - Area B



Archaeological Consultancy		Site: M3 Clonee-North of Kells PPP Scheme	Scale: 1:25 A4
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Figure 17: Sections and profiles of Gainstown 1 - Area B



Plate 1: General view, looking southwest (04_01_Gainstown 1_CP11_07)

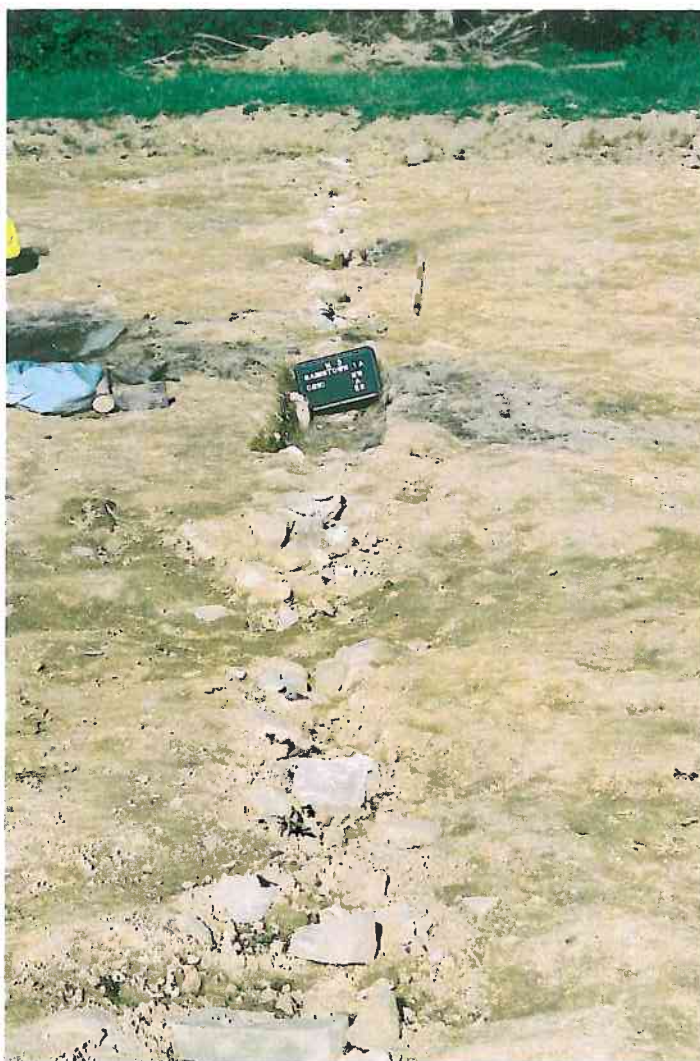


Plate 2: F610, mid-excavation, looking northwest (04_01_Gainstown 1_CP10_06)



Plate 3: F614, mid-excavation, looking southwest
(04_01_Gainstown 1_CP10_21)



Plate 4: F604, sectioned, looking southwest (04_01_Gainstown 1_CP10_12)



Plate 5: F604, post-excavation, looking west
(04_01_Gainstown 1_CP11_04)



Plate 6: F606, sectioned, looking west (04_01_Gainstown 1_CP9_22)



Plate 7: F606, post-excavation, looking north (04_01_Gainstown 1_CP10_13)



Plate 8: F608, pre-excavation, looking north (04_01_Gainstown 1_CP9_25)



Plate 9: F608, sectioned, looking east (04_01_Gainstown 1_CP10_20)



Plate 10: F608, post-excavation, looking east (04_01_Gainstown 1_CP10_23)



Plate 11: F618, pre-excitation, looking northeast (04_01_Gainstown 1_CP10_05)



Plate 12: F612, pre-excitation, looking north (04_01_Gainstown 1_CP9_19)



Plate 13: F616, pre-excavation, looking north (04_01_Gainstown 1_CP10_01)



Plate 14: F719 etc, pre-excavation, looking southwest (04_01_Gainstown 1_CP12_21)



Plate 15: F704 etc., sectioned, looking south (04_01_Gainstown 1_CP12_23)



Plate 16: F704, metalling F718, looking north (04_01_Gainstown 1_CP11_16)



Plate 17: F736 cutting F714, mid excavation, looking northeast (04_01_Gainstown 1_CP13_05)



Plate 18: F736, mid-excavation, looking east (04_01_Gainstown 1_CP17_20)



Plate 19: F760, sectioned, looking east (04_01_Gainstown 1_CP14_19)



Plate 20: F748, sectioned, looking north (04_01_Gainstown 1_CP14_01)



Plate 21: F747, pre-excitation, looking north (04_01_Gainstown 1_CP13_16)



Plate 22: F747, sectioned, looking west (04_01_Gainstown 1_CP14_22)



Plate 23: F754, sectioned, looking north (04_01_Gainstown 1_CP14_03)



Plate 24: F758, sectioned, looking north (04_01_Gainstown 1_CP15_22)



Plate 25: F772, sectioned, looking west (04_01_Gainstown 1_CP15_17)



Plate 26: F801, sectioned, looking west (04_01_Gainstown 1_CP16_18)



Plate 27: F803, pre-excavation, looking north
(04_01_Gainstown 1_CP16_24)



Plate 28: F722, sectioned, looking north (04_01_Gainstown 1_CP12_15)



Plate 29: F724, post-excitation, looking west (04_01_Gainstown 1_CP12_17)



Plate 30: F756, sectioned, looking north (04_01_Gainstown 1_CP14_05)



Plate 31: F762, sectioned, looking north (04_01_Gainstown 1_CP14_11)



Plate 32: F764, sectioned, looking west (04_01_Gainstown 1_C P14_17)



Plate 33: F768, sectioned, looking north (04_01_Gainstown 1_CP15_20)



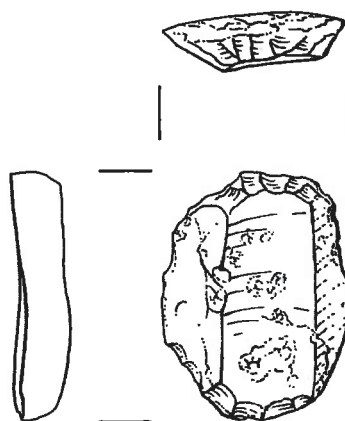
Plate 34: F776, sectioned, looking north (04_01_Gainstown 1_CP14_14)



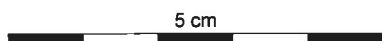
Plate 35: F798, post-excavation, looking north (04_01_Gainstown 1_CP16_13)



Plate 36: General view, post-excavation, looking southwest (04_01_Gainstown 1_CP17_02)



A023/009:761:1



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Scale: 1:1 A4

Date: Jul '08

Origin: Client/ACS Ltd.

Drawing no.: 04_01_C3007

Illustration 1: Flint end scraper