

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

Site AR129, Keelty, Co. Clare

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

Licence No: 04E0025

by Graham Hull

Job J04/02

(NGR 132192 177177)

14th August 2006

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Summary

Site name: N18 Ennis Bypass and N85 Western Relief Road, Site AR129, Keelty, Co. Clare

Townland: Keelty

Parish: Drumcliff

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: 132192 177177 (OSI Discovery Series, 1:50,000, Sheet 58. OS 6" Clare Sheet 33)

Naturally occurring geology: Gravel overlaying limestone bedrock

TVAS Ireland Job No: J04/02

Licence No: 04E0025

Licence Holder: Graham Hull

Report author: Graham Hull

Site activity: Excavation

Site area: 1000m²

Sample percentage: 100%

Date of fieldwork: 21st to 23rd January 2004

Date of report: 14th August 2006

Summary of results: A substantial stone-built limekiln, dating to the second half of the 19th century, was recorded and excavated. The limekiln is thought to be an element of an estate, probably associated with the Keane family – notorious land agents at the time of the potato failure and after. Artefacts (clay tobacco pipe, china and a high quality glass ink pot) support cartographic and documentary evidence indicating 19th century semi-industrial activity.

Monuments identified: Later 19th century limekiln

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

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Report edited/checked by: Kate Taylor ✓14.08.06

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Final Archaeological Excavation Report**

By Graham Hull

Report J04/02v

Introduction

This report documents the final results of an archaeological excavation of a later 19th century limekiln (Site AR129) on the route of the N18 Ennis Bypass and N85 Western Relief Road at Keelty, Co. Clare (NGR 132192 177177) (Fig. 1). The excavation forms part of the Ennis Bypass Archaeological Contract 7.

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 2003 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 Keelty, parish of Drumcliff, barony of Islands, approximately 1km west of Ennis town centre (the O'Connell Monument) and was centred on NGR 132192 177177 (Figs 1 and 2). The site was on a north-west facing incline overlooking the flood plain of the Claureen River. The surrounding land use at the time of excavation was pasture.

A stone-built limekiln and ancillary structure (Fig. 3) were constructed on a scarp that was approximately 14m above Ordnance Datum (OD) at the south-east and 6m above OD at the north-west. Naturally outcropping limestone was seen along the hillside. Underlying geological deposits observed during excavation were greyish and orangish gravel.

At foot of the scarp, a stone-walled track was noted. This track was orientated from south-west to north-east and seemingly served to link the limekiln with other roads.

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 2003 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).

Clare County Council commissioned a building survey to examine a number of structures including the limekiln (Coyne - Aegis Archaeology). A report on this survey was not available at the time of writing.

At the request of the Project Archaeologist, trial trenches were dug adjacent to the limekiln (03E1291 Hull 2003). Two trenches, 1.8m wide and 7.3m and 3m long, were excavated next to the flue and within the southernmost structure (Fig. 2). The stratigraphy within the trenches demonstrated that a mixture of topsoil and tumble from the kiln overlay natural geological deposits of light grey silty clayey gravel. The tumble/topsoil was between 0.30m and 0.35m thick and included fallen pieces of limestone from the structure. A piece of blackware and slate roofing tile were recorded in the trenches and these objects support the later post-medieval dating of the limekiln. No further structural elements or floor surfaces related to the limekiln were seen to be present.

Historical background

Cartographic and documentary evidence was examined at the Co. Clare Local Studies Library.

The Ordnance Survey 1st Edition Map, surveyed in 1840 (Fig. 4), does not show any buildings at the location of the limekiln. A roadway running from Ennis in the east, past the site of the kiln, to join the Kilmaley Road at the west is present. This roadway survives in part (as far as the limekiln) to the present day. No evidence for the use of this road before the construction of the kiln was found. The 1840 map also illustrates that the fields around the limekiln on the flood plain of the Claureen were smaller than the larger consolidated post-famine landholdings.

The 1917 edition of the Ordnance Survey map, surveyed in 1894 (Fig. 5) shows the limekiln and associated building and walls as they were at the time of excavation. The road shown on the earlier map terminates at the limekiln and the surrounding fields are large. Significantly the limekiln is shown as a ruin in 1894.

Griffiths Valuation (1855) notes that the sole occupier of the townland in which the kiln stood (Keelty) was Patrick Hickey. The land was held *in fee* (i.e. Hickey owned the land). Hickey had a 'Herd's house, offices and land' valued at £49, 10/-. No mention of a kiln is made in the valuation. It is unlikely that such a substantial structure would be overlooked. The corn kilns on Mill Street, Ennis are, for example, noted in the same valuation.

The valuation shows that Hickey's neighbour to the east in 1855 was Francis Keane. Francis was living in the 'Gentleman's residence' known as 'The Hermitage'. The Hermitage is located at the head of the roadway leading to the kiln and was the property of the powerful local Keane family. Directories and gazetteers of the 19th century show the property was in the Keane family throughout the century (Lucas 1788, Pigot 1824, Lewis 1837, Guy 1893, Burke 1912).

Marcus Keane, the notorious land agent (see for example Ó Murchadha 2000), was owner of his brother Francis' house in 1855. The limekiln was a substantial and well-built structure serviced by a road that ran past the door of a Keane house. It is very unlikely that the Keanes did not build and control the kiln during the last half of the 19th century. Significantly, by 1901 the Moroney family (farm servant) had replaced Patrick Hickey (landowner).

The Cancelled Valuation Books held by the Valuation Office were examined for the period 1855-1900. These showed changes of land ownership but did not identify more precisely the construction date for the limekiln.

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 04E0025.

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 21st and 23rd of January 2004, was directed by Graham Hull and assisted by Kate Taylor and Tom Varley.

The square-shaped excavation area was centred on the limekiln and examined 1000m². Topsoil and overburden were removed by a 15 tonne, 360°, tracked machine, operated under direct and continuous archaeological supervision. The spoil was visually scanned for artefacts.

The limekiln was built on a scarp and the hillside was mechanically cleared of vegetation and the buildings hand-stripped of ivy and recorded. The structure was mechanically demolished under archaeological control allowing the construction methods to be identified. A full written, drawn and photographic record was made following procedures outlined in the TVAS Ireland Field Recording Manual (First Edition 2003). The site was planned using a combination of digital and hand drawing methods. Digital plans were made using a Global Positioning System (GPS) unit, tied into the N18 surveying base station to provide millimetre accuracy. In addition to traditional photography, a digital video was made of the archaeological works and this will form part of the site archive.

Excavation results (Fig. 3 and Plates 1 to 10 and 12)

The limekiln was constructed of limestone blocks, many of which were dressed. The kiln was associated with a second, neighbouring, building that was also made of ashlar blocks. The stones of both buildings were fixed with (unsurprisingly) a lime mortar. The ancillary building may have served as a storeroom for fuel. Limestone walls partly enclosed the buildings complex and a metalled road was seen to service the kiln.

The kiln was rectangular in plan and measured 5.7m (north-west to south-east) by 6.6m. At the front (north-west face) the kiln was 4.7m high.

The kiln had a flat upper surface with a centrally located circular flue. The flue had a diameter of 2.2m at the top and tapered downward to join a horizontal furnace. The shape of the chimney and flue was reminiscent of the form of a clay tobacco pipe. The mouth of the furnace had maximum dimensions of 2.2m across and 2.1m high and was brick vaulted. The bricks from the furnace were an orangish red colour, unfroged and hand-made. Each brick had typical dimensions of 230mm by 95mm by 70/75mm (9" by 3¾" by 2¾"/3"). The base of the furnace was made from limestone flags while the chimney was constructed from thin limestone blocks that were mortared and had become heat reddened.

A low parapet wall enclosed the flat upper surface of the kiln. This parapet was 0.25m high and 0.50m wide. A gap in the parapet on the south-western face was interpreted as a drain. The upper surface of the kiln was linked to the upper hillside by a levelled gravel dump that allowed access to the top of the chimney. An overgrown track was seen to run along the top of the hillside and this would have facilitated loading of the kiln with stone.

The kiln was half sectioned in order to examine the construction technique. It was apparent that the building had been made as a shell of limestone blocks with the flue and chimney inserted. Sand and gravel had then been added around the chimney and within the block shell. Banded tip-lines were evident within the sand and gravel fill. The kiln was built onto the natural limestone without cut foundations. In part, the kiln was buried at the sides with back-filled earth and stone. This partial covering of the lower kiln walls served to assist the secure placing of the building onto a steeply inclined hillside.

The ancillary building was located at the west of the kiln and was rectangular in plan. The external dimensions of this single roomed structure were 5.8m (north-west to south-east) by 3.7m. The walls were typically 0.40m – 0.45m thick and stood, in places, to height of 3.9m. The building had part of a gable at the north-west end and this seemingly incorporated a window. Judging from debris found during excavation, the ancillary building was probably roofed with slate. A doorway (0.8m wide) was noted in the north-eastern wall. Iron fastenings, perhaps to bar the door, were seen fixed into the stonework. No evidence of a floor surface was found within the building.

The space in front of the kiln furnace formed a rectangular yard probably for loading carts. This yard was partly surfaced with rammed gravel and mortar and was bounded by the ancillary building, low stone walls and a metalled roadway. The yard measured approximately 12m by 6.5m.

The kiln, ancillary building and associated walls were clearly constructed in a single episode. While the buildings and walls were not keyed to each other, the integrated layout and identical construction techniques indicate a planned building phase.

The metalled and walled roadway at the foot of the hillside on which the kiln was built was orientated from north-east to south-west. The route can be seen to survive in the modern landscape for approximately 500m to the north-east. The road is now grassed over and is approximately 4m wide and flanked by dressed stone walls. At the limekiln, and at other points along the road, cut stone gateposts were present, suggesting control of access to and from the kiln (Plate 4). These gateposts were sold by the former landowner shortly before the excavation took place.

Finds

A Catalogue of Finds is given as Appendix 1.

A number of modern artefacts were recovered during the excavation. These objects were all found in undifferentiated demolition rubble adjacent to the kiln. While unstratified, it would be reasonable to assume that the artefacts were associated with the kiln. The surrounding land use was pasture and no great quantity of modern material was found in the fields in the vicinity during testing. The artefacts were, as an assemblage, clearly from the second half of the 19th century, if not the early 20th century.

The material was characterised by transfer applied china and bottle glass.

Also found was a stamped clay tobacco pipe bowl and a piece of black glazed fire-brick with the stamped words 'COLTHURST &...' and 'PATENT..'

Perhaps the most unusual (and significant?) artefact was a cut-glass inkpot (Plate 11). This object was very well made and of an order superior to the mass-produced glass inkpots of the 19th century. The inkpot would sit well on a gentleman's desk or perhaps, considering the context, on a tallyclerk's table.

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).

Post-medieval pottery by Graham Hull

Seven pieces of pottery dating from possibly the late 18th century to the 20th century were recovered from topsoil immediately around the limekiln. The assemblage represents domestic ware from a relatively wealthy household.

Table 1: Catalogue of pottery

Find No	Deposit	Identification	Description	Date
04E0025:1	topsoil	TGEware, ?tankard/jug	Body, blue-painted pictorial decoration	?late 18th/early 19th
04E0025:2	topsoil	TGEware, angular sided bowl	Rim, Blue painted line decoration	19th
04E0025:3	topsoil	Stoneware, Westerwald-type; ?tankard	Rim, white fabric w. dark blue lines	19th
04E0025:4	topsoil	Porceline. Bowl	Rimsherd	19th
04E0025:5	topsoil	Stoneware, brown bottle.	Rim, neck & base of handle	19th
04E0025:6	topsoil	TGEware, platter	Body w blue painted decor.	19th
04E0025:7	topsoil	White salt-glazed stoneware. Platter	Body; dot & diaper decor.	19/20th

Samples

No bulk soil samples were taken given the relative modernity of the archaeological deposits.

Discussion

Excavation and historical research of the limekiln at Site AR129, Keelty, Co. Clare has demonstrated that the structure was built after 1840 (and probably after 1855) and was a ruin by 1894. It is very possible that the Keelty limekiln was a commercial venture by the wealthy Keane family. The high quality cut-glass inkpot found near the kiln and the gated road indicate control and authority. The presumed fuel store at the kiln site could have been bolted and this is to be expected when one realises that fuel would have been a valuable commodity in the ravaged post-famine landscape. No direct evidence of the type of fuel used in the Keelty kiln was found during the excavation. This is not surprising considering the scarcity of wood for the poorer people in the later 19th century. Coal was found at a dump of 19th century domestic refuse 120m to the north-west (AR130, 04E0030, Taylor 2006) but it cannot be assumed that coal was used to fire the kiln. It is of course possible that peat was the reciprocal goods for the wagon loads of burnt lime that probably ferried alkaline material to the acid bogs.

Limekilns are not uncommon in Ireland, indeed many townlands had their own. In the west of the country small round kilns were typical. The larger, well-built types with arched recessed fronts, built onto hillsides, are characteristic of richer farm areas and were often associated with local estates (Aalen 1997, 170).

Limekilns convert limestone to highly alkaline burnt lime. Burnt lime was primarily used to reduce the acidity of boggy land in order to improve fertility. Other uses of burnt lime in the 19th century included house rendering and disinfectant, water purification, and applications in the tanning industry.

Limekilns were in use in rural Co. Clare until the 1950s (Brennan 1995, O’Gorman 1992) but more generally, the demise of the limekiln came first with the import of South American guano in the later 19th century and then with commercial limestone crushing in the 20th century (Aalen 1997, 170, Collins 2002).

Archaeological potential off the road CPO

The archaeological deposits were excavated in their entirety within the road CPO. Further archaeology off the CPO in this area cannot be ruled out.

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.

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.

Graham Hull MIFA MIAI
TVAS Ireland Ltd
14th August 2006

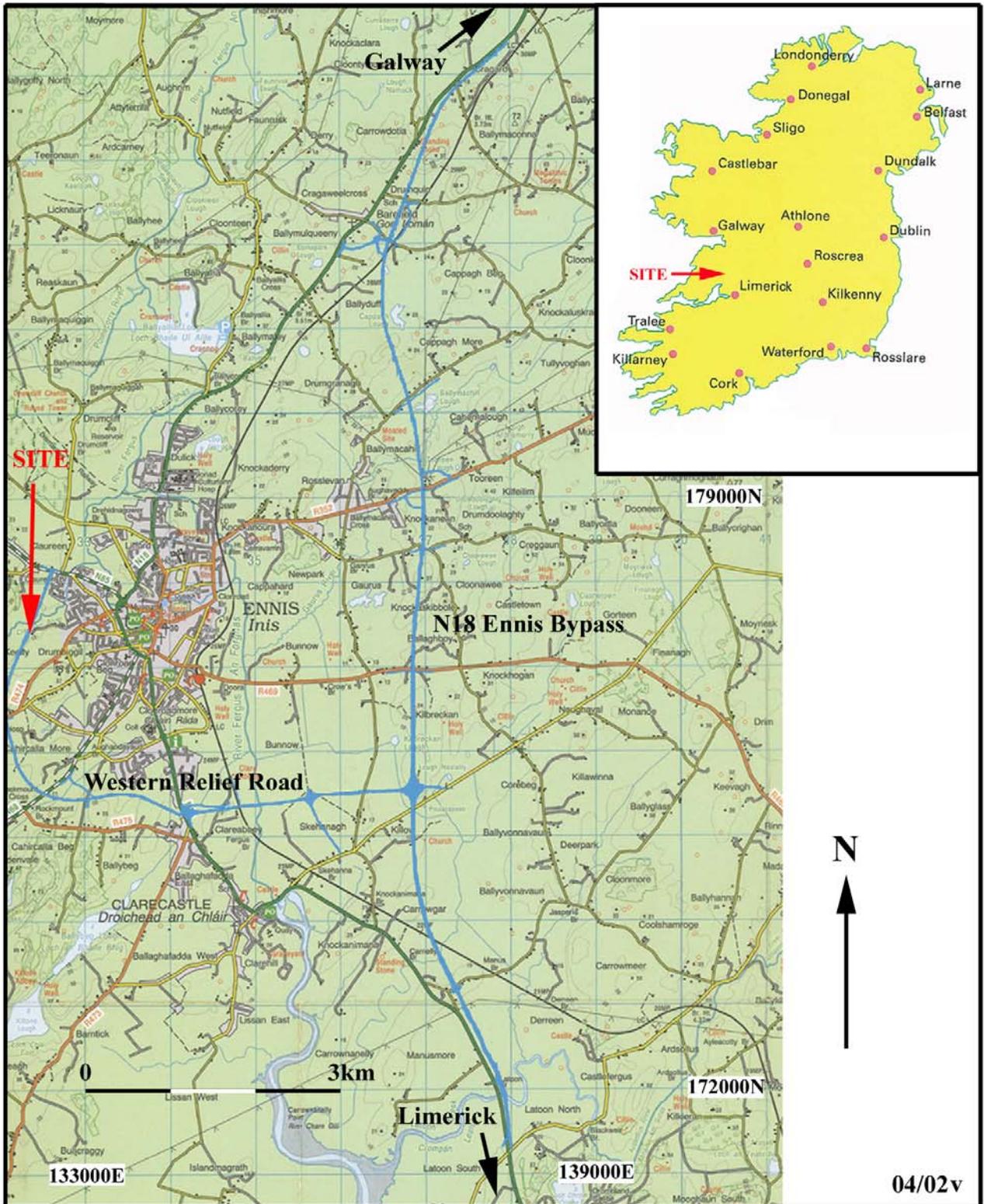
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Appendix 1: Catalogue of Finds

Find No	Deposit	Category	Description	No pieces	Weight
1	Topsoil	Pottery	?19th century	1	10
2	Topsoil	Pottery	?19th century	1	18
3	Topsoil	Pottery	?19th century	1	7
4	Topsoil	Pottery	?19th century	1	8
5	Topsoil	Pottery	?19th century	1	67
6	Topsoil	Pottery	?19th century	1	12
7	Topsoil	Pottery	?19th century	1	6
8	Topsoil	Glass	Cut glass ink bottle	1	139
9	Topsoil	Glass	Small vial	1	22
10	Topsoil	Clay tobacco pipe	Stem fragment	1	5
11	Topsoil	Clay tobacco pipe	Bowl	1	24
12	Topsoil	Stone	Slate fragment	1	8
13	Topsoil	Tile	Glazed fire tile fragment	1	140
14	Topsoil	Metal	Iron shoe seg	1	28

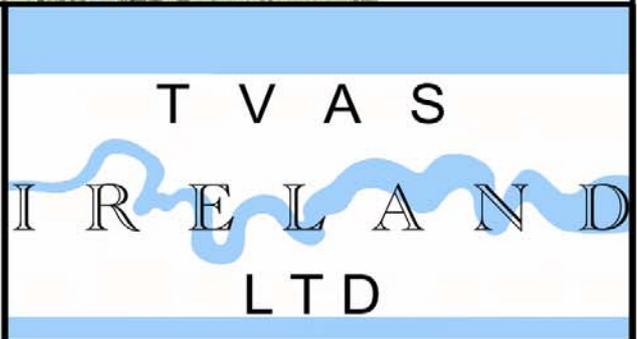


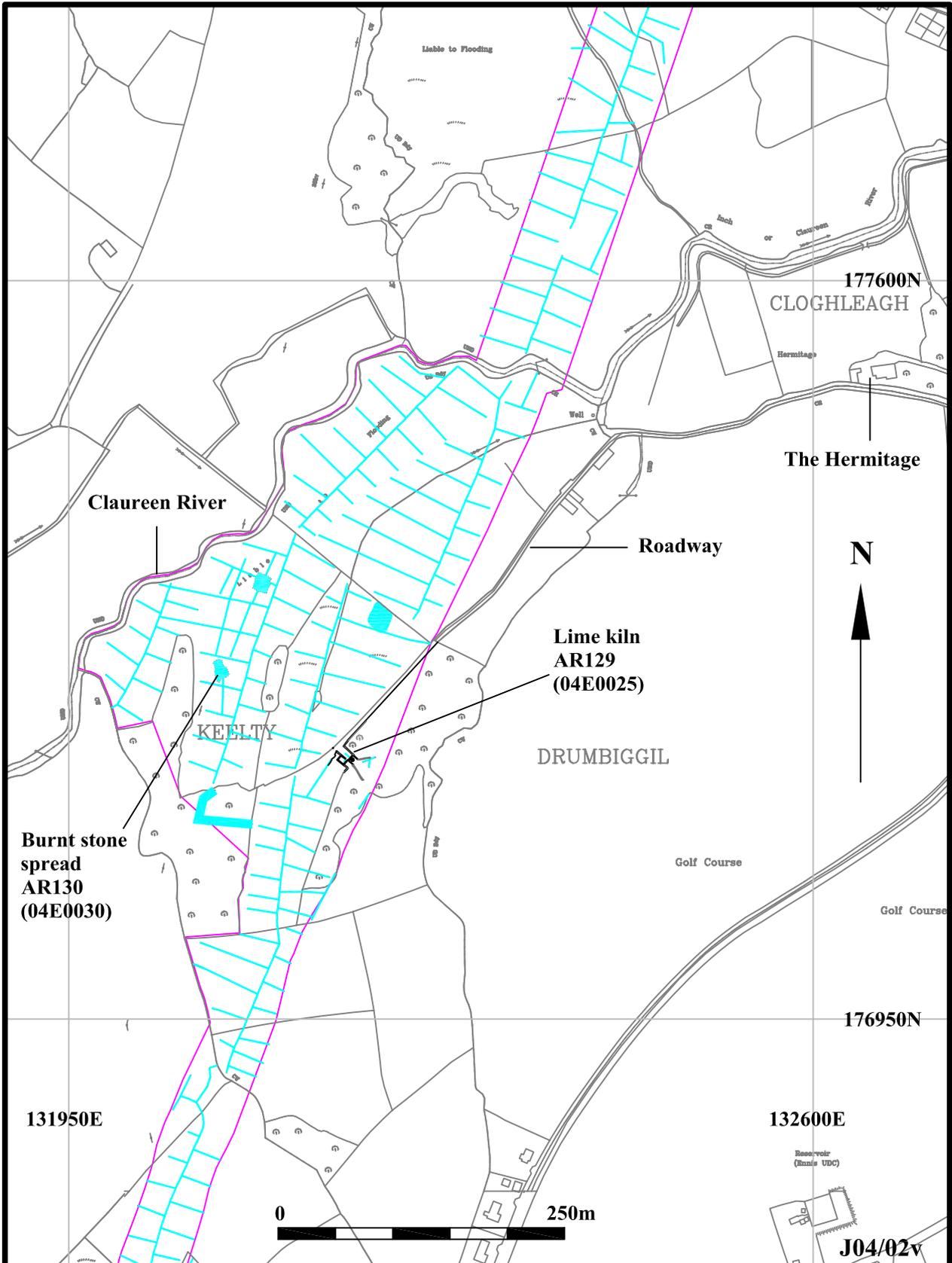
**N18 Ennis Bypass, Site AR129,
Keelty, Co. Clare
04E0025**

Figure 1: Site location

Reproduced from Ordnance Survey Discovery Series 1:50000
1st Edition 1996. Sheet 58

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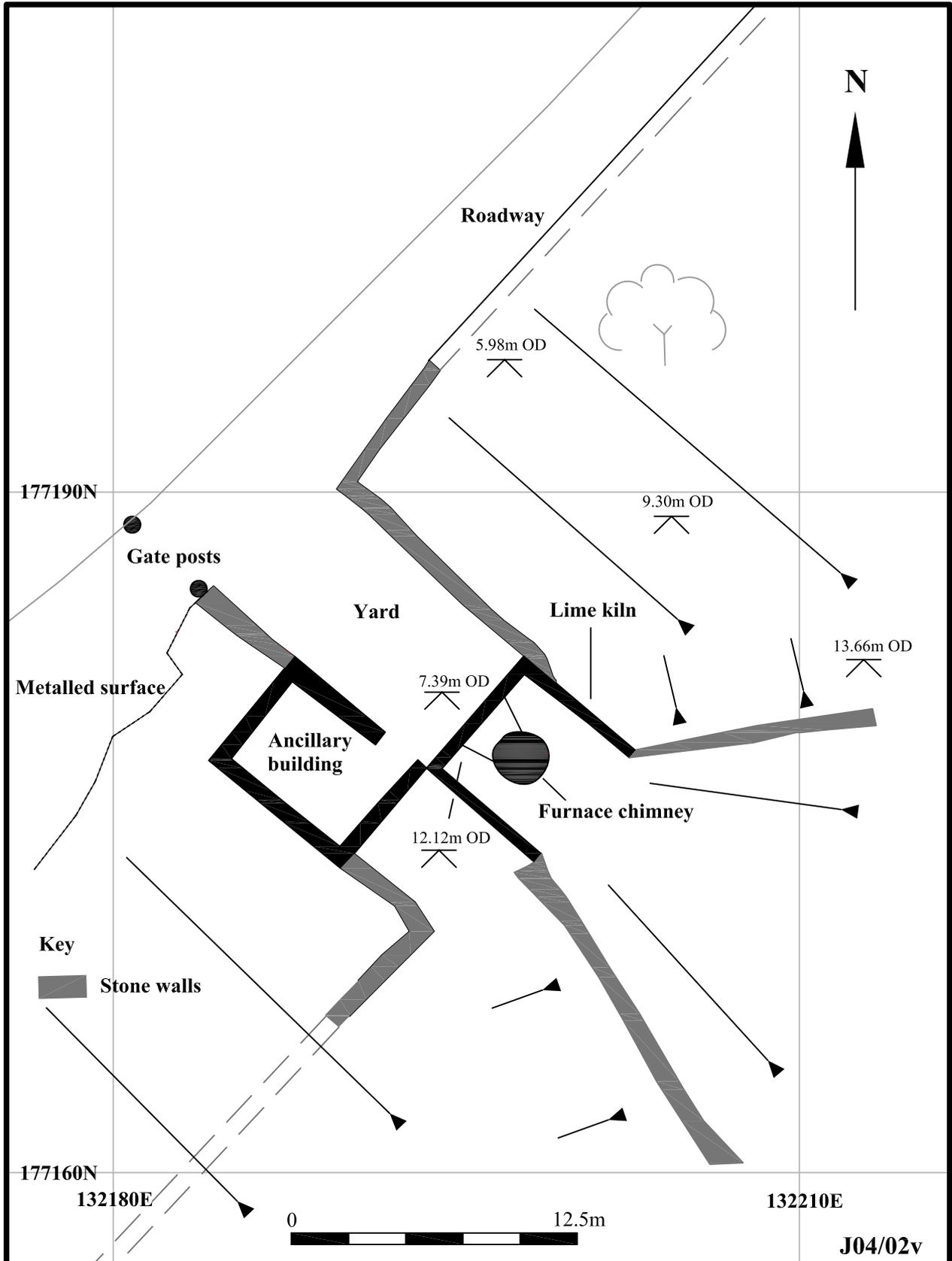
N18 Ennis Bypass, Site AR129, Keelty, Co. Clare

04E0025

**Figure 2: Lime kiln in local landscape.
Showing test trenches (03E1291)**

Scale 1:5000. OSI Licence: AR0049406 Copyright OSI & Govt. of Ireland





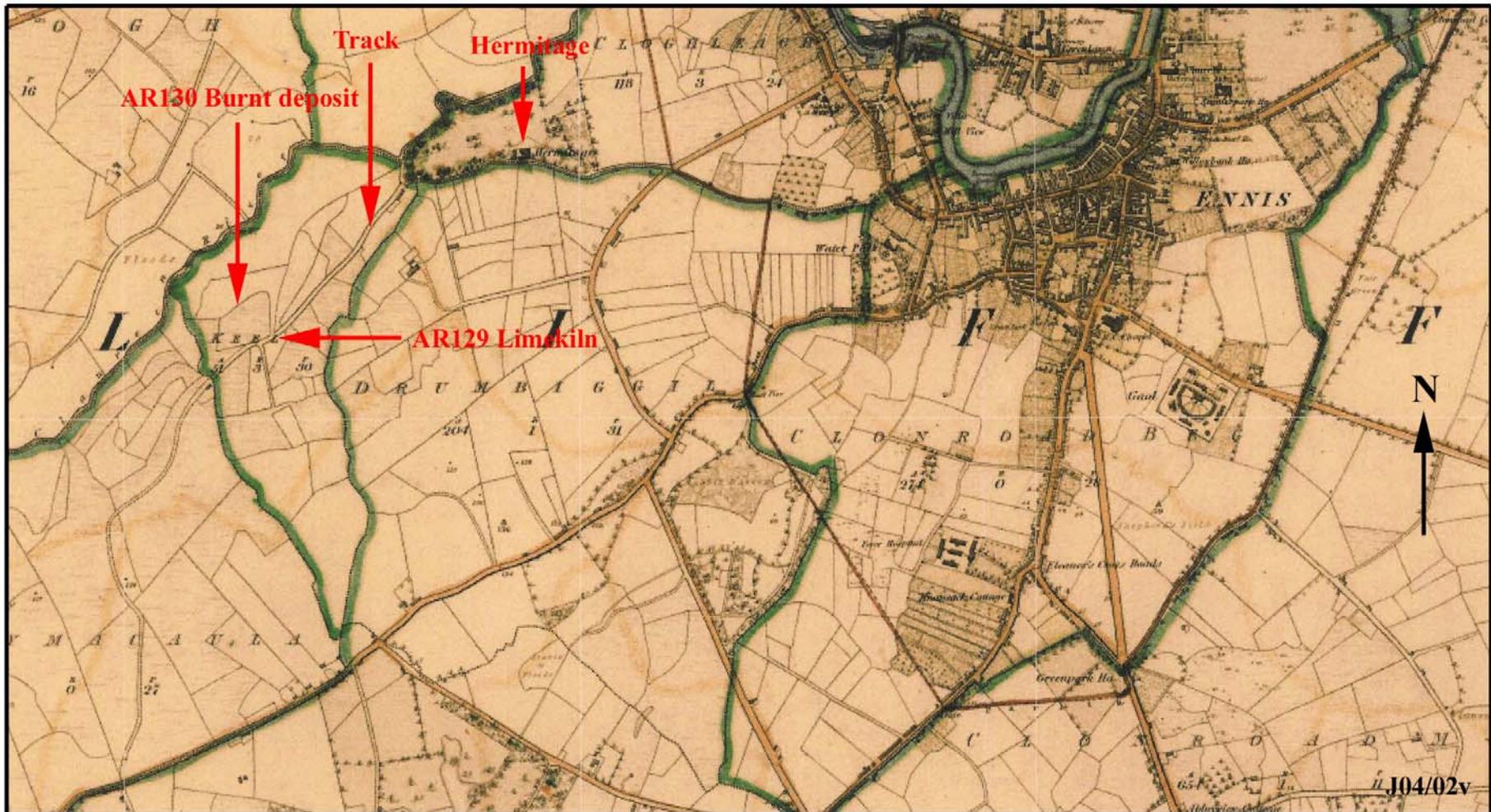
N18 Ennis Bypass, Site AR129, Keelty, Co. Clare

04E0025

Figure 3: Plan of limekiln and associated features

Scale 1:250. OSI Licence AR0049406 Copyright OSI & Govt. of Ireland



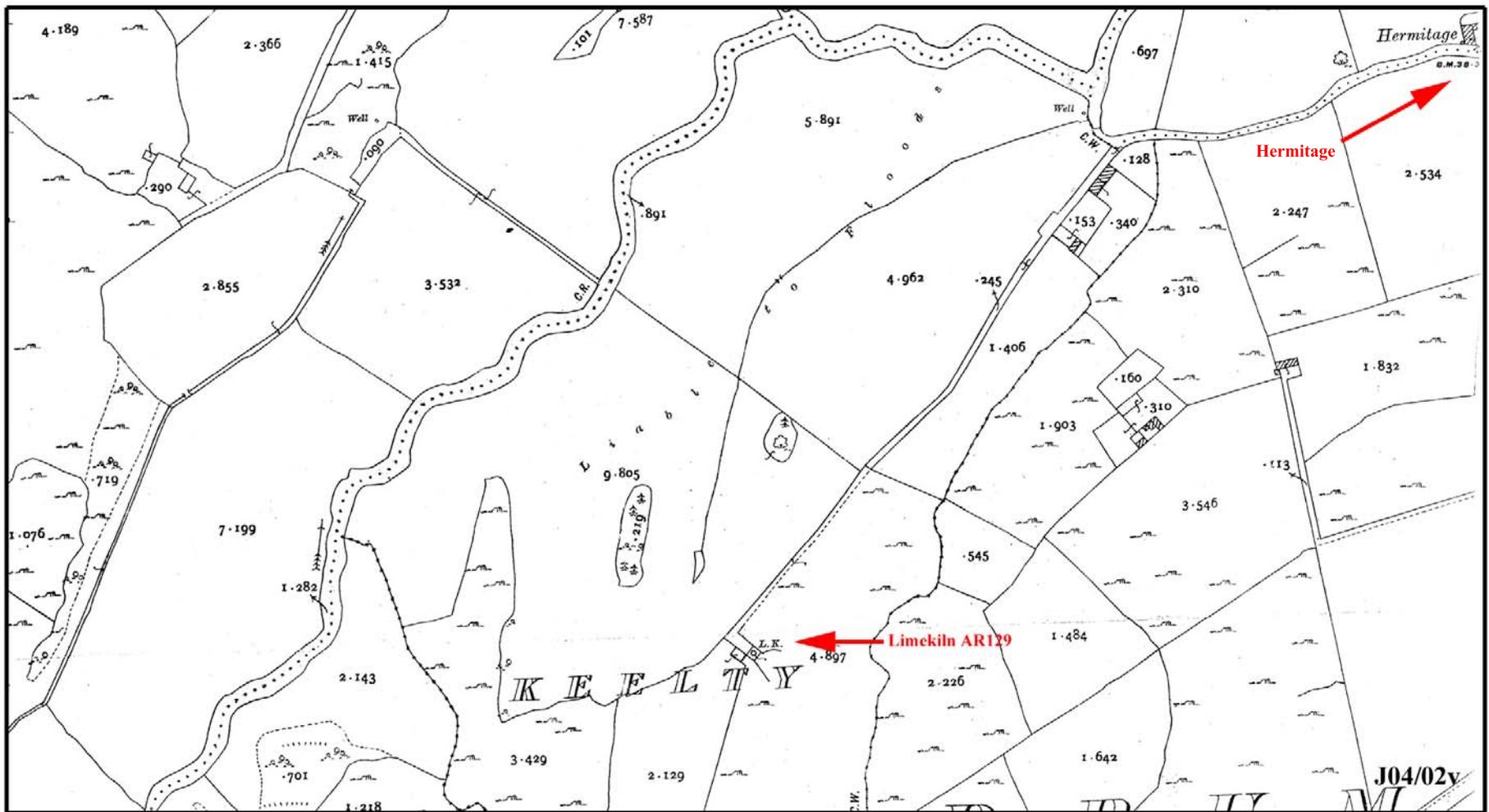


N18 Ennis Bypass, Site AR129, Keelty, Co. Clare, 04E0025

Figure 4: 1840 Ordnance Survey 1st Edition Map

Based on OS 6" to mile. Digital copy Clare Library





N18 Ennis Bypass, Site AR129, Keelty, Co. Clare, 04E0025

Figure 5: 2nd Edition Ordnance Survey Map 1894

Based on OS 25" to mile, Co. Clare Sheet 33xv, Surveyed 1894, published 1917





**Plate 1. Lime kiln prior to demolition. Looking north. Scales 1m.
Ancillary building to left**



**Plate 2. Lime kiln. Looking north-east.
Note doorway of ancillary building at front**



Plate 3. West gable of ancillary building. Scales 1m



Plate 4. Gate post. Identical to those by lime kiln



Plate 5. Lime kiln. Looking south-east. Scales 1m



Plate 6. Ancillary building. Looking west



Plate 7. Lime kiln, furnace mouth. Looking east



Plate 8. Lime kiln. Looking east



Plate 9. Lime kiln during demolition. Looking south

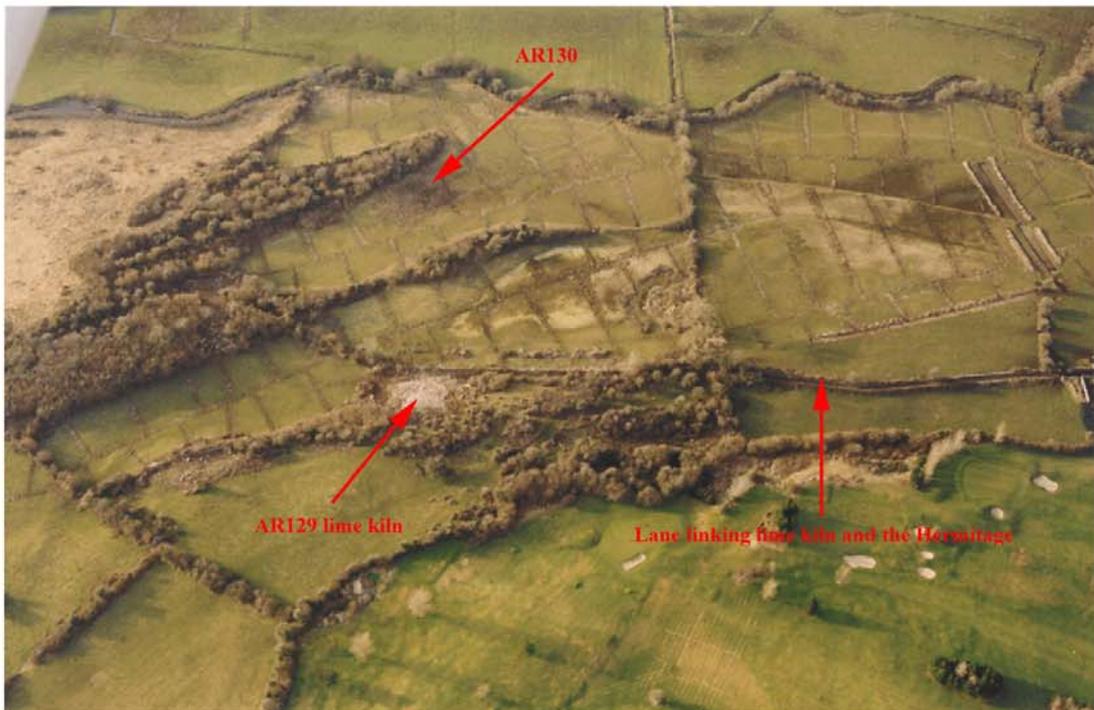


Plate 10. Lime kiln in local landscape. looking west



Plate 11: Cut-glass ink bottle, 04E0025:8. Scale 100mm

04E0025