

Date: October 2009
Client: Offaly County Council
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**N52 Tullamore Bypass:
 Final Report on archaeological excavations at Ardan 3, E2493, in
 the townland of Ardan, Co. Offaly**

By: Lyndsey Clark & Tom Janes
 Ministerial Direction No: A033
 National Monuments Section Registration No: E2493
 Director: Tom Janes
 Chainage: 13515-13530
 NGR: 33900 / 28450



transport21
progress in motion



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1 Summary

This report presents the results of archaeological investigations carried out on behalf of Offaly County Council as part of the Advance Archaeological Works Contract for the N52 Tullamore Bypass. The work was undertaken under Ministerial Direction A033 and National Monuments Section Registration No E2493 in the townland of Ardan, Co. Offaly. The NMS no E2493 was allocated to all general testing work undertaken on the scheme, and to three sites discovered and fully excavated during this phase (Appendix 7). The Minister for the Environment, Heritage & Local Government, following consultation with the National Museum of Ireland, directed that Tom Janes of Headland Archaeology Ltd should proceed with archaeological excavation.

Archaeological testing carried out on this site in 2006 identified two features of archaeological significance. These consisted of two small pits with charcoal and slag inclusions.

Full archaeological resolution was conducted on this site during Phase 1 Testing in September 2006. The area surrounding the feature was stripped of topsoil but no other archaeological features were identified.

2 Introduction (Figure 1)

The scheme involves the proposed construction of the N52 Tullamore Bypass, between the townlands of Cloghanbane and Ardan in Co. Offaly. The proposed scheme will consist of the construction of a bypass around the town of Tullamore. It is to consist of 11.5km of standard single carriageway and 2.5km of wide single carriageway road. It will also involve the construction of seven at-grade roundabout junctions, priority junctions and seven new major structures, including four river crossings, one canal crossing and one railway crossing. The project is funded by the Irish Government and the European Union, through Offaly County Council/National Roads Authority and under the National Development Plan 2000-2006. Headland Archaeology Ltd. was commissioned by Offaly County Council to undertake the works.

An Environmental Impact Statement was prepared in 2004, with the Cultural Heritage Assessment for the route contained within Section 3.8. The EIS was prepared by Babbie Pettit.

3 Site Description and Historical Background (Figure 2)

Ardan 3 was located approximately 2 km north of Tullamore town, in the townland of Ardan, at National Grid Reference 33900/28450. The land comprised gently undulating farmland immediately to the east of the N52, which was under pasture at the time of testing.

The Ordnance Survey Name Books list the following alternate spellings and names for Ardan: Arden, Ardin, Ardenmore and Raheen, Ardmore and Raheens, Ardmore and Raheers, Ardenbegg, and Ardenmore and Rahin. It lists Ardan as *Ardán* in Irish, translating it as "a hillock". The townland is described as being located on a crossroad from Tullamore to the parish of Durrow south of the Silver River (which forms the northern boundary) and a small bog (which forms the southern border), which lies beside the road from Tullamore to Tyrelspass. The land use at the time of the survey was chiefly arable and it contained some brushwood and coarse pasture. Gormagh Bridge crosses the Silver River on the boundary

with Durrow Parish. The townland is completely within the Parish of Kilbride in the Barony of Ballycowan.

Ardan townland contains one known RMP site (OF017-002), a rath, which is also listed in the Archaeological Inventory of County Offaly (entry 112, OS 17:1:6). The rath is described as situated on a small hillock south of Ardan House in undulating country side (Archaeological Inventory of Co. Offaly, 24). It is a bivallate rath with a central platform measuring approximately 28 m in diameter on the east-west axis (ibid.). A poorly preserved internal bank, with a width of 1 m and a height of 0.2 m, is visible in the north only (ibid.). A fosse with a width of 3 m and an external bank are visible to the south (ibid.).

The first edition Ordnance Survey map shows Ardan to be primarily fields with an area of forest at the northern end. It clearly shows the rath, as well as smaller areas of trees and hedges. A small road runs through the townland in an east-west direction and a larger road runs north-south. Several buildings are depicted on the map, clustered predominantly around the crossroads. Griffith's Valuation of 1848-1864, lists the total area of Ardan as 749 acres 1 R 3 P and a total annual value of £448 18 s.

4 Aims and Methodology

The objective of the work was to preserve by record any archaeological features or deposits in advance of the proposed road construction. Topsoil stripping of the site was conducted using a 360° tracked machine fitted with a 1.9m wide ditching (toothless) bucket. A total area of approximately 100 m² was exposed. The monitoring was carried under constant supervision by a qualified archaeologist. The resulting surface was cleaned and all potential features investigated and excavated by hand. Archaeological contexts were recorded by digital photography and on *pro forma* record sheets. Plans and sections were drawn at an appropriate scale. Registers are provided in the Appendices. Ordnance Datum levels and feature locations were recorded using Penmap and an EDM. Environmental samples were taken on any deposits suitable for analysis or dating.

5 Excavation results - Figure 3

Excavation revealed that Ardan 3 comprised two small cut features (Figure 4). The first of these, (006), was circular in plan with vertical sides and an irregular base; it measured 0.25 m in diameter and 0.1 m in depth. However, these dimensions do not represent the original extent of the feature, as it had been truncated by a modern field drain (Plate 1). The fill, a black-brown, firmly-compacted sandy-silt (005), contained occasional inclusions of ferrous slag, and charcoal flecking and fragments.

The second pit, (004) (Plates 1 - 4), was located approximately 0.35 m to the west of (006). It measured 0.35 m in diameter and 0.19 m in depth. It had a circular shape in plan with vertical sides and a slightly concave base. It was filled by firmly compacted, grey-brown sandy-silt (007), which also contained occasional inclusions of ferrous slag, and charcoal flecking and fragments.

6 Discussion

The development of iron-working in Ireland is thought to have occurred around 500 BC, with early bloomeries usually located near to the source of the ore (Tylecote 1976). Bog ore could simply be dug out of the natural landscape rather than mined (Jones 2001) and would have been readily available in the Offaly region.

Although no diagnostic finds were recovered, samples of charcoal from deposit (007) yielded a radiocarbon date of 2 sigma cal BC 484 - 384 (Appendix 6) placing the activity on site firmly in the Iron Age.

The presence of slag and charcoal in the fills of both (004) and (006) indicates that small-scale metalworking was undertaken in the vicinity of Ardan 3. However the lack of *in situ* burning in either feature suggests that they were not utilised as furnaces or hearths. It is possible, therefore, that these features represent metalworking waste pits, with the charcoal and slag originating from a hearth or furnace in the nearby vicinity.

There are no historical records of industrial scale ironworking taking place in the Offaly region; however evidence of similar small scale metalworking sites were identified in the vicinity of Ardan 3 in the townlands of Ballynasrah (E2493) and Cloncollig (E2850).

7 Bibliography

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Tylecote, R. F. 1976. *A History of Metallurgy*, Institute of Materials, London.

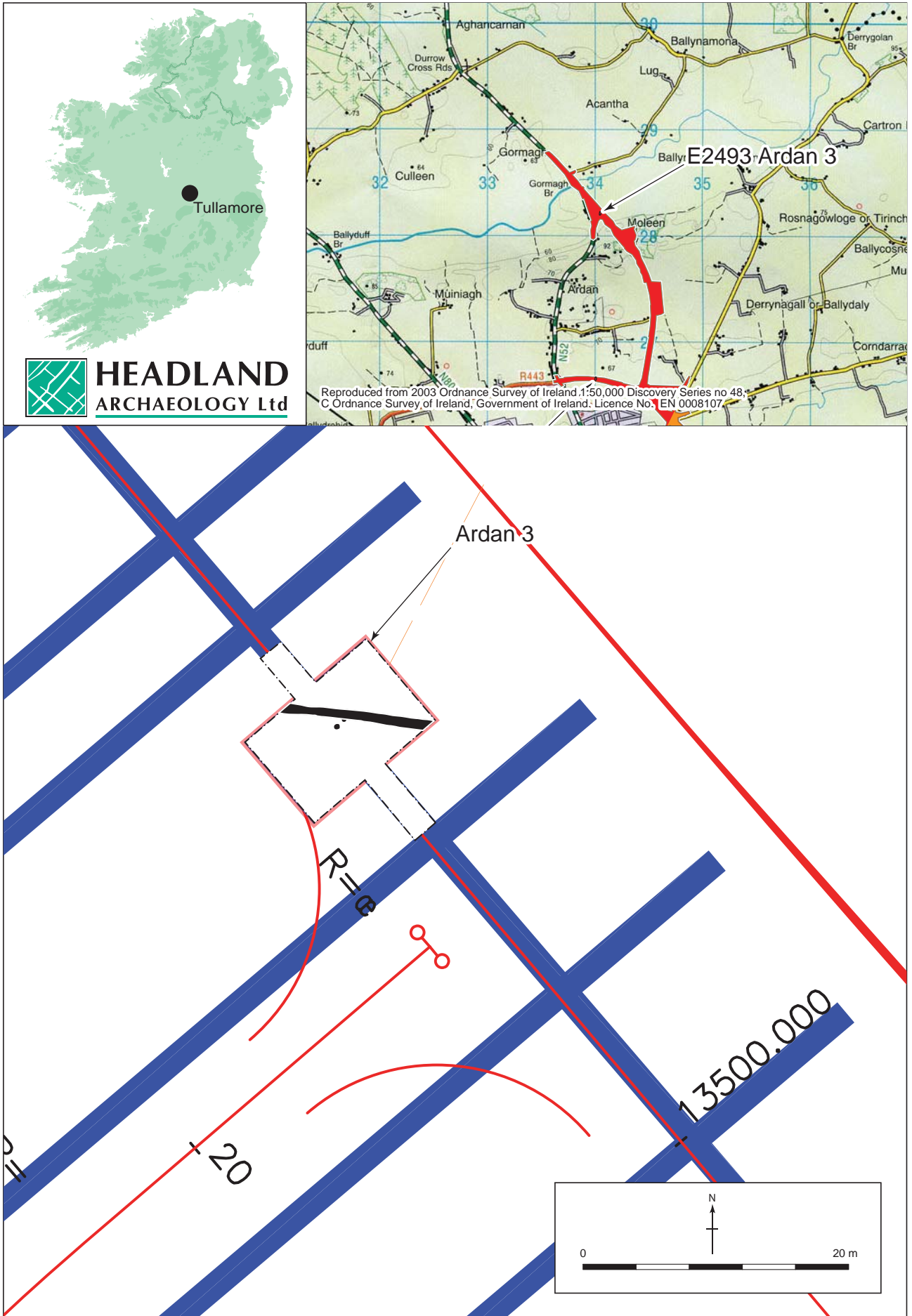


Figure 1 - N52 Tullamore Bypass: E2493, Ardan 3, Site location



Reproduced from 1912 Ordnance Survey of Ireland, Second Edition, Six Inch to One Mile map (not to scale), Offaly Sheets 8, 9, 16, 17, 24 and 25.
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Bypass route is shown broken due to warp of scanned RMP's, this represents a best-fit.

Figure 2 - N52 Tullamore Bypass: E2493, Ardan 3, RMP extract

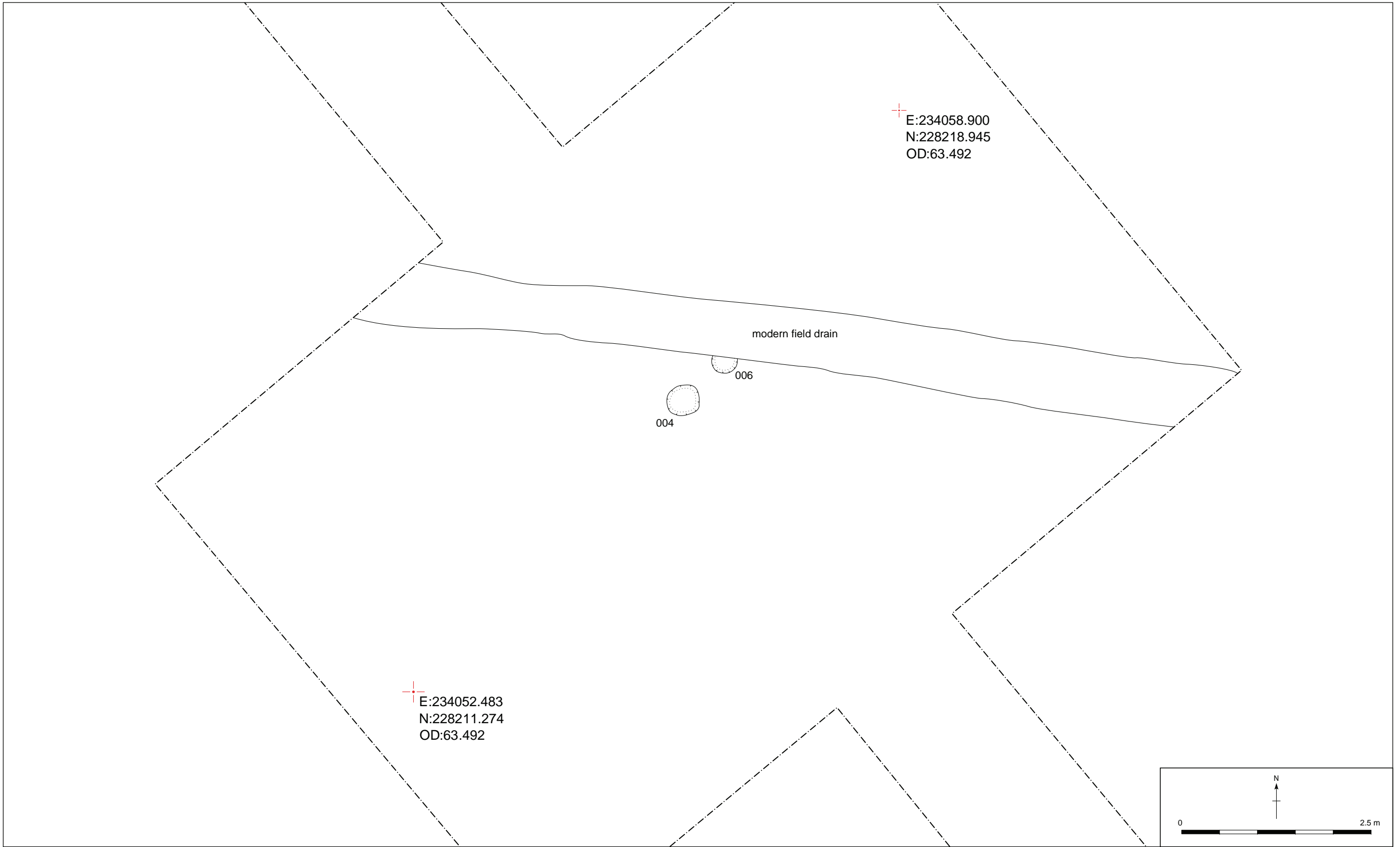


Figure 3 - N52 Tullamore Bypass: E2493, Ardan 3: Site plan

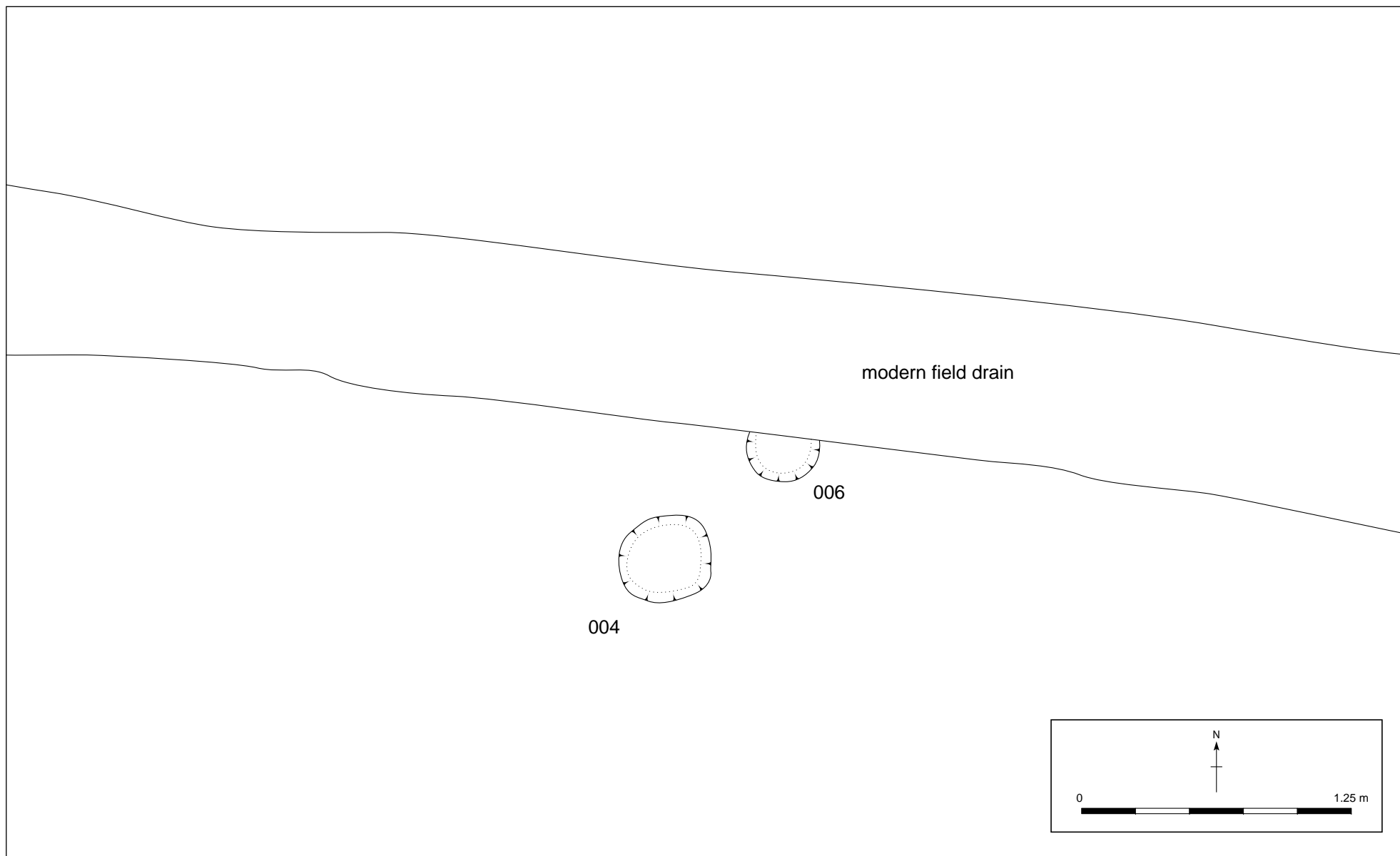


Figure 4 - N52 Tullamore Bypass: E2493, Ardan 3: Plan of features (004) and (006)



Plate 1 - Pre-excavation of (004) and (006), facing west



Plate 2 - Mid-excavation of (004), facing southwest



Plate 3 - Post-excavation of (004), facing east



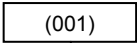
Plate 4 - Post-excavation of (004), facing northwest

Appendix 1 Context Register

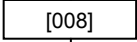
C	Type	Fill of	Filled by	D (M)	W (M)	L (M)	Description	Interpretation
1	Deposit	N/A	N/A	0.4	-	-	Mid-brown silty-clay	Topsoil
2	Deposit	N/A	N/A	-	-	-	Yellowish-orange coarse gravelly-sand	Natural
3	Void							
4	Cut	N/A	(07)	0.19	0.35	0.35	Circular pit with sharp breaks of slope, vertical sides and circular, flat base. Filled by (03), above (02).	Circular pit with sharp breaks of slope, vertical sides and circular, flat base. Filled by (03), above (02).
5	Deposit	(06)	N/A	0.1	0.25	0.25	Blackish brown sandy silt with occasional charcoal flecks and occasional small pieces of slag, contained within cut (06)	Fill of pit, may be related to possible metal working pit (04)
6	Cut	N/A	(05)	0.1	0.25	0.25	Circular cut, truncated by modern field boundary ditch (08), with sharp breaks of slope and vertical sides. Irregular shaped base.	May represent small scale metal working pit, associated with larger pit (03)
7	Deposit	(04)	N/A	0.19	0.35	0.35	Greyish brown sandy silt with occasional charcoal and slag. Fill of possible metalworking pit (04)	Fill of possible metal working pit (04)
8	Cut	N/A	N/A	0.25	0.75	6	Linear field boundary with sharp breaks of slope at top and bottom and steeply sloping sides. Truncates pit (06)	Modern drain

Appendix 2 - Stratigraphic Matrix

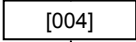
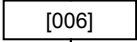
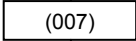
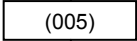
Topsoil



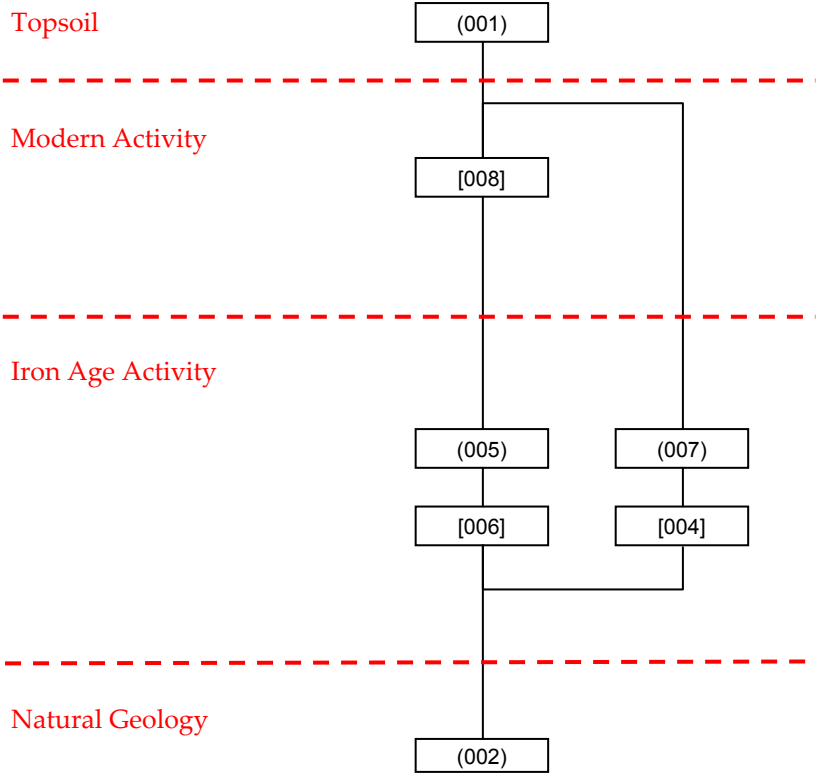
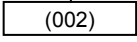
Modern Activity



Iron Age Activity



Natural Geology



Appendix 3 Sample Register

Sample	Context	Description
1	003	Void
2	007	Greyish-brown sandy silt with some charcoal from pit (004)
3	007	Slag metal from pit (004)
4	003	Void

Appendix 4 Photographic Register

Shot	Type	Facing	Description
1	Pre-ex	SE	Void
2	Pre-ex	E	Void
3	Pre-ex	W	Void
4	Pre-ex	V	Void
5	Mid-ex	W	Void
6	Pre-ex	V	(004) (006) (008)
7	Pre-ex	V	(004) (006) (008)
8	Mid-ex	V	(004) (006) (008)
9	Mid-ex	SW	(004) SW-facing section
10	Mid-ex	SW	(004) SW-facing section
11- 12	Post Ex	V	(004) (006)
13- 14	Post Ex	V	(004)

Appendix 5 Drawing Register

Dwg	Type	Area	Scale	Description
1	Plan		1:50	Pre-ex plan of metalworking pits (004) (006)
2	Plan		1:20	Post-ex plan of metalworking pits (004) (006)

Palaeoenvironmental Assessment of Samples from Site E2493, Ardan 3.

Karen Stewart, Headland Archaeology

Introduction

Four samples were taken from the site for palaeoenvironmental assessment. Two of these were processed and assessed for environmental material – Samples 2 and 3. Sample 2 represents a possible metalworking waste pit (context 007), while Sample 3 represents a pit possibly related to the metal working (context 005).

Methods

Samples of approximately 10 L were taken on site under the direction of environmental archaeologist Susan Lyons. Samples were processed in laboratory conditions using a standard flotation method (cf. Kenward *et al*, 1980). The floating debris (flot) was collected in a 250 µm sieve and, once dry, scanned using a binocular microscope. Any remaining material in the flotation tank (retent) was wet-sieved through a 1 mm mesh and air-dried. This was then sorted by eye and any material of archaeological significance removed. All plant macrofossil samples were analysed using a stereomicroscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers *et al* (2006).

Results

The results of the environmental assessment of the Ardan 3 samples are presented in the tables below.

Table 1: Composition of retents

Context number	Sample number	Retent vol. (L)	Wood charcoal		Metal working debris	Chert debris
			Qty	AMS		
07	02	0.21	+		++	
05	03	0.51	+		++++	

Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant

* = sufficient sized charcoal for identification and AMS dating

Table 2: Flotation sample results

Context Number	Sample Number	Total flot Vol. (ml)	Charcoal Quantity	AMS	Comments
07	02	10	++++	*	
05	03	300	++++	*	

Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant

* = sufficient sized charcoal for identification and AMS dating

Plant remains

All of the samples assessed for environmental material contained high quantities of charcoal. No other plant materials were found in any of the samples.

All three samples contained charcoal of sufficient size and quantity to enable wood identification and Accelerated Mass Spectrometry (AMS) dating.

Other finds

Metalworking debris was noted in Samples 2 and 5.

Table 3. Radiocarbon dating results.

Lab code	Sample ID	Material	$\delta^{13}C$	Radiocarbon age BP	Calibrated Age Ranges (2 σ)	Relative probability
UB-9399	context 7, sample 2	alder charcoal	-28.8	2349 +/- 20	cal BC 484- 463	0.036
					cal BC 449- 441	0.009
					cal BC 417- 384	0.955

Radiocarbon dating was undertaken by Stephen Hoper at Queen's University Belfast after Reimer et al (2004).

Discussion

The charcoal found in each of the samples is the main environmental finding from this assessment. The quantity suggests that its presence is not accidental or natural, and that its presence within the context is the result of human action. It is probable that its presence relates to the metalworking debris found in Samples 2 and 3.

References

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Kenward, H.K., Hall, A.R. and Jones, A.K.G (1980). A tested set of techniques for the extraction of plant and animal macrofossils from archaeological deposits. *Science and Archaeology* 22, 3-15.

Appendix 7 All Sites Excavated on Road Scheme

Ardan 1	E2847
Ardan 2	E2846
Ardan 3	E2493*
Ballynasrah	E2493*
Cloncollog 1	E2849
Cloncollog 2	E2850
Clonminch	E2851
Mucklagh 1	E2845
Mucklagh 2	E2844
Puttaghan	E2493*
Screggan 2	E2848

*Fully excavated during Centreline Testing under Ministerial Direction A033 and NMS Registration No. E2493
