



Final Archaeological Report

# Ballinillaun 2

Co. Galway

Burnt Mound

Date: **April 2010**

Client: **Galway County Council and National  
Roads Authority**

Project: **N18 Oranmore - Gort**

E No: **E3886**

Excavation Director: **Tori McMorran**

Written by: **Tori McMorran & Finn Delaney**



# Final Archaeological Report

## Ballinillaun 2

### Co. Galway

Excavation Director  
Tori McMorran

Written By  
Tori McMorran & Finn Delaney



**CORK**  
The Forge, Innishannon, Co. Cork  
tel: 021 4701616 | web: [www.eachtra.ie](http://www.eachtra.ie) | email: [info@eachtra.ie](mailto:info@eachtra.ie)

**GALWAY**  
Unit 10, Kilkerrin Park, Liosbain Industrial Estate, Galway  
tel: 091 763673 | web: [www.eachtra.ie](http://www.eachtra.ie) | email: [galway@eachtra.ie](mailto:galway@eachtra.ie)

© Eachtra Archaeological Projects 2010  
The Forge, Innishannon, Co Cork

Printed in Ireland

## Table of Contents

iii	Summary.....	iii
iv	Acknowledgements.....	iv
1	Introduction .....	1
2	Background to the scheme .....	1
3	Topography, geology and hydrology .....	1
4	Archaeological and historical background .....	2
5	Site description .....	5
6	Methodology .....	6
7	Results of excavation .....	10
7.1	Three pits.....	10
8	Charred plant remains .....	10
9	Charcoal .....	10
10	Radiocarbon dates .....	15
11	Discussion .....	16
12	References.....	19
Appendix 1	Context register .....	21
Appendix 2	Groups and subgroups.....	22
Appendix 3	Charcoal analysis .....	23

## List of Figures

Figure 1:	Discovery series Ordnance Survey map showing the route of the new N18 Oranmore to Gort road and the location of all the excavation sites. The excavation site at Ballinillaun 2 is highlighted.	3
Figure 2:	A distribution map showing the location of prehistoric sites in the area surrounding the site at Ballinillaun 2. It is based on the RMP/SMR map GA095 data-set which has been overlaid on a digital elevation model.	4
Figure 3:	The route of the new N18 Oranmore to Gort road overlaid on the first edition Ordnance Survey map (Sheet GA095). The excavation site at Ballinillaun 2 is also highlighted.	7
Figure 4:	The route of the new N18 Oranmore to Gort road overlaid on the 25 inch Ordnance Survey map (Sheet GA095). The excavation site at Ballinillaun 2 is also highlighted.	8
Figure 5:	The route of the new N18 Oranmore to Gort road overlaid on the RMP/SMR GA095 map which is based on 2nd edition Ordnance Survey map (Sheet GA095-12). The excavation site at Ballinillaun 2 is also highlighted.	9
Figure 6:	Post-excavation plan of the site	12
Figure 7:	Interpretive post-excavation plan of the site.	14

## List of Plates

Plate 1:	Looking south-east across the excavation area.	5
Plate 2:	Looking east across the excavation area.	6
Plate 3:	Looking south-east across the central pit (C.6) prior to excavation.	11
Plate 4:	Looking south-east across the central pit (C.6) after excavation.	11
Plate 5:	Looking north-east across the southern pit (C.9) prior to excavation.	13
Plate 6:	Looking north-west across the southern pit (C.9) after excavation.	13

## List of Tables

Table 1:	Site Location Details	iii
Table 2:	Ballinillaun 2 Radiocarbon dates	15
Table 3:	Ballinillaun Townland Pit Group references	16
Table 4:	Table of radiocarbon dates from the burnt mound sites on the N18 Gort to Oranmore	18
Table 5:	Summary of cluster analysis	18

### iii Summary

This site consisted of a poorly preserved, Early Bronze Age, burnt mound. Three pits were excavated and all the fills of the pits contained large proportions of charcoal and heat-shattered limestone. A radiocarbon date of cal BC 1934–1773 were obtained from basal fill of a trough. This was one of a series of burnt mounds which clustered in Ballinillaun, Moyveela and Colwood which were located adjacent to a number of turloughs.#

Townland	Ballinillaun 2
Parish	Stradbally
Barony	Dunkellin
County	Galway
Ministerial Order Number	A045
E Number	E3886
OS Map Sheet	GA095
National Grid Reference	144719/222930
Elevation	10 m O.D.
Site Type	Burnt Mound

Table 1: Site Location Details

## iv Acknowledgements

The excavation director was Tori McMorran and the site supervisor was Tomasz Borkowski. The field crew included Simon Bolton and Stanislaw Lackowski. The senior archaeologist was Finn Delaney and the post-excavation manager was Jacinta Kiely. Choryna Kiely, Fillip Debniak and Fiona Greene were involved with the administration of the project. Illustrations are by Ben Blakeman and Maurizio Toscano. Specialist analysis of animal bone was undertaken by Margaret McCarthy. Joseph O'Brien was the resident engineer for consultant engineers Hyder Tobins. The project was commissioned by Galway County Council and was funded by the National Roads Authority. The project Archaeologist was Jerry O'Sullivan.



# 1 Introduction

This report constitutes the final excavation report for a poorly preserved burnt mound in the townland of Ballinillaun, Co. Galway (Fig 1). The site was excavated as part of the archaeological excavation programme in advance of construction for N18 Gort to Oranmore Road scheme. The site was found within the CPO for the scheme during Phase 1 archaeological testing.

## 2 Background to the scheme

The N18 Oranmore to Gort (Glenbrack to Rathmorrissey) national road scheme was approved by An Bórd Pleanála on 7<sup>th</sup> June 2007. The development will consist of approximately 27 km of dual carriageway, and all associated works. The area of archaeological investigations lies within the footprint of the proposed scheme as defined by the Compulsory Purchase Order (CPO) published by Galway County Council on 1st August 2006. Eachtra Archaeological Projects was commissioned by Galway County Council and the National Roads Authority to undertake Phase 1 archaeological testing and Phase 2 excavation of sites directly affected by the proposed development.

## 3 Topography, geology and hydrology

The underlying geology in the surrounding area is Carboniferous limestone of the Burren and Tubber formations bordered by Namurian shales and sandstones to the west, in County Clare, and Devonian old red sandstone to the east, in the Slieve Aughty uplands. Glacial till overlies the bedrock to varying depths (0–5 m) and the soils derived from the till are generally deep, well-drained brown earths. The topsoils are characteristically deep and dry and, enriched by the limestone parent material, support moderately good grass pastures. There are boulder fields and expanses of bedrock exposure typical of karst limestone country.

Turloughs and swallow-holes are features of areas with an underlying limestone bedrock. This enables the ground water and water table to produce sometimes perplexing drainage systems. A large turlough is shown on the Ordnance Survey first edition map in the south western portion of Coldwood townland and encompasses parts of the townlands of Moyveela and Ballinillaun (Fig 2). Two small lakes are also shown, namely Pollnakirka and Pollawarla, respectively. The turlough and lakes were fed by the Lavally river from the north-east. A river exits towards the sea at Clarinbridge from the south-west side of the turlough and is marked as the Clarinbridge river. The river was later dredged and canalised and the turlough was divided into large regular fields.

## 4 Archaeological and historical background

The townland name Ballinillaun is derived from a number of Irish words. The first part derives from *Baile* meaning town, townland or homestead while the second part may come from *an oilean* meaning an island. Therefore the townland name may be a direct reference to the landscape with Ballinillaun being a high point within a flat landscape. Alternatively the last part of the name may derive from a personal or family name such as *Uí Fhloinn* or *Ó Laighin* and therefore may relate to this region belonging to and being the home place of a particular family.

There seems to have been an expansion of settlement from hill slopes and uplands into lower lying areas during the Bronze Age. There also seems to have been a trend way from communal funerary monuments to individual burial monument with associated grave goods. This would explain the relatively high concentration of barrows in lowland east Galway.

Barrows are burial monuments of the Bronze Age and Iron Age, which usually consist of a circular central area, which may be flat or slightly dished (a ring ditch), or domed (a ring barrow), and which is enclosed by a ditch and occasionally by an external bank). Bronze Age burials that have been excavated, either in recent times or during the last century, include some found in cists, pits lined with stone flags, and some in simple pits, some of which were accompanied by pottery or other grave goods. These can be placed in tumuli, cairns or barrows, but can also be set within 'natural' monuments, such as sand ridges, or can appear in so-called flat cemeteries, with no above ground marker at all.=

These trends are also reflected in south Galway where stray finds of Bronze Age objects have been found in Toberbrackan and Lavalley and a Bronze Age cist and 'food vessel urn' was found in Moyveela (O'Sullivan 2006).

There are no known house sites or settlements of the period in the area, but there are numerous examples of burnt mounds or *fulacht fiadh*. These mounds of burnt and shattered stone were the by-products of a favoured technique of immersing heated stones in pits filled with water, to boil it. Recorded examples occur on or near the proposed road scheme in Rathmorrissey, Toberroe and Caherweelder and the present programme of excavation in advance of construction on the N18 Oranmore to Gort road scheme has added further to the numbers of burnt mound sites in the area.

A Bronze Age cist burial and a barrow are also recorded in the townland of Moyveela. The distribution map also shows that the burnt mounds at Moyveela and Coldwood fit into a concentration of this monument type to the south and south-west of Atherny.

The burnt mounds in nearby Moyveela are located in the south-eastern corner of the townland. The outline of the townland boundary changes slightly between the first edition Ordnance Survey six inch map and later editions (Fig 2, 3 and 4). The location of the burnt mounds is shown on the first edition map as being located on rougher ground at the western extremity of the large turlough in Coldwood townland to the east. The small lake known as Pollawarla is shown as being located within the turlough margins just to the north-east of the pit groups in Ballinillaun.



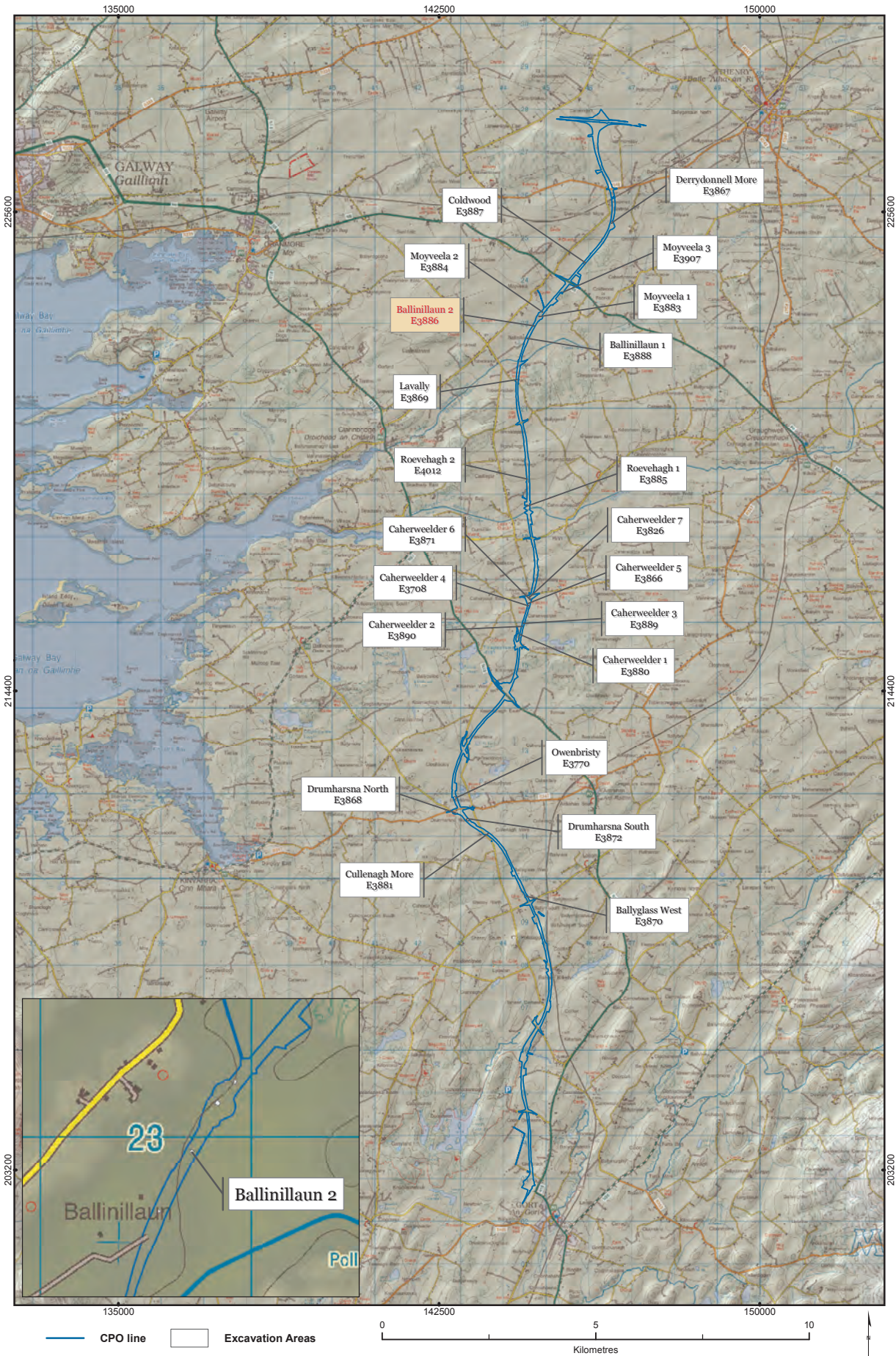


Figure 1: Discovery series Ordnance Survey map showing the route of the new N18 Oranmore to Gort road and the location of all the excavation sites. The excavation site at Ballinillaun 2 is highlighted.



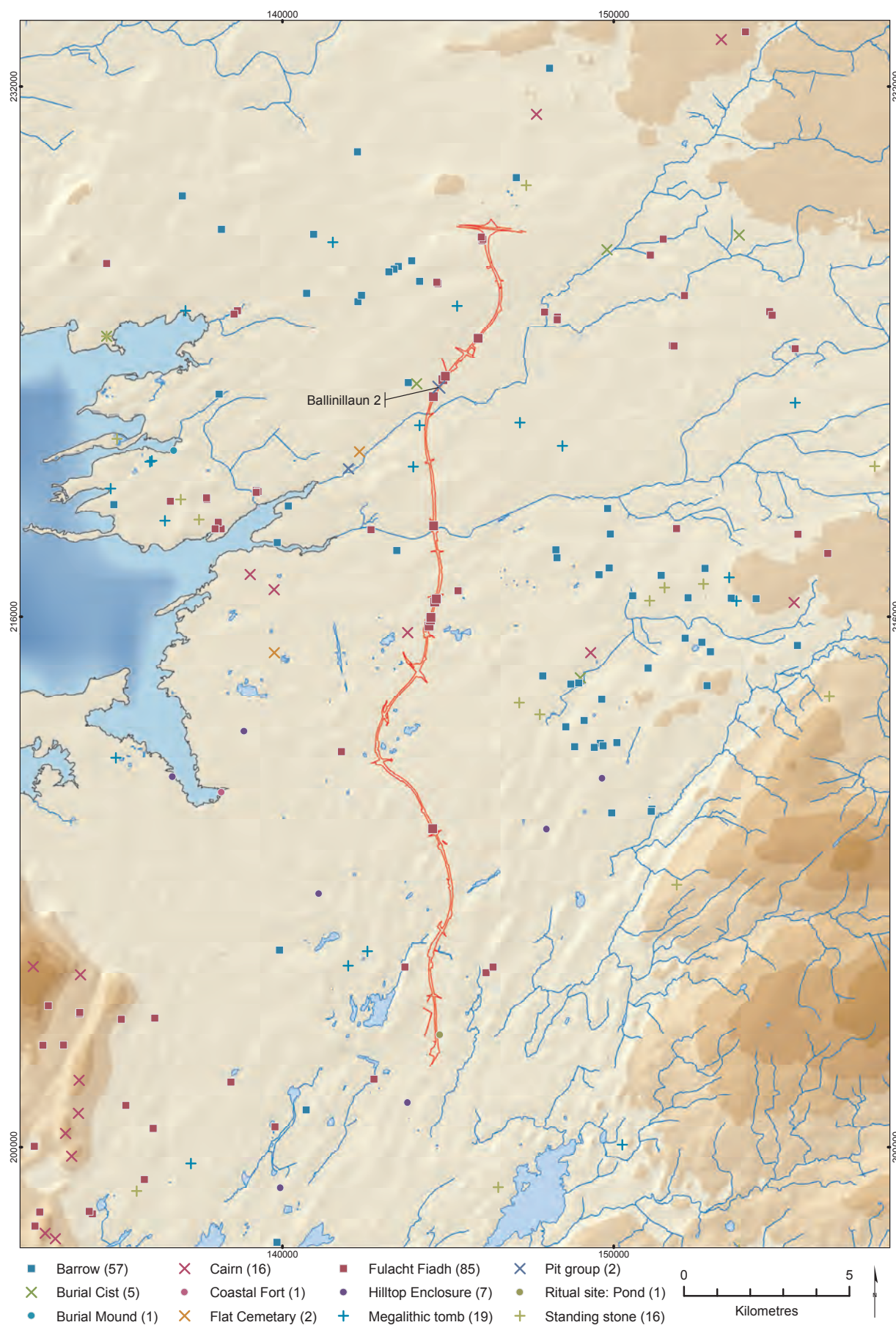


Figure 2: A distribution map showing the location of prehistoric sites surrounding the site at Ballinillaun 2. It is based on the RMP/SMR map GA095 data-set which has been overlaid on a digital elevation model.



Plate 1: Looking south-east across the excavation area.

## 5 Site description

The excavated site was located in the northern portion of Ballinillaun townland (NGR 144570/222643) (Fig 1). It is located very close to the point where the three townlands of Moyveela, Coldwood and Ballinillaun converge. The townland boundaries have shifted slightly between the first and second edition Ordnance Survey maps of the area (Figs 2, 3 and 4). The site at Ballinillaun 2 is accessed through a farm yard and lane located adjacent to a small third-class road joining the present N18 and N6. The landscape here is gently undulating and consists of large fields enclosed by walls of dry-stone construction. The land is rough stony terrain with frequent outcrops of limestone bedrock. The pasture is fairly good and primarily used for grazing cattle.

The site is located on slightly raised ground along the western edge of a large turlough. There are wide views from the site to the east and south across the open expanse of rough pasture which corresponds with the turlough. The fields are bounded by single-leaf dry-stone walls lined with small trees and scrub.





Plate 2: Looking east across the excavation area.

## 6 Methodology

An area measuring roughly 20 m x 10 m (200 sq m) was stripped of topsoil by a 20 tonne excavator using a toothless bucket to reveal the full extents of the pit group and the associated features. The site was then subjected to intensive hand cleaning. A number of features of an archaeological nature were uncovered. These features were located in a cluster close to the eastern limit of the excavation area. All the features were excavated by hand and recorded using the single-context recording system with plans and sections being produced at a scale of 1:20 or 1:10 as appropriate. A complete photographic record was maintained throughout the excavation.

The soil samples taken during the excavation were sieved and the resultant flots were examined by Mary Dillon for plant remains and charcoal analysis. One charcoal sample was sent for radiocarbon dating to Queen's University in Belfast.

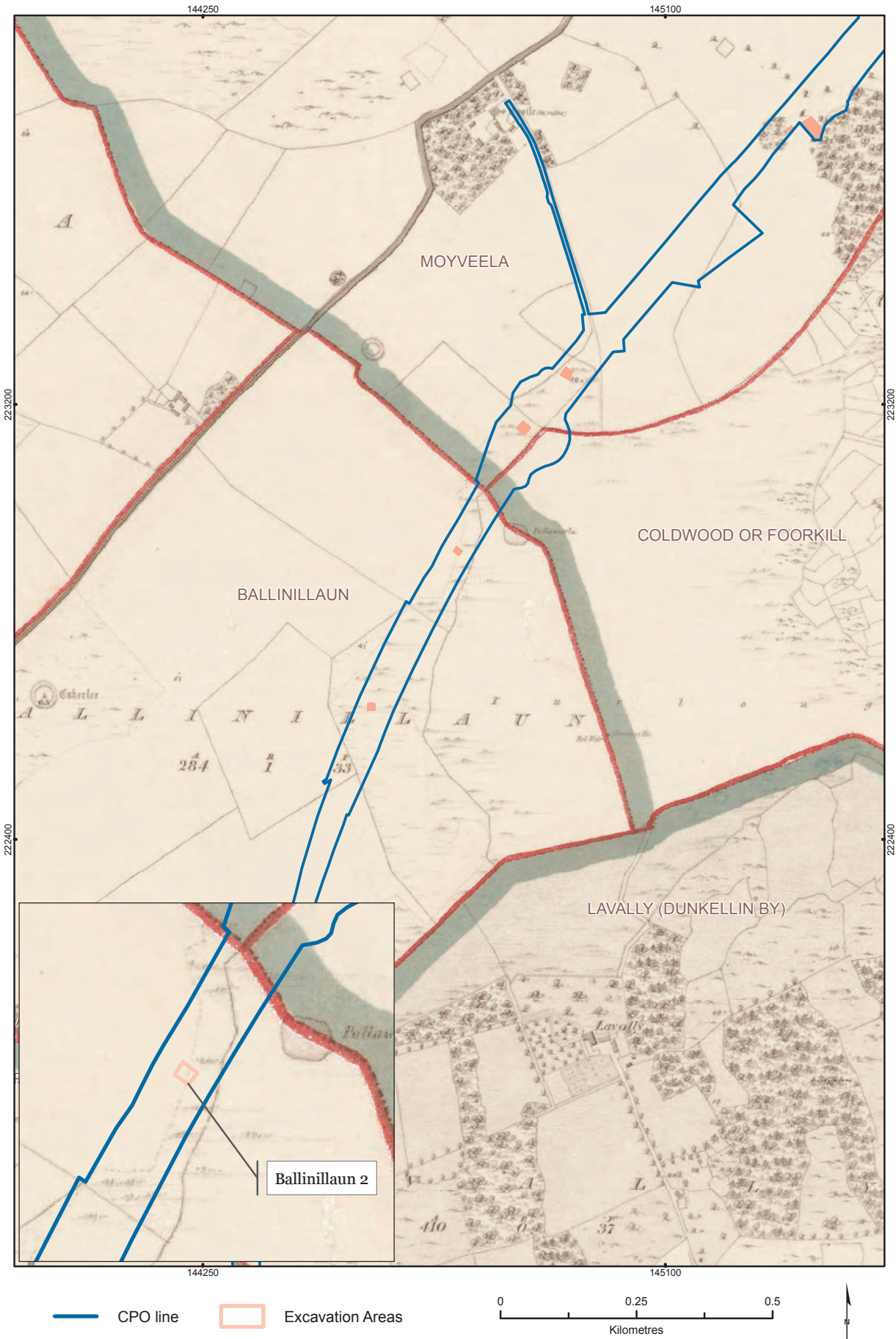


Figure 3: The route of the new N18 Oranmore to Gort road overlaid on the first edition Ordnance Survey map (Sheet GA095). The excavation site at Ballinillaun 2 is also highlighted.



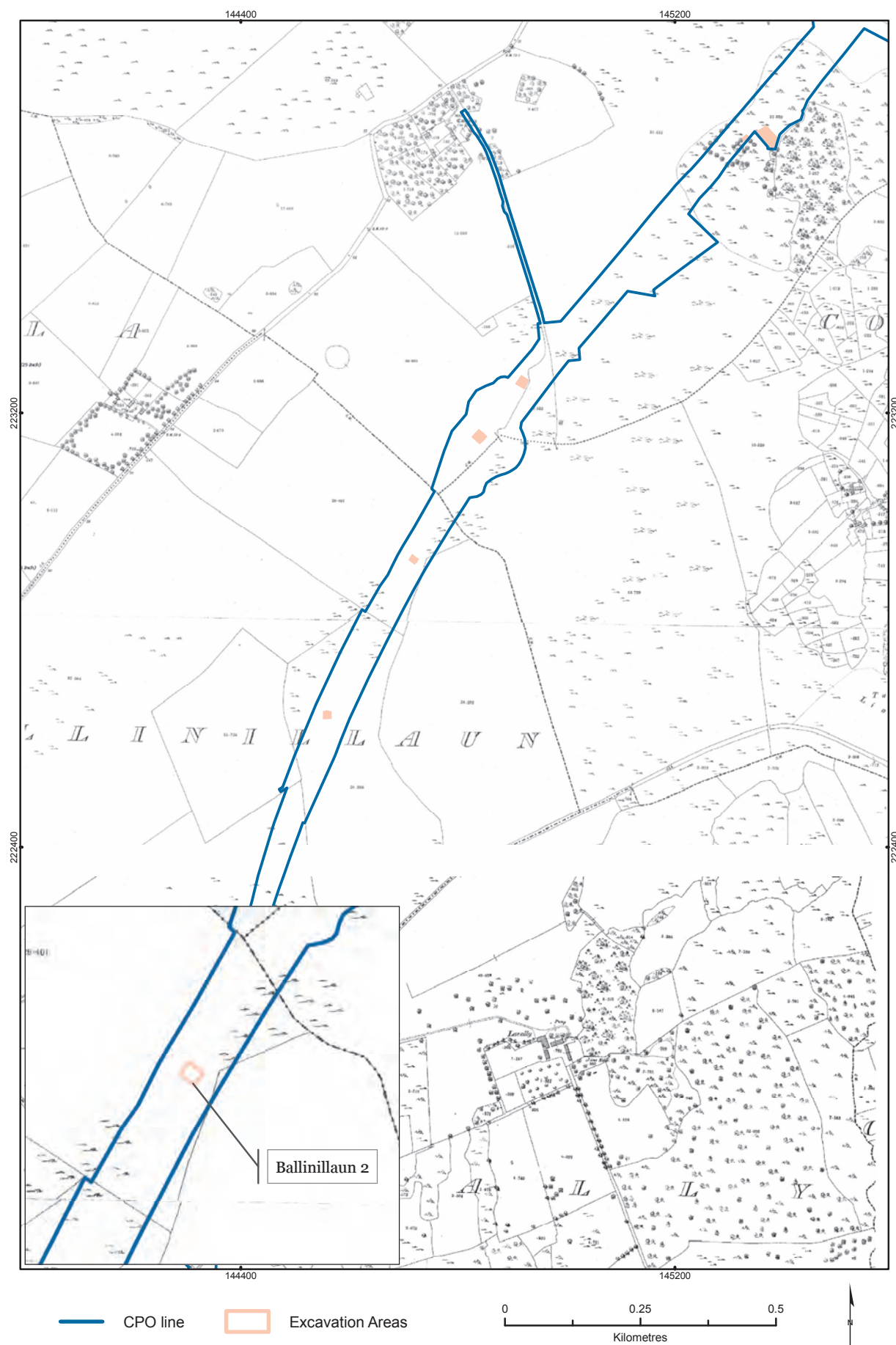
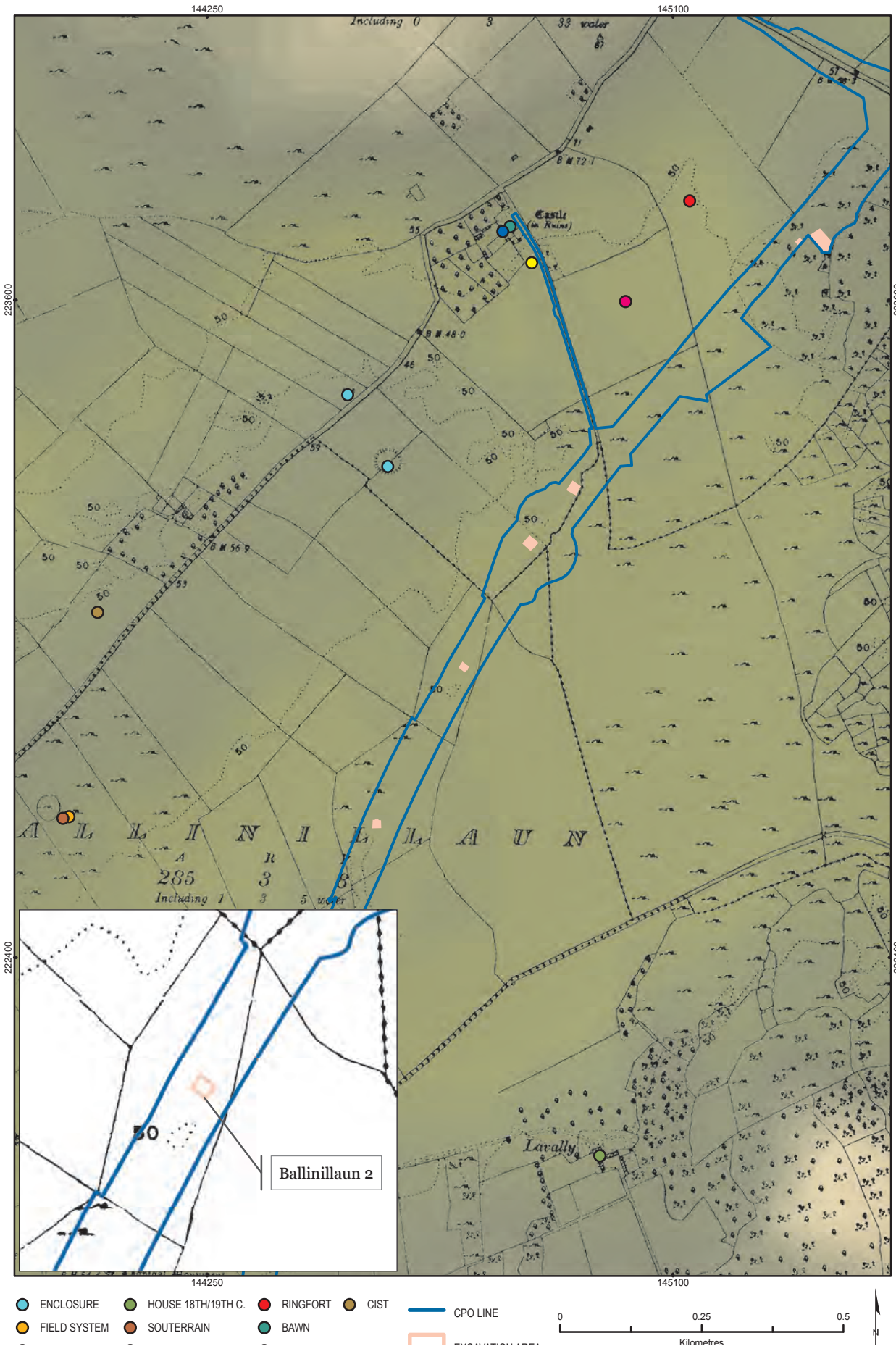


Figure 4: The route of the new N18 Oranmore to Gort road overlaid on the 25 inch Ordnance Survey map (Sheet GA095). The excavation site at Ballinillaun 2 is also highlighted.





## 7 Results of excavation

Three pits were excavated and, although all the fills contained large proportions of charcoal, there was no indication of burning *in situ*. The pit fills also contained large amounts of heat-shattered limestone. The topsoil (C.1) was shallow and composed of mid brown sandy clay. The underling subsoil (C.2) was composed of orange brown clay.

### 7.1 Three pits

Three pits were located in the north-east corner of the excavated area. The largest pit was oval and measured 2.01 m in length 1.60 m in width and was 0.61 m deep. It had steeply sloping concave sides and a concave base. The fill (C.6) was mid-brown grey sandy silt with angular and sub-angular stone and also contained some charcoal flecks.

The second pit was similar in shape and fill but smaller in size. The pit (C.9) was sub-circular and measured 1.50 m in length, 1.30 m in width and was 0.60 m deep. It had steep concave sides and a concave base. The fill (C.8) was dark grey/black sandy silt with angular and sub-angular stone and also contained some charcoal.

The smallest pit (C.12) had a more irregular shape and measured 0.65 m in length, 0.32 m in width and was 0.07–0.09 m deep. It had moderately steep irregular sides and an irregular base. The fill (C.10) was dark grey/black stony silt with some charcoal lumps confined to its uppermost level.

The three pits all contained burnt mound material. Only traces of a mound were found but this site is interpreted as the remains of a poorly preserved burnt mound. The mound remains were slight, but extended throughout the whole of the excavation trench.

## 8 Charred plant remains

The sieved flots from the Ballinillaun 1 samples were examined by Mary Dillon. No charred seeds were found.

## 9 Charcoal

One sample from Ballinillaun 2 was submitted for charcoal analysis in advance of dating. The fill (C.8) of the southern-most pit contained hazel charcoal that was suitable for AMS dating.





Plate 3: Looking south-east across the central pit (C.6) prior to excavation.



Plate 4: Looking south-east across the central pit (C.6) after excavation.

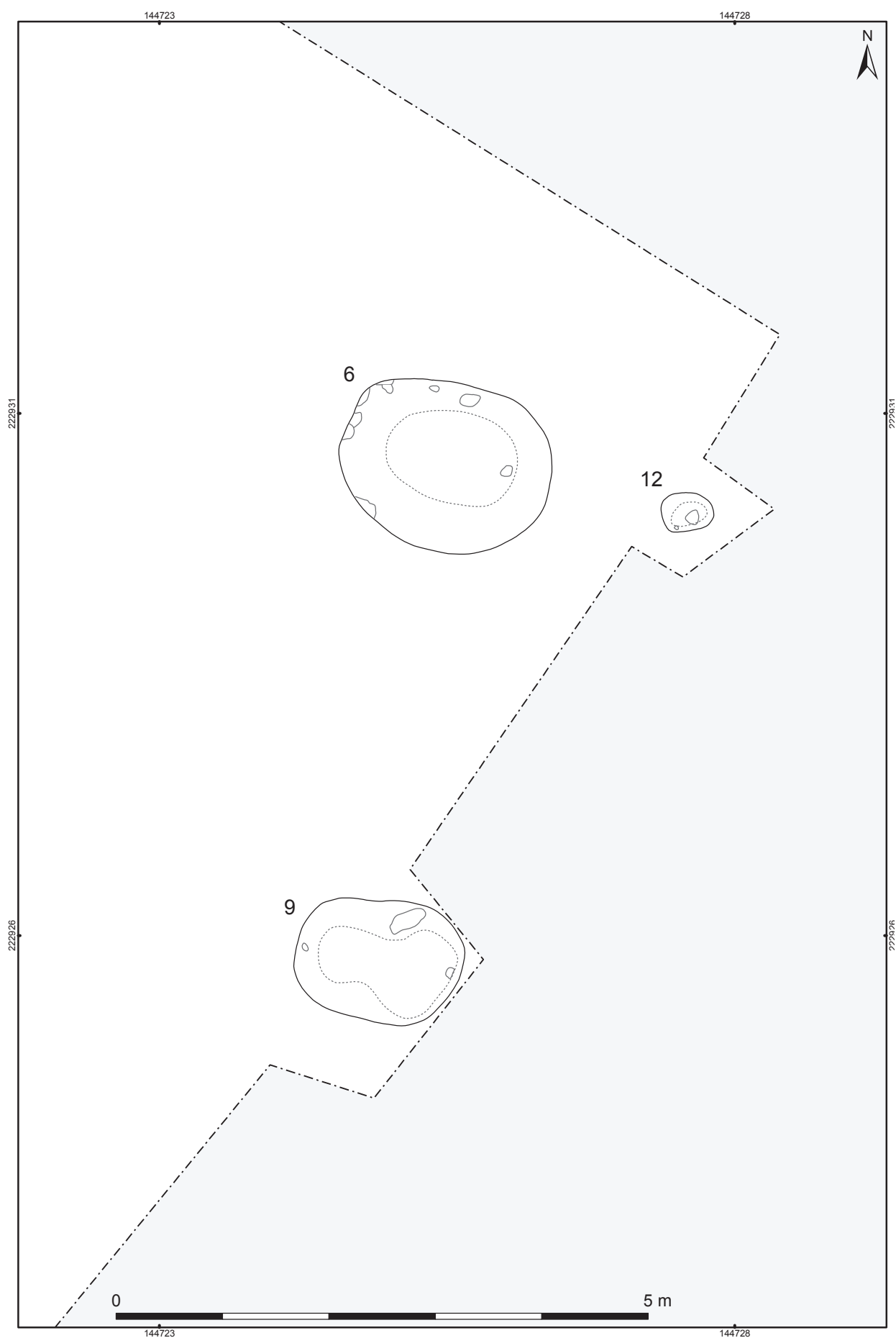


Figure 6: Post-excavation plan of the site





Plate 5: Looking north-east across the southern pit (C.9) prior to excavation.



Plate 6: Looking north-west across the southern pit (C.9) after excavation.

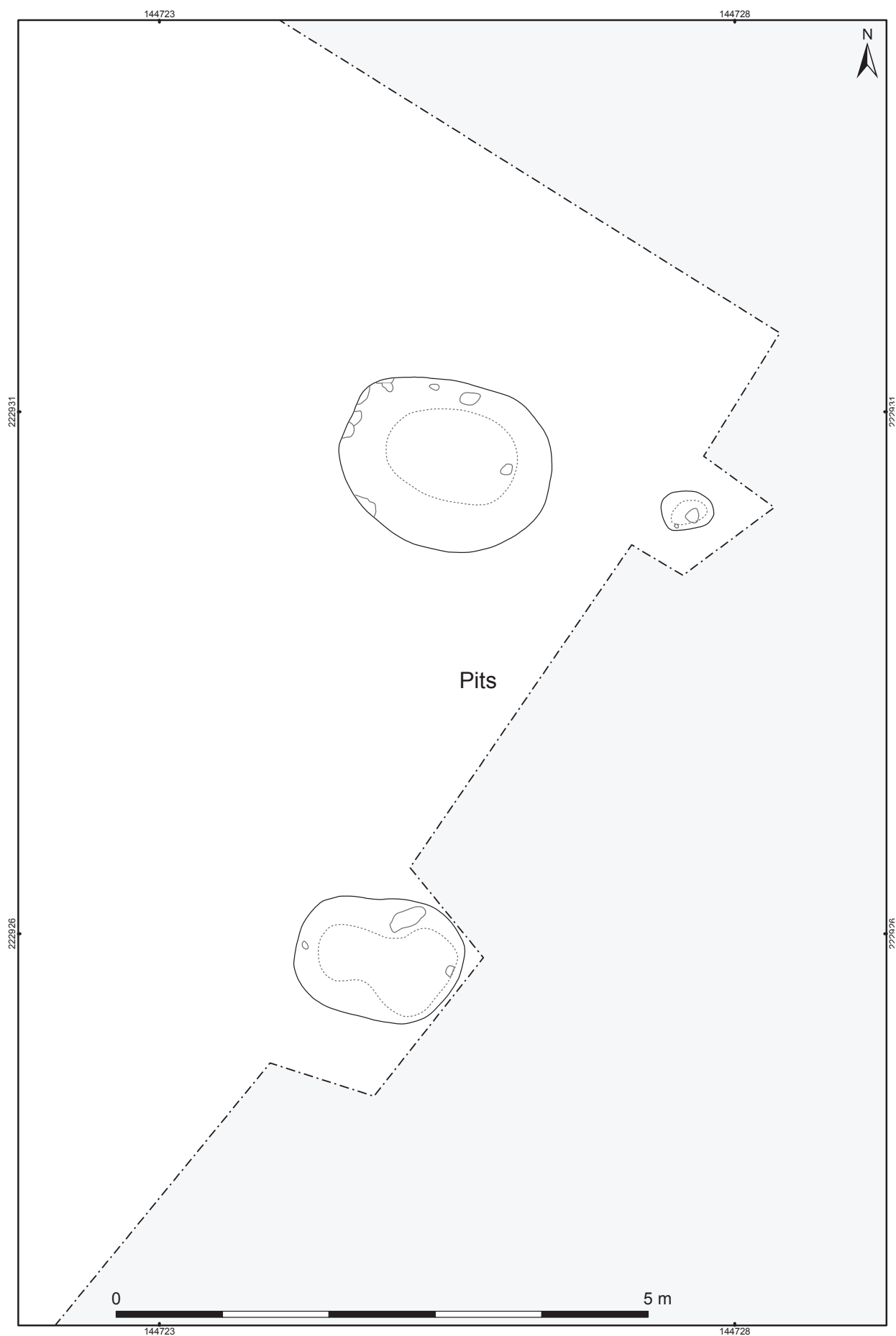


Figure 7: Interpretive post-excavation plan of the site.

## 10 Radiocarbon dates

Radiocarbon analysis was carried out by the 14 Chrono Centre in Queen's University Belfast. Dates were calibrated using Calib Rev5.0.2 (©1986–2005 M.Stuiver & P.J. Reimer) and in conjunction with Stuiver & Reimer 1993 and Reimer et al. 2004.

One Early Bronze Age dates were obtained from basal fill of the trough (C.9).

Lab. Code	Context	Sample	Material	Years BP	$\delta^{13}\text{C}$	1 sigma calibrated date	2 sigma calibrated date	Period
UB-11506	Fill of pit C.9	2	Charcoal hazel 0.6 g	3533 $\pm$ 20	-25	BC 1912–1876 1842–1821 1797–1781	BC 1934–1865 1849–1773	Early Bronze Age

Table 2: Ballinillaun 2 Radiocarbon dates

## 11 Discussion

The site excavated at Ballinillaun 2 was one of a pair of poorly preserved burnt mounds identified in Ballinillaun townland during the Phase 1 testing. Three smaller pit groups (chainage 6520, 6200 and 5650) were excavated and recorded during Phase 1 in this townland while Ballinillaun 1 and 2 were excavated during the Phase 2 excavations. Some of the pits contained heat shattered stone as well as charcoal-rich deposits.

Site	National Grid References
Ballinillaun Pit Group 1	144384;222083
Ballinillaun Pit Group 2	144472;222390
Ballinillaun Pit Group 3	144693;222884

Table 3: Ballinillaun Townland Pit Group references

It is likely that the pits are associated with the functions undertaken at burnt mound sites and the proximity to the two burnt mound sites in Moyveela townland and their similar location on the western edge of a large turlough would seem to support this theory. The pits may be associated with unrecorded burnt mound sites located outside the extent of the road scheme or they could be the surviving remnants of truncated burnt mounds.

Burnt mounds are the most common Bronze Age sites found in Ireland. Estimates suggest that at least 4,500 examples are known (Power et al. 1997) and this number is continually growing as sites continue to be identified by archaeological field work. The characteristic site-type is found in low-lying and damp ground. It consists of a mound of charcoal-rich black sediment that is packed with heat-shattered stones. The mound forms a horse-shoe shape around a pit or trough that was filled with water. In many cases, just like at Coldwood, all that survives to the present day are black charcoal-rich deposits with fragments of shattered stones visible in ploughed fields.

These sites are associated with the process of roasting stones to heat water. Debate continues about their use (Ó'Neill, 2003–4), as hot water is required for many processes including cooking, brewing, washing, and dyeing (Roycroft 2006).

Traditionally, these sites have been interpreted as ancient cooking places, where large stones were heated in fires and then added to the water-filled trough, the extreme heat of the stones eventually heating the water in the trough until it reached boiling point. Experimental cooking at reconstructed sites such as Ballyvourney (O'Kelly 1954) has demonstrated that meat wrapped in straw and placed into a boiling trough can be cooked quite effectively. The perceived lack of any animal bones from these excavated sites has been used against this theory. More recently, however, there is a growing corpus of sites which have produced animal bone (Tourunen 2008) and all of the sites excavated during the N18 Oranmore to Gort project have produced animal bone, albeit in very small quantities.

The traditional perception of burnt mound sites is that they are isolated features on the landscape situated on marginal ground away from settlement. Recent studies however are prompting a re-evaluation of this perception. The recent publication on the archaeol-



ogy of Clare Island has also established the close relationship between burnt mounds and settlement areas (Gosling 2007). Surveys on Clare Island highlighted the spatial association of the identified burnt mounds with enclosures, houses and huts and boundary walls.

Until recently, comparatively few burnt mound sites had been excavated in County Galway. The excavations data-set listed only 18 excavations of burnt mounds/fulachta fiadh in the county prior to 2006 (Bennett 1970 – 2003). The published archaeological inventories for the county record only six examples from the west of the county and 17 in the north. Large scale archaeological works such as those associated with the N6 Galway to Ballinasloe road scheme suggest that the numbers recorded are under representative: 13 burnt mound sites being identified on this scheme alone. However, work associated with the gas pipeline to the west revealed only 1 new burnt mound site in County Galway (Grogan et al 2007). The inventory for the south of the county is not yet published but a look at the distribution map based on the RMP data would suggest that the numbers are significantly higher in the southern portion of the county. Archaeological investigations on the N18 from Oranmore to Gort and from Gort to Crusheen bear out this impression of under representation. A total of 12 burnt mounds including Ballinillaun 1 were excavated on the Gort to Oranmore section while 27 burnt mound sites were excavated on the N18 Gort to Crusheen section by Irish Archaeological Consultancy Ltd.

Site Name	E No.	Radiocarbon date (2 sigma) cal BC	Period
Ballinillaun 1	E3888	1260–1228 1220–1108 1105–1055	MBA
Ballinillaun 2	E3886	1912–1876 1842–1821 1797–1781	EBA
Ballyglass west	E3870	1411–1290 1280–1270	MBA
		1687–1602 1591–1532	EBA
		1740–1703 1699–1618	EBA
		1125 – 978	MBA
Caherweelder 1	E3880	974–957 941–831	LBA
		1038–1034 1028–901	LBA
Caherweelder 2	E3890	1192–1174 1164–1143 1132–1005	MBA
		1294–1124	MBA
Caherweelder 3	E3889	1668–1501	EBA
		1448–1370 1351–1316	MBA
Caherweelder 5	E3866	1125–976 952–947	MBA
		1944–1865 1849–1773	EBA

Site Name	E No.	Radiocarbon date (2 sigma) cal BC	Period
Caherweelder 6	E3871	2195–2174 2145–2119 2096–2040	EBA
Coldwood	E3887		Unknown
Moyveela 1	E3883	731–691 660–652 544–406	LBA
Moyveela 2	E3884	1010–909	LBA
		894–873 846–798	LBA
Roevehagh 1	E3885	976–952 948–832	LBA

Table 4: Table of radiocarbon dates from the burnt mound sites on the N18 Gort to Oranmore

The small burnt mound at Ballinillaun 1 is located on slightly raised ground on the western edge of a large turlough. The preference for locating burnt mound sites on wet-land margins has been consistently noted by other commentators (Gowen et al. 2005 and Grogan et al. 2007). The burnt mound sites at Caherweelder (to the south) which were excavated as part of the N18 programme of excavations, also had a similar location on slightly raised ground on the edge of a turlough.

Clustering of burnt mound sites is also a feature of this type site. This clustering of burnt mound sites, along with the large size of some examples, has led Waddell (2000) to believe that ‘they were an integrated part of a wider settlement pattern. The burnt mounds at Moyveela 1 and Moyveela 2 along with some smaller areas of burnt mound material noted during the Phase 1 testing and the sites at Ballinillaun 1 and 2 reveal a small cluster of Bronze Age sites along the western edge of a turlough. A similar cluster of burnt mound sites was also revealed in Caherweelder townland to the south. The Bronze Age site clusters have been statistically evaluated as part of the current project and two strong clusters in this area of the scheme have been identified

	Cluster No. 8	Cluster No. 10
Number of sites	11	10
Area covered by cluster	8.53 sq km	2.22 sq km

Table 5: Summary of cluster analysis

The site at Ballinillaun 2 fits into the distribution pattern of Bronze Age activity as reflected by the recorded archaeological sites in the area to the south west of Athenry and it provides another element in the growing corpus of Bronze Age sites in Co. Galway.

## 12 References

- Alcock, O, de hOra, K and Gosling, P 1999 *Archaeological Inventory of County Galway*, Vol 2 North Galway. Dublin, The Stationery Office.
- Bennett, I (ed.) *Excavations 1970–2003* [= annual gazetteer of licensed archaeological excavations in Ireland]. Wordwell Press for the Department of Environment, Heritage & Local Government.
- Gosling, P 1993 *Archaeological Inventory of County Galway*, Vol 1 West Galway. Dublin, The Stationery Office
- Gosling P 2007 'A Distributional and Morphological Analysis of Fulachtaí Fia on Clare Island,' In P. Gosling (ed), *New Survey of Clare Island*, Vol 5 Archaeology, 69–90, Dublin
- Gowen, M, O'Neill, J and Phillips, M 2005 *The Lisheen Mine Archaeology project 1996 – 1998*. Wordwell.
- Grogan, E, O'Donnell, L, and Johnston, P 2007 *The Bronze Age Landscapes of the Pipeline to the West*. Bray. Wordwell
- Johnston, P, Kiely, J. and Tierney, J 2008 *Near the Bend in the River: the archaeology of the N25 Kilmacthomas realignment*. NRA Scheme Monograph 3. Dublin
- Joyce, P W 1867–1913 *Names of Irish Places*, 3 vols. London & Dublin.
- Kiely, J and Dunne, L 2005 'Recent archaeological investigations in the Tralee area.' In M. Connolly (ed.), *Past Kingdoms: recent archaeological research, survey and excavation in County Kerry*. Tralee. Heritage Council/Kerry County Council
- O'Kelly, M 1954 'Excavations and experiments in Irish cooking places.' *Journal of the Royal Society of Antiquaries of Ireland*, Vol 84, 105–55.
- Ó Néill, J 2003/2004 *Lapidibus in igne calefactis coquebatur*: The historical burnt mound "tradition", *Journal of Irish Archaeology* Vol. XII & XIII, 77–84
- O'Sullivan, J 2006 'Archaeological Heritage,' In Galway County Council *Environmental Impact Statement for N18 Oranmore to Gort National Road Scheme*.
- Power, D, Byrne, E, Egan, U, Lane, S. and Sleeman. M 1997 *Archaeological Inventory of County Cork Volume 3:Mid Cork*. The Stationery Office, Dublin.
- Roycroft, N 2006 Boiled bull and burnt mounds. *Seanda* 1, 38–43

Tourunen, A 2008 'Fauna and fulachta fiadh: animal bones from burnt mounds on the N9/N10 Carlow Bypass.' In J. O'Sullivan and M. Stanley (eds.), *Roads, Rediscovery and Research*. Archaeology and the National Roads Authority Monograph Series No. 5. Wordwell

Waddell, J 2000 *The prehistoric archaeology of Ireland*. Wordwell

## Appendix 1 Context register

Please see attached CD for Context Register.

## Appendix 2 Groups and subgroups

### Natural Deposits – Group 1

Context Numbers – C.1 and C.2

#### *Description*

The topsoil (C.1) was shallow and composed of mid brown sandy clay. The underling subsoil (C.2) was composed of orange brown clay.

#### *Interpretation*

These deposits represented the topsoil and underlying subsoil across the area of excavation.

### Three Pits – Group 2

Context Numbers – C.6, C.7, C.9, C.8, C.12 and C.10

#### *Description*

Three pits were located in the north-west corner of the excavated area. The largest pit (C.6) was oval and measured 2.01 m in length 1.60 m in width and was 0.61 m deep. It had steeply sloping concave sides and a concave base. The fill (C.7) was mid-brown grey sandy silt with angular and sub-angular stone and also contained some charcoal flecks.

The second pit was similar in shape and fill but smaller in size. The pit (C.9) was sub-circular and measured 1.50 m in length, 1.30 m in width and was 0.60 m deep. It had steep concave sides and a concave base. The fill (C.8) was dark grey/black sandy silt with angular and sub-angular stone and also contained some charcoal.

The smallest pit (C.12) had a more irregular shape and measured 0.65 m in length, 0.32 m in width and was 0.07-0.09 m deep. It had moderately steep irregular sides and an irregular base. The fill (C.10) was dark grey/black stony silt with some charcoal lumps confined to its uppermost level.

#### *Interpretation*

The three pits all contained very similar fills. Although the fills of the pits contained charcoal there was no indication of burning *in situ* in the form of underlying fire red-dened clay or lumps of scorched clay. In addition the stones in the pits were darkened on their surface due to prolonged contact with charcoal however, they did not appear to be burned or fire/heat shattered. There was a large quantity of charcoal flecks and small lumps scattered across the surface of the entire excavated area. The function of the three pits remains unclear.

## Appendix 3 Charcoal analysis

By Mary Dillon

### Introduction

In all, one sample from Ballinillaun 2 (E3886) was submitted for charcoal analysis in advance of dating. Charcoal from trees with a short life-span is suitable for dating while charcoal from trees with a long life-span is not.

### Methodology

Charcoal fragments of 2 mm or greater were identified. Each fragment was prepared for microscopic examination by fracturing it by hand and thereby exposing a clean surface along transverse, radial and tangential planes. All three planes were examined at a range of magnifications (x100 to x400) under a Nikon microscope. For reference literature Schweingruber was consulted (1990). The number and weight of fragments were recorded for each wood type. Note - As the ideal weight of charcoal for standard radiometric dating is 8 to 12g, the sample is recommended only for AMS dating.

### Results

Sample 2 from context 8 had hazel charcoal (1 fragment, 0.6g) that is suitable for AMS dating. Hazel is particularly suitable for submitting for dating as it has a lifespan of just 80 years.

Context	Sample	Identification	Suitable for AMS dating?
2	8	Hazel (1 frag, 0.6g)	Yes

Table 1. Charcoal from Ballinillaun 2

### References

Schweingruber F.H. (1990) Anatomy of European woods. Haupt, Bern