

M3 CLONEE – NORTH OF KELLS MOTORWAY SCHEME ARCHAEOLOGICAL SERVICES CONTRACT 4 NAVAN TO KELLS AND KELLS BYPASS



**E3137: COOKSTOWN GREAT 1
MINISTERIAL DIRECTION REF. NO.: A029/**

FINAL REPORT

SUBMITTED TO MEATH COUNTY COUNCIL

21 JUNE 2010

PROJECT DETAILS

| | |
|--|--|
| | |
| Project Reference No. | MH 00 100 |
| Project | M3 Clonee–North of Kells, Contract 4 |
| Ministerial Direction Reference No. | A029 |
| Excavation Registration Number | E3137 |
| | |
| Excavation Director | Patricia Lynch |
| Senior Archaeologist | Shane Delaney |
| Consultant | Irish Archaeological Consultancy Ltd, 120b Greenpark Road, Bray, Co. Wicklow. |
| Client | Meath County Council |
| | |
| Site Name | Cookstown Great 1 |
| Site Type | Prehistoric Spreads and Pits |
| Townland | Cookstown Great |
| Parish | Balrathboyne |
| County | Meath |
| NGR (Easting) | 276270 |
| NGR (Northing) | 273163 |
| Chainage | 67400 |
| Height m OD | 55m OD |
| | |
| RMP No. | N/A |
| | |
| Excavation Start Date | 25 September 2006 |
| Excavation Duration | 20 days |
| | |
| Report Type | Final |
| Report Date | 21 June 2010 |
| Report By | Patricia Lynch |

ACKNOWLEDGMENTS

This final report has been prepared by Irish Archaeological Consultancy Ltd on behalf of Meath County Council and the National Roads Authority in advance of the construction of the M3 Clonree – North of Kells Motorway Scheme. This excavation has been carried out under Ministerial Direction to the Department of Environment, Heritage and Local Government (DoEHLG), in consultation with the National Museum of Ireland issued under Section 14 of the National Monuments Acts 1930–2004.

Consulting Engineers – N3 Meath Consult

Engineer – Peter Thorne and Thomas Meagher

Resident Engineer – Gillian Cogan

Meath County Council, National Roads Design Office

Senior Engineer – John McGrath

Project Archaeologists – Mary Deevy and Maria Fitzgerald

Project Liaison Officer – Catherine Anderson

National Monuments, Department of the Environment, Heritage and Local Government

Archaeologist – Martin Reid

Irish Antiquities Division, National Museum of Ireland

The Duty Officer

Report Contributions

Final Report Management and Production: Gill McLoughlin and Fintan Walsh

Final Report Research: Gill McLoughlin, Michelle Brick and Fintan Walsh

Final Report Compilation: Maeve Tobin, Mark Moraghan, John Winfer

Figure Production: Paul Higgins and Graeme Kearney

Final Report Editing: Gill McLoughlin and Fintan Walsh

ABSTRACT

This is a final report of an archaeological excavation at Cookstown Great 1 which was located on the route of the M3 Navan–Kells & Kells Bypass (Archaeological Services Contract 4) of the M3 Clonee–North of Kells Motorway Scheme, County Meath. The excavation was carried out by Patricia Lynch of Irish Archaeological Consultancy Ltd on behalf of Meath County Council and the National Roads Authority. The work was carried out under Ministerial Direction No. A029/019 and National Monuments Service (NMS) Excavation Registration No. E3137 which were received from the DoEHLG in consultation with the National Museum of Ireland. The fieldwork took place between 25 September – 21 November 2006.

A total area of 948m² was opened around Cookstown Great 1 to reveal the archaeological features that were identified at the site during archaeological testing under licence 04E0918.

Two phases of activity were identified at Cookstown Great 1. Phase 1, and the focus of the site, comprised a spread of charcoal rich soil C3 (9m x 3.2m x 0.2m) containing heat affected stones and early Neolithic pottery. Four pits and a pit/hearth were also excavated at the site and one of these pits (C27) was dated to the late Bronze Age / early Iron Age (768–521 BC) (Phase 2). The remainder of the pits and the hearth were undated and could belong to either phase.

Alder (*Alnus* sp.), *Prunus* and oak (*Quercus* sp.) charcoal were identified from samples retrieved from the site and the results were dominated by oak. It is likely that the site was located close to oak woodlands, possibly with a river, stream or wetlands nearby (O'Donnell, Appendix 2.3).

The early Neolithic and late Bronze Age / early Iron Age features identified at Cookstown Great 1 are an important addition to the increasingly widespread corpus of prehistoric activity in this part of Co. Meath which includes the extensive prehistoric landscape of the Kilmainham/Cookstown Great complex c. 1km to the north-west.

CONTENTS

| | | |
|-------------------|--|------------|
| 1 | INTRODUCTION..... | 1 |
| 1.1 | Background to the Proposed Development..... | 1 |
| 1.2 | Previous Archaeological Work | 2 |
| 1.2.1 | EIS..... | 2 |
| 1.2.2 | Geophysical Survey | 2 |
| 1.2.3 | Testing..... | 3 |
| 1.3 | Methodology..... | 3 |
| 2 | EXCAVATION RESULTS | 5 |
| 2.1 | Natural Geology | 5 |
| 2.2 | Phase 1: Early Neolithic Activity | 5 |
| 2.2.1 | Spread C3 and Associated Deposits..... | 5 |
| 2.3 | Phase 2: Late Bronze Age / Early Iron Age Activity | 6 |
| 2.3.1 | Pit C27..... | 6 |
| 2.4 | Undated Pits and Hearth | 6 |
| 2.4.1 | Pit C7..... | 6 |
| 2.4.2 | Pit C15..... | 7 |
| 2.4.3 | Pit C41..... | 7 |
| 2.4.4 | Pit/Hearth C45..... | 7 |
| 2.5 | Agricultural Activity | 8 |
| 2.5.1 | Furrows Filled with Archaeological Material | 8 |
| 2.5.2 | Agricultural Furrows | 8 |
| 2.5.3 | Topsoil..... | 8 |
| 3 | SYNTHESIS..... | 10 |
| 3.1 | Landscape Setting..... | 10 |
| 3.2 | The Archaeological Landscape – Neolithic and Bronze Age | 10 |
| 3.2.1 | General Neolithic landscape of the Scheme | 11 |
| 3.2.2 | General Bronze Age Landscape of the Scheme | 14 |
| 3.2.3 | Archaeological Landscape of site Cookstown Great 1 | 16 |
| 3.4 | Summary of the Excavation Results | 17 |
| 3.5 | Summary of the Specialist Analysis | 17 |
| 4 | DISCUSSION AND CONCLUSIONS..... | 18 |
| 4.1 | Discussion | 18 |
| 4.2 | Conclusions..... | 18 |
| 5 | BIBLIOGRAPHY | 20 |
| 5.1 | References | 20 |
| 5.2 | Other Sources | 26 |
| APPENDIX 1 | CATALOGUE OF PRIMARY DATA..... | I |
| Appendix 1.1 | Context Register | i |
| Appendix 1.2 | Catalogue of Artefacts | iii |
| Appendix 1.3 | Catalogue of Ecofacts..... | v |
| 1.3.1 | Charcoal..... | v |
| 1.3.2 | Carbonised Seeds..... | v |
| Appendix 1.4 | Archive Checklist | vi |
| APPENDIX 2 | SPECIALIST REPORTS | VII |
| Appendix 2.1 | Prehistoric Pottery Report – Eoin Grogan and Helen Roche | ix |
| Appendix 2.2 | Clay Pipe Report – Joe Norton | xv |
| Appendix 2.3 | Charcoal and Wood analysis Report – Lorna O'Donnell | xvii |
| Appendix 2.4 | Plant Remains Analysis Report – Susan Lyons..... | xxv |
| Appendix 2.5 | Radiocarbon Dating Results – QUB Laboratory | xxxiii |

APPENDIX 3 LIST OF RMP SITES IN AREAXXXV

APPENDIX 4 LIST OF M3 CONTRACT 4 SITE NAMESXXXVI

FIGURES

PLATES

List of Figures:

- Figure 1 E3137 Cookstown Great 1 site location on OS Discovery Series background.
- Figure 2 E3137 Cookstown Great 1 showing RMPs with OS background.
- Figure 3 E3137 Cookstown Great 1 site location on 1st Edition OS map.
- Figure 4 E3137 Cookstown Great 1 site extents showing phase 1 testing results.
- Figure 5 E3137 Cookstown Great 1 plan of site.
- Figure 6 E3137 Cookstown Great 1 sections.
- Figure 7 E3137 Cookstown Great 1 illustration of a selection of early Neolithic carinated bowl sherds (Find numbers E3137:3:11–12, 15–17) (Alva Mac Gowan).

List of Plates:

Cover photo: Pit C41, post excavation, from the south.

- Plate 1 E3137 Cookstown Great 1 aerial photograph of site, with Nugentstown 1 in the foreground, looking south-west (Studio Lab).
- Plate 2 E3137 Cookstown Great 1 section of spread C3, looking south.
- Plate 3 E3137 Cookstown Great 1 pit C27, pre excavation, looking north.
- Plate 4 E3137 Cookstown Great 1 pit C27, mid excavation, looking north.
- Plate 5 E3137 Cookstown Great 1 pit C41, post excavation, looking north.
- Plate 6 E3137 Cookstown Great 1 hearth C45, pre excavation, looking south.
- Plate 7 E3137 Cookstown Great 1 hearth C45, mid excavation, looking south.

1 INTRODUCTION

This report presents the results of the archaeological excavation of Cookstown Great 1 carried out in the townland of Cookstown Great, Co. Meath (Figures 1–6) as part of an archaeological mitigation program completed under Archaeological Services Contract 4 for the M3 Navan–Kells & Kells Bypass, which forms part of the M3 Clonee–North of Kells Motorway Scheme, County Meath. Archaeological fieldwork was directed by Patricia Lynch of Irish Archaeological Consultancy Ltd (IAC) under Ministerial Direction No. A029/019 and NMS Registration No. E3137. The work described here was funded by the Department of Transport under the National Development Plans 2000–2006 and 2007–2013 as part of the Transport 21 initiative. The total archaeological cost is administered by the National Roads Authority through Meath County Council. Irish Archaeological Consultancy Ltd was appointed by Meath County Council to undertake the works following a public procurement process.

1.1 Background to the Proposed Development

The M3 Clonee–North of Kells Motorway Scheme involves construction of 49km of two-lane, dual-carriageway motorway between Clonee and Kells and 10km of single carriageway from Kells to Carnaross, north of Kells, along with additional road upgrades, realignments and associated ancillary works. For the purposes of the Environmental Impact Assessment and the subsequent archaeological investigations the scheme was subdivided into five separate sections as follows: Clonee to Dunshaughlin (Contract 1), Dunshaughlin–Navan (Contract 2), the Navan Bypass (Contract 3) Navan to Kells (Contract 4) and Kells to North of Kells (Contract 5). This section of the scheme incorporates 11.1km along the N3 Navan–Kells Road and 3.8km of the N52 Kells Bypass.

The archaeological components of the Environmental Impact Statement published in 2002 were carried out by Valerie J. Keeley Ltd (VJK) and Margaret Gowen and Co. Ltd (MGL) in 2000–2001. This included desk based studies and field surveys of each section (VJK – Sections 1 & 3 and MGL – Sections 2, 4 & 5). Additionally on behalf of Margaret Gowen and Co. Ltd geophysical survey was undertaken on the Dunshaughlin–Navan section and at Nugentstown on the Navan–Kells section by GSB Prospection (2000 & 2001). These studies carried out as part of the Environmental Impact Assessment were augmented by further geophysical survey conducted by Bartlett-Clark Consultancy on the remainder of the scheme (2002).

Advance archaeological testing was completed by ACS and Irish Archaeological Consultancy Ltd (IAC) in 2004 (ACS – Sections 1–3 and IAC Sections 4–5). Excavation of the sites identified during testing was conducted by ACS and IAC between 2005 and 2008 (ACS Sections 1–3 & 5 and IAC Section 4).

The archaeological requirements for the M3 Clonee–North of Kells Motorway Scheme are set out in the Archaeological Directions issued to Meath County Council by the Minister for Environment, Heritage and Local Government under Section 14A (2) of the National Monuments Acts 1930 – 2004 and in the terms of the contract between Meath County Council and Irish Archaeological Consultancy Ltd. These documents form the basis of all archaeological works undertaken for this development. The excavations at Cookstown Great 1 were carried out in accordance with the written method statement submitted for approval to the Project Archaeologist and the National Monuments Service and National Museum of Ireland in accordance with the provisions of the Ministerial Directions and the terms of the contract.

All features identified during the assessment phase were subsequently re-identified and the site was fully excavated during the resolution phase of the scheme which took place between 25 September – 21 November 2006.

The site was located in the townland of Cookstown Great, c. 3.2km south-east of Kells town and c. 1.8km south of the current N3 (County Meath OS sheet 17). The topography from Navan to Kells is generally flat and gently undulating lowland. The area is characterised by a patchwork pattern of high quality agricultural fields as well as developed hedgerows. Cookstown Great 1 was located in the south-east end of an irregularly shaped field of undulating pasture which was bounded to the south-west by a disused railway line.

The site was assigned the following identification data:

Site Name: Cookstown Great 1; Ministerial Direction Number: A029; Excavation Registration Number: E3137; Route Chainage (Ch): 67400; NGR: 276270/273163.

1.2 Previous Archaeological Work

1.2.1 EIS

An archaeological assessment of the proposed corridor for Contract 4 of the M3 Navan–Kells & Kells Bypass, which forms part of the proposed M3 Clonee–North of Kells Motorway Scheme was included within an EIS which was published in February 2002. This identified twelve RMP sites that would be directly affected by the proposed road development and highlighted a number of areas of archaeological potential.

The Environmental Impact Assessment (EIA) recorded the following archaeological sites and areas of archaeological potential within 500m of Site Cookstown Great 1:

RMP sites adjacent to the route:

- There are no RMP sites within 500m of Cookstown Great 1.

Field walking and aerial survey for the EIA revealed the following areas of archaeological potential:

- A possible archaeological site in the townland of Nugentstown was identified in aerial photographs. The anomaly was apparent as a semi-circular field boundary south-west of the disused railway and a corresponding impression in the field opposite. Significantly the sub-circular feature is surrounded by a larger enclosing circular field system (c. 1.5km in diameter) that survives only to the south-west of the disused railway track and that is truncated by a small road. To the north-east lies a linear field system and the substantial townland boundary of Cookstown Great / Kilmainham.

1.2.2 Geophysical Survey

A geophysical survey of the site was undertaken from May to July 2002. The survey phases were as follows:

| | |
|----------|---|
| Phase 1: | Magnetometry of 9m blocks within each 20m strip of ground, giving 45% coverage of each 20m block. |
| Phase 2: | A magnetic susceptibility reading at 12.5m intervals along the magnetometry transects. |

Bartlett-Clark Consultancy undertook a geophysical survey of the test area containing Site Cookstown Great 1 under Licence No. 02R058. Any potential archaeological anomalies worth investigation were highlighted within the report. Test trenches were

excavated across geophysical anomalies to assess the extent, character and condition of any such below-ground archaeological remains (see section 1.2.3). In all cases the location of the geophysical trenches were surveyed in by GPS to ensure the accuracy of the testing exercise.

Details of the results are as follows:

There are possible linear features and pits, as well as a slight increase in susceptibility readings, to the north-west of Cookstown Great 1 (in plot 3032A) but the magnetometer findings are weak and isolated (Bartlett 2002, 9). No geophysical anomalies were identified at the site of Cookstown Great 1.

1.2.3 Testing

Cookstown Great 1 was identified as a result of archaeological assessment undertaken by IAC Ltd. in 2005. The site was located within Test Area 9 of Contract 4 (Nelis 2005) (Figure 4). Testing at the site revealed a number of archaeological features, including an east–west linear feature with an irregularly shaped feature to the south.

The linear feature measured 8.25m x 1m. It was hand-sectioned in two places but no artefacts were recovered. The full extent of this feature was established through the excavation of additional trenches. Testing failed to define the nature of this feature but it was interpreted as being of potential archaeological significance.

The irregularly shaped feature was located 4.5m south of the linear feature. It had an exposed length of 3.5m x 2.5m and was aligned east–west. This feature is possibly of modern agricultural origin but its close proximity to the east–west linear feature referred to above suggests that it may be of archaeological significance.

1.3 Methodology

The methodology adopted was in accordance with the approved Method Statement. The topsoil was removed to the interface between natural and topsoil using a 20 tonne mechanical excavator equipped with a flat toothless bucket under strict archaeological supervision across an area measuring 948m². The remaining topsoil was removed by the archaeological team with the use of shovels, hoes and trowels in order to expose and identify the archaeological remains. A site grid was set up at 10m intervals and was subsequently tied in to the national grid using GPS survey equipment.

All archaeological features were fully excavated by hand and recorded on *pro forma* record sheets using a variant of the single context recording system with plans and sections being recorded at a scale of 1:50, 1:20 or 1:10 as appropriate.

A complete photographic record was maintained throughout the excavation. Digital photographs were taken of all features and of work in progress. These photographs were supplemented by specialist aerial photography.

An environmental strategy was devised at the beginning of the excavation which consisted of a combination of targeted and random bulk sampling. This ensured that noticeably rich contexts were sampled, but also allowed for samples where environmental remains may not have been obvious. Features exhibiting large amounts of carbonised material such as pits and burnt spreads were the primary targets.

All artefacts uncovered on site were dealt with in accordance with the guidelines as

issued by the NMI and where warranted in consultation with the relevant specialists. All artefacts, ecofacts and paper archive are currently stored in IAC's facility in Lismore, Co Waterford and will ultimately be deposited with the National Museum of Ireland.

All dating of samples from the site was carried out by means of AMS (Accelerator Mass Spectrometry) Radiocarbon Dating of identified and recommended charcoal and charred plant remains samples. All calibrated radiocarbon dates in this report are quoted to two Sigma. Dating of the site also involved pottery analysis through typological study.

All excavation and post excavation works were carried out in accordance with the relevant approvals and in consultation and agreement with the National Roads Authority (NRA) Project Archaeologist, the National Monuments Section of the DoEHLG and the National Museum of Ireland. Where necessary licences to alter and export archaeological objects were sought from the National Museum of Ireland.

Final Report Date Ranges

The following date ranges for Irish prehistory and medieval periods are used for all final reports for the M3 Contract 4 excavations.

Mesolithic: 7000–4000 BC
Neolithic: 4000–2500 BC
Early Bronze Age: 2500–1700 BC
Middle Bronze Age: 1700–1200 BC
Late Bronze Age: 1200–800 BC
Iron Age: 800 BC–AD 500
Early medieval period: AD 500–1100
Medieval period: AD 1100–1600
Post-medieval: AD 1600–1800

Source:

Carlin, N., Clarke, L. & Walsh, F. 2008 *The M4 Kinnegad-Enfield-Kilcock Motorway: The Archaeology of Life and Death on the Boyne Floodplain*. NRA Monograph Series No. 2, Wordwell, Bray.

2 EXCAVATION RESULTS

Two phases of activity were identified at Cookstown Great 1. Phase 1, and the focus of the site, comprised a spread of charcoal rich soil containing heat affected stones and early Neolithic pottery (4227–3978 BC). Four pits and a hearth were also excavated at the site and one of these pits was dated to the late Bronze Age / early Iron Age (768–521 BC) (Phase 2). The remainder of the pits and the hearth were undated and could belong to either phase.

2.1 Natural Geology

The overburden in this area of the proposed route consists of stiff silts overlying glacial till. Bedrock is likely to be found c. 5 m below ground level and to consist of limestone. Generally, the area surrounding Kells is characterised by relatively low ice marginal ridges, eskers, and kame and kettle topography (Finch *et al.* 1983; Meehan 1996) dominated by sand and gravel units. Overall, this area is very hummocky with some interspersed peat bogs and badly drained hollows (Meehan 1999).

The natural subsoil varied much across this cutting resulting in areas of natural subsoil being originally considered to be archaeological features. In general it was a mix of yellow, orange and red mottled clay with gravel and sandy patches scattered throughout.

2.2 Phase 1: Early Neolithic Activity

This phase of activity was the focus of the site and comprised a spread of charcoal rich soil containing heat affected stones and early Neolithic pottery.

2.2.1 Spread C3 and Associated Deposits

Contexts:

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|--|-----------------------------|
| C3 | 13 | 9 | 3.2 | 0.2 | Dark brown sandy silt. | Spread. |
| C9 | C10 | 1 | 0.35 | 0.1 | Loose, dark grey sandy silt. | Fill of shallow oblong cut. |
| C10 | N/A | 1 | 0.35 | 0.1 | Shallow oblong cut. | Cut. |
| C11 | N/A | 0.95 | 0.4 | 0.05 | Dark brown sandy silt, rich in charcoal. | Spread. |
| C13 | N/A | 9 | 3.2 | 0.2 | Irregular cut. | Cut / depression. |
| C17 | C18 | 0.09 | 0.09 | 0.16 | Loose, dark grey, sandy soil. | Posthole. |
| C18 | N/A | 0.09 | 0.09 | 0.16 | Small circular cut. | Posthole. |

Finds:

| Context | Find Number | Material | Period | Description |
|---------|--------------|----------|-----------------|-----------------------|
| C3 | E3137:3:1–20 | Pottery | Early Neolithic | Carinated bowl sherds |

Interpretation:

The focus of this site consisted of an irregularly shaped deposit of charcoal-enriched soil (C3), that contained heat affected stones and pottery (Figures 5–6; Plate 2). The deposit was contained within an irregular cut or shallow depression (C13). A shallow depression in fill C3 contained a charcoal-enriched loose, mid to dark brown sandy silty charcoal-enriched soil (C11).

A shallow oblong feature (C10) cut into C3, was filled with loose, dark grey sandy silty charcoal-enriched soil (C9) (Figure 5). A posthole (C18), was cut into the base of C10.

The pottery recovered from spread C3 has been identified as the remnants of at least four early Neolithic carinated bowls (Figure 7). The material is fragmentary and the presence of sooting on sherds from two vessels, as well as other sherds, is indicative of a domestic assemblage. The assemblage contains vessels with rounded everted

to sharply everted rims, one with an L-shaped profile (No 1). No. 3 has a simple rounded shoulder. These forms represent the earliest type of Neolithic pottery (Case 1961: 'Dunmurry-Ballymarlagh styles'; Sheridan 1995: 'classic' carinated bowls) in Ireland (Grogan and Roche, Appendix 2.1).

A sample of C3 was sent for environmental analysis and was found to contain wheat (*Triticum* sp.), tentatively identified as emmer wheat (*Triticum diococcum*) (Lyons, Appendix 2.4). Further analysis identified alder (*Alnus* sp.) and oak (*Quercus* sp.) charcoal from a sample of this C3 (O'Donnell, Appendix 2.3).

A fragment (0.05g) of holly charcoal (*Ilex aquifolium*) was identified from a sample of fill C3 by Ellen O'Carroll. This charcoal sample was chosen for AMS dating and returned an AMS result of 5250 \pm 26 BP (UBA 12113). The 2 Sigma calibrated result for this was 4227–3978 BC (Appendix 2.5), which is broadly supportive of an early Neolithic date as indicated by the pottery finds from the same deposit.

Analysis showed that the fills of both C10 and C18 (C9, C17) contained only oak (*Quercus* sp.) charcoal (O'Donnell, Appendix 2.3).

2.3 Phase 2: Late Bronze Age / Early Iron Age Activity

One pit dated to the late Bronze Age / early Iron Age was excavated at the site.

2.3.1 Pit C27

Contexts:

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|--|--------------------|
| C25 | C27 | 0.83 | 0.8 | 0.11 | Loose, dark brown sandy silt. | Fill of small pit. |
| C27 | N/A | 0.83 | 0.8 | 0.11 | Rectangular, rounded corners, flat base. | Small pit. |

Finds: None

Interpretation:

C27 was a regular, rectangular cut that measured 0.83m x 0.8m and was 0.11m deep (Figure 5, Plates 3, 4). It was located c. 12m to the south-west of deposit C3. The fill of the pit (C25) consisted of a dark brown sandy silt of loose compaction with inclusions of charcoal and heat affected stones.

Analysis of a sample of C25 identified oak (*Quercus* sp.) and *Prunus* type charcoal (O'Donnell, Appendix 2.3). A low concentration of wild 'seeds' in the form of *Galium* sp. (bedstraw) were also identified from C25 (Lyons, Appendix 2.4). A sample of these seeds (0.1g) was chosen for AMS dating and returned an AMS result of 2491 \pm 24 BP (UBA 11134). The 2 Sigma calibrated result for this was 768–521 BC (Appendix 2.5), indicating a date in the late Bronze Age or possibly the start of the early Iron Age for this pit.

2.4 Undated Pits and Hearth

Three pits and a hearth were excavated at the site in the vicinity of the spread dated to the early Neolithic (Phase 1) and the pit dated to the late Bronze Age / early Iron Age (Phase 2). No finds were recovered from any of the pits and all are undated. Based on proximity to the other features these features could be dated to either phase.

2.4.1 Pit C7

Contexts:

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|------------------------------|----------------------|
| C4 | C7 | 0.2 | 0.15 | 0.05 | Loose, dark grey sandy silt. | Fill of shallow pit. |

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|------------------------|----------------|
| C7 | N/A | 0.2 | 0.15 | 0.05 | Shallow circular cut . | Shallow pit. |

Finds: None

Interpretation:

Shallow pit C7 measured 0.2m x 0.15m and was 0.05m deep (Figure 5). It was filled by C4, a charcoal rich soil. Analysis of a sample of C4 identified oak (*Quercus* sp.) charcoal only (O'Donnell, Appendix 2.3). This small pit was located 14m to the north of the main archaeological activity represented by spread C3.

2.4.2 Pit C15

Contexts:

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|---|---------------------|
| C5 | C15 | 2.21 | 1.53 | 0.08 | Loose, dark to mid-brown sandy silt. | Upper layer of pit. |
| C15 | N/A | 3.4 | 1.6 | 0.7 | Sub-rect., sloping sides, irregular base. | Cut of pit. |
| C16 | C15 | 3.4 | 1.6 | 0.6 | Mod. compact, yellow/brown sandy silt. | Basal layer of pit. |

Finds: None

Interpretation:

Sub-rectangular pit C15 measured 3.4m x 1.6m and was 0.7m deep (Figure 5). It was located c. 12m to the south-west of deposit C3 and was filled with two distinct fills. The basal fill (C16) consisted of yellow-brown sandy silt of moderate compaction and contained frequent inclusions of pebbles and small stones. Oak (*Quercus* sp.) charcoal was also present (O'Donnell, Appendix 2.3). The upper fill (C5) consisted of dark to mid-brown sandy silt of loose compaction. Frequent inclusions of charcoal and some inclusions of pebbles and small stones were also present.

2.4.3 Pit C41

Contexts:

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|---|---------------------|
| C26 | C41 | 0.61 | 0.35 | 0.12 | Grey/black silty clay of hard compaction. | Upper fill of pit. |
| C40 | C41 | 0.64 | 0.35 | 0.08 | Compact grey yellow clayey silt. | Basal layer in pit. |
| C41 | N/A | 0.64 | 0.35 | 0.2 | Oval cut, rounded base. | Pit. |

Finds: None

Interpretation:

C41 was an oval-shaped pot that measured 0.64m x 0.35 x 0.2m deep (Figure 5; Plate 5). It was located 2.5m to the west of deposit C3 and contained two distinct fills. The basal fill (C40) consisted of a compacted grey/yellow clay and silt soil. The upper layer (C26) consisted of compact grey black silty clay with charcoal inclusions.

2.4.4 Pit/Hearth C45

Contexts:

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|--|------------------------|
| C23 | C45 | 0.6 | 0.5 | 0.15 | Sticky, reddish silt, with burnt stones. | Upper fill of hearth. |
| C44 | C45 | 4.2 | 2.4 | 0.15 | Orange clayey silt. | Basal layer of hearth. |
| C45 | N/A | 4.2 | 2.4 | 0.3 | Hearth / area of burning. | Hearth. |

Finds: None

Interpretation:

This irregularly shaped pit/hearth (C45) was originally interpreted as a spread of burning (Figure 5; Plates 6, 7). It measured 4.2m x 2.4m x 0.3m deep and was located 5.75m south of deposit C3. The primary fill (C44) consisted of a layer of orange silt. Its date is unknown.

2.5 Agricultural Activity

Agricultural activity at the site consisted of furrows, including some which had truncated archaeological features at the site and as a result contained charcoal and early Neolithic pottery.

2.5.1 Furrows Filled with Archaeological Material**Contexts:**

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|--|-----------------|
| C20a | C46 | 2.85 | 0.2 | 0.15 | Loose, light brown/grey, 20% charcoal. | Fill of furrow. |
| C20b | C46 | 2 | 0.3 | 0.2 | Loose, light brown/grey, 20% charcoal. | Fill of furrow. |
| C20c | C46 | 1.5 | 0.15 | 0.1 | Loose, light brown/grey, 20% charcoal. | Fill of furrow. |
| C46 | N/A | 2 | 0.3 | 0.2 | Furrow, gradual sides, rounded base. | Furrow. |
| C22 | C48 | 2 | 0.14 | 0.12 | Loose, light brown/grey, 20% charcoal. | Fill of furrow. |
| C48 | N/A | 2 | 0.14 | 0.12 | Furrow, gradual sides, rounded base. | Furrow. |

Finds:

| Context | Find Number | Material | Period | Description |
|---------|-------------|----------|-----------------|----------------------------|
| C20 | E3137:20:1 | Pottery | Early Neolithic | Carinated bowl body sherd. |

Interpretation:

Agricultural furrows C20a, C20b, C20c and C48 were excavated in the vicinity of spread C3. They were related to modern farming practices and were filled with a mix of topsoil and charcoal-enriched soil (C46 and C48) which probably derived from C3. An early Neolithic carinated bowl fragment was recovered from C20b (Grogan and Roche, Appendix 2.1) and was probably related to those found in C3.

2.5.2 Agricultural Furrows**Contexts:**

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|------|------|---|-----------------|
| C6 | C14 | 7.65 | 0.73 | 0.31 | Moderate compact, mid-brown silty sand. | Fill of furrow. |
| C14 | N/A | 7.65 | 0.73 | 0.31 | Linear, gradual sides and a rounded base. | Furrow. |
| C33 | C47 | 3.15 | 0.18 | 0.27 | Moderate compact, mid-brown silty sand. | Fill of furrow. |
| C47 | N/A | 3.15 | 0.18 | 0.27 | Linear, gradual sides and a rounded base. | Furrow. |

Finds: None

Interpretation:

Additional agricultural furrows (C14 and C47) traversed the site and contained mid brown silty sand.

2.5.3 Topsoil**Contexts:**

| Context | Fill of | L(m) | W(m) | D(m) | Basic Description | Interpretation |
|---------|---------|------|-----------|------|------------------------------|------------------------|
| C1 | N/A | N/A | N/A | 0.35 | Yellow brown silty clay. | Topsoil. |
| C19 | C3 | 0.3 | Not known | 0.02 | Light yellow/ brown topsoil. | Mix of topsoil and C3. |

Finds: None

Interpretation:

Topsoil sealed all the archaeological features on site. It was yellow/brown silt with inclusions of small angular stones and was consistent over the site. C19 was a mix of topsoil and C3, and occurred possibly as the result of modern agricultural activity at the site.

3 SYNTHESIS

The synthesis presents the combined results of all of the archaeological analysis carried out at Cookstown Great 1. This includes the analysis of the physical and archaeological landscape, the compilation of information gathered during research into the site type, date, and function, and the results of the excavation and specialist analysis of samples taken during the course of on-site works.

3.1 Landscape Setting

The topography from Navan to Kells is generally flat and gently undulating lowland. The area is characterised by a patchwork pattern of high quality agricultural fields as well as mature hedgerows. The River Tolka and its tributaries drain much of the southern part of County Meath. The Blackwater drains most of Meath, flowing just east of Kells and is fed by a number of significant tributaries such as the Moynalty River and Yellow River.

The geology of Meath consists of solid and glacial geology. The solid geological formations are mostly of Palaeozoic age dating between 545–290 million years ago (Finch *et al.* 1983, 9). The solid geology of the area through which the road traverses is dominated principally by carboniferous limestone, which provides the basis for the nourishing, calcium-rich pastures that are seen throughout much of County Meath. The outcome of geological activity from other periods can be seen in the Namurian shales, which form a number of the hills in the area, such as the Hill of Tara and Skreen, and the Ordovician and Silurian shale and sandstones, which form the underlying geology of Kells and the surrounding area.

The overburden in this area consists of stiff silts overlying glacial till. Bedrock is likely to be found c. 5 m below ground level and to be limestone. Generally, the area surrounding Kells is characterised by relatively low ice marginal ridges, eskers, and kame and kettle topography (Finch *et al.* 1983; Meehan 1999) dominated by sand and gravel units. Overall, this area is very hummocky with some interspersed peat bogs and badly drained hollows (Meehan 1999).

The overlying soils of County Meath are mostly classified as grey-brown podzolics which are good all-purpose, well drained soils used for both arable and pastoral farming. The overlying soil of the Kells area is brown earths, which are well-drained, mature soils which are generally ideally suited to arable farming. A detailed survey of the soils of County Meath is provided by Finch *et al.* (1983).

Cookstown Great 1 was located at 55m above sea level in an irregular-shaped gently sloping field of pasture. The field was bounded on three sides by mature hedgerows while the south-west boundary was formed by the disused Navan to Oldcastle railway line. The nearest watercourses to the site are located along the north and north-east boundaries of the field. The north-east boundary also forms part of the townland boundary between Cookstown Great and Kilmainham and the eastern boundary forms part of the townland boundary between Cookstown Great and Nugentstown. There are no recently discovered sites or known recorded sites in the vicinity of Cookstown Great 1 that are contemporary.

3.2 The Archaeological Landscape – Neolithic and Bronze Age

As part of the general research relating to sites along the scheme and the specific research relating to Cookstown Great 1, the known archaeology within the surrounding landscape was assessed in order to establish the level and type of activity in the surrounding area in the past. This included a review of information from the Record of monuments and places, previous excavations and other relevant documentary sources including mapping and other sites excavated as part of the M3

scheme. The excavated archaeology at Cookstown Great 1 has been identified as being early Neolithic and late Bronze Age / early iron Age in date

3.2.1 General Neolithic landscape of the Scheme

Extensive settlement and funerary activity dating to the Neolithic period (c. 4000–2500 BC) has been identified in advance of the M3 Clonee–North of Kells Contract 4 Road Scheme. County Meath has a number of well-known burial/ceremonial centres which is indicative of a large and well established Neolithic population. These include the large passage tomb complexes at Newgrange and Loughcrew to the less widespread court and wedge tombs at Cornaville North (ME001:005) and Edengera (ME002:037-001). Until recently, comparatively little evidence of the wider settlement and domestic activities of these communities were known. In recent years as a result of nationwide development and infrastructure projects, a number of dwellings and settlement sites dating to this period have been uncovered. These discoveries provide us with an insight into the domestic and familial aspects of this society beyond the more obvious upstanding funerary monuments. Discoveries in advance of road scheme and other linear projects such as the M1 Northern Motorway Drogheda Bypass, the M3 Clonee–North of Kells, the N2 Ashbourne Bypass and the Dunshaughlin to Castletown Tara Sewerage Scheme have contributed to the growing number of Neolithic discoveries in Co. Meath. Contract 4 of the M3 Clonee–North of Kells Road Scheme in particular has provided for the identification of an expansive prehistoric landscape including at least eight early Neolithic houses with associated structures, as well as evidence of middle Neolithic activity, late Neolithic ceremonial deposits and a late Neolithic timber circle (McLoughlin and Walsh 2008, 20).

Funerary and Ritual Activity

No early or middle Neolithic funerary activity was uncovered along Contract 4 of the M3 Road Scheme however late Neolithic ceremonial activity has been identified at a number of sites. At Kilmainham 3 (Whitty 2010b) two rectilinear structures and a timber circle defined by 40 postholes were excavated, both of which were associated with high concentrations of burnt bone, flint artefacts and late Neolithic Grooved Ware pottery. The site excavated at Kilmainham 1C (Walsh 2010) also produced sherds of Grooved Ware pottery and a near-complete Grooved Ware pot. Grooved Ware pottery was also associated with a group of pits or possible structure at Phoenixtown 5 (Coughlan 2010a). Grooved Ware appears in the early third millennium BC in Ireland as the distinctive flat bottomed flowerpot shaped pottery (Malone 2001, 242) and is primarily found associated with funerary/ritual activity in the Irish context. Pits and postholes associated with grooved ware have also been excavated at Bettystown (Eogan 2000), Fourknocks (King 1999) and Ninch, Laytown (Eogan and Reid 2002) to name but a few.

Other Neolithic funerary and ceremonial activity in the county is dominated by large tomb complexes. The Hill of Tara is situated approximately 20km to the south-east of Kells. Contract 2 of the M3 Clonee–North of Kells Road Scheme passes through the environs of this complex. The Tara complex dates from the Neolithic onwards and was subject to excavations by Seán P. Ó'Riordáin in the 1950s. The excavations carried out at Duma na nGiall (the mound of the Hostages) not only confirmed that it was a passage tomb but also that it was reused for burial during the early and middle Bronze Age (Ó'Riordáin 1955; Roche 2002, 20). Another complex comprising a number of passage tombs is Loughcrew; located 15km to the west of Kells. The archaeological landscape of Sliabh na Calliagh covers at least eight townlands, but the whole area is usually called after one of them, Loughcrew (Halpin and Newman 2006, 314). It contains a number of prehistoric features, the most frequent being passage tombs; seven of which are located at Corrstown and directly to the west another seven are located at Newtown. In addition to these tombs, cairns, passage

tomb art and standing stones are present and numerous throughout this expanse. In recent years this complex has become the subject of increased interest for researchers and archaeologists. Most notably the Loughcrew Landscape Project, pioneered by the Cambridge University Unit in order to review the surrounding landscape and better understand the occupation of these monuments. In association with Irish archaeologists and the use of lidar data, field checking and similar techniques it has become apparent that the surrounding landscape at Loughcrew, specifically to the north, has had a much stronger prevalence of prehistoric activity than was initially believed, and further sites of interest associated with the prehistoric complex have been uncovered (Shell 2005, 1). Ancient field boundaries, a set of small enclosures with low surrounding bank and no obvious ditch and a pair of aligned post/pit features associated with a standing stone, to name but a few, have been discovered as a result (Shell 2005, 3).

A similar project is currently being undertaken to the east of Kells in the area of the Boyne Valley. The area known as Brú na Bóinne focusing on the major passage tomb complexes of Knowth, Dowth and Newgrange was inscribed as a Unesco World Heritage Site in 1993 (Smyth 2009, vi). A research agenda has been developed as a result of this project and a number of themes associated with these sites are currently being investigated. The area surrounding Knowth, Dowth and Newgrange incorporates at least 24 passage tombs among a number of other prehistoric features including pit circles, Neolithic houses, enclosures, passage tomb art, standing stones and cairns. Extensive analysis of the seeds and pollen collected during the excavations of the passage tombs have yielded a relatively detailed picture of the land use since the time of their construction around 3200 BC (Groenman-van Waateringe and Pals, 1982; Groenman-van Waateringe, 1984; Collins, 1997; Brooks and Farrell 2005). The location of these sites is significant; they occur along the banks of the River Boyne which no doubt influenced this concentration of ritual and burial activity. The river formed an important route-way that would have facilitated trade and communication. The core of the aforementioned passage tomb complex at Loughcrew is situated c. 10km from the River Blackwater which flows in a south-easterly direction, along the northern end of Kells Town, and joins the River Boyne at Navan. This association suggests that a route-way could have existed between the Loughcrew and Boyne Valley complexes.

Settlement Activity

Neolithic settlement sites were excavated as part of the M3 Clonee–North of Kells Contract 4 Road Scheme excavations, many of which recovered evidence of early Neolithic buildings while no clear evidence of middle or late Neolithic buildings/houses were found, with the exception of a possible late Neolithic structure at Phoenixtown 5. Five early Neolithic structures/houses dating to c. 3700–3500 BC were discovered in the townlands of Kilmainham and Cookstown Great, two were excavated at Town Parks and another was excavated at Gardenrath (McLoughlin and Walsh 2008, 20). These sites were identified within 3km of each other to the south of Kells town. The majority of the structures/houses were rectangular in plan with the exception of a building with a rough square plan at Gardenrath 2 (Bayley 2010a). Each of these sites had additional settlement features associated with them such as pits and postholes. A number of Neolithic houses have been discovered throughout Co. Meath especially in recent years. Early Neolithic rectangular houses form an impressive corpus of material but there is also an important body of evidence for circular houses in the middle and late Neolithic periods (Grogan 2004, 103). To date five rectangular houses have been recorded at Knowth (Eogan 1984) as well as an additional nine circular houses (Grogan 2004, 105). Other sites in Co. Meath demonstrating a presence of circular Neolithic structures include Claristown (Russell 2003a) and Slieve Breagh (Grogan 1996; Grogan 2004, 111), as well as Mulhuddart

(Stafford 2002) and several at Newgrange (O’Kelly *et al* 1983). A rectangular Neolithic house was excavated at Cruicerath in Co. Meath (O’Carroll 2008) and a number of artefacts dating to this period were recovered from the site. A further rectangular house was discovered at Newtown as a result of archaeological monitoring of topsoil removal on the BGE north-eastern Pipeline, Phase 3 (Halpin 1991). Neolithic structures were also identified as part of the M3 Clonee–North of Kells Contracts 1–3 & 5 excavations. A Neolithic structure was excavated at Johnstown 1 (Elder and Ginn 2009a) and at Skreen 2 (O’Neil and O’Hara 2009). A circular house with associated pits was excavated at Drumbaragh 1 (Danaher and O’Hara 2009) and has also returned a late Neolithic date.

The construction of the M1 Northern Motorway Drogheda Bypass located c. 25km east of Kells has also resulted in the excavation of a number of Neolithic sites. This project led to the discovery of a circular Neolithic structure at Sheephouse (Moore 2003a) and evidence of a rectangular structure at Platin (Moore 2003b); both are located in Co. Meath on the southern side of the River Boyne. Additionally two rectangular Neolithic buildings were discovered at Coolfore (Ó’Drisceoil 2002) and a further five circular Neolithic houses were excavated at Balgatheran to the north of the river (Ó’Drisceoil 2003). It is likely that Neolithic houses are located in association with additional structures as demonstrated at Knowth and Balgatheran, however most developments are linear and only allow a narrow sample of the landscape to be excavated. The open area excavation facilitated by the large intersection at Kilmainham/Cookstown Great on the M3 Clonee–Kells Contract 4 Road Scheme demonstrates that in some cases these settlements may be very widespread, extending over very large areas, rather than just being individual or small clusters of buildings. Agglomerated settlement appears to be a feature of the early, middle and late Neolithic alike (Grogan 2002, 524) and the results from the present road scheme reinforce this theory. Many of the Neolithic structures were excavated in close proximity to one another specifically in the northern half of this scheme.

It also remains to be seen whether clusters of buildings represent contemporary occupation or if they are the result of settlement spread over time (Smyth 2006, 236). At Knowth there are five phases of Neolithic settlement (Grogan, 2002, 522) and similarly at Newgrange it has been suggested that there was a longer pattern of occupation by smaller groups (Cooney and Grogan 1994; Grogan 1996; 2002; 2004, 112). This settlement drift has important implications for an understanding of Neolithic social and settlement patterns and suggests long-term permanence of occupation on some sites at least (Grogan 2004, 112).

Further evidence of Neolithic activity is evident in Co. Meath through the discovery of pits, domestic refuse, pottery sherds and lithic finds. One of the many examples throughout the county are the prehistoric lithics that were discovered in association with deer antler, animal bone, wood and hazelnut shells, discovered beneath a burnt mound at Leshemstown (Tobin 2008) as part of the Dunshaughlin to Castletown Tara sewerage scheme. The N2 Finglas–Ashbourne road scheme has also revealed similar activity and artefacts at Harlockstown (O’ Connor 2007) and Fleenstown Little (Murray 2007). The Neolithic activity revealed as a result of the excavations of the M3 Clonee–North of Kells Contract 4 Road Scheme has significantly contributed to our understanding of the prehistoric landscape of Co. Meath. As a result further emphasis is being placed on the domestic and habitual activities of these communities and their distribution is becoming more apparent and widespread.

3.2.2 General Bronze Age Landscape of the Scheme

Activity dating to the Bronze Age period (2500–800 BC) along Contract 4 of the M3 Clonee–North of Kells Road Scheme was represented in the form of funerary and settlement activity.

Funerary Activity

Bronze Age funerary sites occur throughout Co. Meath. Ring-ditches and barrows are a common feature of the Bronze Age, 48 of which are listed as recorded monuments in the county. Ring-ditches are circular ditches or gullies that are associated with prehistoric funerary activities and sometimes contain deposits of cremated human bone within their ditch fills. In some cases the ring-ditch may encircle a central pit containing a cremation deposit, and they are sometimes found in association with Bronze Age cemeteries. Ring-barrows are similar funerary features however the circular ditch surrounds a low earthen mound. A cluster of such monuments occurs at the Tara complex, to the south of Navan, in the townlands of Castletown Tara and Castleboy, and barrows are recorded at Kilmainham (ME017:020) and Commons of Lloyd (ME016:014) to the west of Kells. Additional barrows recorded within the vicinity of Contract 4 of the M3 Clonee–Kells Road Scheme include those at Hurdlestown (ME017:028) and Ardraccan (ME024:013). Barrows are located to the north-west at the Loughcrew complex. Further Bronze Age funerary sites worthy of note in the county include the cemetery at Keenoge (Mount 1995), the early Bronze Age flat cemetery at Bettystown (Eogan 2000), the ring-ditch with burial urns at Staleen (Campbell 2007) and the Bronze Age cist cemetery at Donaghmore, Blackcastle Demesne (Roche 1994). At the Mound of the Hostages, Tara, Co. Meath, approximately fifty secondary burials were inserted in the earth-covering of the mound but only a single, poorly constructed cist was noted (Raftery 1969, 13) and Bronze age burials including cists were recorded at Fourknocks (Waddell & Ríordáin 1993, 123–124). Cist burials are also common and 22 are listed as recorded monuments throughout Co. Meath; one of which is located at Commons of Lloyd (ME016:049). Settlement activity dating to this period presents itself in the form of enclosures and houses as well as widespread evidence for burnt mound activity.

Two ring-ditches dating to the Bronze Age were excavated on Contract 4 of the M3 Clonee–Kells Road Scheme. At Grange 3 a large ring-ditch was established in the middle Bronze Age (1372–1131 BC) and re-cut in the late Bronze Age (974–828 BC). Four cremation pits were also excavated at the site and are likely to be contemporary with this Bronze Age monument. At Kilmainham 3 (Whitty 2010b), close to recorded monument ME017:020 (possible barrow), an early Bronze Age ring-ditch was tentatively identified (2137–1965 BC). Bronze Age pottery was also recovered from a number of sites. The types of pottery consisted of cinerary urns and included cordoned urns, vase urns and a fine bipartite vase that was recovered from Phoenixtown 3 (Lyne 2010a). In addition to this a cordoned urn recovered from Kilmainham 1C (Walsh 2010) has been identified as a possible disturbed burial. The remainder of the Bronze Age vessels, although they are most commonly associated with burial, have been associated with domestic use.

Bronze Age ring-ditches have been excavated along Contract 1, 2, 3 & 5 of the M3 Clonee–North of Kells Road Scheme and occur at Johnstown 4 (Elder & Ginn 2009c), Raynestown 1 (Elder, O'Connor & Owen 2009), Ardsallagh 2 (Clarke & Carlin 2008a), Garretstown 2 (Rathbone 2009), Lismullin 1 (O'Connell 2009) and a circular enclosure representing a possible ring-ditch was excavated at Boyerstown 3 (Clarke 2009). A flat cemetery was also excavated at Ardsallagh 2 (Clarke & Carlin 2008a) and urn burials were discovered at Ardsallagh 1 (Clarke & Carlin 2008b), Collierstown 2 (Linnane 2008) and Lismullin 1. Bronze Age pottery sherds were

plentiful throughout the scheme representing food vessels, collared and cordoned urns and Bronze Age domestic ware. Such sherds were recovered from Ardsallagh 1 (Clarke & Carlin 2008b), Ardsallagh 2 (Clarke & Carlin 2008a), Dunboyne 4 (Elliott & Ginn 2008a), Boyerstown 3 (Clarke 2009), Pottlebane 1 (Rathbone & Ginn 2008), Johnstown 3 (Elder & Ginn 2009b), Johnstown 4 (Elder & Ginn 2009c), Chapelbride 4 (O'Hara, Gallagher & Ginn 2009) and Macetown 1 (Martin 2009). Similar collections of Bronze Age pottery have been retrieved from Site 10, Rathmullan (Bolger 2003), Stamullin (Ní Lionain 2008) and Colp West (Clarke & Murphy 2003) further east in Co. Meath.

Settlement Activity

Settlement sites dating to the Bronze Age period along Contract 4 of the M3 Clonee–Kells Road Scheme have recovered substantial evidence for Bronze Age houses. The most common type in Ireland is circular or almost circular in plan (Doody 2000, 139) and similarly, the majority of the structures excavated along Contract 4 conform to this design. Burnt mound activity is also a common feature of the Bronze Age and a number of these sites were excavated along Contract 4 of the M3 Road Scheme. The most enduring explanation for the function of burnt mound sites is that they were used for cooking joints of meat in a trough of boiling water (O'Kelly 1954). These sites are identified by deposits of heat shattered stones and trough features. Water was an essential element for the function of these sites and as a result they are often located in wetland/boggy areas or close to watercourses.

As part of the excavations for Contract 4 of the M3 Clonee–North of Kells Road Scheme Bronze Age structures were excavated at Grange 3 (Structure 1: 1499–1415 BC – and Structure 2: 1408–1269 BC; Kelly 2010), Nugentstown 1 (Structure 3: 1186–978 BC; Lynch 2010c), Phoenixtown 3 (Structure 1: 1503–1415 BC – 1435–1303 BC; Lyne 2010a), Cakestown Glebe 2 (Structure 1: 1122–939 BC and 993–838BC, Structure 2: 1215–1013 BC; Lynch 2010d), Kilmainham 1A (Structure 3: 1436–1314 BC – 1419–1269 BC; Lyne 2010b), and Town Parks 3 (late Bronze Age structure: 1019–906 BC; Gleeson 2010b). In addition to these two small 'D shaped' structures were excavated at Cookstown Great 3 (McLoughlin 2010a) dated to the early Bronze Age and some small Bronze Age huts were identified at Kilmainham 1C (Walsh 2010).

A number of Bronze Age enclosures were excavated as part of the M1 Northern Motorway–Drogheda Bypass in Co. Meath to the west of Drogheda town. Bronze Age enclosures were uncovered at Sheephouse (Nelis 2002), Kilsharvan, site 16 (Russell 2003c) and at site 17, Lagavooren (Murphy 2003). Several Bronze Age houses have been excavated throughout the county and structures have been identified as part of Contract 1, 2, 3 & 5 of the M3 Clonee–North of Kells Road Scheme excavations at Chapelbride 4 (O'Hara, Gallagher & Ginn 2009) and Skreen 3 (O'Neill 2005) that date to the late Bronze Age. Possible Bronze Age structures have been excavated at Bennetstown 3 (Elliott & Ginn 2008b), Dunboyne 2 (O'Hara 2009) and Boyerstown 3 (Clarke 2009), all of which are part of the excavations of Contracts 1, 2, 3 & 5 of the M3 Clonee–North of Kells Road Scheme. Bronze Age houses were also excavated at Kilsharvan 5 (Russell 2003b) and Rathmullan site 15/16 (Stafford 2003) as part of the M1 Motorway, west of Drogheda town and structures have also been identified in other parts of Co. Meath; at the lakeshore settlement at Moynagh Lough, Brittas (Bradley 2005) and Colp West (Clarke & Murphy 2003).

Burnt Mound Activity

As part of the archaeological investigations conducted in advance of the construction of the M3 Clonee–North of Kells Road Scheme 41 sites exhibiting evidence for hot

stone technology were excavated (O'Connor 2007, 2). In addition to these, burnt mound activity was present at 15 of the sites excavated along Contract 4 of the scheme. Nine of these have been identified as dating to the Bronze Age. One of two burnt mounds excavated at Kilmainham 1C (Walsh 2010) was dated to the late Neolithic/early Bronze Age (2 Sigma Cal 2573–2472 BC) and a late Neolithic/early Bronze Age date was also recovered for burnt mound activity at Nugentstown 2 (Lynch 2010b) (2 Sigma Cal 2575–2475 BC). Similar activity was also recorded at Town Parks 6 (Whitty 2010a) however this has been dated to the Neolithic and dates were not recovered from three of the remaining sites. The River Blackwater is located to the east of this part of the M3 scheme and meanders on a north-west, south-east axis. Many of its tributaries traverse the M3 road scheme providing an ideal landscape and ready water source for these burnt mound sites. Within the vicinity of Contract 4 of the M3 Clonee–Kells Road Scheme a burnt spread (ME025:044019) and a burnt mound (ME025:044015; *fulacht fiadh*) listed as recorded monuments are located at Abbeyland South in Navan, and a cluster of *fulachta fiadh* are located approximately 5km east of Nugentstown.

An increase of development in recent years has exposed numerous sites displaying burnt mound activity in Co. Meath; twelve sites presenting such activity were excavated as part of the M1 Northern Motorway Drogheda Bypass, three similar sites were uncovered as part of the N2 Ashbourne Bypass and five sites with burnt mound activity were excavated in Co. Meath as part of the Dunshaughlin–Castletown Tara Sewerage Scheme.

Lithic finds were also recovered throughout Contract 4 of the M3 Clonee–Kells Road Scheme. A number of these artefacts have a wide date range from the Neolithic to the historic period. Lithics recovered from Phoenixtown 1 (Lyne 2010c) included thumbnail scrapers diagnostic of the Bronze Age period and flint artefacts recovered from Nugentstown 3 (Lynch 2010a), Ballybeg 3 (Coughlan 2010b) and Town Parks 2 (Gleeson 2010a) have been identified as late Neolithic/Bronze Age in date.

The funerary and settlement activity excavated along Contract 4 of the M3 Clonee–North of Kells Road Scheme has uncovered additional elements of Co. Meath's Bronze Age heritage and further contributes to our knowledge and understanding of these communities.

3.2.3 Archaeological Landscape of site Cookstown Great 1

Cookstown Great 1 returned dates in the early Neolithic (4227–3978 BC) and the late Bronze Age / early Iron Age (768–521 BC). There were several newly discovered prehistoric sites found in the vicinity of Cookstown Great 1 (Figure 2) that provide tangible evidence of a continued settlement in the immediate landscape spanning several millennia. The site at Cookstown Great 3, 850m to the north-west contained early Neolithic houses (3702–3536 BC, 3651–3526 BC), an early Bronze Age burnt mound (1912–1742 BC) and associated huts (2023–1886 BC, 2109–1982 BC, 1948–1776 BC, 1923–1756 BC). It also contained a burnt mound dated to the late Bronze Age which returned a very similar date to a pit at Cookstown Great 1 (791–541 BC) (McLoughlin 2010a). The site at Cookstown Great 2, 500m to the north-west contained early, middle and late Bronze Age activity (McLoughlin 2010b). Further to the north-west in Kilmainham townland, c. 1.1km away, extensive activity from the early Neolithic through to the medieval period was excavated at Kilmainham 1C, Kilmainham 1A and Kilmainham 1B (Walsh 2010, Lyne 2010b, Bayley 2010b).

Nugentstown 1, 100m to the east comprised pits and structures and returned middle and late Bronze Age dates (1657–1506 BC, 1186–978 BC) (Lynch 2010c) and a burnt spread at Nugentstown 2, 700m to the south-east was dated to the final

Neolithic / early Bronze Age (2575–2475 BC) (Lynch 2010b). The site at Nugentstown 3 comprised early and middle Bronze Age pits (1915–1759 BC, 1664–1522 BC) and was located about 950m to the south-east (Lynch 2010a).

3.4 Summary of the Excavation Results

Two phases of activity were identified at Cookstown Great 1. Phase 1, and the focus of the site, comprised a spread of charcoal rich soil C3 (9m x 3.2m x 0.2m) containing heat affected stones and early Neolithic pottery. Four pits and a hearth were also excavated at the site and one of these pits (C27) was dated to the late Bronze Age (768–521 BC) (Phase 2). The remainder of the pits and the hearth were undated and could belong to either phase.

3.5 Summary of the Specialist Analysis

A number of specialists provided analysis of samples and artefacts recovered from the site as part of the post-excavation works. This work in part formed the basis for the dating evidence for the site. The detailed reports on the results of all analysis are in Appendix 2.

Prehistoric Pottery Analysis

The site produced a small assemblage of 15 sherds (plus 9 fragments; total weight: 105.5g) representing at four early Neolithic carinated bowls (Grogan and Roche, Appendix 2.1).

Small Finds Analysis

Clay pipe

One clay pipe stem fragment was recovered from the site. It was not possible to attribute a date, as the fragment was too small for positive dating (Norton, Appendix 2.2).

Charcoal and Wood Species Identification

Charcoal was identified from six contexts at Cookstown Great 1. Three wood types or taxa only were identified, alder (*Alnus* sp.), *Prunus* and oak (*Quercus* sp.). The results are dominated by oak. It is likely that the site was located close to oak woodlands, possibly with a river, stream or wetlands nearby (O'Donnell, Appendix 2.3).

Analysis of Plant Remains

Emmer wheat, which has been cultivated from the Neolithic period in Ireland, was identified from C3. In the absence of conflagration deposits and a larger cache of grain/cereal chaff however, it is difficult to establish what level of arable agriculture was practiced at Cookstown Great 1 or indeed if such activities were directly associated with features recorded at the site. A low concentration of wild 'seeds' in the form of *Galium* sp. (bedstraw) were identified from C25 (Lyons, Appendix 2.4).

Radiocarbon Dating

Two samples were submitted for AMS dating. A sample of holly charcoal from spread C3 returned a date of 5250+/-26 which was calibrated to 4227–3978 BC. A sample of *Galium* (bed straw) seeds from the fill of pit C27 (C25) returned a date of 2491+/-24 which was calibrated to 768–521 BC (QUB, Appendix 2.5).

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

Two phases of activity were identified at Cookstown Great 1. The focus of the site comprised a spread of charcoal rich soil dated to the early Neolithic (4227–3978 BC) (Phase 1). Four pits and a hearth were also excavated at the site and one of these pits was dated to the late Bronze Age / early Iron Age (768–521 BC) (Phase 2). The remainder of the pits and the hearth were undated and could belong to either phase.

The Significance of the Site in the Neolithic Landscape

The spread at Cookstown Great 1 and the early Neolithic pottery recovered from it, adds to a growing repertoire of early Neolithic activity in the wider area which includes five early Neolithic structures within the important prehistoric complex at Kilmainham/Cookstown Great located c. 1km to the north-west (McLoughlin 2010a) and another one in the adjacent townland of Gardenrath (Bayley 2020a) 1.5km to the north-west. The C14 date from Cookstown Great 1 was slightly earlier than the dates returned from the other early Neolithic sites in the vicinity however the presence of early Neolithic carinated bowl sherds indicates that this activity was contemporary with the early Neolithic structures at Kilmainham / Cookstown Great.

The Significance of the Site in the Bronze Age / Iron Age Landscape

The pit dated to the late Bronze Age / early Iron Age at Cookstown Great 1 is a minor addition to the corpus of prehistoric sites in the wider area. 850m to the north-west the site at Cookstown Great 3 contained a burnt mound dated to the late Bronze Age which returned a very similar date to the pit at Cookstown Great 1 (791–541 BC). It also contained an early Bronze Age burnt mound (1912–1742 BC) and associated huts (2023–1886 BC, 2109–1982 BC, 1948–1776 BC, 1923–1756 BC) (McLoughlin 2010a). The site at Cookstown Great 2, 500m to the north-west contained early, middle and late Bronze Age activity (McLoughlin 2010b) and further to the north-west in Kilmainham townland, c. 1km away, extensive activity throughout the Bronze Age was identified at Kilmainham 1C, Kilmainham 1A and Kilmainham 1B (Walsh 2010, Lyne 2010b, Bayley 2010b).

Further Bronze Age activity was identified at Nugentstown 1, 100m to the east and comprised pits and structures which returned middle and late Bronze Age dates (1657–1506 BC, 1186–978 BC) (Lynch 2010c). A burnt spread at Nugentstown 2, 700m to the south-east was dated to the final Neolithic / early Bronze Age (2575–2475 BC) (Lynch 2010b) and the site at Nugentstown 3 c. 950m to the south-east comprised early and middle Bronze Age pits (1915–1759 BC, 1664–1522 BC) (Lynch 2010a).

The Surrounding Environment

The charcoal analysis from Cookstown Great 1 indicates that the site was located close to oak woodlands. A wetland element is also indicated by the presence of alder which can often be seen growing alongside rivers, lakes, on marshes or in fens. The *Prunus* type identified could represent either wild/bird cherry (*Prunus avium/padus*) or blackthorn (*Prunus spinosa*). These types grow on or near woodland margins, in marginal forests and in woodland where the canopy has been opened and in scrub and along streams where it may be found with alder (O'Donnell, Appendix 2.3).

4.2 Conclusions

The early Neolithic and late Bronze Age / early Iron Age features identified at Cookstown Great 1 are an important addition to the increasingly widespread corpus of prehistoric activity in this part of Co. Meath which includes the extensive

prehistoric landscape of the Kilmainham/Cookstown Great complex c. 1km to the north-west.

5 BIBLIOGRAPHY

5.1 References

Armit, I., Murphy, E., Nelis, E. & Simpson, D. 2003 Irish Neolithic Houses. In I. Armit, E. Murphy, E. Nelis and D. Simpson (eds.), *Neolithic Settlement in Ireland and Western Britain*, 146–148. Oxbow Books, Exeter.

Bartlett, A.D.H. 2002. Report on Archaeogeophysical Survey 2002, Section 3: Navan to Kells and Kells Bypass.

Bayley, D. 2010a E3145 Gardenrath 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Bayley, D. 2010b E3142 Kilmainham 1B Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Brooks, A. & Farrell, A. 2005 Assessment of Palaeoenvironmental Research Potential on the Route of the M3 Clonee–North of Kells: prepared for Meath County Council. Department of Geography, Trinity College, Dublin.

Bolger, T. 2003 Rathmullan, Site 10, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Bradley, J. 2005 Moynagh Lough, Co. Meath, in the Late Bronze Age. In H. Roche *et al.* (eds.), *From megaliths to metal. Essays in honour of George Eogan*, 91–98. Oxbow.

Campbell, K. 2007 Staleen, Co. Meath. In I. Bennett (ed.) 2007 *Excavations 2004: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Clarke, L. 2009 E3107 Boyerstown 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Clarke, L. & Carlin, N. 2008a E3087 Ardsallagh 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Clarke, L. & Carlin, N. 2008b E3088 Ardsallagh 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Clarke, L. & Murphy, D. 2003 Colp West, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Collins, B. 1997. Plant remains. *Excavations at Knowth 2*, 295–300. Dublin: Royal Irish Academy.

Cooney, G. & Grogan, E. 1994 *Irish Prehistory: a social perspective*. Dublin.

Coughlan, T. 2010a E3126 Phoenixtown 5 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Coughlan, T. 2010b E3160 Ballybeg 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Danaher, E. & O'Hara, R. 2009 E3175 Drumbaragh 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Doody, M. 2000 Bronze Age houses in Ireland. In A. Desmond *et al.* (eds.), *New agendas in Irish prehistory. Papers in commemoration of Liz Anderson*, 135–159. Wordwell: Bray.

Elder, E. & Ginn, V. 2009a E3041 Johnstown 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Elder, S. & Ginn, V. 2009b E3043 Johnstown 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Elder, S. & Ginn, V. 2009c E3052 Johnstown 4 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Elder, S., O'Connor, E. & Owen, J. 2009 E3038 Raynestown 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Elliott, R. & Ginn, V. 2008a E3024 Dunboyne 4 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Elliott, R. & Ginn, V. 2008b E3027 Bennetstown 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Eogan, G. 1984 *Excavations at Knowth I: Smaller passage tombs, Neolithic Occupation and Beaker activity*. Dublin Royal Irish Academy.

Eogan, J. 2000 Bettystown, Co. Meath. In I. Bennett (ed.) 2000 *Excavations 1998: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Eogan, J. & Reid, M. 2002 Ninch, Laytown, Co. Meath. In I. Bennett (ed.) 2002 *Excavations 2000: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Finch, T.F., Gardiner, M.J., Comey, A. and Radford, T. 1983 *Soils of County Meath*. Dublin, An Foras Talúntais.

Gillespie, R. 2009 A treasury in time around Charlesland, Co. Mayo. *Seanda* 4, 8–11.

Gleeson, C. 2010a E3148 Town Parks 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Gleeson, C. 2010b E3149 Town Parks 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Gowen, M. 2002 *M3 Clonee–North of Kells Dunshaughlin–Navan, Environmental Impact Statement*.

Groenman-van Waateringe, W. 1984. Appendix II: Pollen and seed analyses. In G. Eogan (ed) 1997 *Excavations at Knowth 1*, 325–329, Dublin: Royal Irish Academy.

Groenman-van Waateringe. & Pals, J.F. 1982. Pollen and seed analysis. In M.J. O'Kelly (ed) 1982 *Newgrange: archaeology, Art and Legend*. 219–23, London: Thames and Hudson.

Grogan, E. 1996 Neolithic Houses in Ireland. In T. Darvill and J. Thomas (eds.), *Neolithic Houses in Northwest Europe and Beyond*. Oxbow Books.

Grogan, E. 2002 Neolithic houses in Ireland: a broader perspective. *Antiquity* **76**, 517–525.

Grogan, E. 2004 The implications of Irish Neolithic houses. In I. Shepard and G. Barclay (eds.), *Scotland in ancient Europe*. 103–114. Edinburgh: Society of Antiquaries of Scotland.

Halpin, E. 1991 Newtown, Co. Meath. www.excavations.ie

Halpin, A. & Newman, C. 2006 *Ireland; an Oxford Archaeological Guide*. Oxford: University Press.

Harbison, P. 1992. *Guide to the National and Historic Monuments of Ireland*. Dublin: Gill and Macmillan.

Kelly, A. 2010 E3123 Grange 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Kilfeather, A. 2002 *M3 Clonee–North of Kells Dunshaughlin–Navan, Environmental Impact Statement Vol 6C*, Appendix G.

King, H. A. 1999 Excavation on the Fourknocks Ridge, Co. Meath. *P.R.I.A.* **99C**, 157–198.

Linnane, S.J. 2008 E3069 Collierstown 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lynch, P. 2010a E3134 Nugentstown 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lynch, P. 2010b E3135 Nugentstown 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lynch, P. 2010c E3136 Nugentstown 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lynch, P. 2010d E3158 Cakestown Glebe 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lyne, E. 2010a E3130 Phoenixtown 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lyne, E. 2010b E3141 Kilmainham 1A Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Lyne, E. 2010c E3128 Phoenixtown 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Malone, C. 2001 *Neolithic Britain and Ireland*. Tempus.

Martin, K. 2009 E3100 Macetown 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

McLoughlin, G. 2010a E3139 Cookstown Great 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

McLoughlin, G. 2010b E3138 Cookstown Great 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

McLoughlin, G. & Walsh, F. 2008 A slice through time: prehistoric settlement and ritual near Kells, Co. Meath. *Seanda* 3, 20–22.

Meehan, R. *Directions of ice flow during the last glaciation in counties Meath, Westmeath and Cavan*, Teagasc, Kinsealy Research Centre, Dublin.

Mitchell, F. and Ryan, M. 1997 *Reading the Irish Landscape*. Dublin: Townhouse.

Moore, D. 2003a Site 2, Sheephouse, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Moore, D. 2003b Site 19, Duleek Road, Platin, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

- Mount, C. 1995 A Look at the Burials of the Bronze Age. *Archaeology Ireland* **9** (31), 18–21
- Murphy, D. 2003 Lagavooren, site 17, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- Murray, C. 2007 Fleenstown Little, Co. Meath. In I. Bennett (ed.) 2007 *Excavations 2004: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- Nelis, D. 2002 Sheephouse, Co. Meath. In I. Bennett (ed.) 2002 *Excavations 2000: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- Nelis, D. 2005 Report on Archaeological Assessment, Testing Area 9, M3 Clonee–North of Kells Motorway Scheme.
- Ní Lionain, C. 2008 Stamullin, Co. Meath. In I. Bennett (ed.) 2008 *Excavations 2005: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- O'Carroll, E. 2008 Cruicerath, Co. Meath. In I. Bennett (ed.) 2008 *Excavations 2005: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- O'Connell, A. 2009 E3074 Lismullin 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.
- O'Connor, D. 2007 Harlockstown, Co. Meath. In I. Bennett (ed.) 2007 *Excavations 2004: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- O'Connor, E. 2007 *Fulacht Fiadh*, Burnt Mounds and Hot Stone Technology on the M3. Unpublished Report. Archaeological Consultancy Services, Louth.
- Ó'Drisceoil, C. 2002 Site 1, Coolfore, Co. Louth. In I. Bennett (ed.) 2002 *Excavations 2000: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- Ó'Drisceoil, C. 2003 Balgatheran, Site 4, Co. Louth. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.
- O'Hara, R. 2009 E3034 Dunboyne 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.
- O' Hara, R., Gallagher, D. & Ginn, V. 2009 E3169 Chapelbride 4 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.
- O'Kelly, M.J. 1954 Excavations and experiments in ancient Irish cooking-places. *Journal of the Royal Society of Antiquaries of Ireland* **84**, 105–155.
- O'Kelly, M., Cleary, R. and Lehane, D. (eds.) 1983 *Newgrange, County Meath, Ireland*. Oxford.

O'Neill, T. & O'Hara, R. 2009 E3072 Skreen 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

O'Neill, T. 2009 E3073 Skreen 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

O'Ríordáin, S.P. 1955 A burial with faience beads at Tara. *Proceedings of the Prehistoric Society* **21**, 163–173.

O Ríordáin, S. P. 1995 *Antiquities of the Irish Countryside*. London, Methuen.

Raftery, B. 1969 Freestone Hill, Co. Kilkenny: An Iron Age Hillfort and Bronze Age Cairn. *PRIA* **68C**, 1–108

Rathbone, S. 2009 E3061 Garretstown 2 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Rathbone, S. & Ginn, V. 2008 E3181 Pottlebane 1 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Roche, H. 1994 Donaghmore, Blackcastle Demesne, Co. Meath. www.excavations.ie

Roche, H. 2002 Excavations at Ráith na Ríg, Tara, Co. Meath. *Discovery Programme Report* **5**, 19–82

Russell, I. 2003a Claristown 2, Claristown, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Russell, I. 2003b Kilsharvan 5, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Russell, I. 2003c Kilsharvan, site 16, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Shell, C. 2005 The Loughcrew Landscape Project. *Past; the news letter of the Prehistoric Society* **51**. University College London, 1–3.

Smyth, J. 2006 The Role of the House in Early Neolithic Ireland. *European Journal of Archaeology* **9**, 229–257.

Smyth, J. 2009 *Brú na Bóinne World Heritage Site Research Framework*. The Heritage Council.

Stafford, E. 2002 Mulhuddart, Co. Meath. In I. Bennett (ed.) 2002 *Excavations 2000: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Stafford, E. 2003 Rathmullan site 15/16, Co. Meath. In I. Bennett (ed.) 2003 *Excavations 2001: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Sweetman, D. (ed) 1987 *Archaeological Inventory of County Meath* Office of Public Works.

Tobin, R. 2008 Leshemstown, Co. Meath. In I. Bennett (ed.) 2008 *Excavations 2005: Summary Accounts of Archaeological Excavations in Ireland*. Bray: Wordwell.

Waddell, J. & Riordáin, B. 1993 *The Funerary bowls and vases of the Irish Bronze Age*. Galway University Press.

Waddell, J. 1998 *The Prehistoric Archaeology of Ireland*. Galway, Galway University Press.

Walsh, F. 2010 E3140 Kilmainham 1C Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Whitty, Y. 2010a E3152 Town Parks 6 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

Whitty, Y. 2010b E3144 Kilmainham 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

5.2 Other Sources

Record of Monuments and Places (RMP), The Department of the Environment, Heritage and Local Government, 7 Ely Place Upper, Dublin 2.

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

APPENDIX 1 CATALOGUE OF PRIMARY DATA

Appendix 1.1 Context Register

| Context | Fill of | L(m) | W(m) | D(m) | Interpretation | Description |
|---------|---------|------|-----------|------|-----------------------------|---|
| C1 | N/A | N/A | N/A | 0.35 | Topsoil. | Yellow brown silty clay with inclusions of occasional large sub-angular stones. |
| C2 | N/A | N/A | N/A | N/A | Natural subsoil. | Very varied, patches of yellow, orange and red clay and sandy silt and gravel patches. |
| C3 | 13 | 9 | 3.2 | 0.2 | Spread. | Dark brown sandy silt, rich in charcoal, with burnt bone, pottery and quartz. |
| C4 | C7 | 0.2 | 0.15 | 0.05 | Fill of shallow pit. | Dark grey sandy silt of loose compaction. Rich in charcoal. |
| C5 | C15 | 2.21 | 1.53 | 0.08 | Upper layer of pit. | Upper fill of C15. Dark to mid-brown sandy silt of loose compaction. Frequent inclusions of charcoal and some inclusions of pebbles and small stones. |
| C6 | C14 | 7.65 | 0.73 | 0.31 | Fill of furrow. | Mid-brown silty sand, of moderate compaction. Some inclusions of small stones and infrequent flecks of charcoal. |
| C7 | N/A | 0.2 | 0.15 | 0.05 | Shallow circular cut | Shallow circular bowl shaped cut. |
| C8 | N/A | N/A | N/A | N/A | N/A. | N/A |
| C9 | C10 | 1 | 0.35 | 0.1 | Fill of shallow oblong cut. | Dark grey sandy silty of loose compaction. Rich in charcoal. Inclusions of small stones. |
| C10 | N/A | 1 | 0.35 | 0.1 | Shallow oblong cut. | Shallow oblong cut, with steep sides and concave base. |
| C11 | N/A | 0.95 | 0.4 | 0.05 | Spread. | Dark brown sandy silt, rich in charcoal. |
| C12 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C13 | N/A | 9 | 3.2 | 0.2 | Irregular cut / depression. | Irregular cut / depression filled with C3. |
| C14 | N/A | 7.65 | 0.73 | 0.31 | Furrow. | Linear furrow with gradual sides and a rounded base. |
| C15 | N/A | 3.4 | 1.6 | 0.7 | Pit. | Sub-rectangular feature with rounded corners, sloping sides and an irregular base. |
| C16 | C15 | 3.4 | 1.6 | 0.6 | Basal layer of pit. | Yellow/brown sandy silt of moderate compaction. Frequent inclusions of pebbles and small stones. Flecks of charcoal also present. |
| C17 | C18 | 0.09 | 0.09 | 0.16 | Posthole. | Dark grey, sandy soil of loose compaction with charcoal inclusions. Cut into the base of C10. |
| C18 | N/A | 0.09 | 0.09 | 0.16 | Posthole. | Small circular cut with sharp break of slope at top. This feature is at an angle in the ground. |
| C19 | C3 | 0.3 | Not known | 0.02 | Mix of topsoil and C3. | Light yellow brown topsoil with charcoal inclusions. |
| C20a | C46 | 2.85 | 0.2 | 0.15 | Fill of furrow. | Loose and crumbly soil, light brown/grey in colour and containing 20% charcoal. |
| C20b | C46 | 2 | 0.3 | 0.2 | Fill of furrow. | Loose and crumbly soil, light brown/grey in colour and containing 20% charcoal. |
| C20c | C46 | 1.5 | 0.15 | 0.1 | Fill of furrow. | Loose and crumbly soil, light brown/grey in colour and containing 20% charcoal. |
| C21 | N/A | N/A | N/A | N/A | Natural subsoil. | N/A |
| C22 | C48 | 2 | 0.14 | 0.12 | Fill of furrow. | Loose and crumbly light brown/grey soil, containing 20% charcoal. |
| C23 | C45 | 0.6 | 0.5 | 0.15 | Upper fill of hearth. | Silty reddish, sticky in compaction. Burnt stones and charcoal present. |

| Context | Fill of | L(m) | W(m) | D(m) | Interpretation | Description |
|---------|---------|------|------|------|--------------------------|---|
| C24 | N/A | N/A | N/A | N/A | Natural subsoil. | N/A |
| C25 | C27 | 0.83 | 0.8 | 0.11 | Small pit with charcoal. | Dark brown sandy silt of loose compaction. Charcoal and burnt stones present. |
| C26 | C41 | 0.61 | 0.35 | 0.12 | Upper fill of pit. | Grey/black silty clay of hard compaction. Rich in charcoal. |
| C27 | N/A | 0.83 | 0.8 | 0.11 | Small pit with charcoal. | Regular cut, almost rectangular with rounded corners. The break of slope was gradual to the west, and sharp to the east with a flat base. |
| C28 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C29 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C30 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C31 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C32 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C33 | C47 | 3.15 | 0.18 | 0.27 | Furrow. | Mid-brown silty sand, of moderate compaction. Some inclusions of small stones and infrequent flecks of charcoal. |
| C34 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C35 | N/A | N/A | N/A | N/A | Natural subsoil. | N/A |
| C36 | N/A | N/A | N/A | N/A | Natural subsoil. | Reddish silty clay of moderate compaction. No charcoal present. |
| C37 | N/A | N/A | N/A | N/A | Natural subsoil. | Brownish/reddish silty clay. No charcoal. |
| C38 | N/A | N/A | N/A | N/A | Natural subsoil. | N/A |
| C39 | N/A | N/A | N/A | N/A | Non-archaeological. | N/A |
| C40 | C41 | 0.64 | 0.35 | 0.08 | Basal fill of pit. | Compact grey yellow clayey silt. |
| C41 | N/A | 0.64 | 0.35 | 0.2 | Pit. | Oval-shaped cut, with rounded corners, a sharp break of slope and a rounded base. |
| C42 | N/A | N/A | N/A | N/A | Natural subsoil. | N/A |
| C43 | N/A | N/A | N/A | N/A | Natural subsoil. | N/A |
| C44 | C45 | 4.2 | 2.4 | 0.15 | Basal layer of hearth. | Basal layer of hearth C45. Orange clayey silt. |
| C45 | N/A | 4.2 | 2.4 | 0.3 | Hearth. | Hearth / area of burning. Contains two fills, both of clayey silt with inclusions of burnt stones and charcoal. |
| C46 | N/A | 2 | 0.3 | 0.2 | Furrow. | Linear furrow with gradual sides and a rounded base. |
| C47 | N/A | 3.15 | 0.18 | 0.27 | Furrow. | Linear furrow with gradual sides and a rounded base. |
| C48 | N/A | 2 | 0.14 | 0.12 | Furrow. | Linear furrow with gradual sides and a rounded base. |

Appendix 1.2 Catalogue of Artefacts

| Registration Number | Context | Item No. | Simple Name | Full Name | Material | No. of Parts | Description |
|---------------------|---------|----------|-------------|----------------------|----------|--------------|---|
| E3137:3:1 | 3 | 1 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl body sherd |
| E3137:3:2 | 3 | 2 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl fragment |
| E3137:3:3 | 3 | 3 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl neck sherd |
| E3137:3:4 | 3 | 4 | Pottery | Carinated Bowl sherd | Pottery | 2 | Early Neolithic Carinated Bowl fragments |
| E3137:3:5 | 3 | 5 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl body sherd |
| E3137:3:6 | 3 | 6 | Pottery | Carinated Bowl sherd | Pottery | 3 | Early Neolithic Carinated Bowl fragments |
| E3137:3:7 | 3 | 7 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl fragment |
| E3137:3:8 | 3 | 8 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl neck sherd |
| E3137:3:9 | 3 | 9 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl fragment |
| E3137:3:10 | 3 | 10 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl fragment |
| E3137:3:11 | 3 | 11 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl rim sherd |
| E3137:3:12 | 3 | 12 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl shoulder sherd |
| E3137:3:13 | 3 | 13 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl body sherd |
| E3137:3:14 | 3 | 14 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl neck sherd |
| E3137:3:15 | 3 | 15 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl rim sherd |
| E3137:3:16 | 3 | 16 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl rim sherd |
| E3137:3:17 | 3 | 17 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl rim sherd |

| Registration Number | Context | Item No. | Simple Name | Full Name | Material | No. of Parts | Description |
|---------------------|---------|----------|-------------|----------------------|----------|--------------|---|
| E3137:3:18 | 3 | 18 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl neck sherd |
| E3137:3:19 | 3 | 19 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl neck sherd |
| E3137:3:20 | 3 | 20 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl rim sherd |
| E3137:20:1 | 20 | 1 | Pottery | Carinated Bowl sherd | Pottery | 1 | Early Neolithic Carinated Bowl body sherd |
| E3137:24:1 | 24 | 1 | Clay Pipe | Stem fragment | Ceramic | 1 | Stem fragment, post-medieval |

Appendix 1.3 Catalogue of Ecofacts

A total of 23 bulk soil samples were taken during the course of excavation at this site. 13 of these were processed by means of flotation and sieving through a 250/300µm mesh and the remainder were processed by dry sieving. The results of this are outlined below.


1.3.1 Charcoal

| Context number | Sample number | Feature | Sample weight (g) |
|----------------|---------------|----------|-------------------|
| 3 | 3 | Spread | 2.1 |
| 3 | 18 | Spread | 21.2 |
| 3 | 19 | Spread | 0.1 |
| 4 | 1 | Pit C7 | 6.5 |
| 5 | 4 | Pit C15 | 2.4 |
| 9 | 8 | Pit C10 | 7.9 |
| 9 | 9 | Pit C10 | 3.4 |
| 9 | 10 | Pit C10 | 2.7 |
| 11 | 7 | Spread | 2.6 |
| 16 | 6 | Pit C15 | 0.9 |
| 18 | 2 | Posthole | 0.9 |
| 25 | 11 | Pit C27 | 15.1 |

1.3.2 Carbonised Seeds

| Context number | Sample number | Feature | Sample weight (g) |
|----------------|---------------|------------|-------------------|
| 3 | 18 | Spread | 12 |
| 11 | 7 | Spread | 2.5 |
| 20 | 23 | Furrow C46 | 2.5 |
| 25 | 11 | Pit C27 | 8 |

Appendix 1.4 Archive Checklist

| | | |
|---|--|-------------------------|
| Project: M3 – Navan to Kells, Contract 4 | Irish Archaeological Consultancy Ltd | |
| Site Name: Cookstown Great 1 |  | |
| Excavation Registration No.: E3137 | | |
| Ministerial Direction: A029/019 | | |
| Site director: Patricia Lynch | | |
| Date: April 2010 | | |
| Field Records | Items (quantity) | Comments |
| Site drawings (plans) | 2 | |
| Site sections, profiles, elevations | 6 | |
| Other plans, sketches, etc. | 0 | |
| Timber drawings | 0 | |
| Stone structural drawings | 0 | |
| | | |
| Site diary/note books | 1 | |
| Site registers (folders) | 1 lever arch folder | |
| | | |
| Survey/levels data (origin information) | On plans | |
| | | |
| Context sheets | 48 | |
| Wood Sheets | 0 | |
| Skeleton Sheets | 0 | |
| Worked stone sheets | 0 | |
| | | |
| Digital photographs | 63 | |
| Photographs (print) | 13 | |
| Photographs (slide) | 0 | |
| | | |
| Finds and Environ. Archive | | |
| Flint/chert | 1 | |
| Stone artefacts | 0 | |
| Pottery (specify periods/typology) | 15 sherds + 9 fragments early Neolithic carinated bowl | |
| Ceramic Building Material (specify types eg daub, tile) | 0 | |
| Metal artefacts (specify types - bronze, iron) | 0 | |
| Glass | 0 | |
| Other find types or special finds (specify) | 1 | clay pipe stem fragment |
| | | |
| Human bone (specify type eg cremated, skeleton, disarticulated) | 0 | |
| Animal bone | 0 | |
| Metallurgical waste | 0 | |
| Enviro bulk soil (specify no. of samples) | 23 | |
| Enviro monolith (specify number of samples and number of tins per sample) | 0 | |
| | | |
| Security copy of archive | yes | |

APPENDIX 2 SPECIALIST REPORTS

Appendix 2.1 Prehistoric Pottery Report – Eoin Grogan and Helen Roche

Appendix 2.2 Clay Pipe Report – Joe Norton

Appendix 2.3 Charcoal and Wood analysis Report – Lorna O'Donnell

Appendix 2.4 Plant Remains Analysis Report – Susan Lyons

Appendix 2.5 Radiocarbon Dating Results – QUB Laboratory

THE PREHISTORIC POTTERY
COOKSTOWN GREAT 1 (E3137)
EOIN GROGAN AND HELEN ROCHE
GR CONSULTANTS

Summary

The site produced a small assemblage of 15 sherds (plus 9 fragments; total weight: 105.5g) representing at four early Neolithic carinated bowls. The material highlights the range of prehistoric activity in the Kilmainham/Cookstown Great area.

Early Neolithic carinated bowls

The pottery came from an irregularly shaped deposit (3) of charcoal-enriched soil contained within a cut (13) (Lynch 2008). The assemblage consists of 15 sherds (five rim-, four neck-, one shoulder- and five bodysherds, plus nine fragments, weight: 105.5g) from at least four early Neolithic carinated bowls. Although there are few feature sherds present the assemblage contains vessels with rounded everted to sharply everted rims one (Nos 1) with an L-shaped profile. No. 3 has a simple rounded shoulder. The material is fragmentary and with some surface and edge-break wear; this, and the presence of sooting on Vessels 2 and 3, as well as other sherds, is indicative of a domestic assemblage. The vessels were well-made and generally fine-walled with inclusions of generally fine quartzite (2–3mm) although there are also occasional inclusions of dolerite. An unusual feature of the Cookstown assemblage is the use of sandstone which forms the inclusions in Vessels 1 and 2 (and another sherd 3:8). Cavities in the fabric of No. 1 indicate the use of organic temper. Vessel 1 has a burnished external surface but it is probable that other vessels had been finished in this manner. These forms represent the earliest type of Neolithic pottery (Case 1961: 'Dunmurry-Ballymarlagh styles'; Sheridan 1995: 'classic' carinated bowls) in Ireland.

Cookstown Great 1 occurs to the south-east of the Neolithic complex at Kilmainham: two of these, Sites 1A and 1C, produced major assemblages of early Neolithic pottery (Lyne 2008; Walsh 2008; Grogan and Roche 2009a; 2009b). A small quantity also came from Cookstown Great 3 to the north-west (McLoughlin 2008; Grogan and Roche 2009c). Together with the other recent discoveries in the area at Gardenrath and Town Parks these indicate an important and previously unknown settlement core in the Kells area (McLoughlin and Walsh 2008).

Bibliography

Case, H. 1961 Irish Neolithic Pottery: Distribution and Sequence, *Proceedings of the Prehistoric Society* 9, 174–233.

Grogan, E. and Roche, H. 2009a M3 Navan – Kells. *The prehistoric pottery assemblage from Kilmainham 1A, Co. Meath (E3141)*. Unpublished Report for Irish Archaeological Consultancy Ltd.

Grogan, E. and Roche, H. 2009b M3 Navan – Kells. *The prehistoric pottery assemblage from Kilmainham 1C, Co. Meath (E3140)*. Unpublished Report for Irish Archaeological Consultancy Ltd.

Grogan, E. and Roche, H. 2009c M3 Navan – Kells. *The prehistoric pottery assemblage from Cookstown Great 3, Co. Meath (E3139)*. Unpublished Report for Irish Archaeological Consultancy Ltd.

Lynch, P. 2008 *Interim Report on Archaeological Excavation of A029/019, E3137, Cookstown Great 1. M3 Clonee–North of Kells*. Unpublished Report for Irish Archaeological Consultancy Ltd.

Lyne, E. 2008 *Interim Report On Archaeological Excavation of A029/053, Kilmainham 1A. M3 Clonee–North of Kells*. Unpublished Report for Irish Archaeological Consultancy Ltd.

McLoughlin, G. 2008 *Interim Report on Archaeological Excavation of A029/021, E3139, Cookstown Great 3. M3 Clonee–North of Kells*. Unpublished Report for Irish Archaeological Consultancy Ltd.

McLoughlin, G. and Walsh, F. 2008 A slice through time: prehistoric settlement and ritual near Kells, Co. Meath, *Seanda* **3**, 20–22.

Sheridan, A. 1995 Irish Neolithic pottery: the story in 1995. In I. Kinnes and G. Varndell (eds), *'Unbaked Urns of Rudely Shape'*, 3–21. Oxbow Monograph **55**, Oxford.

Walsh, F. 2008 *Interim Report on Archaeological Excavation of A029/022, E3140, Kilmainham 1C. M3 Clonee–North of Kells*. Unpublished Report for Irish Archaeological Consultancy Ltd.

CATALOGUE

The excavation number E3137 is omitted throughout: only the context number, in **bold**, followed by the find number is included (e.g. **3:15–17**). The thickness refers to an average dimension; where relevant a thickness range is indicated. Vessel numbers have been allocated to pottery where some estimation of the form of the pot is possible, or where the detailed evidence of featured sherds (e.g. rims, shoulders), decoration or fabric indicates separate pots. The inclusions were examined using simple magnification and in some cases attribution reflects probable, rather than certain, identification.

R. rim N. neck

Early Neolithic carinated bowls

Charcoal-enriched deposit 3

Vessel 1. This is represented by seven sherds (four rimsherds: **3:15–17**, 20), two necksherds: **3:18–19**; one bodysherd: **3:1**; nine fragments: **3:2**; 4 (2), 6 (3), 7, 9–10) from a large vessel with a broad (17.95–18.45mm), rounded top and a pronounced outward and slight inward projection; the neck is very gently curved. The light buff to brown-buff fabric has a grey core; where preserved (**3:16–17**) the surfaces are very smooth but there are numerous cavities in the fabric and on the surfaces. The external surface appears to have been burnished. There is a very low content of sandstone inclusions ($\leq 2 \times 1\text{mm}$). Neck thickness: 9.54–9.75mm; weight: 84.5g.

Maximum external rim diameter: c. 260mm Maximum internal rim diameter: c. 230mm

Comment

The cavities have lipped openings where they appear on the surface so they are not the result of the removal of inclusions (which are present in only a very small quantity) or the expansion of moisture or gasses during the firing process. It appears that they are voids left through the combustion of organic temper in the fabric during firing.

Vessel 2. This is represented by a single rimsherd (**3:11**) from a vessel with a rounded everted rim and a gently curved neck. The smooth grey-brown fabric has a brown-buff core. There are patches of sooting on the rim and the external surface. There is a very low content of sandstone inclusions ($\leq 1\text{mm}$). Neck thickness: 7.49mm; weight: 2g.

Vessel 3. This is represented by 2 sherds (1 shouldersherd: **3:12**; 1 necksherd: **3:14**) from a vessel with a curved neck and simple rounded shoulder. The smooth dark grey fabric has a grey to grey-brown core. There are patches of sooting on the rim and the external surface. There is a very low content of quartzite inclusions ($\leq 2.5 \times 2\text{mm}$). Neck thickness: 4.3–5.7mm; body: 4.48mm; weight: 5g.

Vessel 4. This is represented by two bodysherds (**3:5**, 13) from a fine-walled vessel with a smooth dark grey inner surface and a buff to grey-brown core; the external surface is abraded. There is a medium content of quartzite inclusions (up to $3.6 \times 3\text{mm}$). Body thickness: c. 4.67–5.31mm; weight: 7g.

Other sherds

Worn bodysherd (**3:8**) of buff fabric with a smooth dark grey sooted inner surface. There is a very low content of sandstone inclusions (up to $2.8 \times 2\text{mm}$). Body thickness: c. 5.4mm; weight: 1g.

Small worn necksherd (3:3) of buff fabric with a dark grey inner surface. There is a low content of quartzite and dolerite inclusions (up to 2.5 x 2mm). Neck thickness: 6.47mm; weight: 1g.

Fill 20 of furrow 45

Worn bodysherd (20:1) of buff fabric with smooth dark grey-brown core and a red-brown sooted inner surface. There is a low content of quartzite inclusions (up to 3 x 2mm). Body thickness: 8.31mm; weight: 5g.

| Vessel No. | Context/feature | Number of sherds | Rimsherds | Necksherds | Shouldersherds | Bodysherds | Fragments | Inclusions | Vessel size (cm) | Weight (g) | Pottery type | Burnished |
|--------------|-----------------|------------------|-----------|------------|----------------|------------|-----------|------------|------------------|--------------|--------------|-----------|
| 1 | 3 | 7 | 4 | 2 | 0 | 1 | 9 | S | Ri. 26 | 84.5 | ENCB | ■ |
| 2 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | S | M | 2 | ENCB | - |
| 3 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | Q | - | 5 | ENCB | - |
| 4 | 3 | 2 | 0 | 0 | 0 | 2 | 0 | Q | - | 7 | ENCB | - |
| Other | 3 | 2 | 0 | 1 | 0 | 1 | 0 | Q S D | - | 2 | ENCB | - |
| Other | 20 | 1 | 0 | 0 | 0 | 1 | 0 | Q | - | 5 | ENCB | - |
| Total | | 15 | 5 | 4 | 1 | 5 | 9 | | | 105.5 | ENCB | |

Q quartzite D dolerite Sh shale S sandstone M medium sized vessel ■ burnished

ENCB early Neolithic carinated bowl

Ri. Rim diameter (in cm)

Table 1. Details of Neolithic pottery including individual vessels from Cookstown Great 1, Co. Meath.

| Vessel | Context | Sherds to draw | Section only | Photograph |
|--------|---------|----------------|--------------|------------|
| 1 | 3 | R. 3:16–17 | R. 3:15 | |
| 2 | 3 | R. 3:11 | | |
| 3 | 3 | | S. 3:12 | |

R. rim S. shoulder

Table 3. Suggestions for illustration: Cookstown Great 1, Co. Meath.

THE CLAY TOBACCO PIPE
COOKSTOWN GREAT 1

JOE NORTON

MAY 2009

It was not possible to attribute a date, as the item, a stem piece, was too small for positive dating. The pipe fragment was from a non-archaeological context.

| Find No. | Date | Description |
|------------|---------|--|
| E3137:24:1 | Unknown | Small stem fragment, too small to date accurately. L=24mm, W=6mm, Diameter of Hole=3mm |

Table 1 – Catalogue of clay pipe pieces from Cookstown Great 1

THE CHARCOAL REMAINS
COOKSTOWN GREAT 1 E3137
LORNA O'DONNELL

FEBRUARY 2010

1 Introduction

A burnt spread with related features was excavated at Cookstown Great 1, Co. Meath as part of Contract 4 of the M3 Navan–Kells bypass (Lynch 2008). Pottery and radiocarbon dating results indicate the site was used during the Neolithic period and Iron Age (during its prehistoric phase of use). The aim of the charcoal analysis is to provide a floristic background to the area. The analysis can also identify any fuel selection patterns at Cookstown Great 1. This report is summary in nature only, further analysis, discussions and comparisons of results will be incorporated into a final integrated charcoal and wood report for all sites excavated on Contract 4 of the M3 (Lyons and O'Donnell forthcoming).

2 Methodology (After IAC Ltd)

2.1 Processing

- A mechanical flotation tank using a pump and water recycling system is used for soil flotation
- The soil is washed using a 1mm mesh in the flotation tank and a 300 micron and 1mm sieve is used to catch floated material.
- The volume of all soil samples are recorded in litres using a measuring jug.
- The sample is then placed into the 1mm mesh in the flotation tank, the tank is then filled with water and the sample washed. Any large lumps of soil can be carefully broken down by hand, but the jets of water in the flotation tank gently clean the rest of the sample.
- Once the sample is clean (just stones, charcoal, artefacts remaining in the mesh) the tank is filled up with water and at this stage any floating material (charcoal, seeds etc) should flow over the spout and into the sieves.
- The retent is then gently poured into a labelled tray (containing site code, site name, sample number and context number) and place on a shelf to dry.
- The flots are securely packaged in tissue, labelled and hung up to dry. This prevents any loss of light material (seeds) which could result once the flots are dry and being moved (if they are dried on trays).
- Before washing a new sample all equipment used (measuring jugs, 1mm mesh, sieves etc) are thoroughly washed using clean water.
- The large black settling tanks (and water) are cleaned between every site, or if a large site is being processed, every 1–2 weeks.
- Any samples containing a high clay content will be soaked in water for 1–2 days to aid the sieving process.

2.2 Charcoal identification

Each piece of charcoal was examined and orientated first under low magnification (10x–40x). They were then broken to reveal their transverse, tangential and longitudinal surfaces. Pieces were mounted in plasticine, and examined under a binocular microscope with dark ground light and magnifications generally of 200x and 400x. Each taxon or species will have anatomical characteristics that are particular to them, and these are identified by comparing their relevant characteristics to keys (Schweingruber 1978; Hather 2000 and Wheeler *et al* 1989) and a reference collection supplied by the National Botanical Gardens of Ireland, Glasnevin. It was aimed to identify fifty fragments per sample.

2.3 Details of charcoal recording

The general age group of each taxa per sample was recorded, and the growth rates were classified as slow, medium, fast or mixed. It was not within the scope of this project to measure all the ring widths from the charcoal, however, some measurements were taken with a microscopic graticule in order to make the scale of

slow, medium and fast growth less subjective. Slow growth within the charcoal from this site was considered to be approximately 0.4mm per annum, medium approximately 1mm per annum and fast approximately 2.2mm per annum.

The ring curvature of the pieces was also noted – for example weakly curved annual rings suggest the use of trunks or larger branches, while strongly curved annual rings indicate the burning of smaller branches or trees (Fig. 1). Tyloses in vessels in species such as oak can denote the presence of heartwood. These occur when adjacent parenchyma cells penetrate the vessel walls (via the pitting) effectively blocking the vessels (Gale 2003, 37). Insect infestation is usually recognised by round holes, and is considered to be caused by burrowing insects. Their presence normally suggests the use of decayed degraded wood, which may have been gathered from the woodland floor or may have been stockpiled.

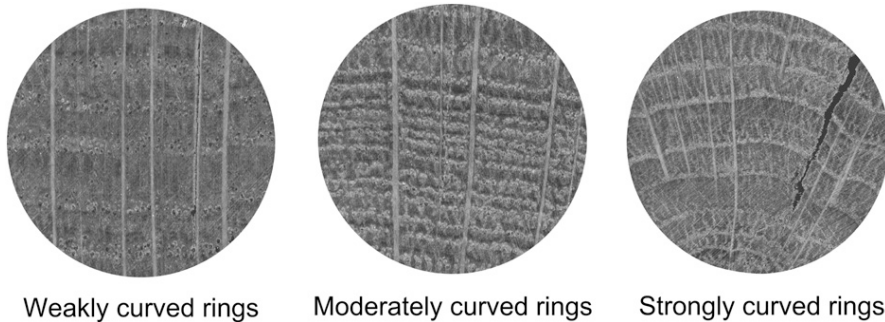


Fig. 1 Ring curvature. Weakly curved rings indicate the use of trunks or large branches (After Marguerie and Hunot 2007 1421, Fig. 3).

3 Results

Charcoal was identified from six contexts at Cookstown Great 1. Three wood types or taxa only were identified, alder (*Alnus* sp.), *Prunus* and oak (*Quercus* sp.). The results are dominated by oak (Fig. 2).

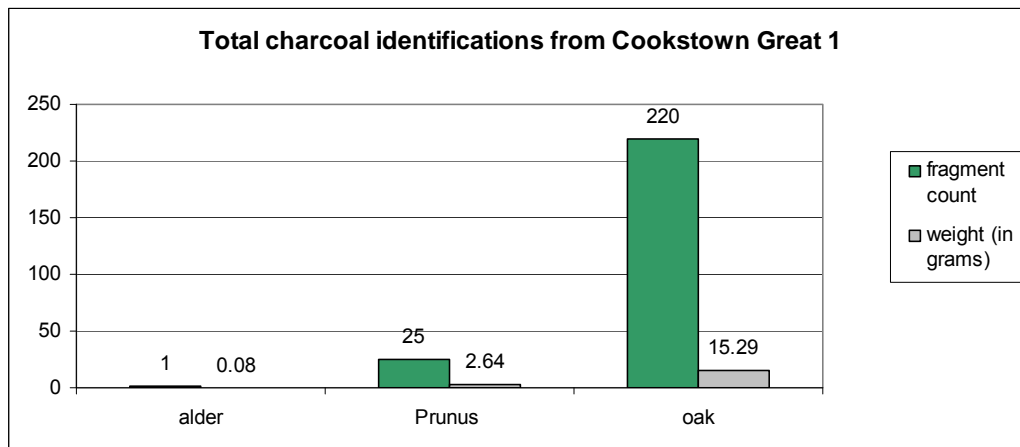


Fig. 2 Charcoal identifications from Cookstown Great 1

Oak only was identified from four of the contexts on site, a posthole (C17 fill of C18), deposit C9 in cut C10 and two pit fills (C4 and C16 fills of C7 and C15). It is likely that the post was made of oak and burnt *in situ*. Oak and *Prunus* type were identified from

C25, the fill of pit **C27**. Alder and oak were identified from **C3**, the fill of **C13**, a sub – rectangular feature.

4 Local environment

The charcoal results from Cookstown Great 1 indicate that the site was located close to oak woodlands. The oak present is most likely pedunculate (*Quercus robur*) or sessile oak (*Quercus petraea*), both are native species. Pedunculate oak is common on heavy clay lowland soils whereas sessile oak thrives on the lighter loams characteristic of higher ground (Gale and Cutler 2000).

A wetland element is indicated by the presence of alder. This tree can often be seen growing alongside rivers, lakes, on marshes or in fens. It can form alder carr when its roots are in water. It is able to survive on these wet sites (which generally lack the nitrates needed for growth) as its roots have nodules which contain nitrogen fixing bacteria that extract nitrogen from the air (Lipscome and Stokes 2008, 134).

The *Prunus* type identified could represent either wild/bird cherry (*Prunus avium/padus*) or blackthorn (*Prunus spinosa*). Wild cherry needs light to grow, on or near woodland margins and on light well drained soils (Orme and Coles 1985, 11). Bird cherry occurs particularly in marginal forests, and is generally solitary (Stuijts 2005, 142). Blackthorn grows in woodland where the canopy has been opened, on woodland margins, in scrub and along streams where it may be found with alder. It does not survive under heavy shade (Orme and Coles 1985, 11).

5 Summary

Charcoal was identified from six contexts at Cookstown Great 1. The results are dominated by oak. It was probably selected for posts as it is a strong and durable timber. It is likely that the site was located close to oak woodlands, possibly with a river, stream or wetlands nearby.

References

Gale, R. 2003 Wood based industrial fuels and their environmental impact in lowland Britain. In P. Murphy and P.E.J. Wiltshire (eds), *The Environmental Archaeology of Industry*, 30–47. Oxford.

Gale, R. and Cutler, D., 2000 *Plants in Archaeology. Identification of vegetative plant materials used in Europe and the southern Mediterranean to c. 1500*. West Yorkshire.

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

Lipscombe, M. and Stokes, J. 2008. *Trees and how to grow them*. London: Think books.

Lynch, P. 2008 Interim Report on Archaeological Excavation of Cookstown Great 1, E3137. Unpublished report prepared by Irish Archaeological Consultancy Ltd for Meath County Council.

Marguerie, D. and Hunot, J.Y. 2007 Charcoal analysis and dendrology: data from archaeological sites in north-western France. *Journal of Archaeological Science* **34**, 1417–1433.

Orme, B.J. and Coles, J.M. 1985 Prehistoric woodworking from the Somerset levels: 2: Species selection and prehistoric woodlands. *Somerset Levels papers* **11**, 7–24.

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

Stuijts, I. 2005 Wood and charcoal identification. In M. Gowen, J. Ó Neill and M. Philips (eds), *The Lisheen Mine Archaeological Project 1996–8*, 137–186. Dublin.

Wheeler, E.A, Bass, P. & Gasson, P.E. 1989 *IAWA list of microscopic features for hardwood identification*. *IAWA Bulletin* nos. **10** (3): 219–332.

Table 1 Charcoal identifications from Cookstown Great 1

| Sample number | Context number | Feature type | Wood taxon | Flot weight | No. of fragments | Charcoal weight (grams) | Size of fragments (mm) | No. of growth rings | Growth | Ring curvature | Insect holes | Tyloses | Comment |
|---------------|----------------|--|--------------------------|-------------|------------------|-------------------------|------------------------|---------------------|-------------|-----------------|--------------|---------|---------|
| 1 | C4 | Fill of C7 Pit | <i>Quercus</i> sp. (oak) | 6.5 | 50 | 3.11 | 5–10 | 2–3 | Fast | Weakly curved | | Present | |
| 2 | C18 | Posthole (fill C17) | <i>Quercus</i> sp. (oak) | 0.9 | 30 | 0.29 | 5–10 | 2–3 | Fast | Weakly curved | | Present | |
| 6 | C16 | Lower Fill of pit C15 | <i>Quercus</i> sp. (oak) | 0.9 | 16 | 0.7 | 5–10 | 2–3 | Fast | Weakly curved | | Present | |
| 8 | C9 | Fill of C10 Posthole | <i>Quercus</i> sp. (oak) | 7.9 | 50 | 2.46 | 5–10 | 2–4 | Medium | Weakly curved | | | |
| 11 | C25 | Fill of C27 Pit | <i>Prunus</i> | 15.1 | 25 | 2.64 | 5–10 | 2–8 | Medium | Strongly curved | | | |
| 11 | C25 | Fill of C27 Pit | <i>Quercus</i> sp. (oak) | 15.1 | 25 | 3.25 | 5–10 | 2–4 | Medium/fast | Strongly curved | | | |
| 18 | C3 | Fill of C13 cut of sub-rectangular feature | <i>Alnus</i> sp. (alder) | 21.2 | 1 | 0.08 | 5 | 5 | Medium | | | | |
| 18 | C3 | Fill of C13 cut of sub-rectangular feature | <i>Quercus</i> sp. (oak) | 21.2 | 49 | 5.48 | 5–10 | 2–4 | Medium/fast | Weakly curved | | | |

THE PLANT REMAINS
COOKSTOWN GREAT 1 (E3137)
SUSAN LYONS MSC MIAI

SEPTEMBER 2009

1 Introduction

Four flot samples were analysed from excavations associated with archaeological activity recorded at Cookstown Great 1, Co. Meath. Cookstown Great 1 was excavated as part of the archaeological mitigation programme associated with Contract 4 of the M3 Navan–Kells and Kells Bypass, which formed part of the proposed M3 Clonee to North Kells Motorway Scheme. The site consisted of a series of agricultural furrows, along with an irregular shaped burnt spread, which contained burnt bone and potentially prehistoric pottery fragments. A number of irregular features were also recorded at the site (Lynch, 2008). Holly charcoal **C3** (fill of burnt spread) was sent for radiocarbon dating and returned a date of Cal 4227–3978 BC (2 sigma).

The primary objective of the plant remains project is to identify, analyse and interpret the charred and any waterlogged botanical remains present in order to help with understanding the change in the floral environment and activities at the site over time and to help with highlighting the function of certain areas of the site or indeed the features recorded within. This report will later form part of an overall scheme-wide report encompassing all sites along the M3 Clonee to North Kells Motorway Scheme (Lyons, *forthcoming*).

2 Methodology

2.1 Sample processing (after IAC Ltd)

- A mechanical flotation tank using a pump and water recycling system is used for soil flotation.
- The soil is washed using a 1mm mesh in the flotation tank and a 300 micron and 1mm sieve is used to catch floated material.
- The volume of all soil samples are recorded in litres using a measuring jug.
- The sample is then placed into the 1mm mesh in the flotation tank, the tank is then filled with water and the sample washed. Any large lumps of soil can be carefully broken down by hand, but the jets of water in the flotation tank gently clean the rest of the sample.
- Once the sample is clean (just stones, charcoal, artefacts remaining in the mesh) the tank is filled up with water and at this stage any floating material (charcoal, seeds etc) should flow over the spout and into the sieves.
- The retent is then gently poured into a labelled tray (containing site code, site name, sample number and context number) and place on a shelf to dry.
- The flots are securely packaged in tissue, labelled and hung up to dry. This prevents any loss of light material (seeds) which could result once the flots are dry and being moved (if they are dried on trays).
- Before washing a new sample all equipment used (measuring jugs, 1mm mesh, sieves etc) are thoroughly washed using clean water.
- The large black settling tanks (and water) are cleaned between every site, or if a large site is being processed, every 1–2 weeks.
- Any samples containing high clay content will be soaked in water for 1–2 days to aid the sieving process.
- All flots were sorted by post-excavation staff at IAC Ltd and any botanical remains were removed and bagged separately.

2.2 Quantification and identification of plant remains

The flot samples are viewed under a low powered binocular microscope (magnification x0.8 to x5) and any carbonised or potentially waterlogged botanical materials were identified to genus/species level where applicable. The plant remains

are recorded using an abundance key to highlight the concentrations/quantities of material identified from each sample;

+ = rare (1–10) **++** = occasional (11–50)
+++ = common (51–100) **++++** = abundant (>100)

To fully identify charred remains, a series of morphological characteristics are recorded, which includes length, breadth, shape on the longitudinal and transverse planes, texture of the seed coat (smooth or reticulate), attachments (pappus), scars (hilum) and the presence of the embryo and endosperm components in cereal grains (Pearsall 2000, 135–6). Cereal chaff fragments were noted for glume base angle, ventral/dorsal keels, nerves, size of lemma scars etc (Hillman, 1981).

Plant species are made using reference to the author's seed collection and standard seed atlases and references; *Flora of the British Isles* (Clapham, A R, Tutin, T G, Warburg, E F, 1957), *Zadenatlas der Nederlandsche Flora* (Beijerinck, W. 1976), *New Flora of the British Isles 2nd Edition* (Stace, C, 1997) and *Digital Seed Atlas of the Netherlands* (Cappers, R.T.J., R.M. Bekker and J.E.A. Jans, 2006).

3 Results

Four samples from **C3** (burnt spread), **C11** (charcoal-rich fill within **C3**), **C20** (fill of agricultural furrow) and **C25** (fill of pit **C27**) were submitted for archaeobotanical analysis.

C20 and **C11** were both archaeologically sterile and will therefore not be discussed as part of this report.

The results are summarised in **Table 1**.

Carbonised cereal remains – Carbonised cereal grains were recorded in low concentrations from **C3**. Wheat (*Triticum* sp.), tentatively identified as emmer wheat (*Triticum diococcum*), was identified.

Carbonised wild taxa – A low concentration of wild 'seeds' in the form of *Galium* sp. (beadstraw) were identified from **C25**.

4 Discussion

4.1 Carbonisation of plant remains

Charred plant remains are those which have been heated to more than about 200° C, but where there is not enough oxygen to complete the burning process. Instead, the organic components are converted to a more carbon-rich resilient material or to carbon itself rather than to ash (Broadman & Jones, 1990). Despite being subjected to high temperatures, many charred remains retain a morphology or exterior detail which can aid plant identification to genus or even species level. Carbonised cereal remains recorded from archaeological sites are interpreted as the residual remains or charred debris from crop drying events. Some remains are found in the same place that they were charred (hearths, fires, kilns, ovens, burnt stores). More are found thinly spread and scattered across a wider area entering deposits such as occupational layers, pits and potholes for example. Over time, this material can move and be re-distributed due to disturbances such as soil movement, extreme climatic conditions, root penetration or worm/animal action. The carbonisation process obviously affects different species and plant components in different ways, where finer, lighter material can be destroyed more easily than larger elements. It must therefore be noted that the charred plant remains recovered from archaeological

features can as much reflect the results of the carbonisation process as how and what plant remains were used on a site.

4.2 The carbonised plant remains from Cookstown Great 1

The only evidence for carbonised cereal grain was recorded from **C3** (burnt spread deposit). Emmer wheat grains were identified, which were in a poor state of preservation for the most part. A radiocarbon date for **C3** returned a date of Cal 4227–3978 BC (2 sigma). The presence of emmer wheat would not be unusual from an early prehistoric site, since emmer has been cultivated from the Neolithic period in Ireland (Monk, 1986, 37). While the presence of carbonised wheat from the site would represent the remains of agricultural activity, it is difficult to fully interpret the extent of early prehistoric agricultural at Cookstown Great 1 based on just two grains. In the absence of any obvious *in situ* burning from **C3**, it is most likely that these grains were re-deposited from another source and may bear no relation to the feature itself. Plant remains can become charred inadvertently or if used as fuel or kindling within a feature, which may account for the carbonised *Galium* sp. nutlets recorded from **C25**.

5 Summary

Emmer wheat, which has been cultivated from the Neolithic period in Ireland, was identified from **C3**. In the absence of conflagration deposits and a larger cache of grain/cereal chaff however, it is difficult to establish what level of arable agriculture was practiced at Cookstown Great 1 or indeed if such activities were directly associated with features recorded at the site.

6 Recommendations

- 1 There is no further identification work required on these samples from Cookstown Great 1. Any additional processed samples associated with 1 feature excavated at the site should also be scanned to determine if there are any other plant remains present, which may help with the interpretations put forward.
- 2 A record of the methodology and results of this assessment should be included in any final report.

6 References

Beijerinck, W. 1976 *Zadenatlas der Nederlandsche Flora*. Amsterdam: Backhuys & Meesters.

Boardman, S. and G. Jones 1990 Experiments of the effects of charring on cereal plant components. *Journal of Archaeological Science* **12**, 1–11.

Cappers, R.T.J., Bekker R.M. & Jans J.E.A. 2006 *Digital Seed Atlas of the Netherlands*. Groningen, Netherlands.

Clapham, A. R., Tutin, T. G., Warburg, E. F. 1957 *Flora of the British Isles* Cambridge.

Hillman, G. 1981 Reconstructing crop husbandry practices from charred remains of crops. In R. Mercer (eds), *Farming practices in British prehistory – 2nd edition*, 123–162. Edinburgh.

McClatchie, M. *et al.* 2007 Brewing and *fulachta fiadh*. *Archaeology Ireland* **21** No. 4, 46.

Lynch, P. 2008 *M3 Clonee – North of Kells Motorway Scheme, Contract 4: Cookstown Great 1 E3137*. Unpublished report prepared by IAC Ltd for Meath County Council.

Monk, M. A. 1986 Evidence from macroscopic plant remains for crop husbandry in prehistoric and early historic Ireland: A review. *The Journal of Irish Archaeology* **III** 1985/6, 31–36.

Pearsall, D. 2000 *Palaeoethnobotany: Handbook of Procedures*. 2nd edition, San Diego: Academic Press.

Stace, C. 1997 *New Flora of the British Isles* (2nd edition) Cambridge: Cambridge University Press.

Table 1. Composition of plant remains from Cookstown Great 1 (E3137)

| Feature | Context number | Sample Number | Flot volume (grams) | Context description | Carbonised cereal grains | Carbonised wild taxa | Comments |
|----------------------------------|----------------|---------------|---------------------|---|--------------------------|----------------------|--|
| Charcoal Enriched Deposit | 3 | 18 | 0.1 grams | Deposit or possible working area for firing pottery | + | | Emmer wheat (x2) Uncarbonised <i>Polygonum lapathifolium</i> (x1) |
| | 11 | 7 | 0.1 grams | Charcoal enriched deposit | | | Archaeologically sterile |
| Furrow | 20 | 23 | 0.1 grams | Fill of furrow C46 | | | Archaeologically sterile |
| Pit | 25 | 11 | 0.1 grams | Fill of small pit C27 with charcoal | | + | <i>Galium</i> sp. (x3) |

Key: + = rare (1–10), ++ = occasional (11–50), +++ = common (51–100) and ++++ = abundant (>100)

Radiocarbon Dating Results – QUB Laboratory

The “Measured radiocarbon age” is quoted in conventional years BP (before AD 1950). The error is expressed at the one-sigma level of confidence.

The “Calibrated date range” is equivalent to the probable calendrical age of the sample material and is expressed at the one Sigma (68.3% probability) and two-Sigma (95.4% probability) level of confidence.

Calibration dataset:

Calibration programme: CALIB REV5.0.2 - used in conjunction with Stuiver, M., and Reimer, P.J., 1993, Radiocarbon, 35, 215–230.

| Context | Sample No | Material | Species id/ Weight | Lab | Lab Code | Date Type | Calibrated date ranges | Measured radiocarbon age (BP) | 13C/12C Ratio ‰ |
|---------|-----------|----------|-------------------------------------|-----|----------|-----------|--|-------------------------------|-----------------|
| C25 Pit | 11 | Seeds | <i>Galium</i> sp. (Bed straw) <01g | QUB | UBA11134 | AMS(Std) | 757–546 BC (1 sigma), 768–521 BC (2 sigma) | 2491+/-24 | -25.8 |
| C3 Pit | 3 | Charcoal | <i>Ilex Aquifolium</i> Holly (0.1g) | QUB | UBA12113 | AMS(Std) | 4220–3989 BC (1 sigma), 4227–3978 BC (2 sigma) | 5250+/-26 | -28.6 |

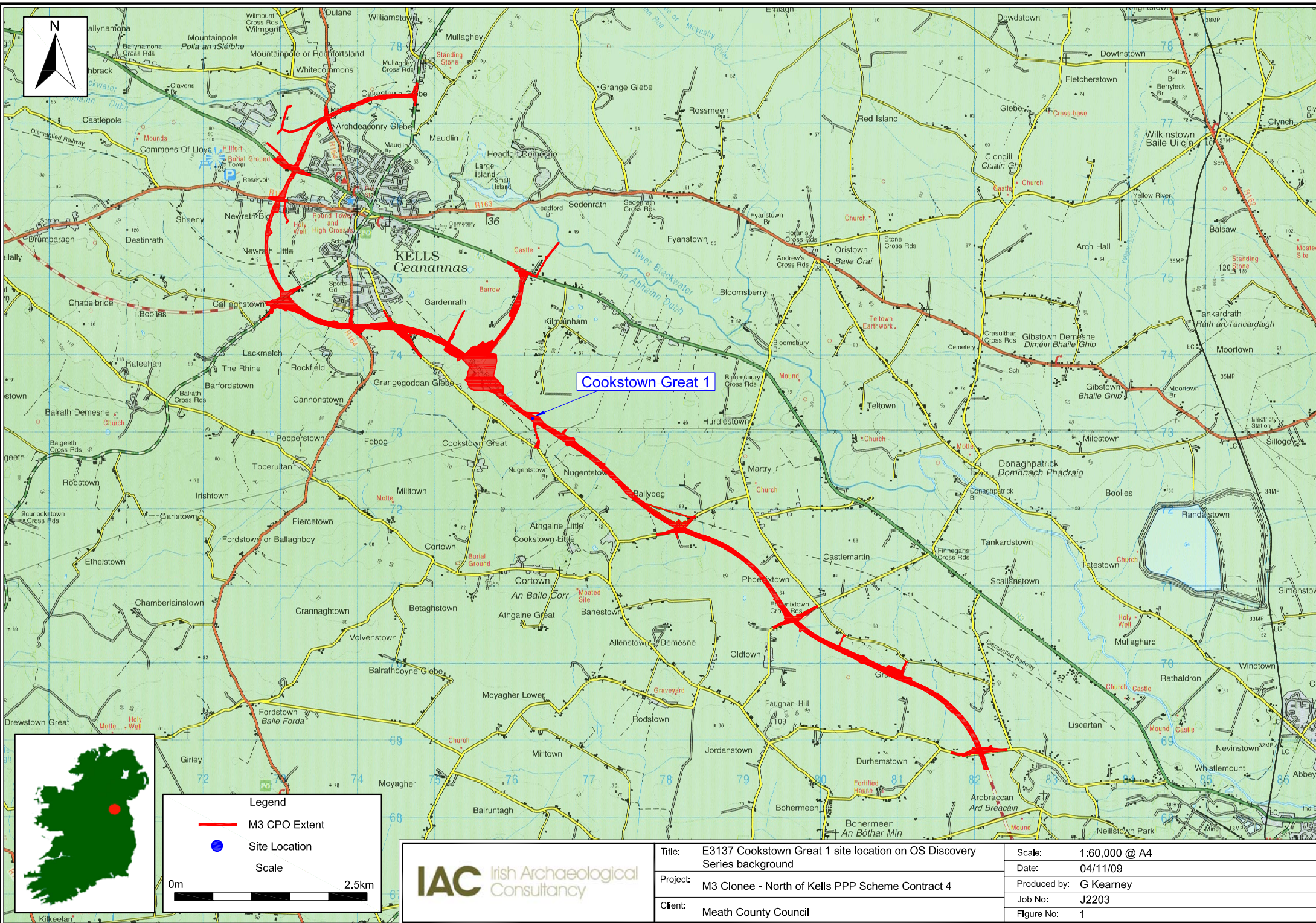
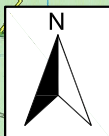
APPENDIX 3 LIST OF RMP SITES IN AREA

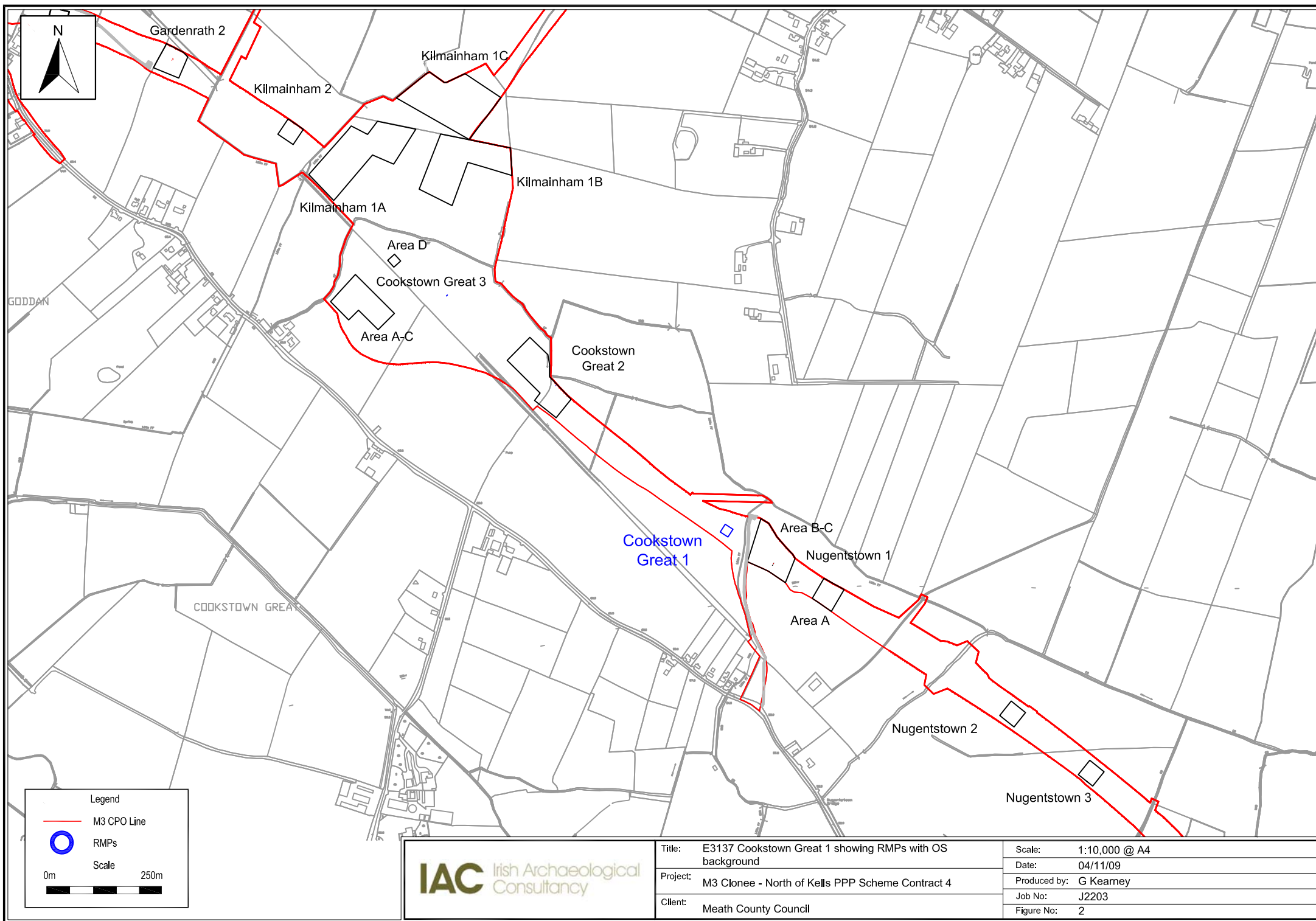
| RMP No | Description |
|---------------|--------------------|
| ME017–035 | Motte |
| ME017–036 | Font |

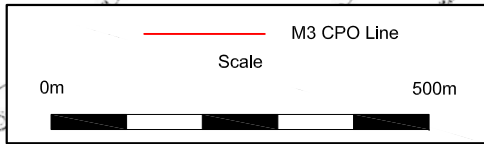
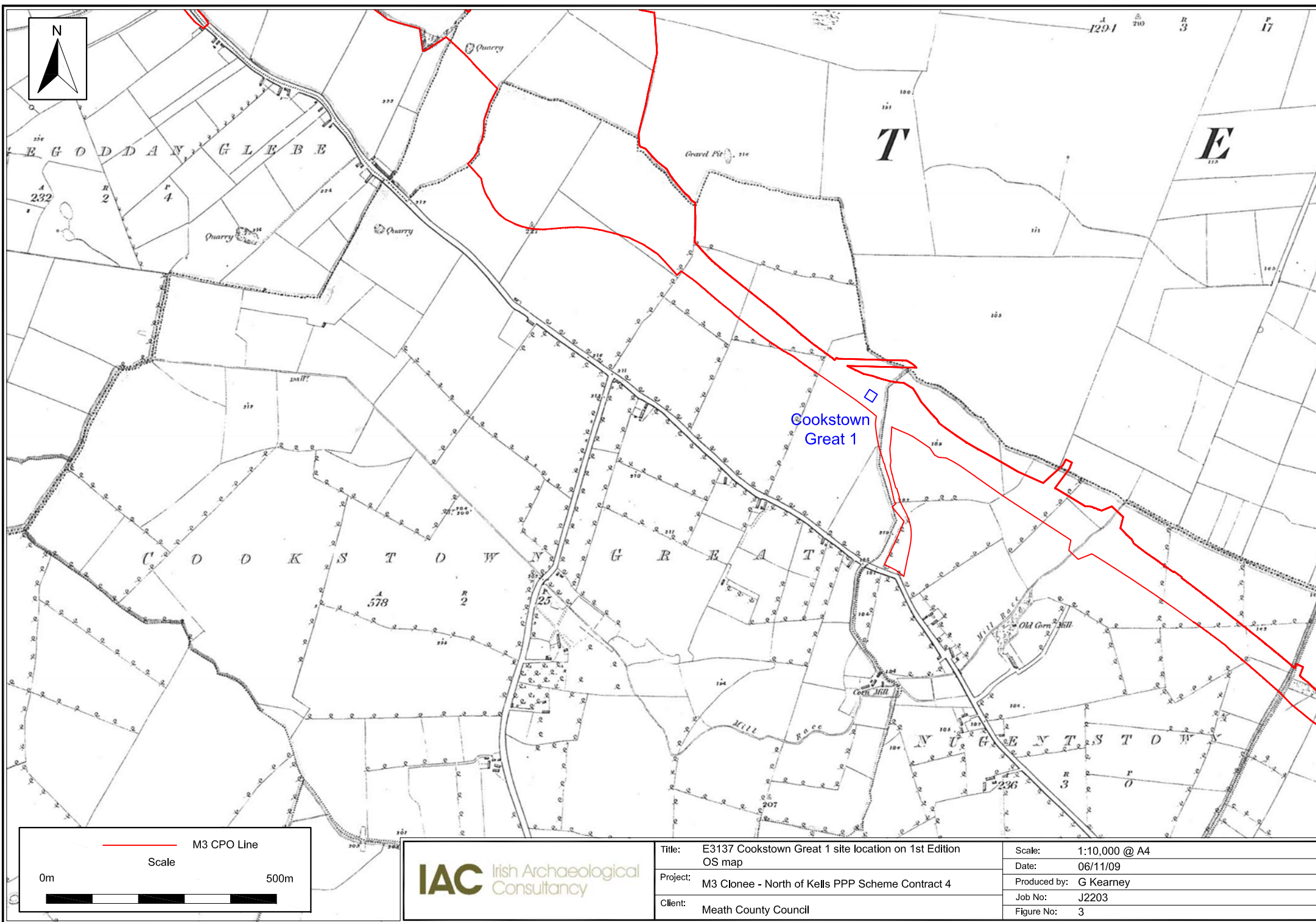
These sites are located 2.1km (ME017–035) and 2.3km (ME017–036) to the south-west of Cookstown Great 1 and are outside of the area shown on Figure 2.

APPENDIX 4 LIST OF M3 CONTRACT 4 SITE NAMES

| Site Name | Director | Contract site reference no. | Excavation Registration No. |
|---------------------------------|-----------------|-----------------------------|-----------------------------|
| Ardbraccan 5 | Carmel Duffy | A029-001 | E3119 |
| Ardbraccan 6 | Ciara MacManus | A029-002 | E3120 |
| Grange 5 | Amanda Kelly | A029-003 | E3121 |
| Grange 4 | Carmel Duffy | A029-004 | E3122 |
| Grange 3 | Amanda Kelly | A029-005 | E3123 |
| Grange 2 | Amanda Kelly | A029-006 | E3124 |
| Grange 1 | Patricia Lynch | A029-007 | E3125 |
| Phoenixtown 5 | Tim Coughlan | A029-008 | E3126 |
| Phoenixtown 6 | Ed Lyne | A029-009 | E3127 |
| Phoenixtown 1 | Ed Lyne | A029-010 | E3128 |
| Phoenixtown 2 | Ed Lyne | A029-011 | E3129 |
| Phoenixtown 3 | Ed Lyne | A029-012 | E3130 |
| Phoenixtown 4 | Ed Lyne | A029-013 | E3131 |
| Ballybeg 1 | Patricia Lynch | A029-014 | E3132 |
| Ballybeg 2 | Patricia Lynch | A029-015 | E3133 |
| Nugentstown 3 | Patricia Lynch | A029-016 | E3134 |
| Nugentstown 2 | Patricia Lynch | A029-017 | E3135 |
| Nugentstown 1 | Patricia Lynch | A029-018 | E3136 |
| Cookstown Great 1 | Patricia Lynch | A029-019 | E3137 |
| Cookstown Great 2 | Gill McLoughlin | A029-020 | E3138 |
| Cookstown Great 3 | Gill McLoughlin | A029-021 | E3139 |
| Kilmainham 1A | Ed Lyne | A029-053 | E3141 |
| Kilmainham 1B | David Bayley | A029-054 | E3142 |
| Kilmainham 1C | Fintan Walsh | A029-022 | E3140 |
| Kilmainham 2 | David Bayley | A029-023 | E3143 |
| Kilmainham 3 | Yvonne Whitty | A029-024 | E3144 |
| Gardenrath 2 | David Bayley | A029-025 | E3145 |
| Gardenrath 1 | David Bayley | A029-026 | E3146 |
| Town Parks 1 | Gill McLoughlin | A029-027 | E3147 |
| Town Parks 2 | Catrina Gleeson | A029-028 | E3148 |
| Town Parks 3 | Catrina Gleeson | A029-029 | E3149 |
| Town Parks 4 | Yvonne Whitty | A029-030 | E3150 |
| Town Parks 5 | Yvonne Whitty | A029-031 | E3151 |
| Town Parks 6 | Yvonne Whitty | A029-032 | E3152 |
| Newrath Little 3 | James Kyle | A029-033 | E3153 |
| Newrath Little 2 | Yvonne Whitty | A029-034 | E3154 |
| Newrath Little 1 | James Kyle | A029-035 | E3155 |
| Town Parks / Commons of Lloyd 1 | David Bayley | A029-036 | E3156 |
| Commons of Lloyd 1 | Yvonne Whitty | A029-037 | E3157 |
| Cakestown Glebe 2 | Patricia Lynch | A029-038 | E3158 |
| Cakestown Glebe 1 | Patricia Lynch | A029-039 | E3159 |
| Ballybeg 3 | Tim Coughlan | A029-040 | E3160 |
| Ballybeg 4 | Patricia Lynch | A029-041 | E3162 |



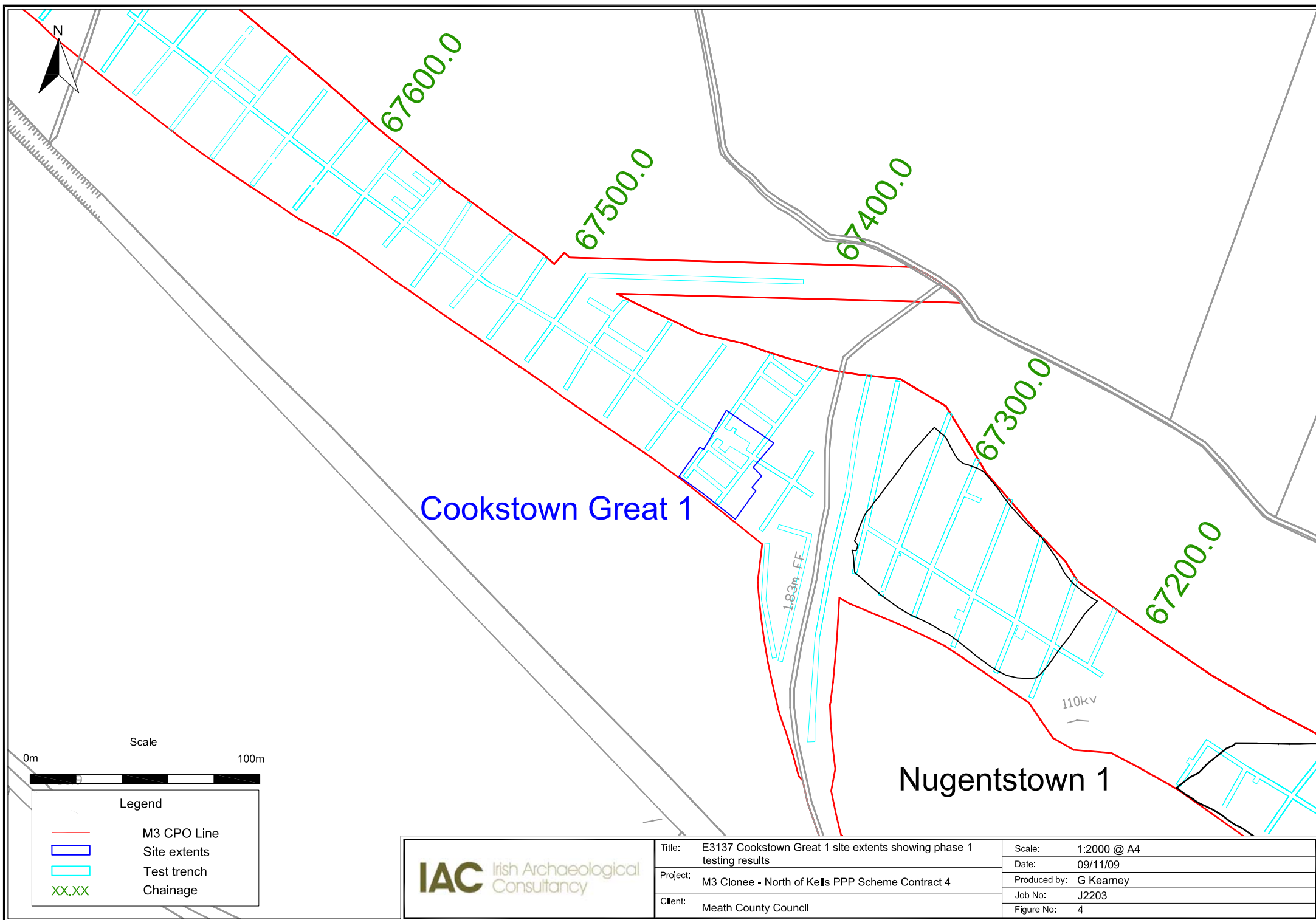


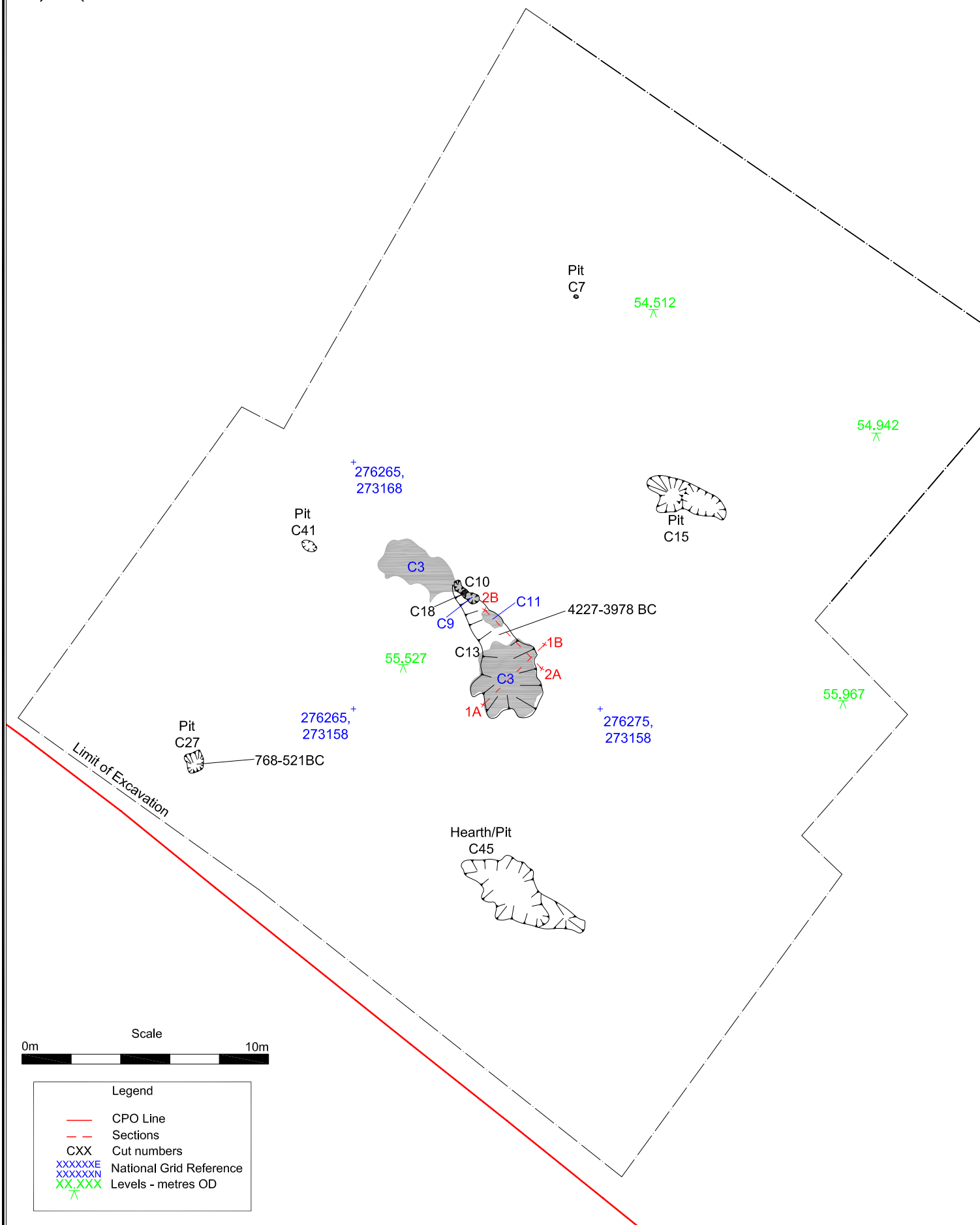


IAC Irish Archaeological
Consultancy

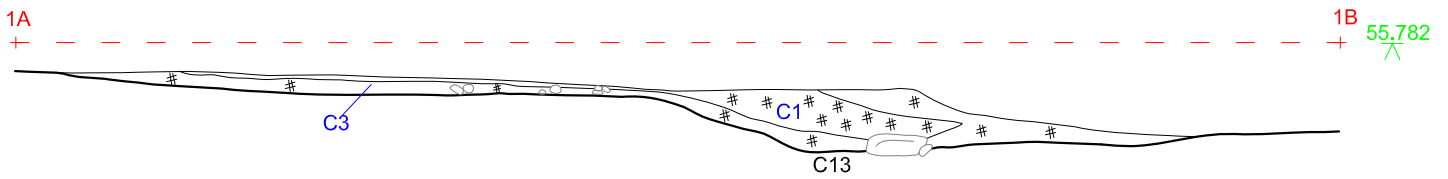
Title: E3137 Cookstown Great 1 site location on 1st Edition
OS map
Project: M3 Clonee - North of Kells PPP Scheme Contract 4
Client: Meath County Council

Scale: 1:10,000 @ A4
Date: 06/11/09
Produced by: G Kearney
Job No: J2203
Figure No: 3

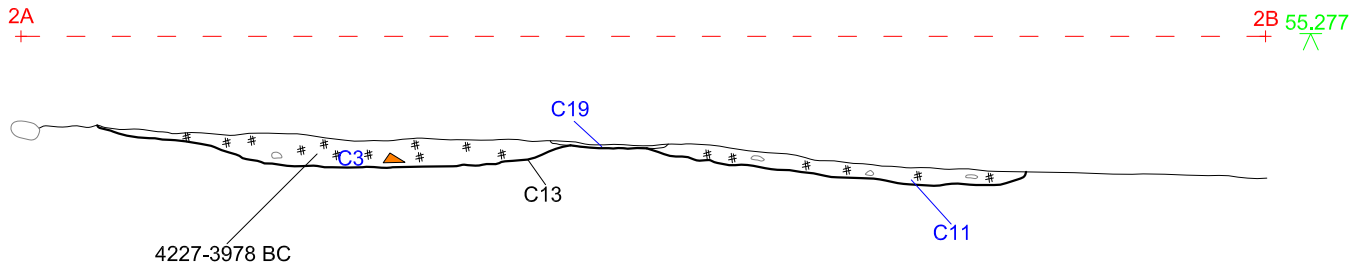




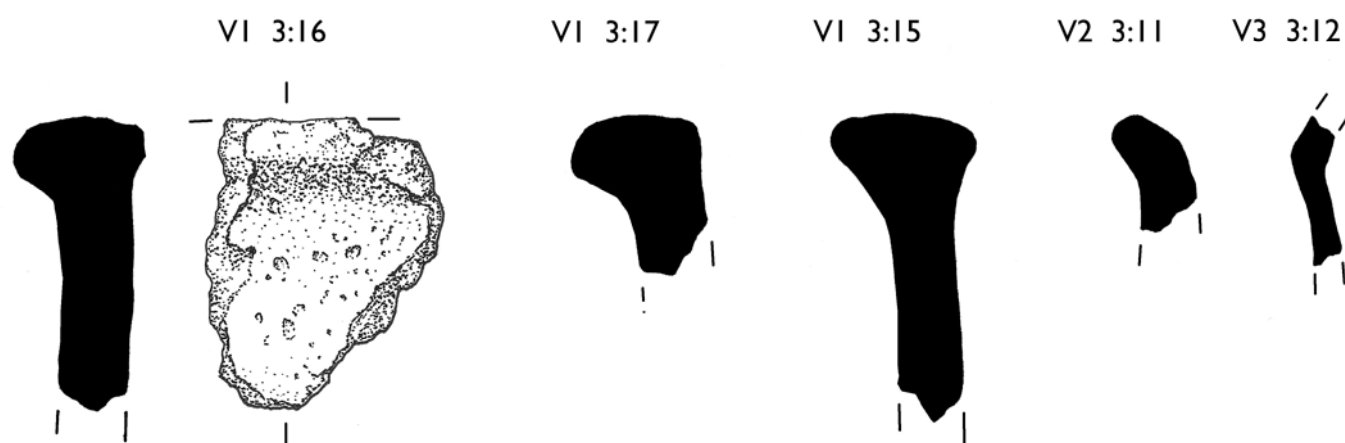
Southeast facing section of C13



Northeast facing section of C13



| Legend | |
|--------|--------------------|
| | Pottery |
| CXX | Cut Numbers |
| CXX | Fill Numbers |
| | Stone |
| # | Charcoal |
| XX.XXX | Levels - metres OD |



0mm Scale 50mm

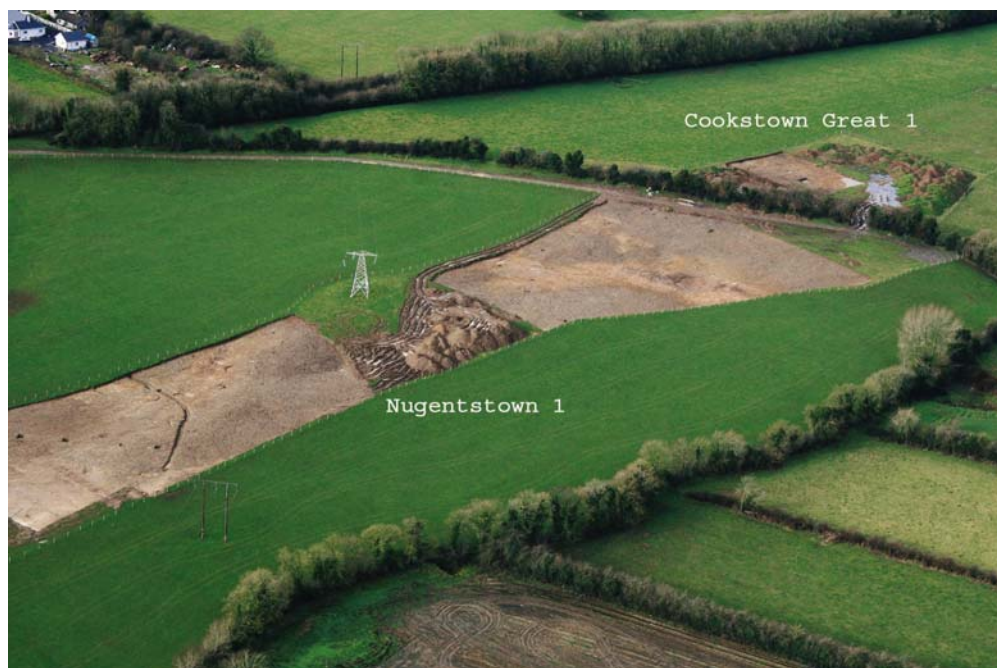


Plate 1: E3137 Cookstown Great 1 aerial photograph of site, with Nugentstown 1 in the foreground, looking south-west (Studio Lab).



Plate 2: E3137 Cookstown Great 1 section of spread C3, looking south.



Plate 3: E3137 Cookstown Great 1 pit C27, pre excavation, looking north.



Plate 4: E3137 Cookstown Great 1 pit C27, mid excavation, looking north.



Plate 5: E3137 Cookstown Great 1 pit C41, post excavation, looking north.

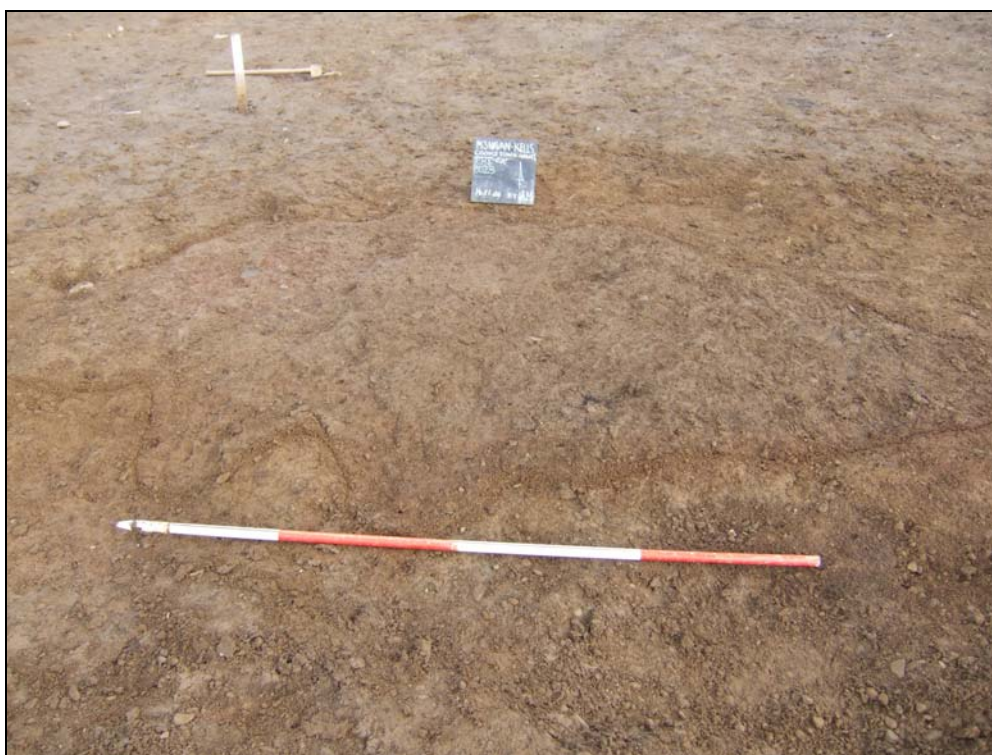


Plate 6: E3137 Cookstown Great 1 pit C45, pre excavation, looking south.



Plate 7: E3137 Cookstown Great 1 pit C45, mid excavation, looking south.