

**N18 Ennis Bypass
and N85 Western Relief Road**

Site AR101, Manusmore, Co. Clare

**Final Archaeological Excavation Report
for Clare County Council**

Licence No: 04E0188

by Graham Hull

Job J04/01

(NGR 137530 172910)

1st August 2006

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Summary

Site name: N18 Ennis Bypass and N85 Western Relief Road, Site AR101, Manusmore, Co. Clare

Townland: Manusmore

Parish: Clareabbey

Barony: Islands

County: Clare

SMR/RMP Number: N/A

Planning Ref. No: N/A

Client: Clare County Council, New Road, Ennis, Co. Clare

Landowner: Clare County Council, New Road, Ennis, Co. Clare

Grid reference: 137530 172910 (OSI Discovery Series, 1:50,000, Sheet 58. OS 6" Clare Sheet 42)

Naturally occurring geology: Light grey clayey silt (0.15m thick) over bluish grey clay (1.5m +)

TVAS Ireland Job No: J04/01

Licence No: 04E0188

Licence Holder: Graham Hull

Report author: Graham Hull

Site activity: Excavation

Site area: 225m²

Sample percentage: 100%

Date of fieldwork: 15th to 16th March 2004

Date of report: 1st August 2006

Summary of results: A post-medieval brick making clamp, perhaps associated with the nearby 18th/19th century Manus House, was excavated

Monuments identified: Post-medieval brick kiln

Location and reference of archive: The primary records (written, drawn and photographic) are currently held at TVAS Ireland Ltd, Ahish, Ballinruan, Co. Clare.

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Final Archaeological Excavation Report**

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Report J04/01n

Introduction

This report documents the final results of an archaeological excavation of a post-medieval brick making kiln (Site AR101) on the route of the N18 Ennis Bypass and Western Relief Road at Manusmore, Co. Clare (NGR 137530 172910) (Fig. 1). The excavation forms part of the Ennis Bypass Archaeological Contract 6.

A preliminary archaeological report for this site was produced in May 2004 (Hull 2004).

The National Monuments Act 1930 (as amended) provides the legislative framework within which archaeological excavation can take place and the following government publications set out many of the procedures relating to planning/development and archaeology:

Framework and Principles for the Protection of the Archaeological Heritage (DAHGI 1999a)

Policy and Guidelines on Archaeological Excavation (DAHGI 1999b)

Code of Practice between the National Roads Authority and the Minister for Arts, Heritage, Gaeltacht and the Islands (NRA/MAHGI 2001)

Project background

As part of the National Roads Authority scheme for upgrading the N18 Limerick to Galway Road, Clare County Council, in consultation with NRA Project Archaeologist Sébastien Joubert, requested a series of archaeological investigations along the route of the proposed Ennis Bypass and a Western Relief Road. The proposed scheme has an overall length of 21km and involves the construction of a 13.8km eastern bypass of Ennis from Latoon, north of Newmarket-on-Fergus, to Cragard, north of Barefield. The Western Relief Road is 7.1km long and is to link Killow and Claureen (Fig. 1).

A number of sites of archaeological interest were known to lie on the route of the new roads and the mitigation strategy agreed by the Project Archaeologist and the national licensing authorities for these sites was preservation by record, i.e. full archaeological excavation. Further sites, without surface expression, were located as the result of intensive test trenching along the course of the road (03E1291 Hull 2003a and 03E1293 Roger 2004). As preservation *in situ* was not a reasonable option, the resolution strategy for these new sites was also preservation by record.

The archaeological excavation and post excavation work were funded by Clare County Council through the National Roads Authority and part-financed by the European Union under the National Development Plan 2000-2006.

Location, topography and geology

The site was located in the townland of Manusmore, parish of Clareabbey, barony of Islands and lay approximately 6km south-east of Ennis town centre (the O'Connell Monument), 2.5km south-east of Clarecastle and was centred on NGR 137530 172910 (Figs 1 and 2).

The site lay in a field that was flat and located between higher ground to both the north and south. The vegetation at the time of the excavation was reeds with poor pasture. North to south orientated shallow gullies, related to drainage, were visible on the modern ground surface. The landowner's father reported that the field was once so wet that geese would swim on it and that his grandfather had laid 'Dutch drains' in c. 1905.

The topsoil (0.1m to 0.15m thick) was a dark brown organic deposit and overlay a light grey clayey silt. Test pits dug at the testing phase (03E1291 Hull 2003a) established that the silts were 0.15m thick and overlay, in turn, bluish grey clay that was at least 1.5m deep. Frequent red ceramic drains were observed and were orientated either from north to south or from east to west. These drains were undoubtedly those reportedly laid in the early 20th century.

Archaeological background

As part of the environmental assessment process for the road scheme, Clare County Council commissioned desk-based and walkover surveys that formed part of an Environmental Statement (Babtie Pettit 2000) and an archaeological study for the Environmental Impact Statement (Doyle 1999). A total of 36 sites of known or potential cultural heritage significance were identified along the entire route of the proposed Ennis Bypass and Western Relief Road.

Earthwork and geophysical survey were undertaken on potential archaeological sites and invasive testing and excavation took place in 2002 and 2003 on some of the above ground sites affected by the proposed road (Aegis 2002, IAC 2003, Geoquest 2002, Earthsound 2003).

A systematic programme of testing along the new road route, involving the mechanical excavation of a central linear trench with offsets, took place in Summer/Autumn 2003. Twenty-two previously unknown sites, including cremation cemeteries, burnt stone spreads, enclosures and brick clamps were found (03E1291 Hull 2003a and 03E1293 Roger 2004). Monuments dating from the Bronze Age to the modern period were found.

Earlier phases of archaeological intervention on newly constructed stretches of the N18 (Dromoland to Carrigoran), to the immediate south of this road project, have demonstrated that the locality has a rich range of prehistoric and later monuments (99E0350 Hull and Tarbett-Buckley 2001).

Recent archaeological work on the BGE Gas Pipeline to the West in the neighbourhood of the new road route has tended to support the picture of continuous human activity in Co. Clare from the Neolithic and even becoming intensive from the Bronze Age. A number of burnt stone spreads and burnt mounds were excavated near the route of the new road in the summer of 2002 (MGL 2002).

An area of densely packed bricks and charcoal was identified during testing. This site was thought to be a brick kiln, was allocated the number AR102 and is the subject of this excavation report.

Prehistoric cemeteries were excavated nearby as part of this road project. (AR100, 04E0187 (Hull 2006a) 550m to the south-east and AR102, 04E0189 (Hull 2006b) 200m to the north-west).

Excavation aims and methodology

A licence to excavate was granted to Graham Hull by the National Monuments Section of the Department of the Environment, Heritage and Local Government, in consultation with the National Museum of Ireland, on behalf of the Minister for the Environment, Heritage and Local Government. The licence number is 04E0188.

The aims of the excavation were to:

- 1) Preserve by record all archaeological deposits and features within the excavation area
- 2) Produce a high quality report of the findings

The fieldwork took place between 15th and 16th March 2004 and was directed by Graham Hull, supervised by Astrid Lesley Nathan and assisted by Tim Dean, Lewis Goodman and Jamie Parra Rizo.

The excavation area was rectangular, centred on the archaeological features seen during testing and examined 225m². Topsoil and overburden were removed by a 24 tonne, 360°, tracked machine, operated under direct and continuous archaeological supervision. The digger was fitted with a 6 foot toothless bucket.

All features were hand-cleaned then fully excavated.

A full written, drawn and photographic record was made following procedures outlined in the TVAS Ireland Field Recording Manual (First Edition 2003).

Excavation results (Fig. 3 and Plate 1)

A discrete area of archaeological material was identified beneath 0.1m of topsoil. These deposits were a parallel series of eight charcoal-rich linear bands. The charcoal lay in shallow (less than 0.05m deep) slots cut into the natural clay and the slots were orientated from south-west to north-east. The slots were individually 5m long and 0.5m wide. Each charcoal slot was separated from its neighbour by 0.5m. The overall measurement of the eight slots was 5m by 8m. Overlying and between the charcoal slots was a deposit of compacted brick fragments that had a maximum thickness of 0.1m.

A linear band of broken bricks was recorded at the south-west of the charcoal deposits. The bricks may once have been whole. Together the bricks formed an unmortared area of 6m by 0.6m and were no more than one course high.

Finds

Four pieces of brick were collected as a representative samples (Table 1).

Table 1: Brick catalogue

Find No	Cut	Deposit	Category	Description	No pieces	Weight (g)
04E0188:1	-	1	Brick	Red brick - 2 pieces co-joining	2	2154
04E0188:2		1	Brick	Red brick - 1/2	1	1187
04E0188:3		1	Brick	Red brick - 1/2	1	1140

The bricks are reddish brown in colour, unfrosted and hand-made. The bricks are uneven and vary in size from one to another. Co-joining pieces of brick were found and a reasonable estimation of the full size is 8½ by 3¾ - 4 by 1¾ - 2½ inches (215mm by 95 - 102 by 45 - 63 mm).

The finds have been cleaned, numbered, labelled, properly packed and will be deposited with the National Museum of Ireland in accordance with *Advice Notes for Excavators* (NMI 1997).

Samples

A bulk soil sample was taken from the charcoal rich deposit (sample 1). This sample was floated and wet sieved through a 300micron mesh and then through a 2mm mesh in order to recover charred plant material. A large quantity of large pieces of wood charcoal was recovered.

Charred plant macrofossils and other remains by Val Fryer

Introduction

Excavation of a post-medieval brick clamp was carried out by TVAS Ireland Ltd in March 2004. Although the structure was incomplete, a number of charred deposits were noted, and a single sample was taken for the extraction of the plant macrofossil assemblage.

Methods

The sample was floated and wet sieved by TVAS Ireland Ltd, and the flot was collected in a 300 micron mesh sieve. The dried flot was scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed below in Table 2. Nomenclature within the table follows Stace (1997). All plant remains were charred. The density of material within each assemblage is expressed in the table as follows: x = 1 – 10 specimens, xx = 10 – 100 specimens and xxx = 100+ specimens.

Results

Plant macrofossils

Small fragments of heavily burnt peat and other compacted organic concretions formed the main components of the assemblage. Fragments of root or stem were also reasonably common although, with the exception of occasional pieces of heather (*Ericaceae*) stem, none were closely identifiable. Charcoal was comparatively rare.

Other remains

As expected within a brick clamp, pieces of fired clay were common. The rare fragments of black tarry material are probable residues of the combustion of organic remains at very high temperatures. Occasional burnt stone fragments were also recorded.

Table 2: Charred plant macrofossils and other remains

Sample No	1
Deposit No.	1
Ericaceae indet. (stem)	x
Charcoal >2mm	x
Charred root/stem	xx
Burnt peat/other compacted organic material	xxx
Black tarry material	x
Burnt stone	x
Fired clay	xx
Sample volume (litres)	8
Volume of flot (litres)	0.5
% flot sorted	25%

Conclusions

Peat would appear to have been the principal fuel used for brick production, presumably because of its local availability. Similar assemblages were noted from a further clamp excavated at Clareabbey (Site AR120 Taylor 2006) as part of this road scheme.

Analysis of Charcoal by Simon Gannon

Introduction

A single sample of charcoal fragments was retrieved from the site, a post-medieval brick making clamp. Identification of taxa of the retrieved charcoal may assist in the reconstruction of the local, contemporary woodland-environment and the use of the woodland resources by the people responsible for the archaeological features.

Methodology

In sorting fragments suitable for identification a guide size of at least 2mm in radial cross-section was used. From this sort 100% of fragments were analysed.

Initially the grain direction of the fragments was identified before fracturing across their transverse plains. Identifications were made under microscopic examination, in most cases. Further fractures were made to reveal radial and/or tangential plains in cases where identification was more difficult. Magnification of between x10 (hand lens) to x400 was used. Structural elements of the fragments were examined to allow for identification of roundwood, heartwood, and sapwood features.

Reference material comprised a reference collection of charred samples of taxa and reference publications, Microscopic Wood Anatomy (Schweingruber 1990) and The Identification of the Northern European Woods (Hather 2000).

Results

The results are summarized in Table 3. Classification follows that of *Flora Europae* (Tutin et al 1964-80). Certain related taxa cannot be securely differentiated on the basis of their anatomical characteristics and are assigned to their respective family groups. The identification of wood taxa was consistent with taxa from the following group:

Broadleaf taxa

Fagaceae. *Quercus* sp., oak

Table 3: Number of identified charcoal fragments in sample

Sample	Cut	Deposit	Context type	<i>Alnus</i>	<i>Betula</i>	<i>Corylus</i>	<i>Corylus/Alnus</i>	<i>Fraxinus</i>	Pomoidea	<i>Prunus</i>	<i>Quercus</i>	Salicaceae	<i>Taxus</i>	<i>Ulmus</i>
1	-	1		-	-	-	-	-	-	-	2	-	-	-

Discussion

Anatomical characteristics from charcoal fragments do not allow for identification of individual species in every case. Several species belong to groups of species, species of genera, of sub-families and of families that cannot be separated anatomically (Schweingruber 1990 and Hather 2000). It is possible that a narrow range of species and, occasionally, one or two species can be indicated with a degree of confidence due to established factors, principally their native status and history of introduction by people (Huntley and Birks 1983, Peterken 1996 and Scannell and Synott 1987). The following section places the given charcoal based taxa identification in the context of defined tree species allowing for implications related to the environmental characteristics and possible use by ancient peoples to be drawn.

Taxa description

Oak

There are two native species, pedunculate oak, *Quercus robur*, dair ghallda and sessile oak, *Quercus petraea*, dair ghaelach. (Family - Fagaceae).

Environmental indications: Broadly soil tolerant. *Q. robur* preferring alkaline or neutral soils rich in minerals, particularly damp clay soils and usually found in mixed woodland. *Q. petraea* preferring acid and lighter well drained soils, often in pure stands. Both species are naturally distributed throughout Ireland (Goldstein et. al. 1984, Mitchell 1978).

Uses in antiquity: Both species produce a hard wood resistant to abrasion and water degradation, particularly useful for structural timber and implements, poles and fencing. Woodland trees can be coppiced to produce stakes, straight poles etc. (Kelly 1998, O'Sullivan 1996, Rackham 1976-90 and Raftery 1996).

AR101, Manusmore, comprised of a single taxa, oak (*Quercus*). Generally, there are various, largely unquantifiable, factors that effect the representation of species in charcoal samples including bias in contemporary collection, inclusive of social and economic factors, and various factors of taphonomy and conservation (Théry-Parisot 2002). In this case a single taxa is represented in just two fragments and interpretation is limited, oak (*Quercus*) being a very common occurrence as charcoal residue.

Conclusion

The identified taxa are not considered to be proportionately representative of the availability of wood resources in the environment but may be reflective of particular choice of fire making fuel from those resources. The commonly found fire fuel taxa oak (*Quercus*) is solely represented.

Radiocarbon dating

Given the modern nature of the site and the degree of error from the radiocarbon process, association with brick-built structures best dates the brick clamp and therefore no radiocarbon determinations were sought from the charcoal.

Discussion

The excavation of Site AR101, Manusmore, Co. Clare has produced evidence that brick manufacture was taking place on the site.

The nearby 'Big House' at Manus has brickwork erected in the later 18th/ earlier 19th centuries (present occupiers pers. comm.) and it would not be unreasonable to speculate that the brick clamp was associated with the house. The bricks recovered from the clamp might be thought of as 'wasters' but these are very similar to those used in the front face of Manus House. Seemingly oak was selected as a fuel to fire the brick kiln.

Examples of brick clamps have been found in similar clay rich locations and have been excavated under archaeological conditions in recent years. A similar, but better-preserved example, was found on clay adjacent to the River Fergus in the vicinity of Clare Abbey as part of this road project (AR120 04E0027, Taylor 2006). Other examples of these semi-industrial manufactories have been excavated as part of BGE Gas Pipeline to the West (Dollas Upper, Co. Limerick, 02E0557, Hull 2003b) and on the alluvial flood plain of the River Shannon (A005/2010 and A005/2018, Reilly 2006a and 2006b).

A brick clamp (or temporary kiln) is a rectangular construction for firing bricks. The 'green' bricks are stacked on the ground in rows ('benches') and alternate header and stretcher layers built up to form an externally battered structure. The gaps between the lower rows of bricks were filled with fuel (in this case probably peat) and ignited. These gaps would have facilitated a through draught. The clamp was most likely turf covered and the slow firing of the bricks would generate large amounts of white smoke. The clamp would have burned for a number of days before the finished bricks could be taken down ready for use. An average sized example (such as that excavated at Dollas Upper) might have been stacked up to 5m high and produced 20,000 to 30,000 bricks (Rynne 1999, Palmer and Neaverson 1998, Drury 1981, Dobson 1971, Goldthwaite 1980). The post-medieval production of brick was accelerated by shortages of structural timbers (Palmer and Neaverson 1998, 44) and the simple form of clamp may pre-date the mechanised production of bricks in the mid-19th century.

Archaeological potential off the road CPO

This excavation and earlier testing (Hull 2003a) indicate that the post-medieval brick clamp at Site AR101 was a discrete archaeological feature and has been resolved in its entirety within the road CPO. Although no surface expression was apparent during the fieldwork, further brick clamps, or other archaeological deposits, may of course be present in the field off the road CPO.

Publication plan

A summary of the findings of the excavation has been submitted to *Excavations 2004*.

Copies of this final excavation report will be deposited with the Clare County Museum and the Local Studies Library, Ennis, Co. Clare

A summary article, describing the findings of this road project has been published in the local journal *The Other Clare* (Hull and Taylor 2005).

An illustrated information brochure describing the findings of this road project has been published by Clare County Council.

An article in *Archaeology Ireland* illustrating the characteristics of the components of relict industrial landscapes has been published (Hull 2005). The site in Manusmore, as well as others in Clare and Limerick is described.

The stated aim of the National Roads Authority with regard to archaeological publication is clear, (O'Sullivan 2003) and it is anticipated that the results of this excavation will be disseminated as a component of a monograph dedicated to the archaeology of the Ennis Bypass. Publication is expected to take place in 2006/7 at the latest.

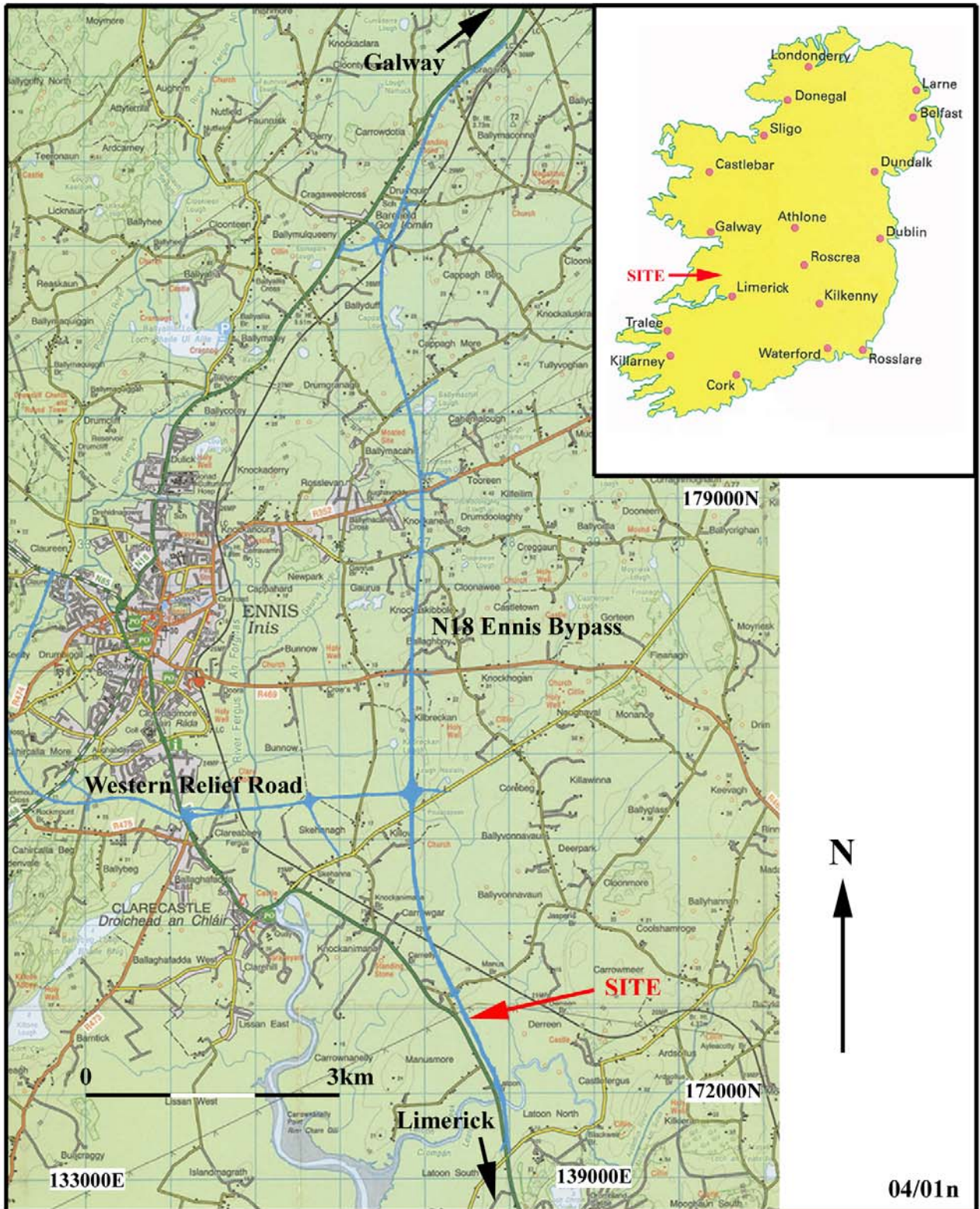
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TVAS Ireland Ltd
1st August 2006

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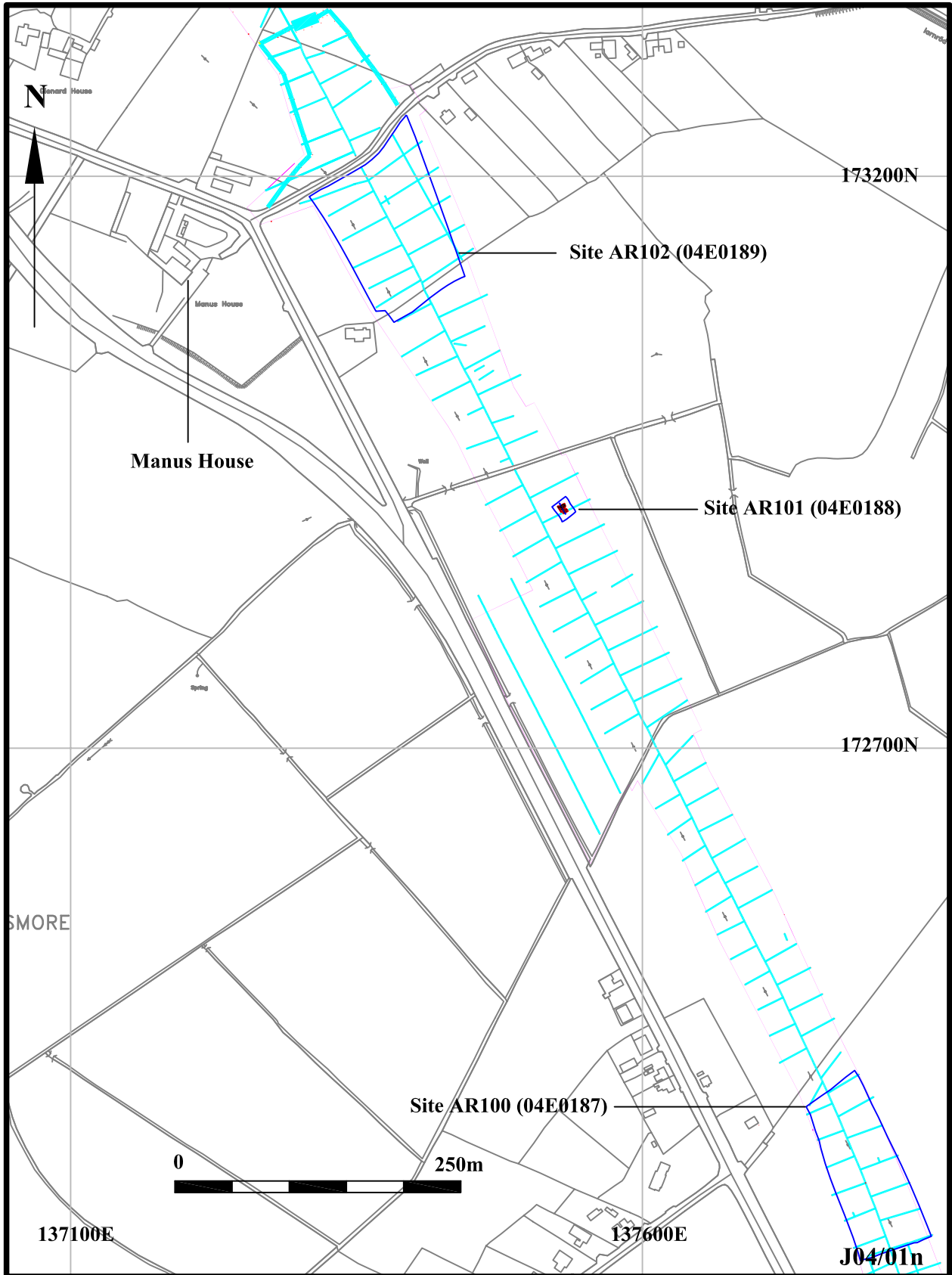
**N18 Ennis Bypass, Site AR101,
Manusmore, Co. Clare
04E0188**

Figure 1: Site location

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N18 Ennis Bypass, Site AR101, Manusmore, Co. Clare

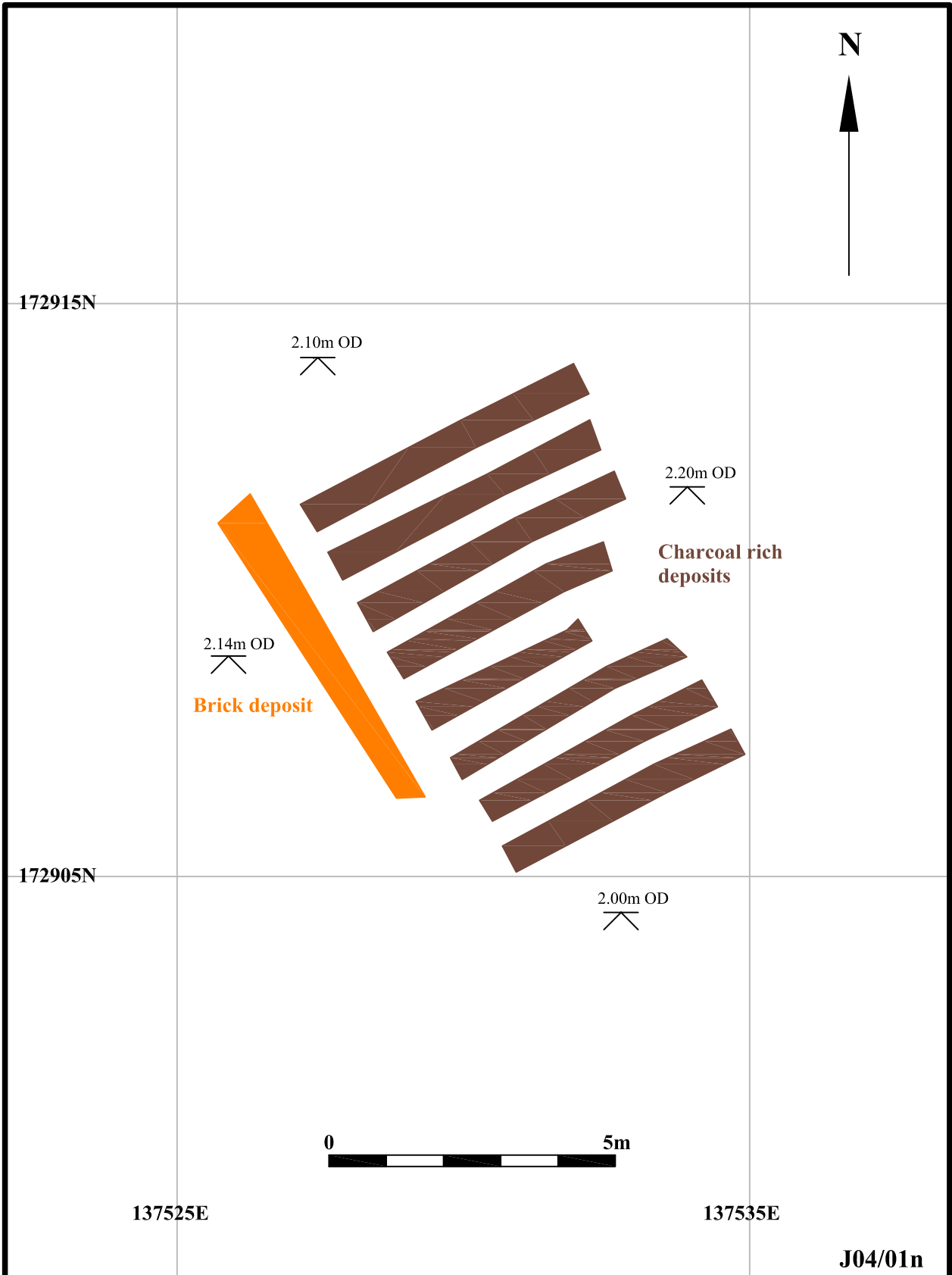
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Figure 2: Site location within local landscape. Showing test trenches and adjacent excavation areas

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N18 Ennis Bypass, Site AR101, Manusmore, Co. Clare

04E0188

Figure 3: Brick clamp

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**Plate 1. Brick clamp AR101. Looking south-east.
Charcoal rich areas are approx. 0.5m wide**