Westmeath County Council
In Partnership with
Meath County Council
&
Kildare County Council

KINNEGAD – ENFIELD - KILCOCK

ARCHAEOLOGICAL CONSULTANCY SERVICES
CONTRACT 1

Report On
Archaeological Excavation
At Towlaght 1
County Meath
Licence Number 02E1145

West consult
M. C. O'SULLIVAN • ROUGHAN & O'DONOVAN
CONSULTING ENGINEERS

A.C.S Ltd

PROJECT DETAILS

Project	Archaeological Excavation
Road Scheme	M4 Kinnegad–Enfield–Kilcock Motorway Scheme, Contract 1
Archaeologist	Stephen J. Linnane
Client	Westmeath County Council, Council Buildings, Mullingar, County Westmeath
Site	Towlaght 1, County Meath
Townland	Towlaght
Parish	Clonard
Nat. Grid Ref.	264616 243634
RMP No.	N/A
Licence No.	02E1145
Planning Ref.	N/A
Project Start Date	2nd October 2002
Report Date	16th January 2004

NON-TECHNICAL SUMMARY

The site was identified during test trenching in advance of development. An area of land measuring *c.*100m by *c.*50m was stripped of topsoil and the features exposed were identified as relating to two distinct periods of activity. Area 1 contained an enclosure ditch with complex entrance arrangements. The enclosure ditch contained no more than a natural depression which had a peat deposit within it and which would have probably formed a shallow pond even into recent times. The associated finds would indicate a date of *c.*1700 AD. Area 2 contained another natural depression again with peat deposits and the remains of a *fulacht fiadh*, which had been badly disrupted by deep ploughing. The pond would have been an obvious location for such a feature. Although dated examples of *fulachta fiadh* span a considerable time scale and their usage is still debated, they are generally considered to be cooking and/or washing areas and their date is frequently found to be within the Bronze Age. An isolated pit, possible bowl hearth, provided the only radiocarbon dating for this site with a date of AD720-740, within the Early Christian period.

CONTENTS

List of Figures

List of Plates

Area 1

Area 2

The Finds

1. INTRODUCTION

This report details the results of an archaeological excavation carried out on one site within the route of the M4 Kinnegad-Enfield-Kilcock Motorway improvement scheme. The site was located in the townland of Towlaght in the County of Meath. (OS 6" sheet number 47, 84mm from the west margin and 401mm from the south margin, NGC 264616 243634). The excavation was carried out on behalf of Westmeath County Council, County Hall, Mullingar under licence number 02E1145 issued to Stephen J. Linnane by *Duchas,* The Heritage Service, Department of the Environment and Local Government. The work was undertaken between 2nd October 2002 and 1st November 2002.

2. THE DEVELOPMENT

2.1 The Site

The archaeological assessment of this site was carried out in advance of the construction of the M4 Kinnegad–Enfield–Kilcock Motorway Scheme, Contract 1 on behalf of Westmeath County Council under licence 02E0102 from *Dúchas,* The Heritage Service, issued to Ian Russell. The assessment took place between the 12th February and 15th March 2002. A number of archaeological features were identified during the assessment and full excavation was recommended. The excavation was carried out between the 2nd October and 1st November 2002.

2.2 Proposal

Towlaght 1 is located along the proposed route of the M4 Kinnegad–Enfield–Kilcock Motorway. This scheme comprises approximately 35km of motorway commencing to the west of Kinnegad in County Westmeath and continuing in an easterly direction through the counties of Meath and Kildare and terminating at the western end of the existing motorway at Kilcock. The route shall include junctions and an interchange and other structures such as over-bridges and under-bridges as required to allow the continued flow of traffic on the existing road network. The proposed scheme ties into the existing M4 to the west of Kinnegad.

3. ARCHAEOLOGICAL EXCAVATION

3.1 Archaeological and Historical Background

Located in Clonard parish, Upper Moyfenrath barony, County Meath, the name Towlaght (*Tamhlacht*) indicates the burial place of plague victims and may owe its origins to the plague of AD664–65 which killed half the community of Clonard monastery. A hill near Clonard is still known as *Ard na Relig* or 'the height of the burial ground' and works on the Clonard River, during the Boyne Drainage Scheme, revealed eighteen skeletons buried in a mass grave (Maye 1982). Towlaght is bound on the north by Kilwarden and Clonard; on the east and partially on the south by Mulphedder townland; on the south by Ticroghan; and on the west by Ardnamullan. In 1837, Towlaght contained 723 acres and was part of the Bishop's Land of Meath. It was held by Mrs. Dabbin who sublet it in farms from ten to fifty acres. A small portion of bog was located in the southern part of the townland and it was principally under tillage. The dwellings were all mud cabins and a new Roman Catholic chapel was located on the eastern side of the main road (Name Books).

3.2 Stratigraphical Report

The topsoil, C101, consisted of a medium brown, sandy loam with occasional inclusions of small limestone fragments. This immediately overlay the natural subsoil, C202 which consisted of a pale orange/brown clay with a slight sand content and *c.*10% limestone fragments. During the course of stripping two distinct areas of archaeological interest were noted and titled Areas 1 and 2.

3.2.1 Area 1 (*Figures 5–8, Plates 1–11)*

This area was situated in the western part of the site that had been stripped. The principal feature was a post-medieval enclosure.

Recent Features

Plough Furrows C103

The whole site was disrupted by parallel plough furrows which were *c.*0.50m wide, *c.*1.50m apart and ran from north to south. The fill of the furrows consisted of pale brown sandy clay.

Ditch C106, Fills C105 and C111

Within the southern part of the stripped area was a ditch running from north to south and extending beyond the area in both directions. The ditch was *c.*2.00m wide and had a

maximum depth of *c.*0.85m. The ditch formed a shallow V in profile with a distinctly steeper sided slot at the base. The fills consisted of

C105 Dark brown, silty clay with occasional charcoal flecks and small stone inclusions
C111 Limestone rubble with voids

The finds from C105 would indicate a recent date for the backfilling of the ditch. The limestone rubble at the base of the ditch suggests that at the time of backfilling the ditch was intended to perform as a field drain. However, the size and shape of the ditch would suggest that originally it was a field boundary and that only when it was no longer required for this purpose was it turned into a drain.

Ditch C128, Fills C126 and C127

Running from west to east and cutting ditch C121 was a ditch that ought to have joined with C106. The ditch was *c.*1.40m wide and *c.*0.25m deep with sides sloping at 45 degrees and a flat base. From the top the fills consisted of:

C126 Soft, dark brown, silty clay with only very occasional small limestone inclusions
C127 Pale brown sandy silt

The ditch appears to be a field boundary and possibly, the gap between it and ditch C106 would indicate the position of a gateway.

Field drain C125

Running along the same alignment as C128 and cutting its fill was a machine cut field drain measuring *c.*0.45m wide and *c.*0.58m deep with vertical sides and a flat base. The top fill consisted of a mix of re-deposited natural and loam whilst the base fill was limestone rubble with voids. No additional context numbers were allocated to the fills.

Pit C108, Fill C107

This feature consisted of a square, bowl-shaped pit with sides of *c.*1.00m, with rounded corners and a maximum depth of *c.*0.35m. The fill consisted of:

C107 Medium brown, sandy clay with occasional small stone inclusions and no charcoal flecking.

Pit C110, Fills C109 and C113

In the south-eastern corner of the site was a bowl shaped pit with a diameter of *c.*0.85m and a maximum depth of *c.*0.55m. From the top the fills consisted of:

C109 Compact, yellow/brown clay, re-deposited natural.

C113 Medium brown silty clay with occasional small stone inclusions.

The Enclosure Ditch

A shallow ditch formed an irregular enclosure, C122=C124=C135. The ditch was on average, *c.*1.30m wide with a maximum depth of *c.*0.40m and had gently sloping sides to a flat base. To the north the ditch ran beyond the road-take. From the northern edge of the excavation the ditch ran in a south-westerly direction before swinging to the south, running from north to south and then swinging to run due west. Rather than being a constant curve, the ditch ran in a series of straight sections with curving junctions. The ditch ended in a shallow expanded terminal at a distance of *c.*22.50m from the furthest western extent. Where the ditch ran from north to south a series of features indicated the position of an entrance. The layers and features could be divided into three phases of activity although the finds would indicate that this activity spanned only a short period at the beginning of the 18th century.

Phase 1

In the first phase of the entrance a layer of limestone chips, C136, was embedded into the natural clay of the sides and base of the ditch. The metalling had been worn smooth through use.

Phase 2

The ditch was partially backfilled with re-deposited natural (C147) which overlay the metalling of the previous phase. Into this was cut a shallow gulley which formed three sides of a square. The principal side (C139, Fill C138) ran from north to south within the backfilled ditch for a distance of *c.*4.00m and two spurs extended westwards at either end. That to the south (C144, Fill C143) extended for *c.*2.00m whilst that to the north (C142, Fills C140 and C141) was cut by ditch C106 and its full extent is not known. The principal section of the gulley was filled with a layer of large limestone blocks creating a platform (C129). The stones extended beyond the width of the gulley and formed a dry-stone hard area, over which it would be possible to cross the ditch. The gulley extension to the south had two associated post-holes to its south (C152 and C153, fills C154 and C155). Both post-holes were *c.*0.14m

in diameter and *c.*0.15m deep. A further post-hole (C149, fill C151) was situated on the western lip of ditch C122. This post-hole was *c.*0.20m square and *c.*0.15m deep.

Associated features included a shallow depression (C132) on the eastern edge of C135 within which was found a knife handle (Find No. 13). The fills of all gulleys consisted of a medium brown, silty clay with slight sand content and occasional small limestone fragments.

Phase 3

The stonework and associated features of Phase 2 were overlain by ditch fill C121=C123=C131=C134, also C148, a lower fill at the northern end. To the west of the gulley C144 another gulley had been excavated. This lay partially within the fill of the ditch and partially in the natural. Gulley C146, fill C145, extended for *c.*1.20m and was filled with a line of limestone blocks (C120). At its western end a glass bottle base had been positioned, fulfilling the same purpose as the stones. To the east of the stonework and cut into the fill of ditch C135 was what appeared to be a beam slot (C119, fill C118). This slot was *c.*0.30m wide and *c.*0.10m deep. These features formed a late threshold across the almost wholly backfilled ditch, the last Phase of activity before its abandonment.

The Interior of the Enclosure

It was assumed that the enclosure ditch must have had a significant purpose but, despite a careful search of the internal space, no features were found other than a large oval pond. The pond, C160, was *c.*17.00m from northwest to southeast and *c.*9.00m from northeast to southwest. The pond had been filled with a deposit of peat, C159 and eventually, with improved drainage in the modern period, had been reclaimed for agricultural purposes. The upper fill of the pond C158 consisted of the same material as the topsoil.

Discussion

The finds all indicate a short-lived period of use for the enclosure, although the complexity of the entrance arrangement might suggest otherwise. Why such a feature should have been constructed could only be associated with the management of livestock in relation to the pond. Although why access should be restricted is difficult to say. Ceramic and glass finds would suggest that the features were constructed and used during the early 18th century. The range of finds, including what appear to be domestic table knives is unusual (Plates 20-24).

3.2.2 Area 2 (*Figures 9–11, Plates12–16)*

This area was situated at the eastern end of the stripped site. The turf and topsoil and natural were numbered respectively C201 and C202 and were the same as in Area 1. The principal feature within the area was a *fulacht* spread.

Recent features

Plough furrows C212, C213, C214, C219, C220 and C221

The whole area had been severely disturbed by plough furrows which tended to run from north-west to south-east. The furrows were, on average, *c.*0.35m wide and *c.*0.15m deep with a shallow U-shaped profile. The furrows were *c.*1.00m apart. Their fills consisted of medium brown sandy clay with some small stone inclusions and no charcoal flecking. Some furrows have been numbered because they interfered with the *fulacht* spread described below.

Ditch C206, Fill C205

Running parallel with and between plough furrows C219 and C214 was a ditch with dimensions of *c.*1.30m wide and *c.*0.60m deep. As with the plough furrows the ditch extended beyond both the northern and the eastern site boundaries. The fill was sandy clay, identical to the fill of the furrows. This context has been designated a ditch purely because of its size. Its alignment and proximity to the furrows would indicate a close relationship with them.

Field drain C022

A field drain ran from north to south across the site. The drain was *c.*1.00m wide and *c.*0.65m deep with an upper fill of medium brown silty clay and a lower fill of large pebbles.

The Fulacht Spread

The fulacht spread was recognised during test trenching. It was associated with a large natural depression which was only recognised in the process of topsoil stripping. In the prehistoric period it seems probable that this depression would have formed a pond, which it certainly reverted to during the process of excavation. The stratigraphic sequence consisted of, from the base:

Natural Subsoil C202

In the area of the pond this consisted of pale grey, very plastic clay which changed to orange slightly sandy clay on the higher ground to the sides of the pond.

Peat Deposit C218

Sitting within the depression of the pond, this deposit consisted of brown, silty clay with a high organic content.

Turf Line? C217

Lying below the *fulacht* spread and above the natural subsoil but not obviously below the peat layer, C216. This context was a layer of medium to dark grey clay. The clay was contaminated with *fulacht* material and may represent the original ground surface at the time of the usage of the *fulacht,* in effect a compressed turf line. Alternatively the deposit merely reflects staining of the natural subsoil by the effect of stained water leaching through the *fulacht* into the subsoil.

Fulacht Spread C216

Only a part of the *fulacht* lay within the road-take and it seems probable that the larger part of the *fulacht* material and associated features such as troughs lie to the north of the excavated area. The *fulacht* spread consisted of near black, silty clay with indeterminate charcoal content and c.50% heat shattered stone fragments. On the higher ground, to the north of the site, the material had been badly disturbed by ploughing but as the natural dipped into the area of the pond it was too deep to have been totally destroyed by ploughing. In this area the deposit had a maximum depth of *c.*0.40m and this thinned as it extended into the pond area.

Stone alignment C219

Along the western edge of the *fulacht* spread was an alignment of stones which appeared to form a kerb to the spread. Whether this was a purposeful or accidental construction is open to debate.

Peat Deposit C209

Lying above the fulacht spread was a deposit of peaty, organic material which was nearly black in colour where it lay adjacent to the *fulacht* material. The deposit varied in depth but had a maximum thickness of *c.*0.15m

Colluvium C208

Lying above the upper level of peat and on the flat western part of the site, above the *fulacht* spread, was a layer of pale, orange/brown, sandy clay. The layer had an average depth of *c.*0.20m and had been visibly cut by the plough furrows. The latter observation led to the initial interpretation that the layer was the natural subsoil but it was found to overlie both the *fulacht* spread and the peats within the pond area. The layer is interpreted as having been created by soil washing down the hillside and collecting within the bowl of the pond.

Hearth, (Figure 12, Plates 17–19, Appendices 1 and 3)

Hearth C204, Burning C203, Fill C207

This feature consisted of a shallow oval pit with dimensions of *c.*0.70m from northwest to southeast and *c.*0.58m along the other axis. The pit was bowl-shaped in profile with a distinct dip at the centre and a maximum depth of *c.*0.15m. The sides and base had been burnt red (oxidised) to a depth of *c.*0.02m. The fill consisted of soft, very dark brown silty clay with frequent charcoal and only occasional, small stone inclusions. This pit was an isolated feature and was not necessarily connected to the *fulacht fiadh*. A radiocarbon date was obtained from the fill, C207 (Appendix 2). The date obtained was AD 720-740, within the Early Christian period. Prior to radiocarbon dating, the wood species were identified as oak and alder, with oak forming only *c.*20% of the sample. The hearth was very close to the edge of the road-take and it is possible that connected features exist in the area beyond the road-take. The pit may have been a bowl hearth connected with iron smelting. Such features were seen frequently on other sites along the road line.

3.3 List of Contexts

Area 1

Context	Description
101	Turf and Topsoil
102	Natural Subsoil
103	Plough furrows
104	Not archaeological
105	Fill of C106
106	Field drain
107	Fill of C108
108	Pit
109	Fill of C110
110	Pit
111	Fill of C106
112	Not archaeological
113	Fill of C110
114	Not archaeological
115	Not archaeological
116	Not archaeological
117	Not archaeological

118	Fill of C119
119	Beam slot
120	Stone feature
121	Fill of ditch C122
122	Ditch
123	Fill of C124
124	Ditch
125	Field drain
126	Fill of C128
127	Fill of C128
128	Ditch
129	Stone feature
130	Stone feature
131	Fill of C135
132	Depression
133	Not archaeological
134	Fill of C135
135	Ditch
136	Area of cobbling
137	Not archaeological
138	Fill of C139
139	Gulley
140	Fill of C142
141	Fill of C142
142	Cut filled with C140 and C141
143	Fill of C144
144	Gulley
145	Fill of C146
146	Gulley
147	Fill of C135
148	Fill of C122
149	Post hole
150	Not archaeological
151	Fill of C149
152	Post hole
153	Post hole
154	Fill of C152

155	Fill of C153
156	Not archaeological
157	Not archaeological
158	Fill of C160
159	Peat in C160
160	Pond

Area 2

Context	**Description**
201	Turf and Topsoil
202	Natural subsoil
203	Oxidised clay
204	Bowl hearth
205	Fill of C206
206	Ditch
207	Fill of C204
208	Deposit overlying C209
209	Deposit of peat
210	Deposit of black silty clay
211	*Fulacht* deposit
212	Plough furrow
213	Plough furrow
214	Plough furrow
215	*Fulacht* material, equals C216
216	*Fulacht* spread
217	Grey stained clay over C202
218	Deposit of peat
219	Stone alignment
220	Plough furrow
221	Plough furrow
222	Field drain
223	Plough furrow

3.4 Lists of Finds

Area 1

02E1145-101-1	Small pottery fragment. Orange fabric with yellowish green glaze.
02E1145-101-2	Small pottery fragment. Orange fabric with brownish green glaze.

02E1145-101-3	Small pottery fragment. Orange fabric with brownish green glaze.
02E1145-101-4	Fragment of clay pipe bowl. Two thirds surviving.
02E1145-101-5	Length of clay pipe stem. 3 cm long, 0.9cm diameter.
02E1145-101-6	Fragment of large diameter cast iron pan. 7.5cm by 5cm by 0.5cm.
02E1145-120-1	Base of onion-shaped wine bottle. Dark green glass. 13cm in diameter.
02E1145-121-1	Small pottery fragment. Orange fabric with brown glaze.
02E1145-121-2	Iron spike, probably a tang. 13.2 cm long, 0.4 cm wide at one end, 2cm wide at the other (Plate 20).
02E1145-123-1	Neck of wine bottle. One fifth surviving. Complete from shoulder to rim.
02E1145-123-2	Small pottery fragment. Orange fabric with brown glaze.
02E1145-129-1	Iron knife blade with tang. Blade is curved and is 6.8cm long, 2cm wide and 0.1cm thick. Oval shoulder 1cm long, 1.6cm wide and 1.6cm thick. Tang is 4.4cm long and 0.9cm thick. Total length 12.2cm (Plate 21).
02E1145-131-1	Small iron knife blade with tang. Blade is straight and is 4.4 cm long but possibly missing tip, 1.4cm wide and 0.2cm thick. No shoulder. Tang is broken but 1.9cm long and 0.5cm thick (Plate 22).
02E1145-131-2	Flat corroded ferrous object. 3cm long, 2cm wide and 0.2cm thick. Small accretion at one end.
02E1145-131-3	Flat corroded ferrous object 5.3cm long, 1.2cm wide and 0.2cm thick. Possibly a knife blade fragment (Plate 23).
02E1145-131-4	Flat corroded ferrous object. 5.3cm long, 2cm wide and 0.3cm thick. Large accretion at one end.
02E1145-132-1	Knife handle of bone with iron tang inside. 10.6cm long, 2cm wide and 1cm thick (Plate 24).
02E1145-132-2	Flat corroded ferrous object. 5.4cm long, 2.7cm wide and 0.3cm thick. Has possible bolt or rivet protruding out at right angle for 1.4 cm at one end.

3.5 List of Samples

No samples were taken for further analysis from Area 1 because of the recent date of the deposits and because none of the deposits appeared to contain material capable of further analysis.

Sample No.	Context	Description
2/1	207	Soil sample for flotation
2/2	159	Peat (environmental)
2/3	216	*Fulacht* material
2/4	209	Peat (environmental)
2/5	217	Soil sample for flotation

4. CONCLUSIONS

The post-medieval enclosure partially surrounding a pond with a fairly elaborate entrance is an unusual feature and difficult to explain. The enclosure does not relate to the current field pattern and probably predates the enclosure of land in the 18th century. It is possible that the land was still wooded at this time and that the enclosure demarks a clearing within woodland with the pond as its central feature and reason for construction. The short period of occupation may indeed coincide with the deforestation and enclosure of this area. The finds assemblage provided the dating material for this site. The assemblage was unusual in the quantity of iron objects found, including knives of domestic appearance.

The *fulacht* spread had been badly disrupted by ploughing and most of the deposit is likely to survive on the northern, higher slope, outside the road-take. Probably in this area the deposit will be even more badly damaged by ploughing as it is unlikely to have been protected by the layer of colluvium which had formed over the deposit. *Fulachta fiadh* form a common group of monuments within the rural landscape and they also form a significant topic of debate as to their usage. No finds or features were found during this excavation which would throw further light on that debate. Despite substantial samples having been taken from the *fulacht* material, the charcoal retrieved was not adequate for radiocarbon dating purposes. Such monuments have been dated over a considerable time span, from the Neolithic to the post-medieval period, they are most frequently found to date from the Bronze Age and their usage is generally accepted as being for cooking and/or bathing.

The isolated hearth in the southeastern corner of the site is similar to features which have been excavated on other sites within this project. It seems probable that this hearth would form an element within the managed landscape. The landscape appears to have been wooded and, possibly, coppiced in order to produce charcoal for iron smelting (charcoal producing kilns are another common feature excavated on sites in the vicinity). A radiocarbon date of AD720-740 was obtained from the fill of the hearth whilst the charcoal was identified as oak and alder.

5. RECOMMENDATIONS

The two main features on the site: the post-medieval enclosure and the *fulacht* spread have been fully resolved and it would appear unlikely that development along the line of the road-take would encounter any features or deposits related to these features. The solitary hearth appears to be associated with similar features excavated on other sites within the road-take. These features appear to provide a picture of scattered industrial activity within a managed woodland landscape. The scattered nature of the features might suggest that other such features will occur in an unpredictable manner during the course of topsoil stripping in advance of development. As discussed elsewhere the method of dealing with such unpredictable archaeological features will vary. It is however recommended to undertake monitoring of topsoil stripping in the area north west of this site during the construction stage.

6. BIBLIOGRAPHY

Buckley V. (compiler) (1990) *Burnt Offerings: international contributions to burnt mound archaeology*. Wordwell.

Edward, N. (1990) *The Archaeology of Medieval Ireland*. London.

Kelly, F. (1997) *Early Irish Farming*. Dublin

Lewis, S. (1837) *A Topographical Dictionary of Ireland*. Lewis & Co. London.

Maye, B. (1982) "A Look at the History of Clonard" in *Kinnegad Parish Magazine*. December 1982.

Raftery, B. (1994) Pagan Celtic Ireland: The Enigma of the Irish Iron Age. London.

Other Sources

Name Books: *Ordnance Survey Field Name Books of the County of Meath 1835–36*. Vol. V.

Record of Monuments and Places (RMP), formerly the Sites and Monuments Record (SMR), of *Dúchas* The Heritage Service, Department of Arts, Heritage, Gaeltacht and the Islands, 7 Ely Place Upper, Dublin 2.

Topographical Files of the National Museum of Ireland, Kildare Street, Dublin 2.

Signed:

_____

Stephen J. Linnane, Archaeologist

16th January 2004

APPENDIX 1: WOOD IDENTIFICATION *by Ellen O'Carroll*

Introduction

One charcoal sample was submitted for analysis. The charcoal was sent for species identification prior to ^{14}C dating and also to obtain an indication of the range of tree species, which grew in the area. Charcoal analyses may also provide information on the utilization of certain species for various functions. Wood used for fuel at pre-historic sites would generally have been sourced at locations close to the site. Therefore charcoal identifications may, but do not necessarily, reflect the composition of the local woodlands. The charcoal was excavated from the fill of a square, bowl shaped pit with sides of *c*1.00m, with rounded corners and a maximum depth of *c*0.35m.

Methods

The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). The identification of charcoal material involves breaking the charcoal piece so that a clean section of the wood can be obtained. This charcoal is then identified to species under an Olympus SZ3060 zoom stereomicroscope. By close examination of the microanatomical features of the samples the species were determined. The diagnostic features used for the identification of charcoal are micro-structural characteristics such as the vessels and their arrangement, the size and arrangement of rays, vessel pit arrangement and also the type of perforation plates.

Results

Table 1: Results from charcoal identification

Site no. & site type	**Context no.**	**Sample no.**	*Species type*	
Towlaght 1, Fill of pit	F207	1	oak & alder	oak (2 g) & alder (9g). Oak is bagged separately

Discussion

There are two species types present in the charcoal remains. The most commonly occurring species was alder (*Alnus glutinosa*) and a small amount of oak was also identified from the assemblage.

Alder is a widespread native tree and occurs in wet habitats along streams and riverbanks. Alder also grows regularly on fen peat. It is an easily worked and split timber and does

not tear when worked. Alder is commonly identified from wood remains associated with wet/boggy areas.

A small amount of oak (*Quercus* spp.) was also identified from the sample. The oak identified suggests that there was a supply of oak in the surrounding environment. Oak makes good firewood when dried and will grow in peat when conditions are dry. Throughout all periods of prehistory and history oak has been used for structural timbers. Oak also has unique properties of durability and strength. Sessile oak (*Quercus petraea*) and pedunculate oak (*Quercus robur*) are both native and common to Ireland. The wood of these species cannot be differentiated based on its microstructure. Pendunculate oak is found on heavy clays and loams particularly where the soil is of alkaline pH. Sessile oak is found on acid soils often in pure stands and although it thrives on well-drained soils it is also tolerant of flooding (Beckett 1979, 40-41). Both species of oak grow to be very large trees (30-40m) and can live to an age of 400 years. The oak could have grown on or near the peat deposits where the sites are located or in mixed woodlands nearby.

Conclusions

There does not seem to be any pattern of selection of certain species over others at the investigated site. Alder indicates local wet condition along riverbanks or peat bogs. The oak identified at Towlaght may have also grown in the peaty soils but only during a dry period. Alternatively it could have been collected from mixed woodlands nearby to the site.

Note for radiocarbon dating

All of the charcoal samples represent the inner part of a tree of unknown age and it was not possible to tell from identification how much larger, if at all, the whole piece was. As a result the old-wood effect may need to be taken into consideration when C14 dates are returned (Warner 1979, 159-172). This is particularly true in the case of oak as it can grow to an age of 300 to 400 years. The samples identified could be of a more recent date than the rings represented on the sample.

References

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

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

Warner, R.B., 1987, "A proposed adjustment for the « Old-Wood Effect »", in Mook, W. & Waterbolk, H. (eds) *Proc. 2nd Symp of 14C & Archaeology, Groningen 1987,* 29, 159-172.

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

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

APPENDIX 2: THE ANIMAL BONES *by Catherine Boner*

Introduction

A small quantity of animal bone was submitted for osteological analysis following archaeological excavations of three sites situated along the route of the Kinnegad-Enfield-Kilcock motorway. The bones were retrieved entirely by hand.

Methodology

Where possible, bone fragments were identified to species and skeletal element using the Queen's University of Belfast comparative skeletal collection. Differentiation between sheep and goat could not be achieved and the remains of these species were categorized as sheep/goat.

Epiphyseal fusion data is based on Silver (1969). Measurements of complete bones elements were taken (Table 2), following the recommendations of von den Driesch (1976). Estimation of shoulder height for horse is based on Kiesewalter (von den Driesch & Boessneck 1974, 333).

Analysis

A summary of the results of analysis is presented in Table 1. Overall, the material was found to be quite well-preserved. Of the eleven fragments examined six could be identified to species and skeletal element. Species include cattle (*Bos taurus*), horse (*Equus caballus*) and sheep/goat (*Ovis Capra*),. The remains of bird and fish are absent from the samples.

Ditch Fill (F121)

Three fragments of a right cattle scapula were recorded from this context. One specimen was fused, indicating a time of death of over ten months (Silver 1969, 285).

Fill of gulley (F143)

Two fragments of animal bone were retrieved from F143, one of which was identified as a skull fragment of sheep/goat.

Peat Deposit (F209)

A near complete right radius of horse was recovered from F209. The proximal and distal epiphyses are fused, indicating a time of death of over three and a half years (Silver 1969, 285). Biometrical data for this bone are presented in Table 2, and based on the greatest length of its lateral side (L1) an estimated shoulder height value of 138.7 metres was obtained

(Kiesewalter, in von den Driesch and Boessneck 1974, 333). This shoulder height value indicates that the individual was of a small pony-sized variety (13.6 hands). Butchery marks are not present on the bone.

Fulacht Spread (F216)

One cattle molar was recovered from F216.

Site	Feature No.	No. frag	Species	Anatomy	Details
Towlaght 1	**121**	3	Cattle	Scapula	1 RF
(02E1145)		2	Unid.	-	-
	126	2	Unid.	-	-
	143	1	S/G	Skull	-
		1	Unid.	-	-
	209	1	Horse	Radius	R, PF, DF, flaking
	216	1	Cattle	Tooth	Maxillary Molar

Key: LM=large mammal; MM=medium mammal; S/G=Sheep or goat; Unid.=unidentified; LB=longbone; L=left; R=right; P=proximal; D=distal; S=shaft; FU=fused; Un=unfused; CM=cut marks; B=burnt bone.

Table 1 Summary of results of osteological analysis.

Site	Feature No.	Species	Anatomy	Measurement	mm	ESH (m)
Towlaght 1	**209**	Horse	Radius	L1	319.6	138.7
(02E1145)				Bd	73.0	-
				BFd	62.0	-

Table 2 Measurements of complete bone elements (after von den Driesch 1976), and estimated shoulder height for horse (after Kiesewalter in von den Driesch and Boessneck 1974, 333).

Bibliography

Driesch, A. von den, 1976. *A Guide to the Measurement of Animal Bones from Archaeological Sites*. Peabody Museum Bulletin, Harvard.

Driesch, A. von den & Boessneck, J. A. 1974. 'Kritische Anmerkungen zur Widerristhoherberechnung aus Langermassen vor und fruhgeschichtlicher Tierknochen', *Saugetierkundliche Mitteilungen* **22**, 325-48.

Silver, I. A. 1969. 'The ageing of domestic animals', in D. Brothwell & E. Higgs (eds.), *Science and Archaeology.* London, Thames and Hudson (2nd edition), 283-302.

Area 1

Plate 1: Ditch C106, sectioned, looking north. (GT3, CP4:14)

Plate 2: Ditch C128, sectioned, looking west. (GT3, CP4:2)

Plate 3: Pit C108, sectioned, looking south. (GT3, CP4:12)

Plate 4: Pit C110, sectioned, looking south. (GT3, CP4:10)

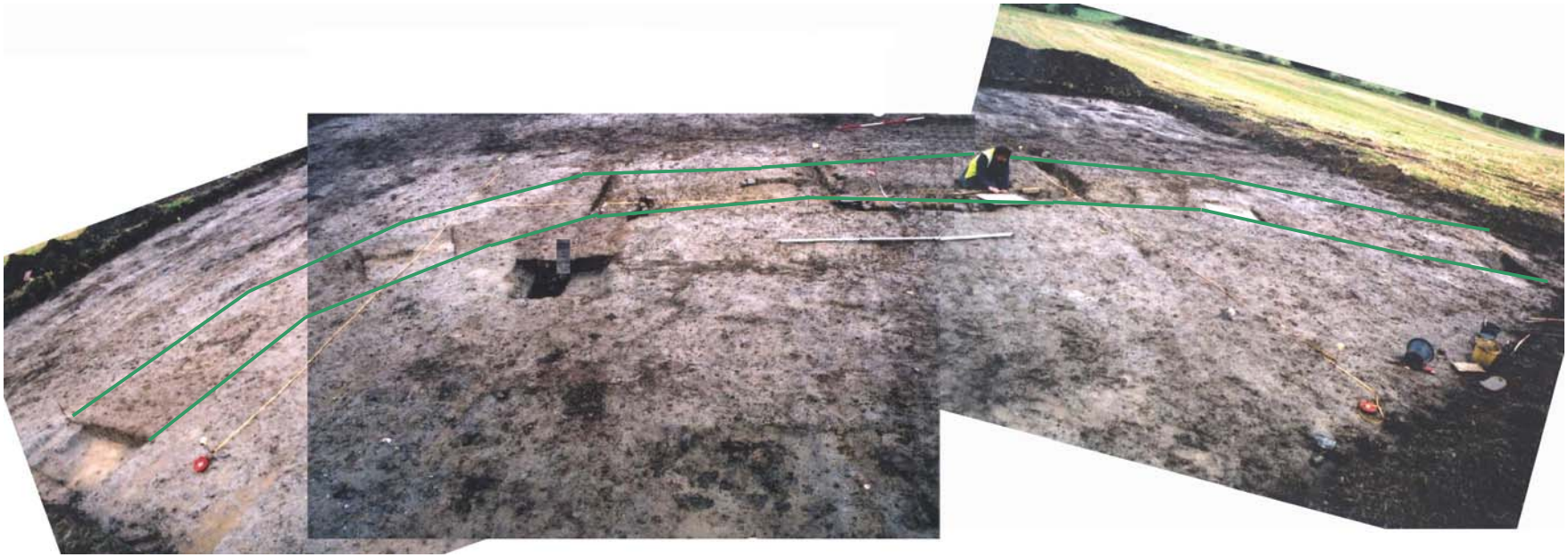


Plate 5: Photomontage showing the extent of the enclosure in Area 1, looking west. (CP2:3-5)

Area 1

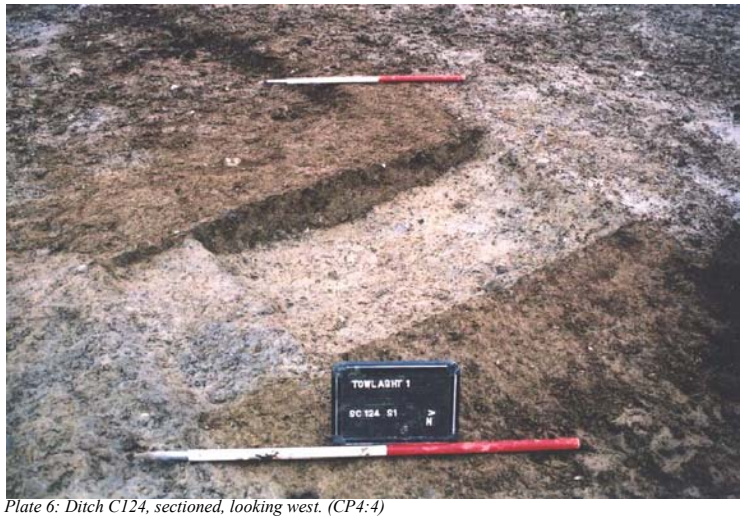


Plate 6: Ditch C124, sectioned, looking west. (CP4:4)

Plate 7: Stonework C129 in ditch C124, looking east. (CP2:20)

Plate 8: Stonework C129 and gully C142, looking south. (CP1:5)

Plate 9: Posthole C131, post-excavation, looking east. (CP1:18)

Area 1

Plate 10: Stonework C120, pre-excavation, looking north. (GT3, CP4:6)

Plate 11: Trench through peat C159, looking north. (CP3:6)

Area 2

Plate 12: Fulacht spread C216, plough furrows C212 etc excavated, looking north. (CP3:22)

Plate 13: General shot, post-excavation, looking west. (CP1:18)

Area 2

Plate 14: Fulacht section, looking north. (CP3:11-13)

Plate 15: Fulacht section, looking east. (CP3:6)

Plate 16: C219, pre-excavation, looking north. (CP3:22)

Plate 17: Hearth C204, pre-excavation, looking west. (01_80:CP2:12)

Plate 18: Hearth C204, sectioned, looking west. (01_80:CP2:10)

Plate 19: Hearth C204, post-excavation, looking west. (01_80:CP3:26)

The Finds

Plate 20: Find No. 02E1145-121-2

Plate 21: Find No. 02E1145-129-1

Plate 22: Find No. 02E1145-131-1

Plate 23: Find No. 02E1145-131-3

Plate 24: Find No. 02E1145-132-1

Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site Location: Towlaght , M4 Kinnegad-Enfield-Kilcock	Scale: 1:100000 A4	Drawn By: Courtesy of Westconsult
	Client: Westmeath County Council	Date: 02 Jan 03	Drawing No.: 01_80_C432

Figure 1: Location of Towlaght

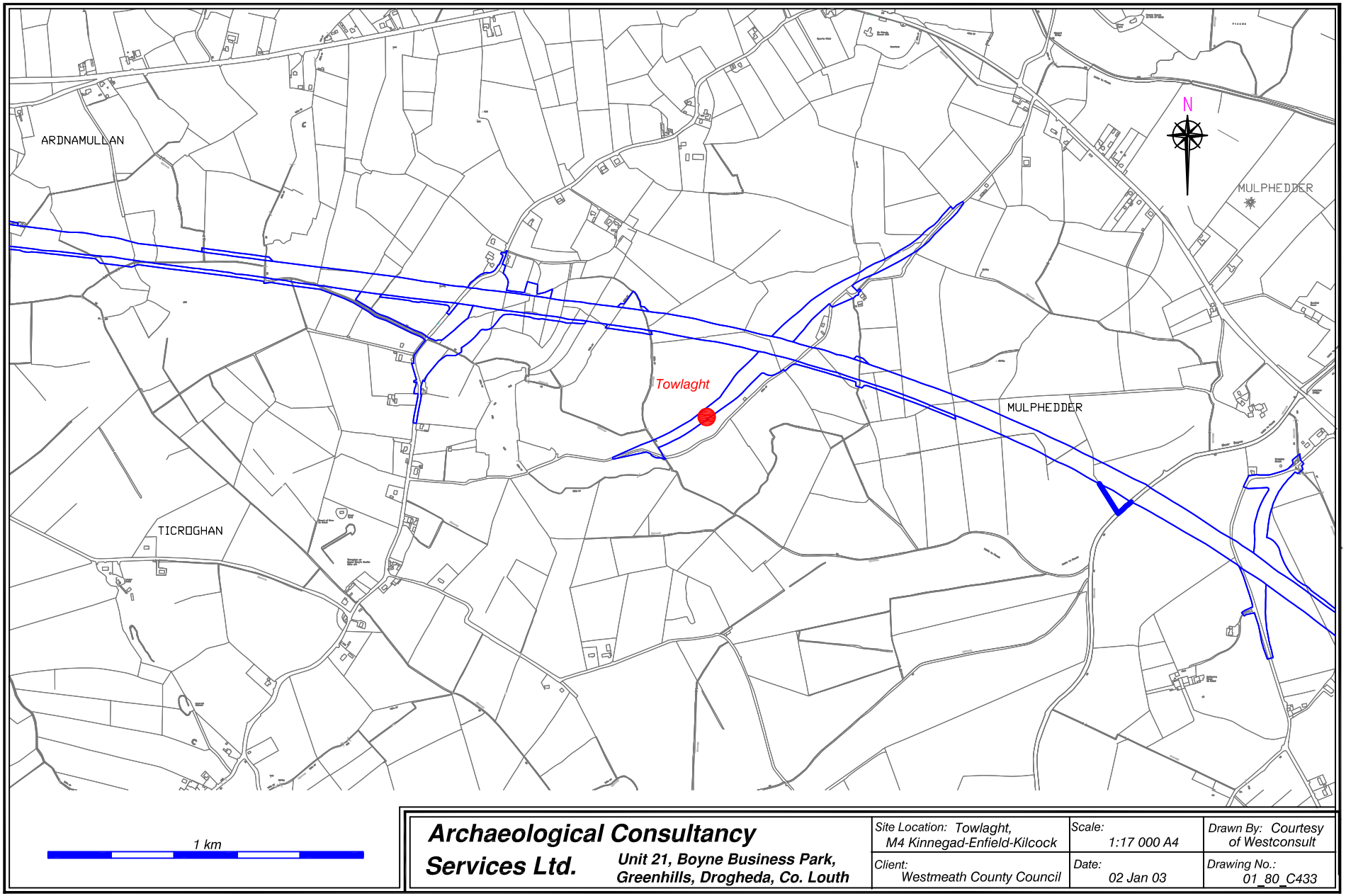


Figure 2: Detailed location of Towlaght

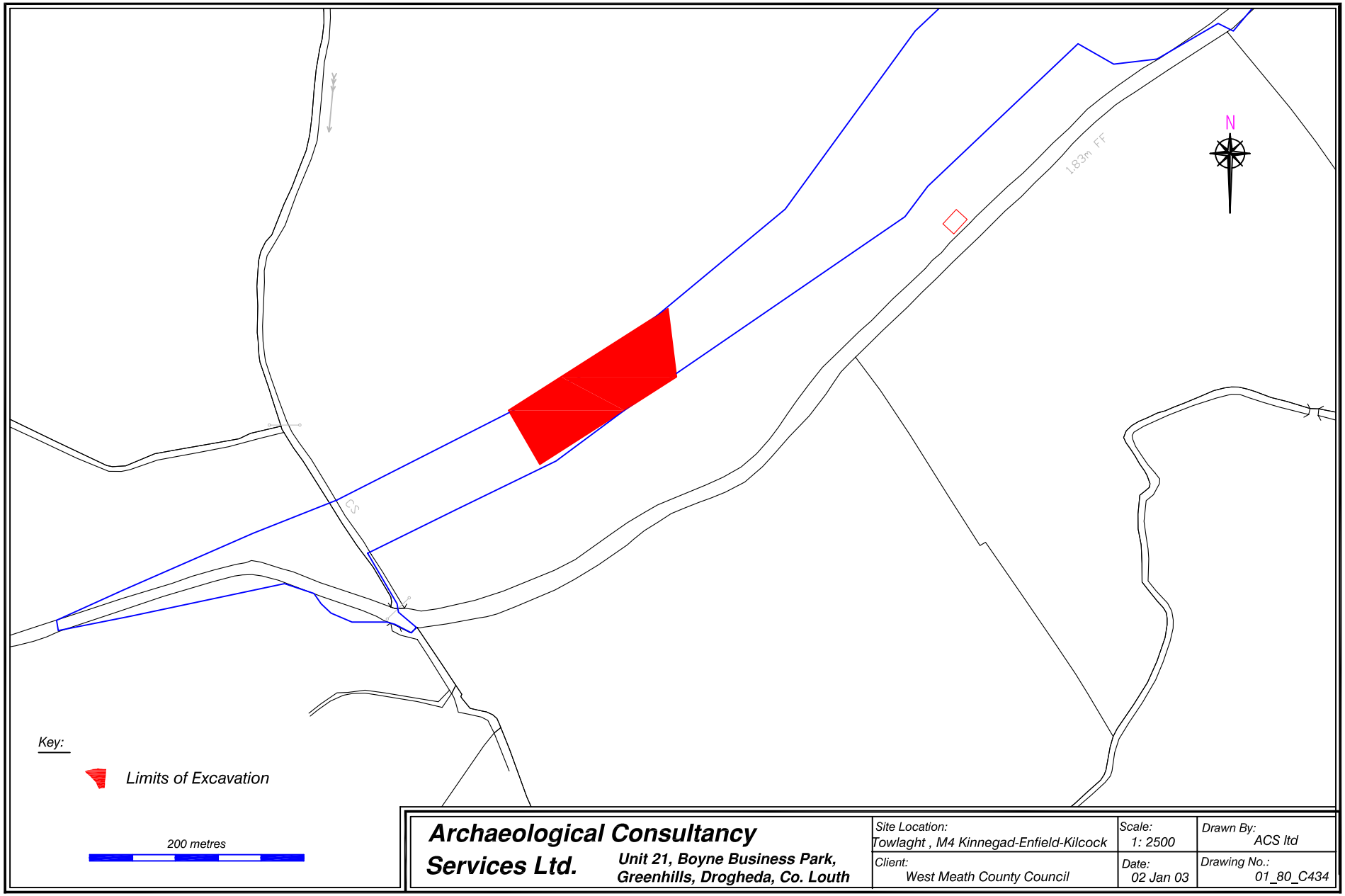


Figure 3 : Towlaght , Area of Excavation

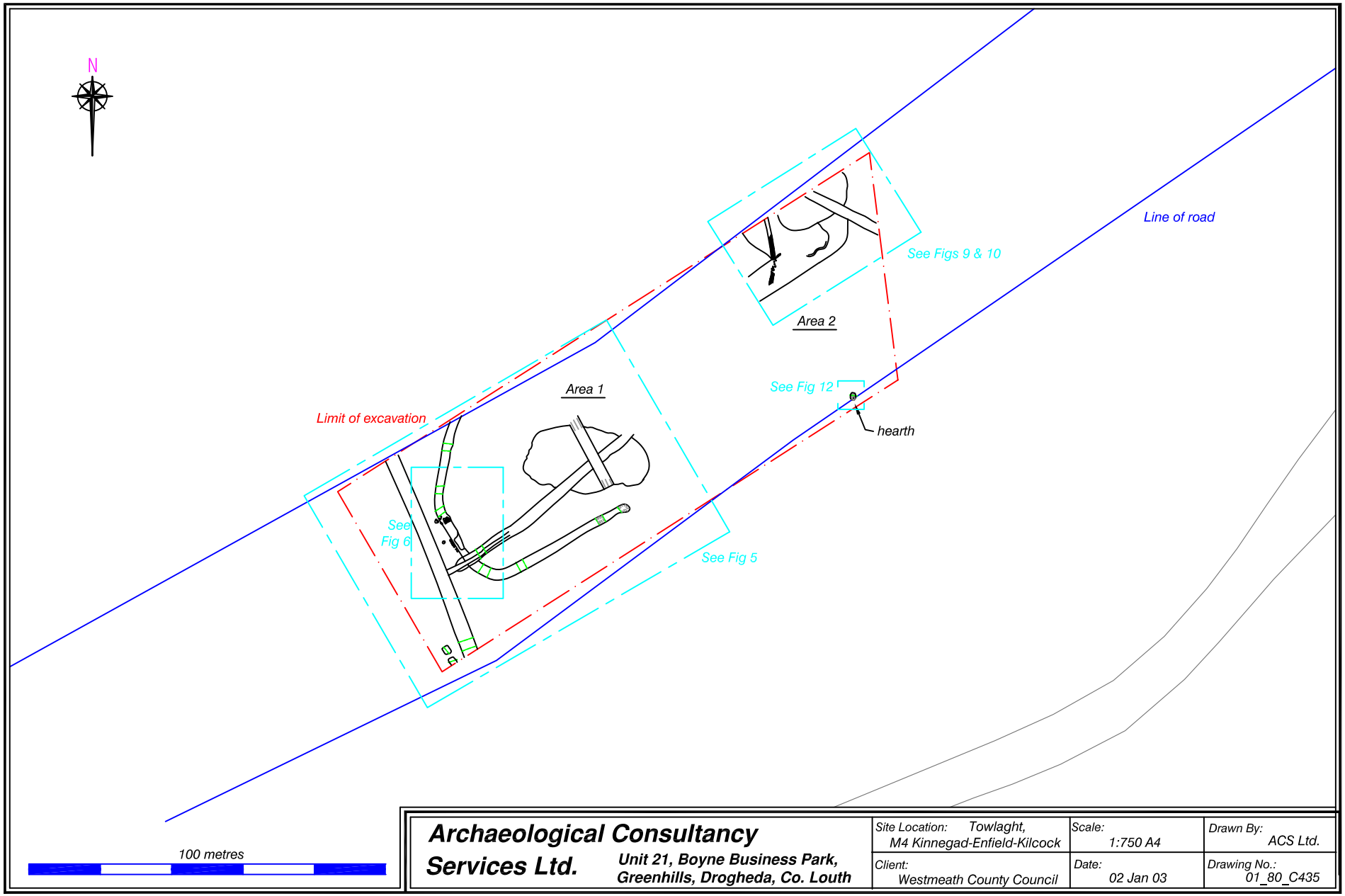
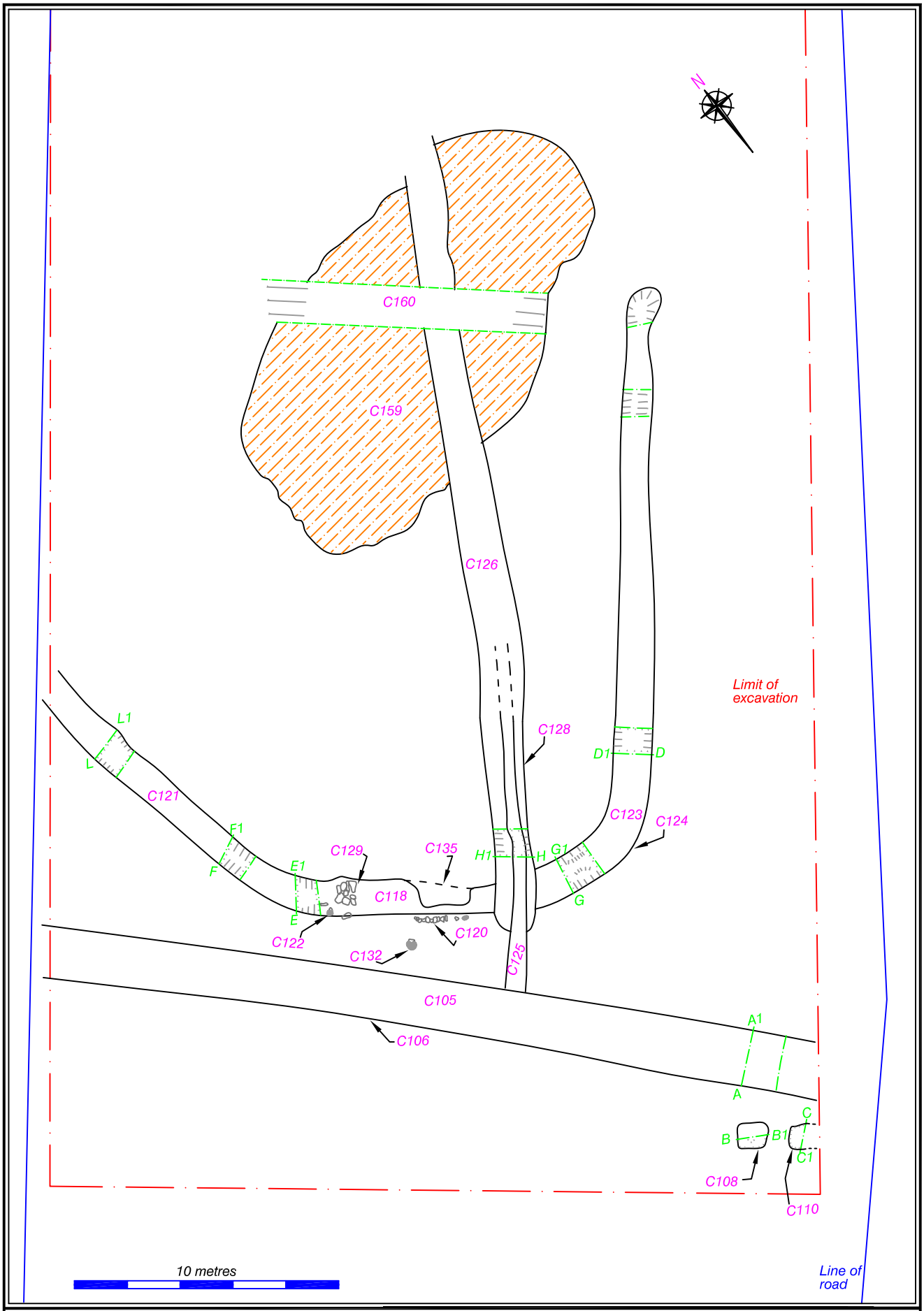
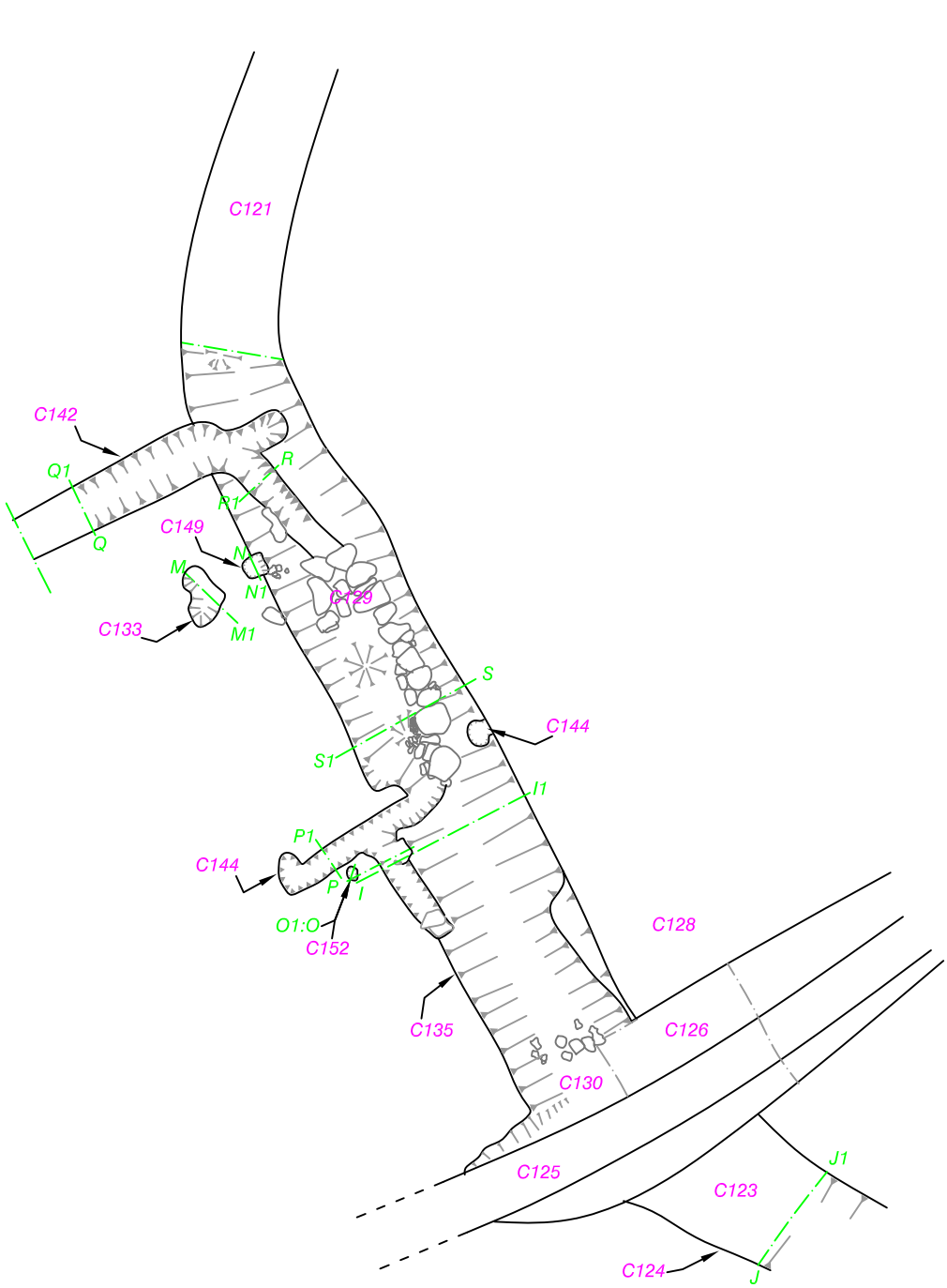


Figure 4: Pre-excavation plan of the site showing main features



Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:200 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 06 Jan 03	Drawing No.: 01_80_C440

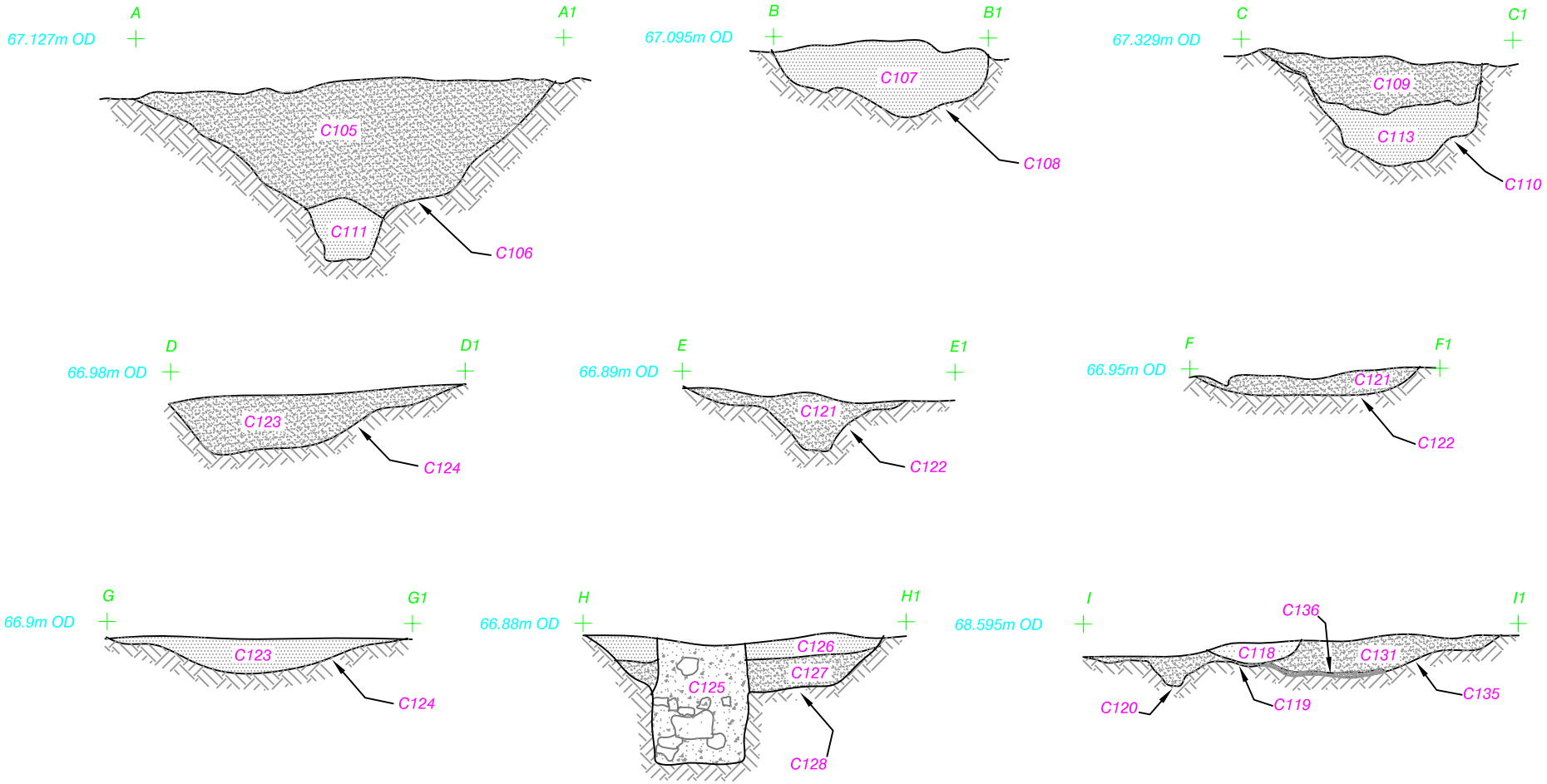
Figure 5: Area 1, plan showing section etc and Phase 3 entrance.



4 metres

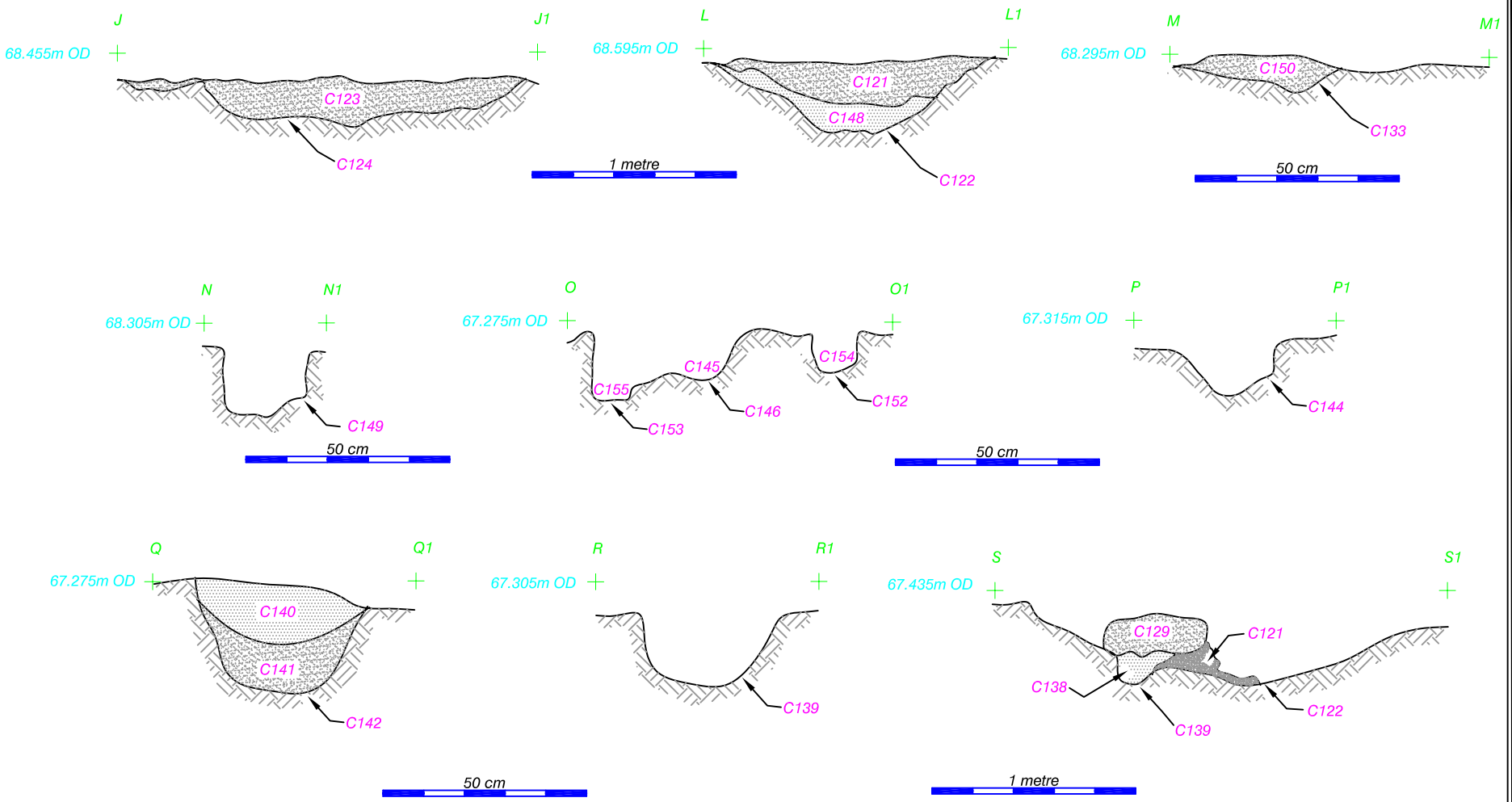
Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:75 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 06 Jan 03	Drawing No.: 01_80_C441

Figure 6: Area 1, plan showing Phase 2 entrance.



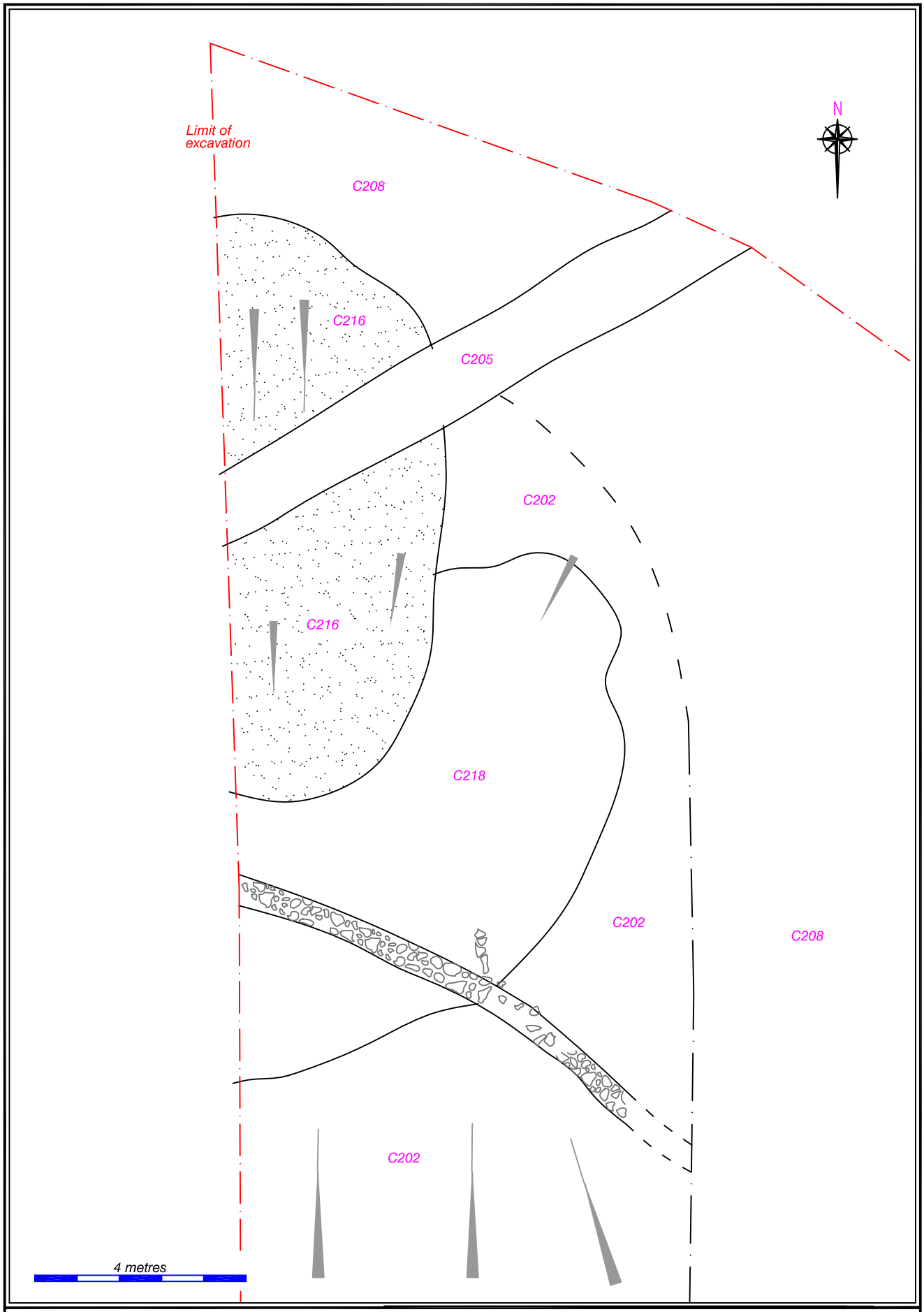
Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:30 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 06 Jan 03	Drawing No.: 01_80_C442

Figure 7: Sections A:A1 - I:I1



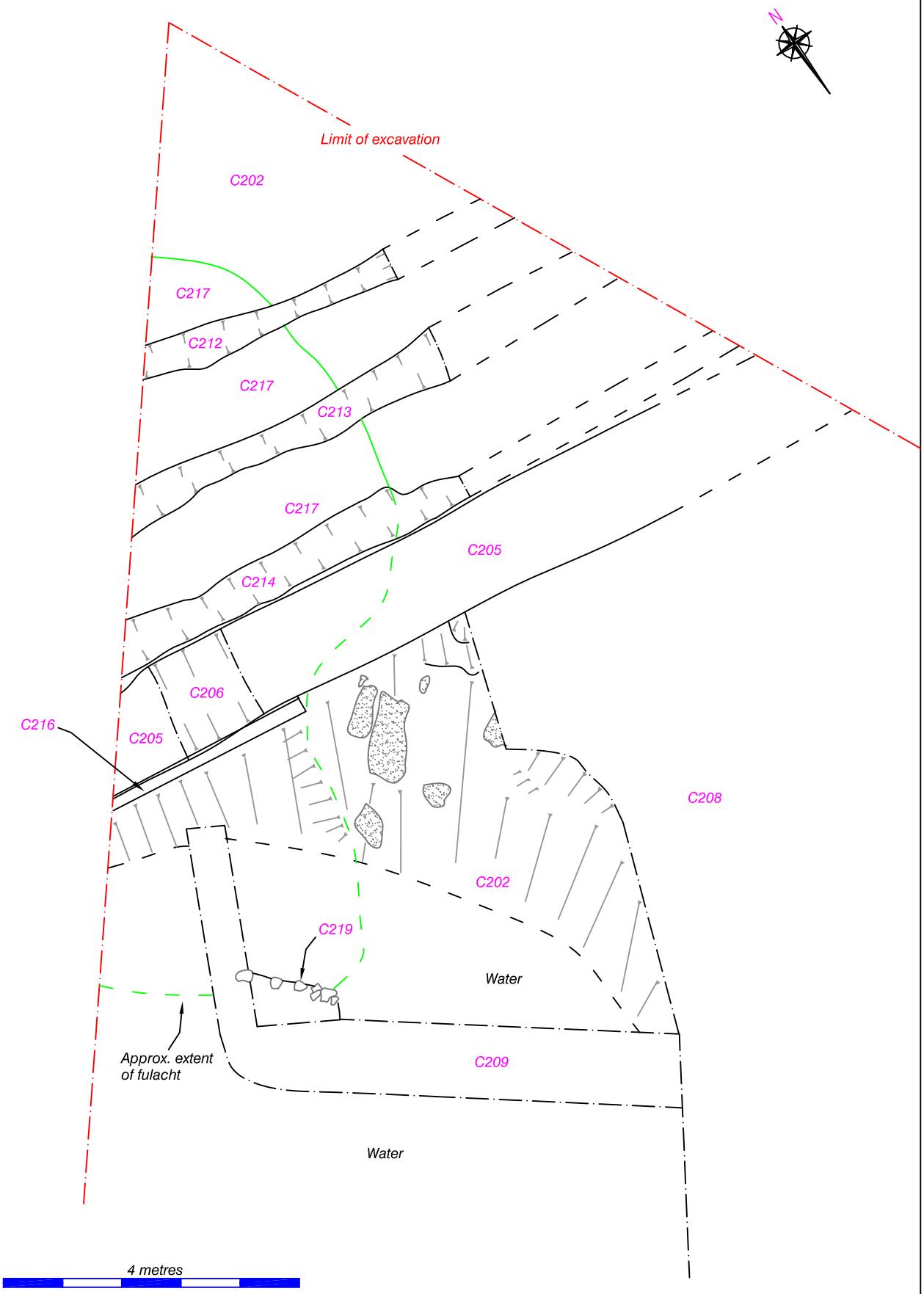
Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:30 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 06 Jan 03	Drawing No.: 01_80_C443

Figure 8: Sections and profiles J:J1 - T:T1



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:100 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 05 Mar 03	Drawing No.: 01_80_C520

Figure 9: Area 2, plan showing extent of fulacht spread



Archaeological Consultancy Services Ltd. Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:75 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 05 Mar 03	Drawing No.: 01_80_C521

Figure 10: Area 2, post excavation plan

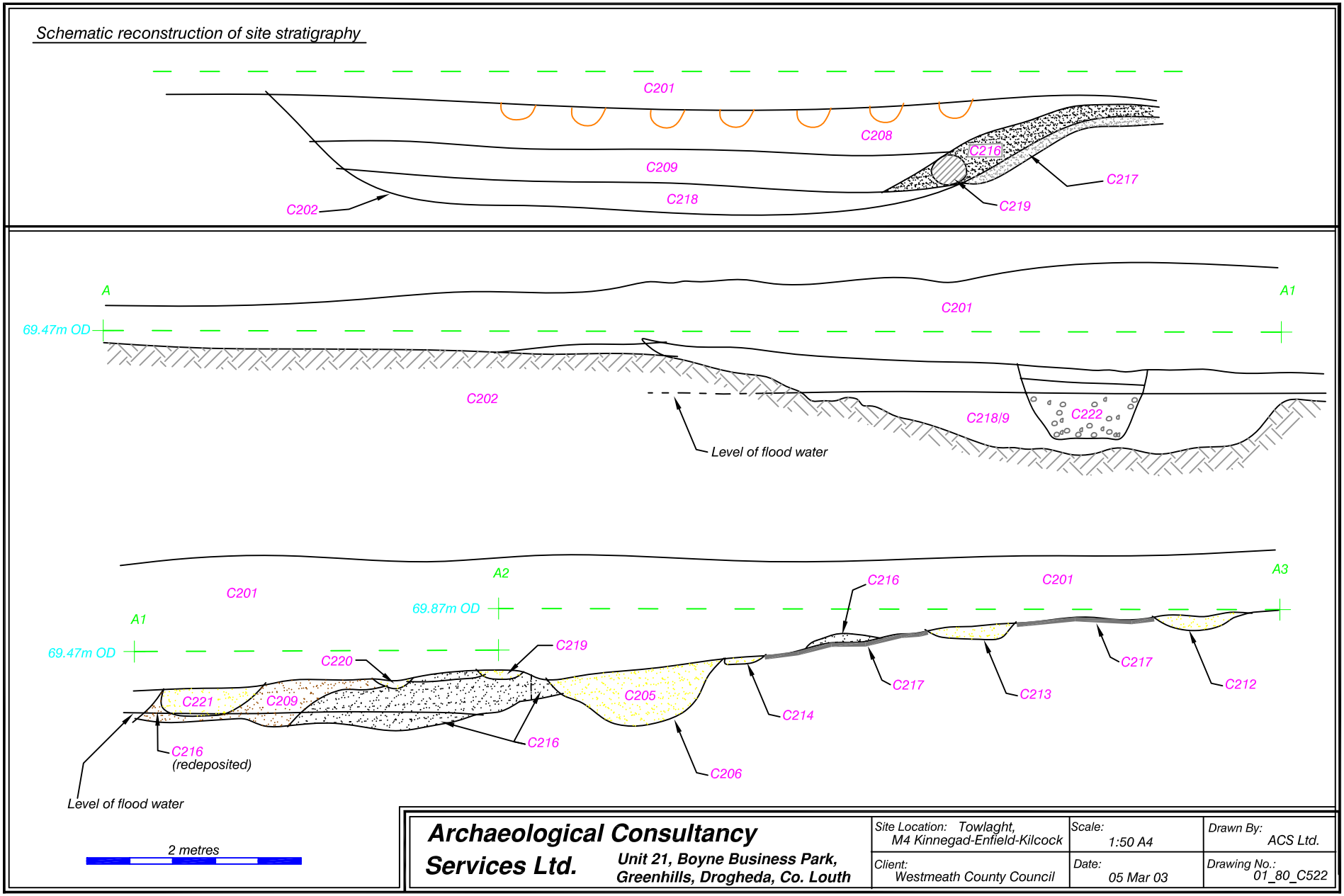
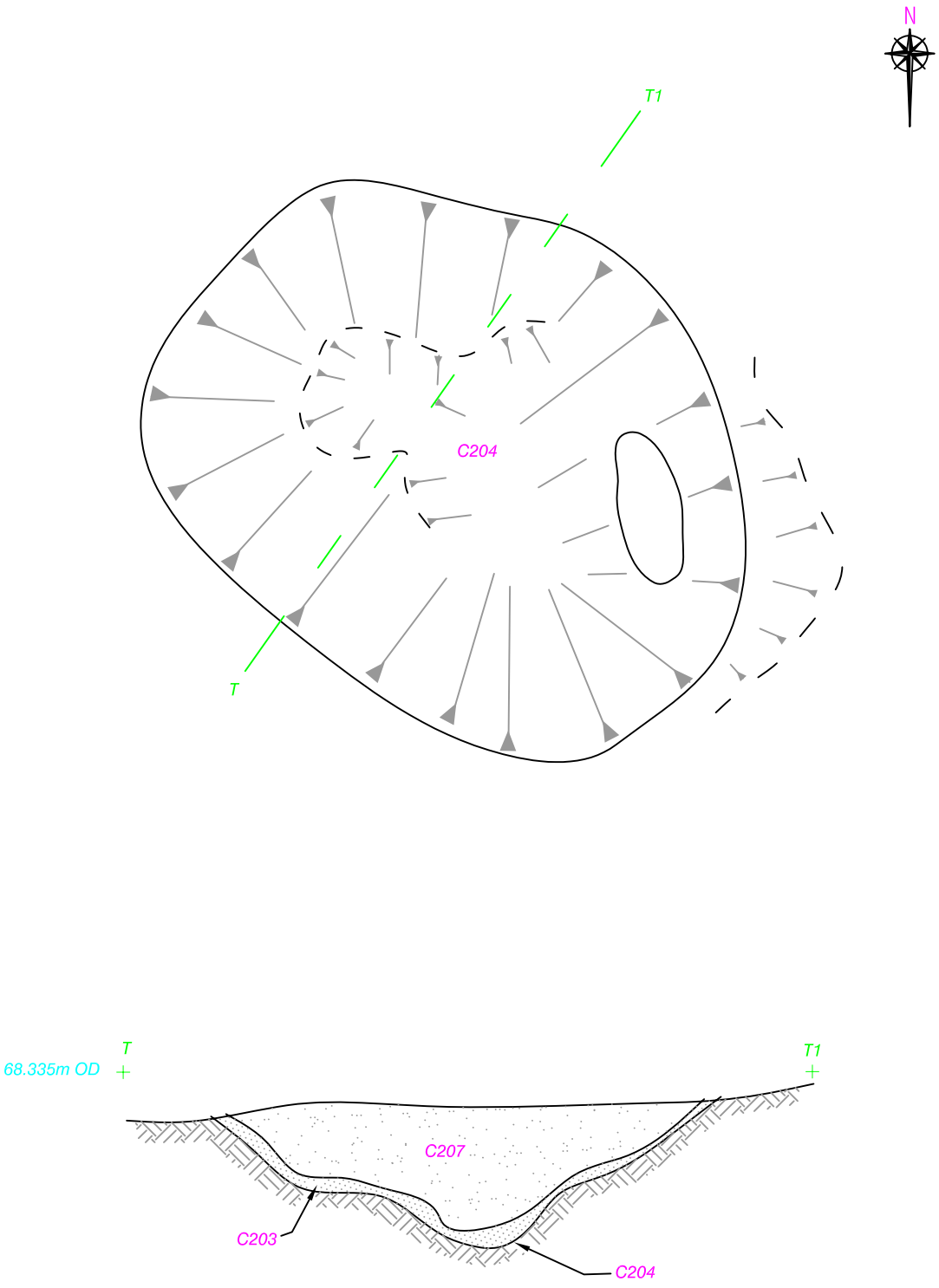


Figure 11: Area 2, Sections



Archaeological Consultancy Services Ltd. *Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth*	Site Location: Towlaght, M4 Kinnegad-Enfield-Kilcock	Scale: 1:10 A4	Drawn By: ACS Ltd.
	Client: Westmeath County Council	Date: 07 Mar 03	Drawing No.: 01_80_C523

Figure 12: Area 2, Hearth C204, plan and section