N18 Ennis Bypass
and N85 Western Relief Road

Site AR25

Carrowdotia, Co. Clare

Final Archaeological Excavation Report

for Clare County Council

Licence No: 03E1442

(NGR 136850 182830)

Kate Taylor

J03/15

31st December 2006

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Summary

Site name: N18 Ennis Bypass and N85 Western Relief Road, Site AR25, Carrowdotia, Co. Clare

Townland: Carrowdotia

Parish: Kilraghtis

Barony: Bunratty Upper

County: Clare

SMR/RMP Number: CL026:033

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: 136850 182830 (OSI Discovery Series 1:50,000, Sheet 58. OS 6" Clare Sheet 26)

Naturally occurring geology: Pale gravel overlain in places by orange silty clay

TVAS Ireland Job No: J03/15

Licence No: 03E1442

Licence Holder: Kate Taylor

Report author: Kate Taylor

Site activity: Excavation

Site area: 7600m^2

Sample percentage: 100%

Date of fieldwork: 8th September to 31st October 2003

Date of report: 31st December 2006

Summary of results: A large area, including approximately one third of a stone enclosure, was excavated in advance of road construction. The enclosure, thought to be an early medieval cashel, produced no immediately dateable material and only a single possible feature was found in the interior of the monument. This internal feature was radiocarbon dated to between the earlier 6th to mid 7th centuries AD. A stone and earthen bank forms the majority of the enclosure; however a stone wall surviving on top of a portion of the bank was investigated. The wall, which was up to 2.5m thick and 1.7m high, was constructed of two rough faces with a loose rubble core. No entrance or associated external features were revealed. In addition, a small burnt spread, possibly of prehistoric date, was located nearby at the edge of a bog. Several post-medieval pits, possibly representing quarrying, were also identified.

Monuments identified: Early medieval cashel, undated burnt stone spread, undated pits, late post-medieval / modern pits or quarries

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

 Report edited/checked by: Graham Hull ✓01.03.07

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By Kate Taylor

Report J03/15e

Introduction

This report documents the final results of an archaeological excavation of part of an Early Christian cashel and other features(Site AR25) on the route of the N18 Ennis Bypass and N85 Western Relief Road at Carrowdotia, Co. Clare (NGR 136850 182830) (Fig. 1). The excavation forms part of the Ennis Bypass Archaeological Contract 5.

A preliminary archaeological report for this site was produced in January 2004 (Taylor 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)

The planning 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 is located in the townland of Carrowdotia, in the parish of Kilraghtis, Bunratty Upper barony, north of the centre of Barefield village (NGR 136850 182830) (Figs 1 and 2). The current N18 Limerick to Galway road runs 130m to the west and the Ennis to Galway railway runs 240m to the

east. The surrounding landscape is characterised by drumlins, outcrops of limestone bedrock and low boggy areas.

The site lies on the side of a fairly steep hill on a south-facing slope. At the north-western corner of the site the ground level is at approximately 33.2m above Ordnance Datum (OD) and at the south it is 19.5m OD. The southern end of the site includes the edge of a low-lying bog. The field immediately to the south has been reclaimed in recent years and includes areas of bog, a small lake and mechanically excavated rocks.

The underlying geological deposits observed during excavation were an off-white sandy gravel overlain by patches of mid orange silty clay. Limestone bedrock outcropped in several bands in the centre of the site.

The excavation area incorporates part of two fields, both of which were used as pasture at the time of the archaeological works. The landowner stated that the northern field had been ploughed for vegetables until the 1960s; he had no recollection of the southern field being ploughed.

Archaeological and historical 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. Testing in fields close to site AR25 did not reveal any archaeological deposits.

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).

The major focus of site AR25 is a standing monument (RMP site CL026:033) that appears on the 1840 Ordnance Survey (OS) 1st Edition (Fig. 10) and later editions as a circular enclosure. A field wall was seemingly constructed across the monument in the 75 years between the 1840 and 1914 map surveys. The monument and bisecting wall were present as upstanding features at the time of excavation. The monument had a diameter of approximately 25m and the visible sections of the rampart on the southern side consist of an earth and stone bank. The north-eastern portion of the enclosure was represented by a thick limestone wall that had been incorporated into the current field system. The current field walls are probably part of a systematic revision of the land division within the townland that took place in the later 19th century, the implementation if which may perhaps account for the only

partial survival of the wall of the enclosure, with the remaining stone having been robbed out. To the west of the main enclosure a series of apparent banks and walls in an area of scrub may possibly represent an adjacent or even attached enclosure.

Prior to archaeological investigation the interior of the enclosure was occupied by hazel scrub, brambles and a number of moderately large trees, the roots of which had caused damage to the walls and bank of the monument. It would also appear that the enclosure had been used as a dump for field clearance and other refuse.

The adjacent field to the south of the site includes the location of a previously recorded possible burnt mound, site M29. This monument had probably been entirely destroyed by land reclamation activity prior to the archaeological works and no evidence of it was found during test trenching (02E1492, Collins and Coyne 2002, 25-28; 03E1293, Roger 2004).

A number of other enclosures are known in the townland and surrounding area and, in the absence of any definitive evidence, these are considered likely to be examples of Early Christian ringforts or cashels. Two other possible examples, Sites M27 and AR27, have been investigated within Carrowdotia as part of this road project (Taylor 2006a and 2006b). The monument at Site M27 lies outside the road take, however an iron working feature was excavated adjacent to, is thought to be related to, the enclosure. The example at AR27 was demonstrated to be field clearance cairns and was not archaeological.

Earlier test excavations

Site AR25 was examined by test trenching in the winter of 2002 (licence 02E1493, Collins and Coyne 2002, 29-33). Three test trenches were mechanically opened in the eastern portion of the site, including one that transected the enclosure wall. The testing demonstrated that the enclosing element of the monument was constructed of a mixture of earth and stone. No evidence for an enclosing ditch was found. No external features were found during the trial trenching and the internal space enclosed by the cashel was not investigated.

A geophysical survey across AR25 did not locate any certain or even probable archaeological anomalies (Geoquest 2002).

One of the test trenches excavated to investigate adjacent site M29 was located within the southern end of site AR25 (Collins and Coyne 2002, 25-28). No archaeological deposits were identified.

Excavation aims and methodology

A licence to excavate was granted to Kate Taylor 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 03E1442.

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 8th September and 31st October 2003 and was directed by Kate Taylor, supervised by Sean Wallis and assisted by Tim Dean, Roy Krakowicz, Mike Parks, Edel Ruttle and Tom Varley.

The site encompassed an area measuring approximately 145m by 55m (7600m^2). This includes an extension at the southern extreme that was decided upon when it became apparent that archaeological deposits extended beyond the original limit of the site. Topsoil and overburden were removed by a 360º tracked machine fitted with a toothless grading bucket under direct and continuous archaeological supervision. The spoil was, where possible, visually scanned for artefacts. The topsoil in the interior of the stone enclosure was removed by hand.

Several large areas of the site were cleaned using hand tools in order to define potential archaeological features fully. Slots were dug to investigate all potential features and those that proved to be of archaeological interest were fully excavated. Fairly modern furrows were evident across large portions of the site and once these had been recorded they were mechanically excavated in order to establish whether earlier deposits survived at a lower level.

The stone enclosure was cleared of trees, brambles, ivy and moss to reveal the structure of the wall. Where topsoil covered the bank this was removed mechanically under careful supervision. The wall proved to be rather unstable once the vegetation was removed and, following detailed recording, it was felt appropriate to excavated slots mechanically. Once these slots had been recorded the remainder of the stone was mechanically removed to allow the upper surface of the bank to be examined prior to this material being excavated. The interior of the monument was excavated entirely by hand.

In addition to the main area, four test trenches were excavated in the field to the north-west. The exposed area totalled 157m^2. The excavation methodology was the same as that for the stripping of the excavation area. As no archaeological deposits other than plough scars were evident the field was not further investigated.

A full written, drawn and photographic record was made according to the TVAS Ireland Field Recording Manual (First Edition 2003). The site was planned using a combination of digital and traditional methods. The digital planning was conducted using a Global Positioning System (GPS) unit, tied into the N18 surveying base station in order to provide millimetre accurate readings.

Excavation Results (Figs 3 to 9 and Plates 1-4)

The excavation revealed evidence of activity covering a large time span, from the prehistoric period to recent times. All features and contexts are listed in Appendix 1. The features are described, in three broad phases, below.

?Prehistoric (Fig. 4)

A number of indications of prehistoric activity were recorded at the southern end of the site, however none was definitive and no dateable material was recovered from any of these deposits.

Burnt stone deposits

The extreme south of the site included the edge of a large boggy area, the remainder of which lies in the adjacent field and has been severely disturbed by land reclamation. A small patch of open water located against the boundary wall is reportedly a deep ‘sink hole’ connected to a large underground watercourse (landowner - Sean Howard pers. comm.). It was not possible to investigate this hole archaeologically due to the water level, however the surrounding slightly drier area was excavated and a number of deposits of burnt stone material were recorded.

The burnt stone deposits were generally thin spreads with very little or no charcoal inclusions, however the stone content was largely degraded or burnt sandstone. The most significant deposit was

81, a firm dark brown-black clayey sand with charcoal and burnt stone inclusions measured approximately 10m by 2m and was at least 0.10m thick.

A sequence of layers was recorded at the extreme southern edge of the excavated area. Immediately above the natural sandy clay was an interface layer (88), a dark grey sandy clay with peat inclusions that was probably a product of root disturbance. Above this was deposit 87, a dark brown spread of peaty soil with degraded or burnt sandstone inclusions, filling hollows at the edge of the bog. This deposit was itself overlain in places by clay layer 86.

Deposit 89 was a circular patch of firm dark grey clayey sand with large pieces of burnt sandstone and limestone. The spread filled a depression measuring 1.30m by 0.90m and 0.20m deep (Fig. 7). Deposit 90, a darker more peaty layer, was also contained within the depression.

Several patches of burnt stone material were located in hollows slightly uphill from the limit of the water, however these are unlikely to represent deliberately dug pits. Feature 18 was an irregular oval measuring 1.50m by 0.98m and was up to 0.15m deep with an extremely irregular profile. Feature 21 was assigned to a number of similar shallow depressions, none of which showed evidence of a deliberate cut. Fills 84, 85 and 96 were similar to deposit 89 described above.

Where no burnt stone was recorded against the southern edge of the site a dark peat layer (80) directly overlay the natural geological deposits. Above this layer, and overlaying the burnt stone deposits, was a layer of peat (79) up to 0.30m thick. A single piece of struck chert (03E1442:40) was recovered from this material.

Possible pits

Further up the hill, to the north of the peat, was a series of small features that initially presented as small patches of charcoal rich material and upon excavation generally proved to be shallow depressions, possibly pits (2-6, 12, 14-15). Further inspection of these features demonstrated that, rather than cut features, they were likely to represent charcoal rich soils that had collected in stone sockets or natural depressions caused by mixed geological deposits.

Pit 2 was sub-circular in plan, measured 1.19m by 0.87m and was 0.17m deep with a concave profile. The pit fill (61) was a loose dark brown-black clayey sand with occasional stone and charcoal inclusions.

Feature 3 was a slightly curved elongated shape in plan with an irregular profile. The feature measured 2.42m by 1.40m and was 0.20m deep. The fill (62) was similar to deposit 61 (above).

Pit 4 was oval in plan, measured 1.26m by 0.72m and was 0.27m deep with an irregular concave profile. The fill (64) was similar to deposit 61 (above).

Pit 5 was circular in plan, measured 0.80m by 0.72m and was 0.20m deep with steep sides and a concave base (Fig. 7). Fill 66 was similar to those of the other nearby features.

Possible posthole 6 was circular in plan, with a diameter of 0.30m and was 0.06m deep with a concave profile. The fill (67) was a grey clayey sand with occasional stone inclusions.

Pits 12 and 14 had been severely damaged by ploughing but survived as oval features, measuring 1.72m by 1.13m and 1.00m by 0.65m respectively. Both pits were less than 0.23m deep with irregular concave profiles. Fills 64 and 77 were loose dark brown-black clayey silt with occasional stone and charcoal inclusions.

Pit 15 was sub-circular, measured 0.45m by 0.42m and was 0.11m deep with steep sides and a flat base. The fill (78) was a mid grey clayey sand that was probably created by decaying stone.

No artefactual material was recovered despite full excavation of the deposits and, whilst it is possible that they are evidence of prehistoric occupation, this interpretation cannot be substantiated.

Early medieval (Figs 5, 8 and 9)

The major feature excavated within Site AR25 was a portion of the previously recorded cashel (RMP site CL026:033). This stone-walled enclosure lay partly within the CPO and only that portion that was to be destroyed by road construction was investigated archaeologically.

The maximum external dimensions of the excavated portion were 29m by 11m and the internal area was 68m^2. The excavated area amounts to between one quarter and one third of the enclosure (Fig. 5). The excavated portion of the monument included the most substantial surviving structural element, the wall along the north-eastern edge.

Cashel wall (Figs 8 and 9)

Several slots across the monument were examined in order to understand the construction methods used to create the enclosure. Whilst a stratigraphic sequence could be established it was not clear whether the construction had occurred as a single planned event, or whether the monument had developed over time.

The lowest level was a curvilinear bank of natural geological deposits, apparently created by excavating the interior and exterior areas, an action that would have probably been necessary in order to create a level surface on the hillside. Limestone bedrock outcropped within the interior of the fort and the broken nature of the most protruding rock suggested that it had been deliberately levelled. At the south-western edge a linear depression (ditch 22) was discovered external to the bank, against a bedrock outcrop. This feature, which was at least 4m long, 1m wide and 0.4m deep, was the only indication of an external ditch around the enclosure. The small size and irregular nature of the feature suggests that it did not have a defensive purpose and it may instead have simply been a convenient source of gravel and stone for the bank and wall.

Over the natural bank were a gravelly deposit (97) and a mixed deposit of stone and soil (92), presumably incorporating the material excavated from either side of the bank. At the time of excavation, this deposit formed a 5.70-6.35m wide spread that was up to 0.60m thick, however this may partly be a result of slumping over the years and the bank may well have been more pronounced at the time of construction. The outer edge of the bank at the north and east did not extend noticeably beyond the overlying wall and it would appear that the field has been ploughed to the very edge of the cashel wall, truncating the bank. A single cow tooth (03E1442:41) recovered from deposit 92 was the only artefact discovered from the structure of the cashel itself, however at the south-western edge, part of a rotary quern stone was recovered from the topsoil (59) overlying the bank.

The cashel wall itself (60) was built directly on top of the stone and earth bank, although it was frequently not possible to distinguish between the bank and the soil-mixed lower part of the wall. The wall survived for a length of approximately 18m, was up to 2.55m thick and at most 1.70m tall. Although the enclosure as a whole was clearly penannular, the wall was fairly straight for most of its length, with bends at either end.

Wall 60 was constructed with internal and external faces surrounding a rubble core (Fig. 8). The faces were built with large unworked stones, the largest examples being positioned at the base of the external face; the core was made up of small natural stones and pebbles, similar to more recent field clearance deposits. The wall had a tapering profile, being narrower at the top. No capping stones were evident and the upper surface of the wall was simply the mounded top of the core deposit. The core appeared to have survived to a higher level than the faces, although this material may have included field clearance stones added to the top of the wall. All the stones appeared to be of local origin and

similar stones were found in the surrounding fields. Humic material formed by roots and animal activity had fallen between the stones forming a rich soil towards the base of the wall, however the majority of the structure had no bonding material whatsoever. Tree roots had caused several sections of the wall to collapse and in no place were both the interior and exterior faces complete to the full height of the wall. This disturbance had rendered the masonry extremely unstable and once facing stones were dislodged, the core stones slipped out with ease. Rubble from the collapse of the walls was evident both internally (deposit 56) and externally (57).

A peculiar feature of the northern end of the wall was that four large rocks were placed leaning up against the interior face (153). These rocks were not built into the wall but appeared to be supporting it. It is likely that they were quarried from the bedrock inside the cashel circuit and had been moved a very short distance to their resting-place.

At the southern end of the thick cashel wall was another length of wall that also sat on top of the bank and formed part of the circuit of the enclosure but was of a different construction (not illustrated). This wall, 152, was essentially a linear arrangement of rocks with no evident structure and was probably of a later date. It is likely that this length of wall was built to block the gap between the standing cashel wall and the field wall that divided the monument, hence completing the field boundary.

The cashel interior

The interior of the monument was almost entirely archaeologically sterile. The natural gravel with outcropping limestone bedrock formed a clear horizon that was presumably the level at which excavation had ceased during the cashel's construction. This surface was not level, however, as the bedrock outcrops lay at a slant and there were gaps between these planes.

A single possible feature, 25, was excavated in the interior, although as it was located against the western limit of excavation its form was not particularly clear. Feature 25 was a steep sided pit that had been created by the quarrying of bedrock. The visible dimensions were 4m by 1.3m and the pit was 0.55m deep with an irregular shape and profile created by the bedrock planes (Fig. 9). Against the southern edge of the pit, beneath several large stones, a small deposit of charcoal rich soil, deposit 99, was discovered. The main fill of the pit was a slightly soily gravel, indistinguishable from the overlying layer (95). A few small fragments of burnt clay were recovered from pit fill 99 (03E1442:14) and a radiocarbon determination was made from charcoal recovered from the same deposit, indicating that the pit was backfilled in the period AD 530 to 650.

Above the natural gravel and bedrock and the single feature was a 0.30m thick layer of slightly soily gravel, 95, which contained a few pieces of modern china, metal and clay tobacco pipe (03E1442:46-50) as well as pieces of animal bone (03E1442:42-45). The inclusion of the modern artefacts suggests that the deposit had either been disturbed, or that it had continued to accumulate until recently. Above the gravel was a thin topsoil deposit that was rich in humic material and also contained modern refuse.

External features

Other than the small ditch (22), described above, no external features were excavated that could be related to the cashel. A small charcoal filled pit, 7, to the north of the enclosure was similar in appearance to the possible prehistoric pits at the southern end of the site and may be contemporary. It is possible, however, that this small pit was in use at the same time as the cashel. Pit 7 measured 0.80m by 0.55m and was 0.12m deep with an irregular profile (Fig. 7). Although the pit fills (68 and 69) contained charcoal they were disturbed by ploughing and could not be reliably dated.

Late post-medieval and modern (Figs 3, 5 and 6)

The majority of the deposits and artefacts observed during the excavation of Site AR25 were of this phase.

Agricultural evidence

The most noticeable post-medieval features were the furrows that covered both fields (Fig. 6). In the northern field these were clearly visible as a series of parallel plough scars aligned north-east to south-west across almost the entire area (collectively feature 16). In the southern field the pattern was less clear and two slightly off-set orientations, both roughly aligned south-east to north-west, were visible (collectively feature 17). It is possible that these represent different phases of ploughing, however it is likely instead that they simply reflect many years of attempts to plough following the slope of the hill. A single sherd of pot-medieval pottery (03E1442:10) was recovered from one of the southern furrows.

Beneath the topsoil (50) the site outside the cashel was covered with a ploughsoil (51), further evidence of the agricultural activity that had taken place in the last few centuries. In addition to an interesting piece of inscribed slate (03E1442:29), a large number of pieces of post-medieval pottery, glass, metal, clay tobacco pipe and animal bone were observed within the topsoil, of which a representative sample was collected (03E1442:15-28).

The topsoil within the cashel was recorded separately (deposit 52) and also produced several pieces of pottery, glass and clay tobacco pipe (03E1442:30-38). A thin layer of topsoil had formed over the cashel bank at the southern side (59) and this produced part of a rotary quern stone (03E1442:39).

Mounds of small stones (58), presumably a result of field clearance, were observed around the edges of the field, and included some heaped up against the external face of the cashel wall on the northern side.

Pits or quarries

A number of pits cut through the furrows in both fields, the greatest concentration being found to the south-east of the cashel (Fig. 5). Seven pits were recorded (1, 8-11, 19 and 20). The pits were generally filled with pieces of limestone and it is possible that they represent locations where bedrock or large glacially deposited rocks were quarried for building stone. Almost all of these pits produced fairly modern artefacts.

Pit 1, the largest, measured 5.40m by 2.90m and was 0.90m deep. The western edge was cut against a rock face, indicating that the feature was a quarry. Four artefacts were recovered from the pit (03E1442:1-4), two pieces of corroded iron, an piece of clay tobacco pipe stem and a horse tooth.

Pit 8 was oval in plan, measured at least 2.40m by 1.60m and was over 0.70m deep – the full depth not being excavated. Three sherds of late post-medieval pottery were recovered from the pit fill (03E1442:5-7), including an early 20th century piece.

Pit 9 was tear-drop shaped, 3.40 long, 1.80m wide and over 0.40m deep. A sherd of 18th century pottery (03E1442:8) was recovered from the pit fill and a number of other similar sherds of pottery and also glass were observed but not retained.

Pit 10 that co-joined with pit 8 was an irregular oval shape, measured 6.30m by 4.80m and was over 0.25m deep. A sherd of 18th/19th century pottery (03E1442:9) was recovered from the pit fill.

Pit 11 was a very regular elongated rectangular shape with steep sides and a flat base (Fig. 6). The pit measured 8.80m by 0.90m and was 0.24m deep. No artefacts were observed within the stony fill.

Pits 19 and 20 were not excavated, however as they truncated the furrows in the northern field they were clearly of no great antiquity (Fig. 6). The two features each measured 2.60-2.70m by 2.30m and were stone-filled. The handle from an 18th century pot was retrieved from the surface of pit 20 (03E1442:11).

Field boundaries

Cartographic evidence demonstrates that wall 53 (Fig. 6) that bisected the cashel was built between 1840 and 1914 (Fig. 10, the 1840 map, does not show this boundary). The wall was a rough structure of unworked limestone rocks with no accompanying ditch and was up to 1.20m high outside the cashel, although it stood to just 0.50m high within the enclosure (Fig. 9). In places, particularly within the cashel, wall 53 had collapsed creating spreads of rubble (54).

The field boundary at the southern end of the site is also the townland boundary between Carrowdotia and Drumquin. The wall is of surprisingly poor quality for a townland boundary, however excavations demonstrated that the wall was a fairly recent feature as it was constructed on top of a stone filled ditch or stream. The feature cut across the bog described above and was flooded. Amongst the stones, which themselves appeared to be imported material, several pieces of china and brick were observed, indicating that the ditch, presumably the original townland boundary, had been deliberately backfilled and replaced with a wall.

Ditch

Parallel to the walls was ditch 30, a narrow, shallow linear feature that stretched 31.75m across half of the width of the site, approximately 15m uphill from the southern field wall (Fig. 4). Three slots were excavated across the features (13, 23 and 24) revealing that the ditch was 0.80-1.20m wide and 0.12-0.17m deep with a concave profile. Two sherds of late post-medieval pottery (03E14542:12-13) were recovered from one of these slots demonstrating the late date of the feature.

Finds

A total of 50 artefacts were recovered during the excavation (Appendix 2). The majority of these are pottery sherds, all post-medieval or modern, largely a selection of the items from the topsoil. Other recent items are pieces of clay tobacco pipe, corroded iron items and pieces of bottle glass.

The most interesting object is a large piece of a quern stone, found during topsoil stripping of the southern half of the cashel bank. Other pieces of stone recovered from the site are an inscribed piece of slate and a possible chert blade from the peat overlying the burnt spread at the south.

A few fragments of burnt clay are the only finds from a securely-stratified deposit within the cashel, although one animal tooth was recovered from the bank material, clearly below the standing wall. Three other teeth and a fragment of burnt bone from the gravel layer inside the cashel cannot be considered to be reliably stratified as the same deposit also produced modern material.

Post-medieval pottery by Graham Hull

Twenty-six pieces of pottery spanning a date range of the 18th to 20th centuries was examined. The assemblage is domestic in character.

Table 1: Catalogue of post-medieval pottery

Find No.	Cut	Deposit	Identification	Description	Date
03E1442:5	8	67	White salt-glazed stoneware. Plate	Base / body	
03E1442:6	8	67	Black-Buckley type ware	Body; glazed both sides	
03E1442:7	8	70	Stoneware Jar	Rim of a straight-sided jar	early 20th
03E1442:8	9	72	Brownware	Body	18th
03E1442:9	10	74	Shell-edged ware. Platter	Rim	18/19th

Table 1: Catalogue of post-medieval pottery (continued)

Find No.	Cut	Deposit	Identification	Description	Date
03E1442:10	17	83	White salt-glazed stoneware. Plate	Body	
03E1442:11	20	94	Brownware	Lug-handle	18th
03E1442:12	23	150	Shell-edged ware. Platter	Rim	18/19th
03E1442:13	23	150	White salt-glazed stoneware.	Body	
03E1442:15	-	50	Black-Buckley type ware	Body; glazed on both sides	18/19th
03E1442:16	-	50	Stoneware ?Cup	Blue painted line decoration	18/19th
03E1442:17	-	50	Shell-edged ware. Platter	Rim	18/19th
03E1442:18	-	50	Willow-pattern Bowl	Body, Brown painted décor	18/19th
03E1442:19	-	50	Stoneware Jar	Body	18/19th
03E1442:20	-	50	Willow-pattern plate	Body, Brown painted décor	18/19th
03E1442:21	-	50	White salt-glazed stoneware.	Base	18/19th
03E1442:22	-	50	Stoneware Jar	Base / body. Vertical rilling	early 20th
03E1442:23	-	50	Stoneware, bottle.	Rim	18/19th
03E1442:24	-	50	Red clay ridge tile?		18/19th
03E1442:34	-	52	TGEware. Plate	Body, blue painted décor	18/19th
03E1442:35	-	52	Brownware. Platter?	Base	18/19th
03E1442:36	-	52	TGEware	Body	18/19th
03E1442:37	-	52	White salt-glazed stoneware. Mug	Body	18/19th
03E1442:46	-	95	?Salt-glazed stoneware. Plate	Painted, black & blue leaves with pink line	19th
03E1442:47	-	95	TGEware	Rim. Plain	19th
03E1442:48	-	95	TGEware?	Body.	19th

Clay tobacco pipe by Kate Taylor

Methodology

The pieces of clay pipe were examined visually and described briefly. The collection is small and does not warrant detailed analysis. The pieces were compared to examples given by Ayto 1979.

Results

Just seven pieces of clay tobacco pipe were recovered from site AR25. These items are described in Table 2 below.

Four of the pieces are plain stem fragments, two have partial bowls and two have spurs. None of the pieces are stamped or bear any other maker's mark.

Fragment 03E1442:27 appears to be an early 20th century briar pipe with a thick stem and upright bowl with no spur – a very simple pipe.

The other bowl fragment, 03E1442:32 is only partial and it is difficult to determine its type, however the top of the bowl is clearly not parallel to the stem. The bowl is plain with no rim decoration. The pipe may therefore date from the late 17th to late 19th century.

Table 2: Catalogue of clay tobacco pipe

Find no.	Cut	Deposit	Identification	Dimensions	Weight (g)	Comment
03E1442:3	1	55	Stem fragment	35mm long, 10mm diameter, 2mm diameter bore	3	
03E1442:27		50	Stem fragment with base of bowl attached	54mm long, 11mdiameter minimum diameter widening to 15mm at join with bowl. Bowl broken at 40mm high.	16	No spur. Upright bowl
03E1442:30	-	52	Stem fragment with spur attached	42mm long, 9mm diameter, 2mm diameter bore. Spur 7mm long, 5mm diameter	6	Spur has seam and embossed dots on either side.
03E1442:31	-	52	Stem fragment	41mm long, oval cross-section, 11mm x 9mm, 2mm diameter bore	7	
03E1442:32	-	52	Bowl fragment with heel and part of stem attached	34mm long, 11mm diameter, 2mm diameter bore. Bowl 25mm high, 2mm thick wall. Spur 5mm long, 4mm diameter	2	Spur has seam
03E1442:33	-	52	Stem fragment	24mm long, 6mm diameter, 1.5mm diameter bore	<1	
03E1442:50	-	95	Stem fragment	32mm long, 7mm diameter, 1.5mm diameter bore	1	

Glass by Kate Taylor

Methodology

The pieces of glass were examined visually and described briefly. The collection is small and does not warrant detailed analysis.

Results

Just two pieces of glass were recovered from site AR25. These items are described in Table 3 below.

Both pieces are sherds of dark green bottle glass.

The larger fragment (03E1442:25) is part of the base and wall of a cylindrical bottle. There is no significant kick-up and no pontil marks visible. The letters ‘D’, ‘A’ and part of another unidentified letter are embossed on the base.

Both pieces are probably 19th or 20th century in date.

Table 3: Catalogue of glass

Find no.	Cut	Deposit	Type	Colour	Dimensions (mm)	Weight (g)	Comment
03E1442:25		50	Bottle glass	Dark green	54 tall x 55 wide x 6-9 thick	53	Part of base and bottle wall
03E1442:38		52	Bottle glass	Dark green	30 x 18 x 6 thick	5	Small body sherd

Metal items by Kate Taylor

Methodology

The pieces of metal were examined visually and described briefly. The collection is small and does not warrant detailed analysis. None of the pieces have been conserved.

Results

Just four pieces of metal were recovered from site AR25. These items are described in Table 4 below.

All four pieces are corroded iron and none appears to be of any great antiquity.

Table 4: Catalogue of metal

Find no.	Cut	Deposit	Material	Description	Dimensions (mm)	Weight (g)	Comment
03E1442:1	1	55	Iron	Flat piece of metal, part of bracket?	123 x 34 x 2 thick	31	
03E1442:2	1	55	Iron	Shoe seg	72 x 64 x 4 thick	34	Several nail heads visible and one partial nail stem
03E1442:28		50	Iron	Fragment of hinge?	64 x 9-18 x 3 thick	10	
03E1442:49		95	Iron	Nail	29 x 5 x 5	3	Corroded but appears to have square section stem and possibly square head

Inscribed stone by Graham Hull

One piece of slate (03E1442:29) was recovered from site AR25.

The piece is a small flat fragment of slate that measures 35mm by 31mm, is 5mm thick and weighs 10g. Inscribed lines are visible on both faces. On the most heavily inscribed face is a deeply inscribed arc that appears to be a portion of a circle. On the inside a triangle and a number of small lines point inwards. Three more faint curving lines cross the main arc. On the reverse face four of the faint curving lines are evident.

The pattern has the appearance of a clock face or more likely a sundial with the triangle and small lines on the main face marking the passing of time as the shadow moves around the inscribed circle.

Lithics by Dr Steve Ford

A single prehistoric lithic item, a dark grey coloured chert flake with a previous removal was recovered from deposit 79. The artefact measures 40mm by 16mm and weighs 1 gramme and was allocated the find number 03E1442:40

Quernstone by Michelle Comber

The cashel at Carrowdotia produced two conjoining fragments of the upper stone of a rotary quern (03E1442:39) (Fig. 11). These represent a typical Early Historic upper rotary stone, with central perforation and a stone that thins towards the edges. With an estimated original diameter of just 335mm, this would be one of the smaller examples of a rotary quern from the period (Comber 2000).

Quernstones were used to grind matter, primarily corn (barley, oats, rye, wheat etc.). The saddle quern was used in prehistory, and consisted of a relatively large base stone of slightly concave section. This concavity was formed by using a smaller hand-held rubbing stone to carry out the grinding. The Iron Age saw the introduction of the rotary quern which continued in use throughout the following Christian and Medieval eras. These querns consisted of two disc-shaped stones, one rotated atop the other to grind matter between.

Catalogue

03E1442:39, Deposit 59. Quern fragments.
Two conjoining fragments of the upper stone of a rotary quern. Section of central perforation preserved in the larger of the two fragments. The break is fresh, not ancient. Frequent quartz inclusions in quite coarse sandstone. Low rise or collar around the central perforation on the upper surface of the stone. A shallow, gradual dip leads into the perforation on the lower surface. The side of the quern is slightly convex, with rounded edges. The stone is thicker at the centre than at the edge. The lower, grinding surface is flat with a very coarse texture, ideal for grinding. Not a large quern originally. The broken section shows a pink or red tinge to the stone. The central perforation has straight sides. A relatively small quern, though well-made. The stone is ideal quern material due to its coarseness.

Max. surviving width/diameter 330mm, radius 140mm (from edge of central perforation to side of quern). 70mm thick at centre, 55mm thick at edge. Perforation approx. 55mm original diameter. Original overall diameter approx. 335mm.

Burnt clay by Kate Taylor

Methodology

The pieces of burnt clay were examined visually and described briefly.

Results

Just two pieces of burnt clay were recovered from site AR25. Both pieces are irregular lumps of clay that together weigh 18g. There are no smoothed surfaces and no impressions on the surface and no evidence that either piece is part of a larger object such as a loom weight, or that they are pieces of daub.

Human and animal bone by Sîan Anthony

Methodology

Bone from four contexts was examined from Site AR25. All bones were collected during excavation; no bone was recovered from sieved soils samples.

Human osteological analysis followed recommendations from McKinley (1994, 2000) and Brickley and McKinley (2004). Mammalian bones were identified using standard texts (Hillson 1992 and Getty

1975), all were rapidly scanned and bones damaged on excavation were rejoined and counted as one bone.

Results

Only seven pieces of bone were recovered from four contexts (Table 5). All but two were teeth and all were in an excellent state of preservation. A horse premolar, and two cattle molars were recovered, also a single human molar was recovered from deposit 95. The human tooth was a lower second molar with uneven dental attrition with a small area of caries in the centre of the occlusal face, no calculus was observed around the root. The root was fully formed, with some wear on the tooth, it indicates a younger adult age.

A section of cattle femur with 2 sawn edges was recovered from the topsoil, deposit 50, only a maximum 22mm in width. It is an unusual find as it is not normal butchery practice to saw through a limb bone so thinly, its purpose cannot be ascertained, it may have been an artefact for a piece of bone working or a practice piece of sawing. Only a single piece of large ungulate limb bone was burnt.

Table 5: Catalogue of bone

Find Number	Cut	Deposit	Species	Pres.	Burnt?	Colour	Total	Weight (g)	Comments
03E1442:4	1	55	Horse	G			1	23	Tooth
03E1442:26		50	Cow	E			1	37	Femur, 2 sawn edges
03E1442:41		92	Cow	G			1	23	Tooth
03E1442:42		95	Cow	G			1	18	Tooth
03E1442:43		95	Cow	G			1	In with :43	Tooth
03E1442:44		95	Human	G			1	In with :44	Tooth
03E1442:45		95, top	Csz	G	1	White	1	2	Limb bone

Samples

Five soil samples were taken from the site (Appendix 3). Three of these are from small charcoal rich features at the southern end of the site, which are rather dubious and may simply represent deposits collecting in natural depressions, or alternatively root disturbance. One sample is from a similarly small charcoal rich pit in the northern field that was damaged by ploughing suggesting a potential for contamination. The sample with the greatest potential is that of deposit 99 from possible pit 25 within the cashel. This deposit was sealed below a large rock and the charcoal is unlikely to be intrusive.

The burnt spread material was not sampled as the deposits were thin and severe root disturbance was evident. It was considered that any evidence obtained from such a sample would not be reliable.

Charred plant macrofossils and other remains by Val Fryer

Introduction

A single sample for the extraction of the plant macrofossil assemblage was taken from a pit associated with the enclosure.

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 noted are listed below on Table 6. All plant remains were charred. The

density of material within the assemblage is expressed in the table as follows: xx = 10 – 100 specimens and xxx = 100+ specimens.

Results

The assemblage was solely composed of charcoal fragments, with pieces larger than 2mm being especially common.

Conclusions

As charcoal was the only material recovered, it is not possible to deduce the function of the pit. However, the limited nature of the assemblage may indicate that it is derived from fuel residues.

Table 6: Charred plant macrofossils

Sample No.	4
Cut No.	7
Deposit No.	69
Charcoal <2mm	xx
Charcoal >2mm	xxx
Sample volume (litres)	10
Volume of flot (litres)	0.6
% flot sorted	12.5%

Analysis of Charcoal by Simon Gannon

Introduction

Two samples of charcoal fragments were retrieved from two contexts from the site, consisting of a burnt spread. 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.

Methods

In sorting fragments suitable for identification a guide size of at least 2mm in radial cross-section was used. In this sort some samples were found to contain an unusually large number of fragments and sub-samples were taken, as detailed in Analysis Results.

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).

Analysis Results

The results are summarized in Table 7. Classification follows that of Flora Europae (Tutin et al 1964-1980). Certain related taxa cannot be securely differentiated on the basis of their anatomical characteristics and are assigned to their respective family groups as with the genera Salix and Populus,

and the genera Craetaegus, Malus and Sorbus. Provisional identifications have been given in cases where the condition of the charcoal was degraded.
The various identifications of wood taxa were consistent with taxa from the following groups:

Broadleaf taxa
Corylaceae. Corylus sp., hazel.
Fagaceae. Quercus sp., oak.
Oleaeceae. Fraxinus sp., ash.
Rosaceae.
Subfamily Pomoideae. Craetagus sp., hawthorn; Malus sp., apple; Sorbus spp., Sorbus aucuparia, rowan; S. aria, whitebeam; S. hibernica, Irish whitebeam, and other Sorbus species.

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, 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 identifications in the context of defined tree species allowing for implications related to their environmental characteristics and possible use by ancient peoples to be drawn. Consulted reference works pertaining to environmental factors included Goldstein et al 1984, Hather 2000, Huntley and Birks 1983, Mitchell 1978, Scannell and Synott 1987 and Tutin et al 1964-1980. Kelly 1998, O'Sullivan 1996, Rackham 1976-1990 and Raftery 1996, were consulted in relation to the uses different tree species may have served in antiquity.

Taxa descriptions

Hazel

There is a single native species, Corylus avellana, hazel, coll (family - Corylaceae).
Environmental indications. Botanically a shrub, but does not flower and fruit without sunlight, so is really a canopy tree preferring woodland edges and clearings though it bears moderate shade and is also found as understorey, typically in oak woodlands. Fairly tolerant of poor soils but does not grow on acid soils and preferring chalky, fertile, deep soil. Growing throughout Ireland. .
Uses in antiquity. A tough and flexible wood, useful for small implements and small structural elements. Also grows easily in coppice-like form producing rods suitable for wattle and basketry type structures. Makes useful firewood.

Ash

There is a single native species, Fraxinus excelsior, ash, fuinseog (family - Oleaceae).
Environmental indications. Requiring deep, fertile, moist but well drained, soils. Grows well in mixed stands when not shaded. Widespread throughout Ireland.
Uses in antiquity. A strong but elastic wood suitable for many purposes including structural timber (not where in prolonged contact with water or soil). Coppices readily. Burns well even when green, partly due to low water content.

Hawthorn/ Sorbus

The represented species is probably one or more of the following native members of the sub-family Pomoideae that includes several Sorbus species. (Family - Rosaceae).

Crab Apple, Malus sylvestris, cran fia-úll; hawthorn, Crataegus monogyna, sceach geal.

Environmental indications. Both species. Very rugged and adaptable to almost any climate and most soil types, requiring moist soil and can grow in semi-shade or no shade. Natural distribution throughout Ireland.
Uses in antiquity. Both species produce a very hard close grained wood, suitable for small implements such as mallets and splitting wedges. Both species make excellent fuel; C. monogyna can also make livestock barriers and is noted for being the hottest firewood.

Sorbus. One or more of the native group of at least six species that includes, the most widespread rowan, Sorbus aucuparia, caorthann, as well as whitebeam, Sorbus aria, fionncholl coiteann; and Irish whitebeam, Sorbus hibernica, fionncholl ghaelach.
Environmental indications. General. Very tolerant of soil quality generally, though requiring moist soil. Tolerating light shade, though fruiting better in a sunny position. Effective pioneer, Rowan natural to all of Ireland. Other Sorbus species native to Ireland have a much more restricted range within Ireland and elsewhere, with Irish whitebeam found only in Ireland.
Uses in antiquity. Heavy, close grained hard wood suitable for carving and useful for making bows, tool handles, mallet heads and, if sizable, beams etcetera. Coppices well.

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.
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 etcetera. The density of oak wood makes for an optimum long lasting fire fuel (Rossen and Olson 1985).

The total range of taxa from AR25, Carrowdotia, comprises hazel (Corylus), ash (Fraxinus), hawthorn/apple/Sorbus-group (Pomoideae) and oak (Quercus). The represented taxa belong to the groups of species represented in the native Irish flora.

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 (Schweingruber 1990). On account of these considerations the identified taxa are not considered to be proportionately representative of the availability of wood resources in the environment in a definitive sense and are possibly reflective of particular choice of fire making fuel from those resources.

The most numerous of the identified taxa at this site, confined to one of the two contexts, is oak (Quercus), a typically common charcoal from the Ennis By-Pass sites, the most numerous overall. Oak (Quercus), as noted above, is a particularly useful fire fuel as well as being a commonly used structural/artefactual wood that may have had subsequent use as fire fuel. The other context contained just hazel (Corylus) and hawthorn/apple/Sorbus-group (Pomoideae) and may represent an activity distinct from that responsible for the creation of the oak (Quercus) dominated charcoal debris.

Conclusion

The identified taxa are broadly consistent with the picture of wood use from the other Ennis By-Pass sites with hazel (Corylus), ash (Fraxinus), hawthorn/apple/Sorbus-group (Pomoideae) and oak (Quercus) represented. Oak (Quercus), is particularly numerous in one of the two contexts and as such may fit within the overall demonstrated preference for this taxon as a fire fuel from the Ennis By-Pass sites.

Table 7: Number of identified charcoal fragments per sample (r: roundwood)

Sample	Cut	Deposit	Context type	*Alnus*	*Betula*	*Corylus*	*Corylus/ Alnus*	*Fraxinus*	*Pomoideae*	*Prunus*	*Quercus*	*Salicaceae*	*Taxus*	*Ulmus*
4	7	69	Pit	-	-	-	-	1	-	-	105	-	-	-
5	25	99	?Pit	-	-	18(2r)	-	-	8	-	-	-	-	-

Radiocarbon date

A single radiocarbon determination was made by Beta Analytic Inc, Miami, Florida, from charcoal from the fill of a possible pit within the cashel.

Table 8: Radiocarbon determination

Sample material	Cut	Deposit	Sample	Lab code	Radiometric age	Calendrical calibrations
Charcoal Corylus	25	99	5	Beta-211594	1480±40 BP	2 sigma (95%) Cal AD 530 to 650 1 sigma (68%) Cal AD 550 to 630

The sample material was selected from a relatively short-lived tree species to avoid the 'old wood effect'. The date is therefore likely to fairly accurately reflect the backfilling of the pit.

The radiocarbon determination indicates that human activity was probably taking place at the cashel in the middle centuries of the first millennium AD.

Discussion

The excavation at site AR25, Carrowdotia, Co. Clare has produced evidence for probable prehistoric activity in the form of deposits of burnt stone material and has examined approximately one third of an Early Christian cashel

Probable prehistoric activity

Thin spreads of largely degraded or burnt sandstone that had very little or no charcoal inclusions were found at the margins of boggy ground. Several patches of this material were located in hollows slightly uphill from the limit of the water and bog and these may possibly represent deliberately dug pits. No feature that could reasonably be interpreted as a trough was found within the limits of the site. A single piece of struck chert was recovered from a peat layer overlying the burnt stone material. It is possible that these amorphous spreads of burnt stone represent

Early Christian cashel

The main focus of, and reason for, the excavation at site AR25 was the stone enclosure, SMR/RMP site CL026:033. A little under one third of the monument was excavated as part of this project and it was hoped that the information from the excavated area could be extrapolated to allow an interpretation of the entire structure. As it happened, very little archaeological material was recovered from the interior of the cashel and only one possible feature was revealed, which was only partially excavated as it continued into the portion of the cashel outside the road CPO. This feature, thought to be a pit, produced charcoal that was radiocarbon dated to AD 530 to 650. This possible pit was the only evidence for internal structures. The rotary quernstone pieces, although found in the topsoil, but adjacent to a collapsed section of the cashel wall, also indicates the Early Christian period. The quernstone suggests that domestic activity was probably taking place at the cashel.

A few cattle teeth and a human molar were found within the cashel. It is not possible to state with certainty if these are modern or ancient.

Despite the fact that only a third of the cashel was excavated, the near absence of associated features or material suggests that the fort may have been fairly barren. Although ringforts and cashels are the most numerous archaeological monument recorded in Ireland, our understanding of their function is based on the excavation of an extremely small percentage of the examples with a distinct geographical bias to the north of the island. The sites are generally considered to house individual farmsteads dating

to the second half of the first millennium AD, with the expectation that evidence of domestic buildings and refuse will be found in their interiors. Few, if any, examples of the particular style of stone structure seen at site AR25 have previously been investigated in Co. Clare and seemingly none have been absolutely dated. It is not known whether the stone enclosures observed in the fields of Carrowdotia and nearby townlands were ever intended for habitation. The location of the cashel at AR25, half-way up a hill, would not lend itself to defence, as the monument was overlooked by higher ground to the north. Experience of the conditions during excavation suggests, however, that the plot was fairly sheltered and it would certainly have been dry as it was built onto free draining gravel.

Although the excavations did not reveal the detail of the purpose of the monument, the method of construction was clearly established. It would appear that the cashel was created by excavating both internally and externally of a circular bank, piling up earth and stones to increase the height of the bank and then building a wall on top. The wall was not a particularly solid construction, being formed of two rough faces and a rubble core, however it was 2.5m thick and although it was incorporated into the field system, it was clearly of a different build to the surrounding field walls. Whether this wall could have survived for the 1000+ years since the Early Christian period is debatable as it was found to be rather unstable when excavated. It is possible that the fact that a small segment of the fort circuit became part of a later field system led to the preferential upkeep of this portion and that the instability observed in 2003 was a result of neglect in the last 50 years.

Stout (1997) has examined the dates from 114 ringforts and associated sites and notes that 54% of the determinations fall in the period AD 540 to 884 and nearly two thirds of the sites have the mid point in their date range between AD 600 and 900. The cashel at AR25, with a radiocarbon date of AD 530 to 650 sits well with these statistics, and is towards the earlier part of the range. The typicality of the Carrowdotia cashel is reinforced by its size, as the estimated diameter of 25m seems to be average in the west (*ibid.*).

There are seven enclosures in Carrowdotia townland shown on the Sites and Monuments Record map and on the Ordnance Survey 1st Edition (Fig. 10) that may be ringforts or cashels. Two (CL026-03601&2), were shown not be archaeological (AR25, 03E1443, Taylor 2006b). There is also a significant number in adjacent townlands and it is likely that many of these are contemporary. The immediate vicinity of a probable cashel (not listed on the SMR) was examined as part of this road project also in Carrowdotia townland, 250m to the north (M27, 03E1426, Taylor 2006a). There, two small pits, including one that showed evidence of metal-working were dated to between 700 to 900 AD and may be associated with that cashel. It is therefore likely that this part of Clare, that has high quality grazing land, was relatively densely populated in the Early Christian period.

Archaeological potential off the road CPO

The archaeological deposits were fully resolved within the road CPO, but there is approximately two thirds of the cashel lying outside the road-take. This remaining part of the cashel is listed on the Sites and Monuments Record as CL026:033 and, as such, has statutory protection.

Publication plan

A summary of the findings of the excavation has been submitted to *Excavations 2003*.

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.

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TVAS Ireland Ltd
31st December 2006

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Appendix 1: Catalogue of features and deposits

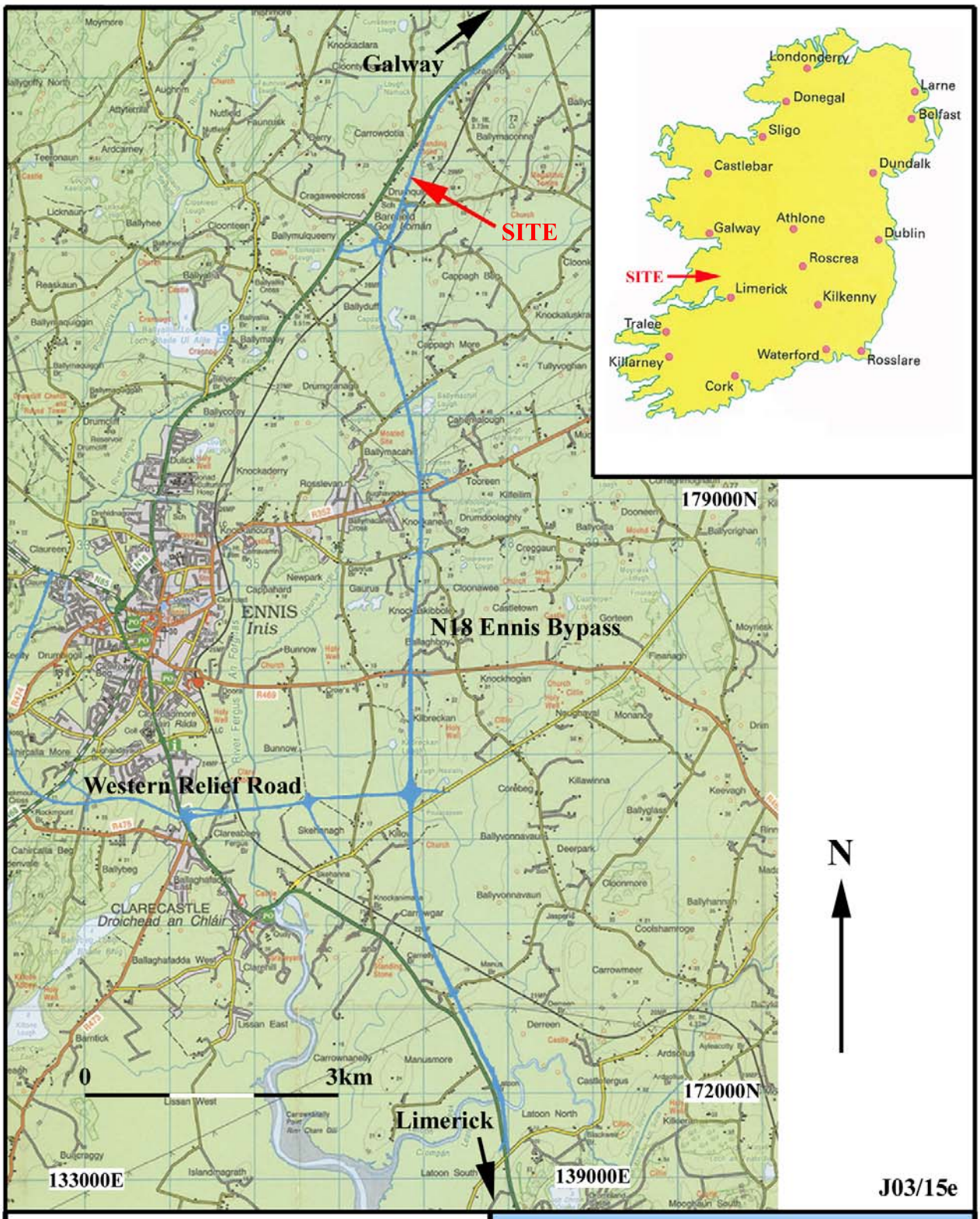
Cut	Deposit	Group Number	Description	Finds
1	55		Quarry pit	1-4
2	61		Pit	-
3	62		Pit/gully	-
4	63		Pit	-
5	66		Pit	-
6	67		?Posthole	-
7	68, 69		Pit	-
8	70, 71		Pit	5-7
9	72, 73		Pit	8
10	74		Pit	9
11	75		Pit	-
12	64		Pit	-
13	76	30	Ditch slot	-
14	77		Pit	-
15	78		?Posthole	-
16	82		Furrows – northern field	-
17	83		Furrows – southern field	10
18	84, 85		Pit/depression	-
19	93		Pit	-
20	94		Pit	11
21	96		Series of pits/depressions	-
22	98		Ditch	-
23	150	30	Ditch slot	12-13
24	151	30	Ditch slot	-
25	99		?Pit	14
		30	Group number for ditch	
-	50		Topsoil outside cashel	15-29
-	51		Ploughsoil	-
-	52		Topsoil inside cashel	30-38
-	53		Field wall	-
-	54		Rubble from wall 53	-
-	56		Rubble inside cashel	-
-	57		Rubble outside cashel	-
-	58		Field clearance outside cashel	-
-	59		Topsoil on cashel bank	39
-	60		Cashel wall	-
-	65		Root disturbance	-
-	79		Peat layer	40
-	80		Peat layer	-
-	81		Burnt spread material	-
-	86		Clay layer	-
-	87		Burnt spread material	-
-	88		Peaty layer	-
-	89		Burnt spread material	-
-	90		Burnt spread material	-
-	91		Evaluation trench backfill	-
-	92		Stone bank layer	41
-	95		Gravel layer inside cashel	42-50
-	97		Gravel layer in bank	-
-	152		Wall attached to cashel	-
-	153		Large stones inside cashel	-

Appendix 2: Catalogue of artefacts

Find No	Cut	Deposit	Category	Description	No pieces	Weight (g)
1	1	55	Metal	Iron object ?sheet steel	1	31
2	1	55	Metal	Iron shoe seg	1	34
3	1	55	Clay pipe	Clay tobacco pipe stem	1	3
4	1	55	Bone	Animal tooth	1	23
5	8	67	Pottery	Post-medieval pottery sherd	1	14
6	8	67	Pottery	Post-medieval pottery sherd	1	13
7	8	70	Pottery	Post-medieval pottery sherd	1	12
8	9	72	Pottery	Post-medieval pottery sherd	1	11
9	10	74	Pottery	Post-medieval pottery sherd	1	1
10	17	83	Pottery	Post-medieval pottery sherd	1	3
11	20	94	Pottery	Post-medieval pottery sherd (handle)	1	24
12	23	150	Pottery	Post-medieval pottery sherd	1	6
13	23	150	Pottery	Post-medieval pottery sherd	1	1
14	25	99	Burnt clay	Burnt clay fragments	2	18
15	-	50	Pottery	Post-medieval pottery sherd	1	10
16	-	50	Pottery	Post-medieval pottery sherd	1	2
17	-	50	Pottery	Post-medieval pottery sherd	1	2
18	-	50	Pottery	Post-medieval pottery sherd	1	7
19	-	50	Pottery	Post-medieval pottery sherd	1	13
20	-	50	Pottery	Post-medieval pottery sherd	1	3
21	-	50	Pottery	Post-medieval pottery sherd	1	17
22	-	50	Pottery	Post-medieval pottery sherd	1	29
23	-	50	Pottery	Post-medieval pottery sherd	1	10
24	-	50	Pottery	Post-medieval pottery sherd	1	22
25	-	50	Glass	Bottle glass fragment	1	53
26	-	50	Bone	Animal bone (sawn)	1	37
27	-	50	Clay pipe	Clay tobacco pipe bowl	1	16
28	-	50	Metal	Iron nail	1	10
29	-	50	Stone	Inscribed slate ?part of sundial, concentric circles	1	10
30	-	52	Clay pipe	Clay tobacco pipe stem	1	6
31	-	52	Clay pipe	Clay tobacco pipe stem	1	7
32	-	52	Clay pipe	Clay tobacco pipe stem	1	2
33	-	52	Clay pipe	Clay tobacco pipe stem	1	< 1
34	-	52	Pottery	Post-medieval pottery sherd	1	5
35	-	52	Pottery	Post-medieval pottery sherd	1	7
36	-	52	Pottery	Post-medieval pottery sherd	1	3
37	-	52	Pottery	Post-medieval pottery sherd	1	4
38	-	52	Glass	Bottle glass	1	5
39	-	59	Stone	Stone rotary quern fragment, in 2 pieces	2	4914
40	-	79	Lithic	Chert ?blade	1	4
41	-	92	Bone	Animal tooth	1	23
42	-	95	Bone	Animal tooth	1	1
43	-	95	Bone	Animal tooth	1	1
44	-	95	Bone	Animal tooth	1	1
45	-	95	Bone	Burnt bone fragment	1	2
46	-	95	Pottery	Post-medieval pottery sherd	1	3
47	-	95	Pottery	Post-medieval pottery sherd	1	1
48	-	95	Pottery	Post-medieval pottery sherd	1	<1
49	-	95	Metal	Iron nail	1	3
50	-	95	Clay pipe	Clay tobacco pipe stem	1	1

Appendix 3: Catalogue of samples

Sample No	Cut	Deposit	Volume sieved (L)	Volume floated (L)	Finds?	Charred plant remains
1	2	61	-	-	N	N
2	4	63	-	-	N	N
3	3	62	-	-	N	N
4	7	69	10	10	N	Y
5	25	99	0.25	0.25	N	Y



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N18 Ennis Bypass, Site AR25
Carrowdotia, Co. Clare
03E1442

Figure 1: Site location

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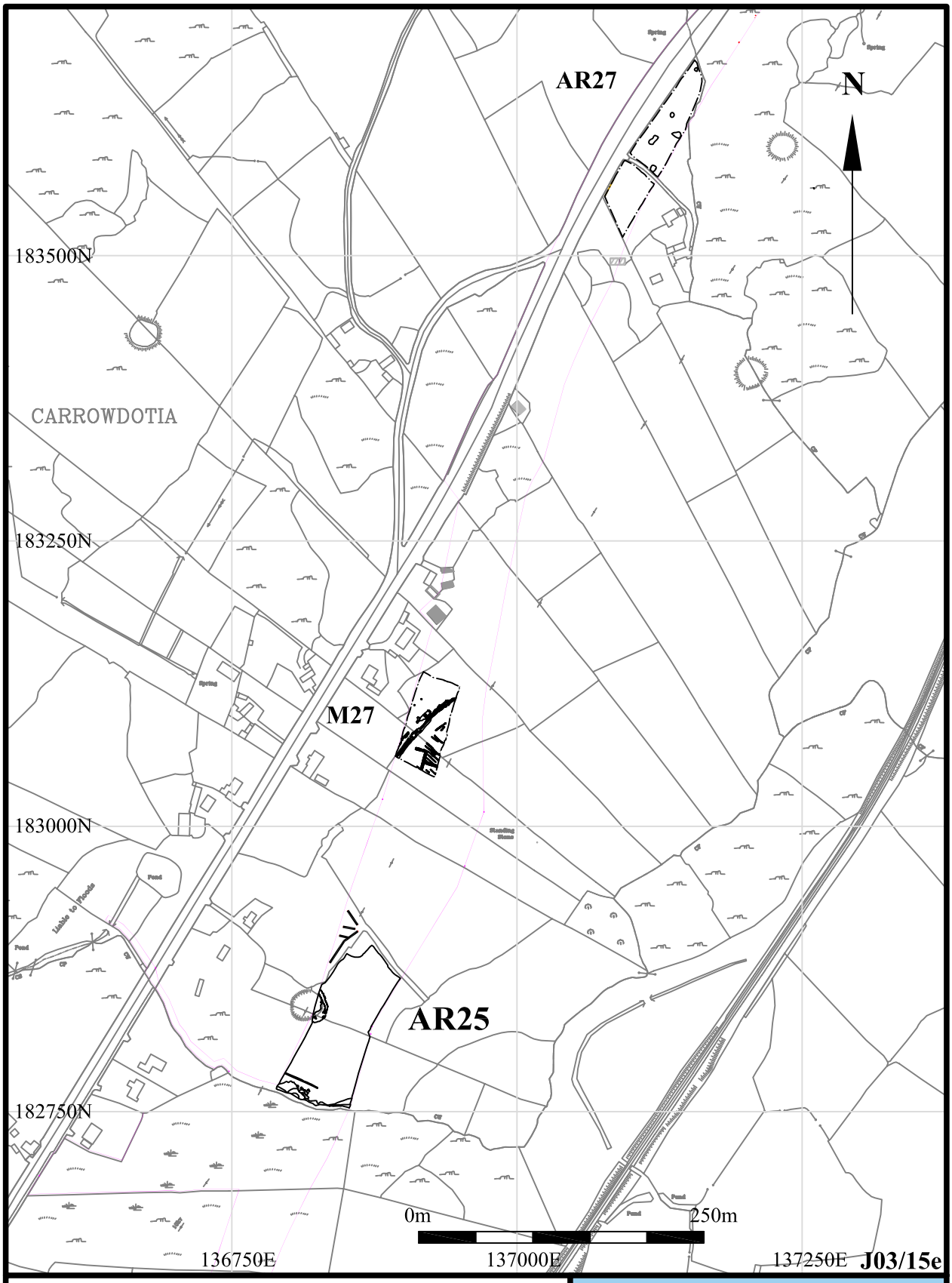

N18 Ennis Bypass AR25, Carrowdotia, Co. Clare

03E1442

Figure 2: Location of site relative to nearby excavations

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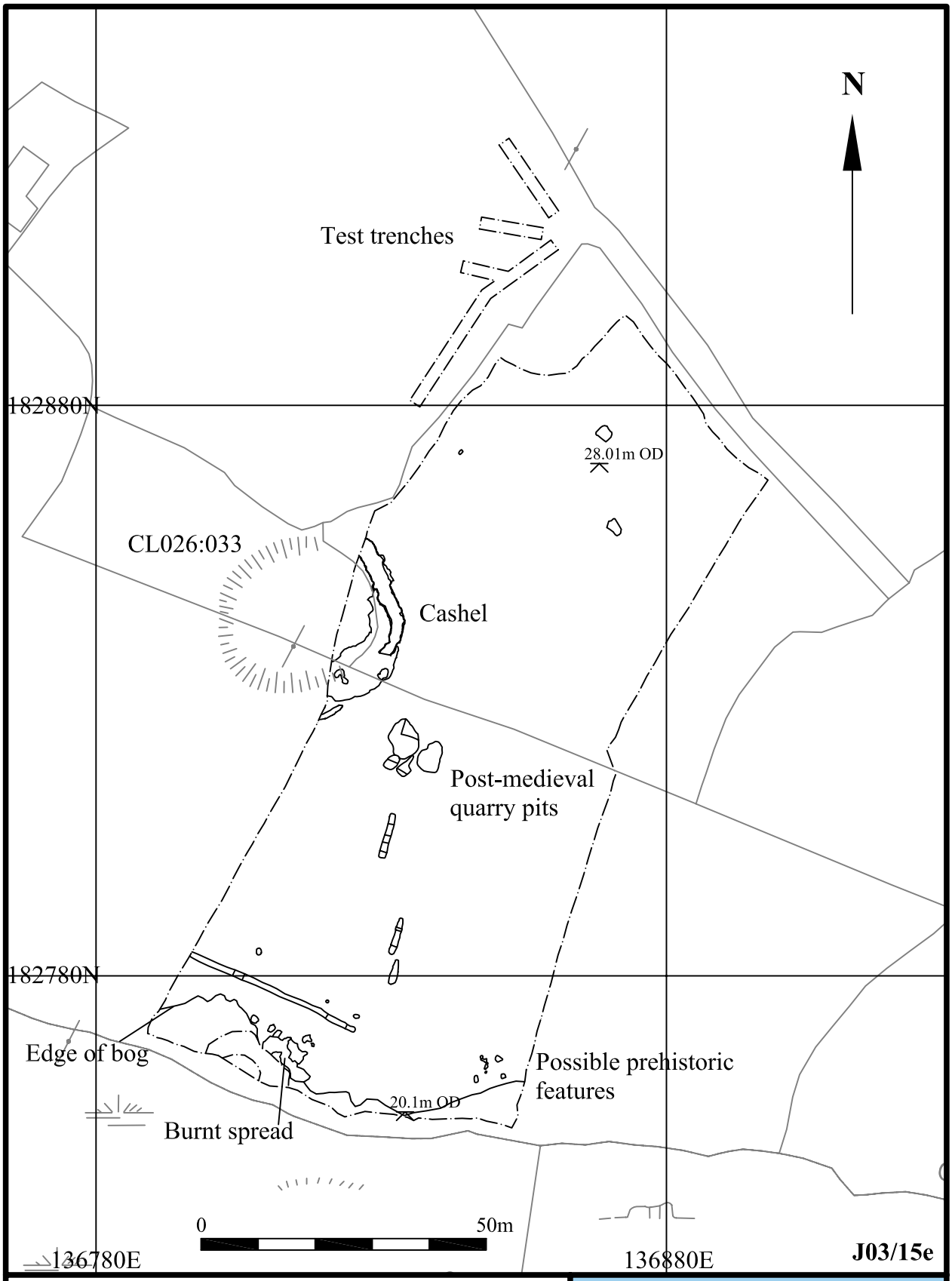

N18 Ennis Bypass AR25, Carrowdotia, Co. Clare
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Figure 3: Site plan - summary

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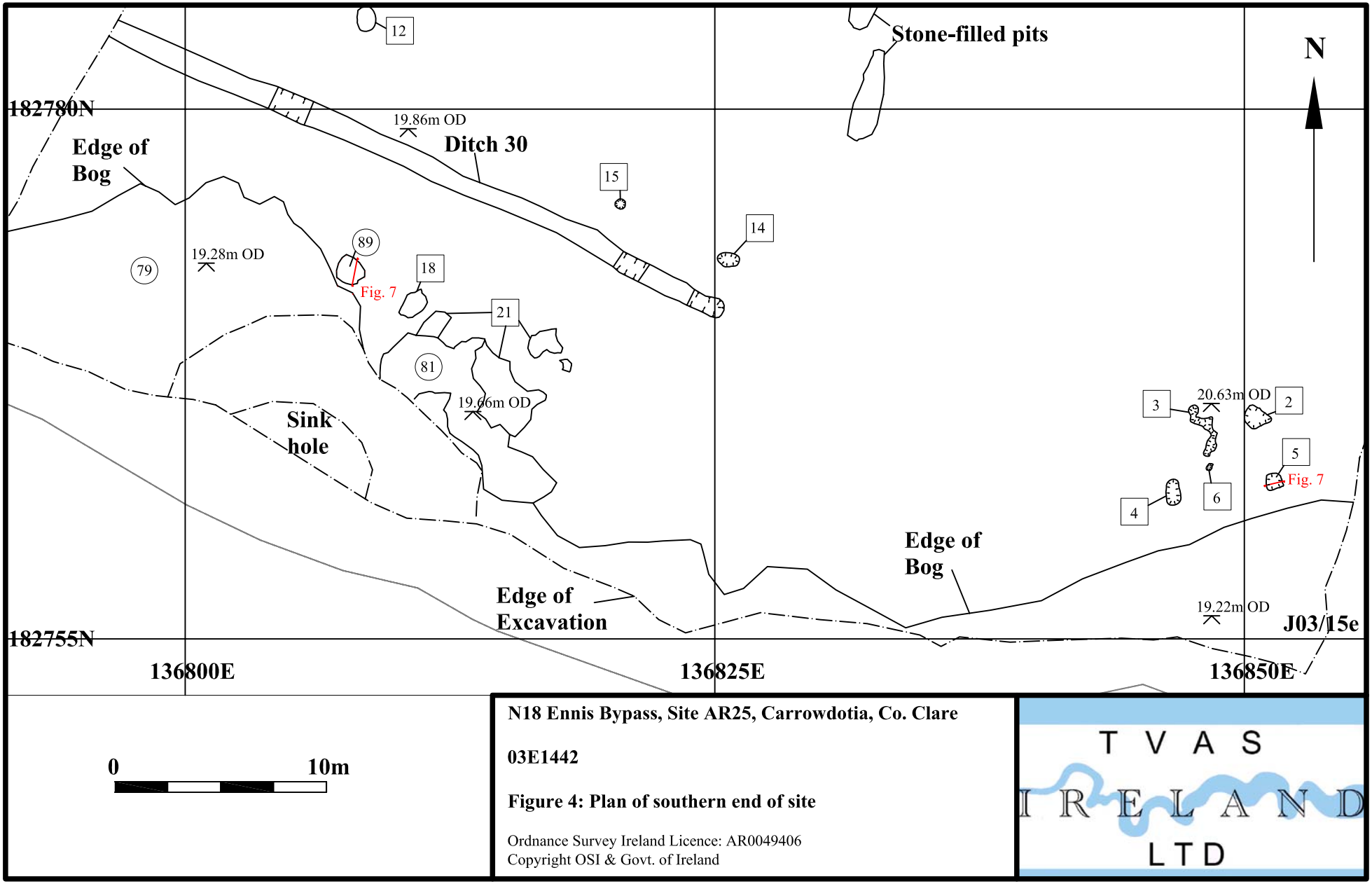

N18 Ennis Bypass, Site AR25, Carrowdotia, Co. Clare

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Figure 4: Plan of southern end of site

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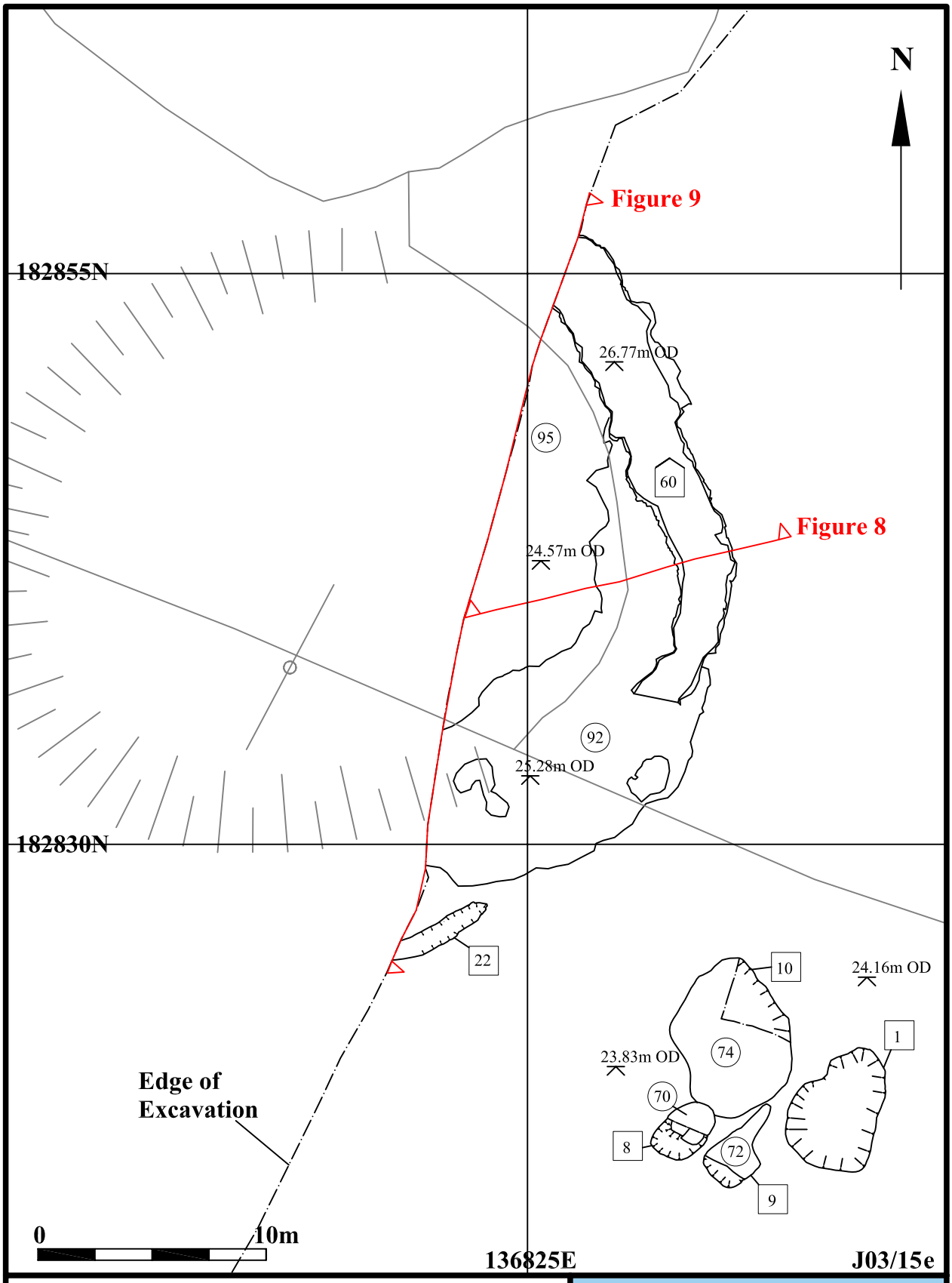

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Figure 5: Plan of cashel and nearby post-medieval pits

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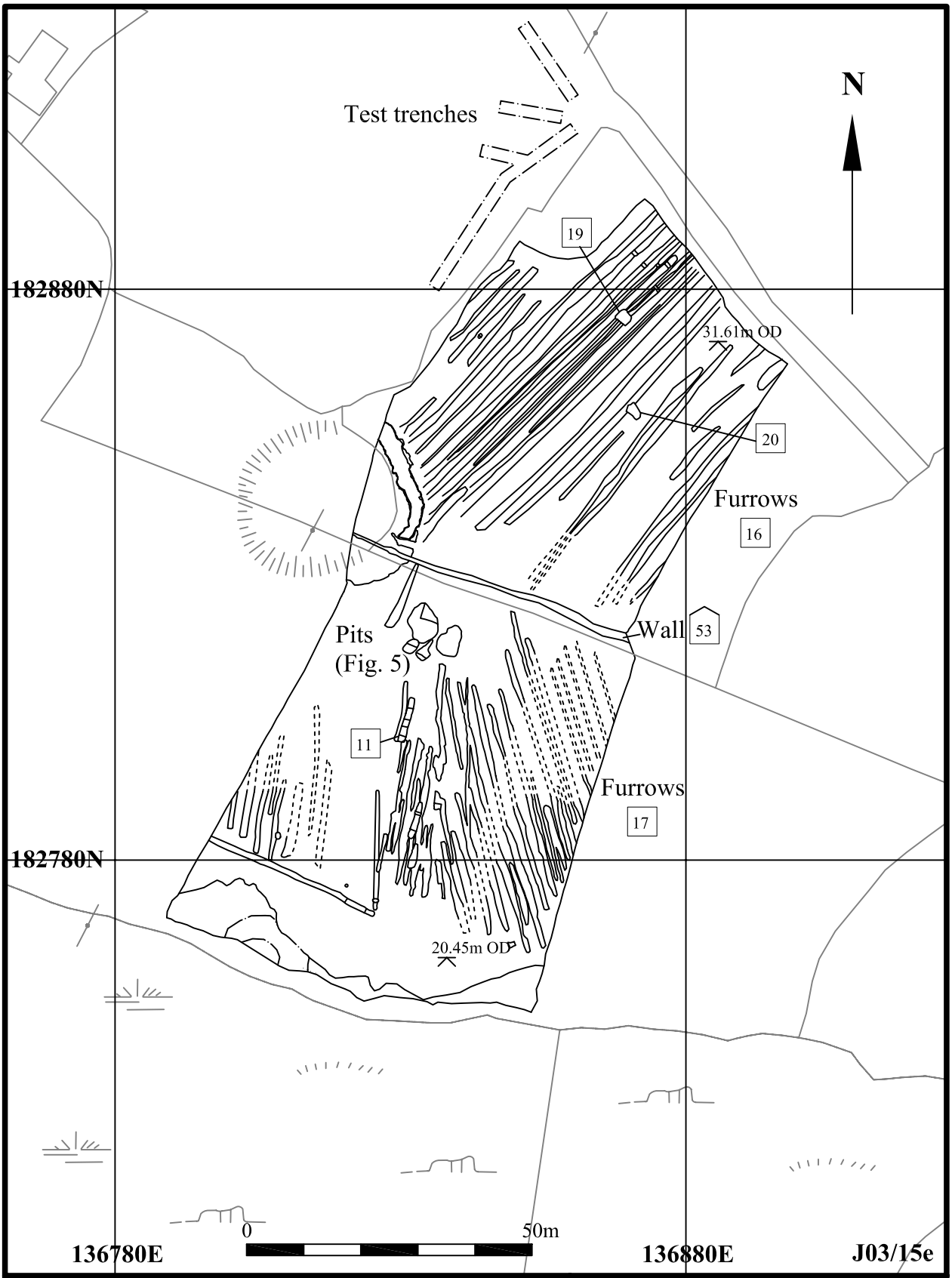

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Figure 6: Plan of post-medieval features

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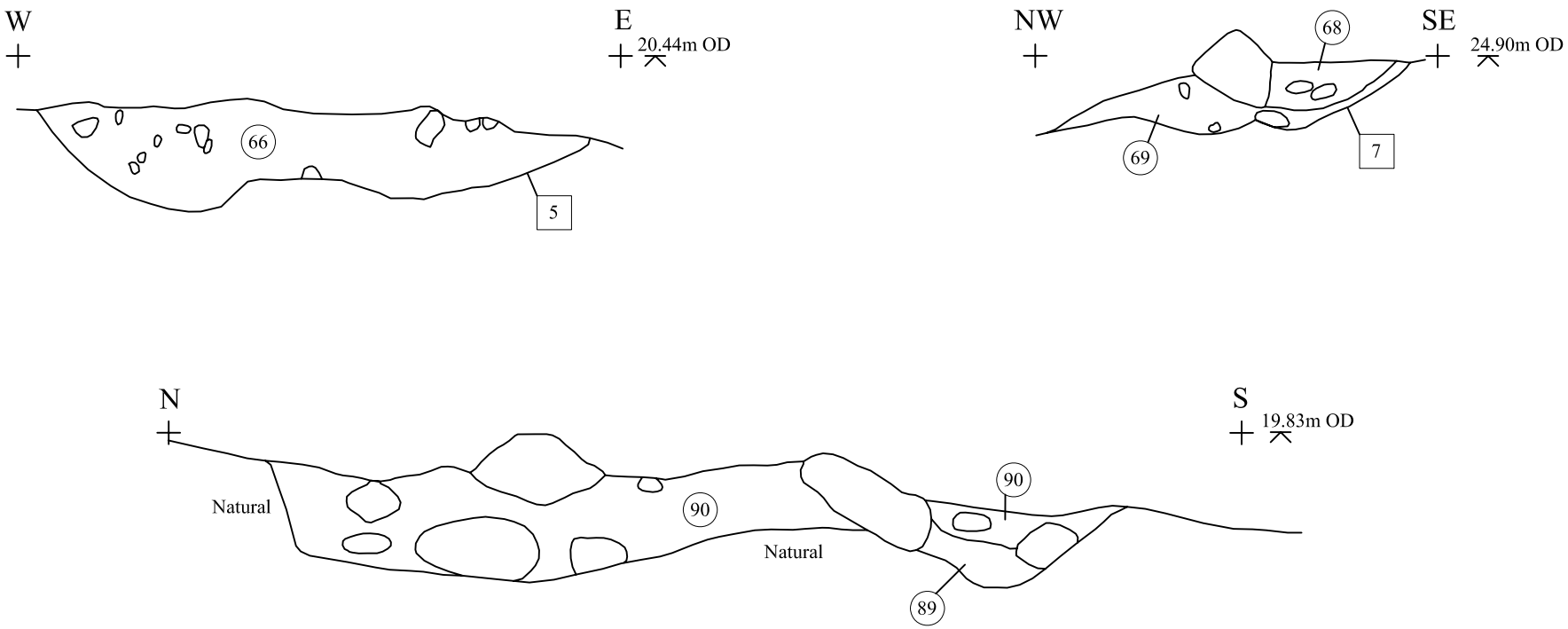

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0 0.5m

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Figure 7: Sections through undated pits and section through burnt stone material

Scale 1:10

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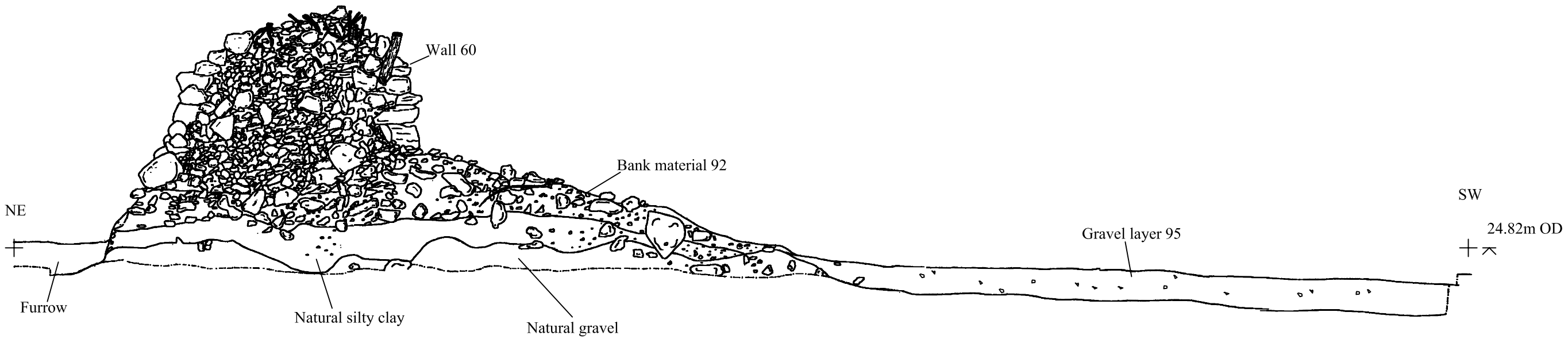

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0 2m

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Figure 8: Section through cashel

Scale 1:40

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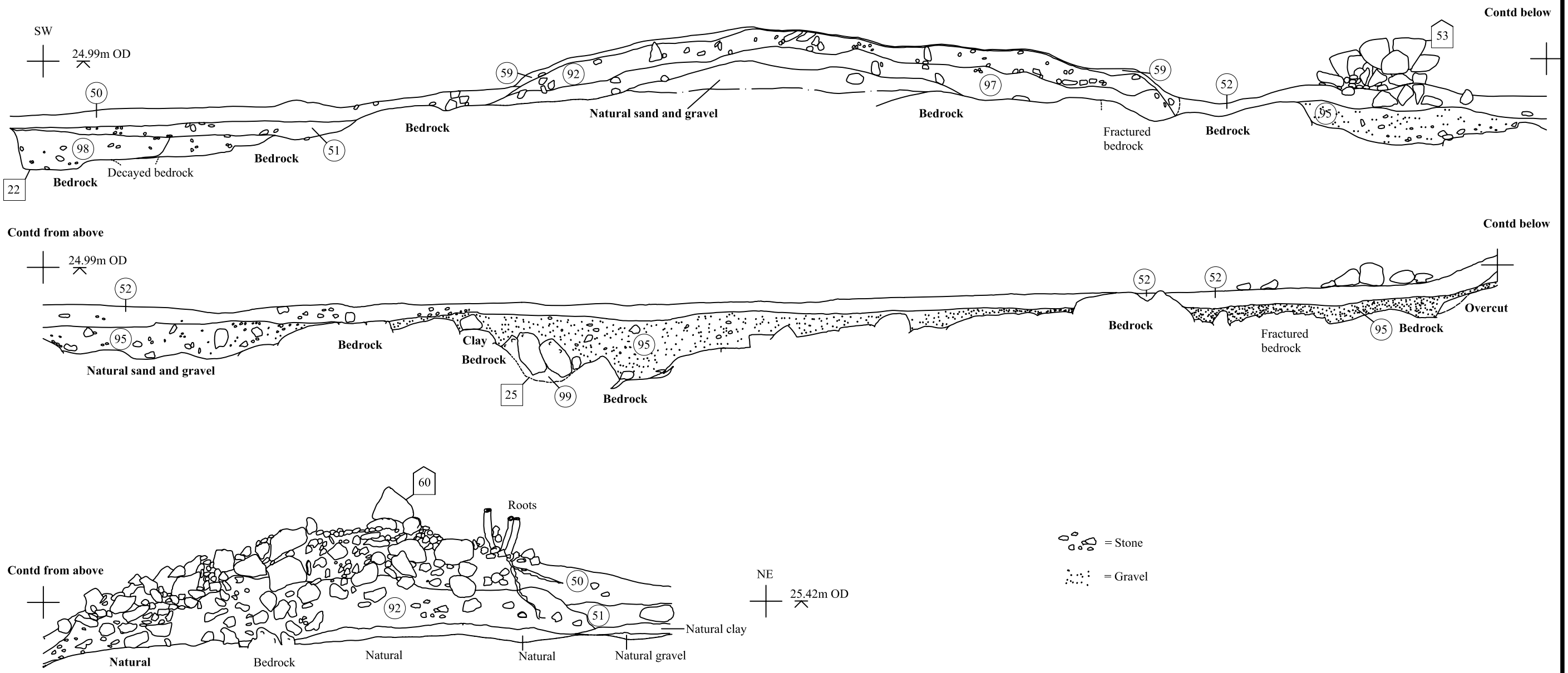

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Figure 9: Baulk section across cashel

Scale 1:40

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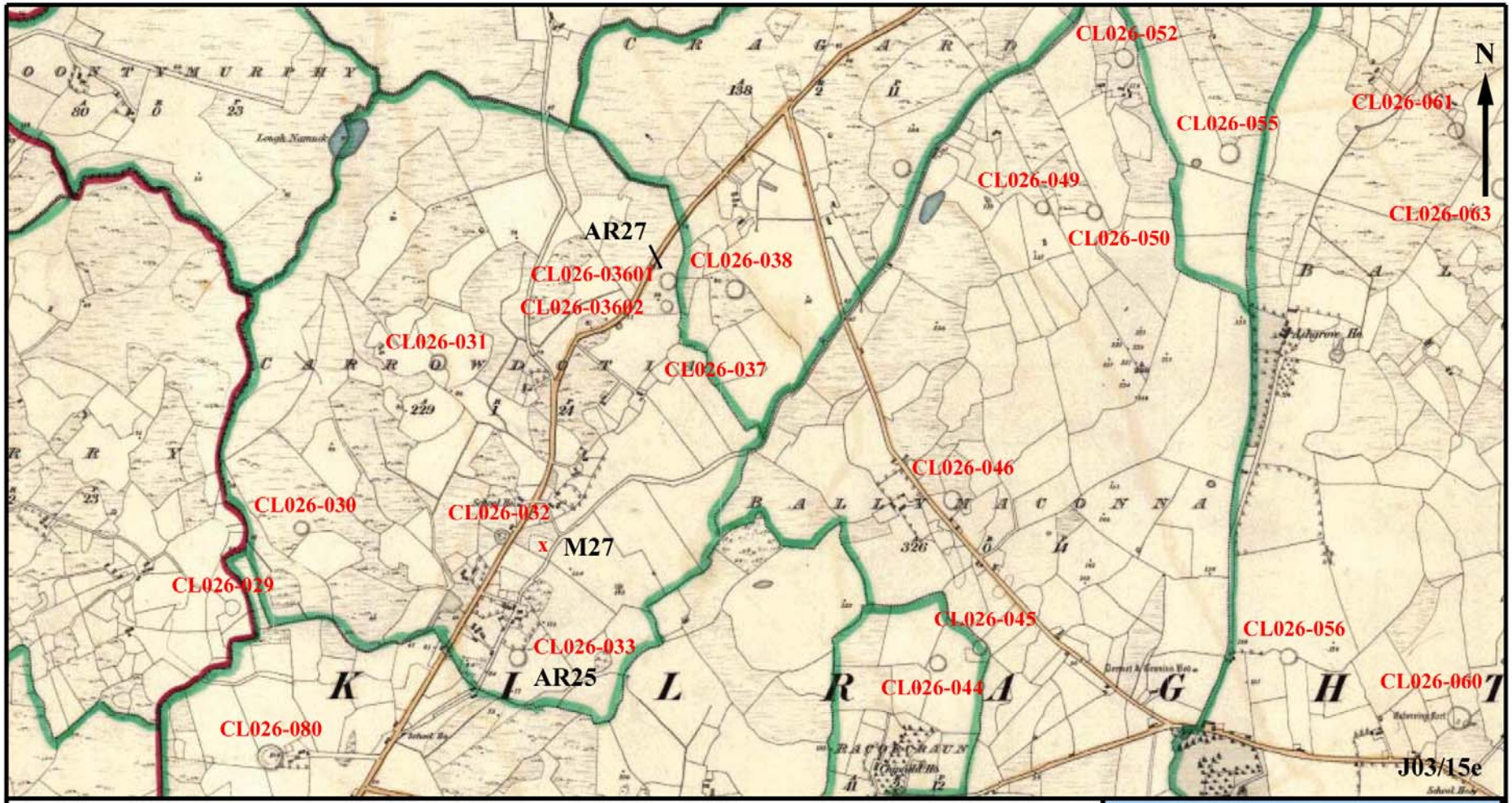

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Figure 10: First edition Ordnance Survey Map showing enclosures in vicinity of AR25

Based on OS 6" to mile 1st Edition, surveyed 1840.
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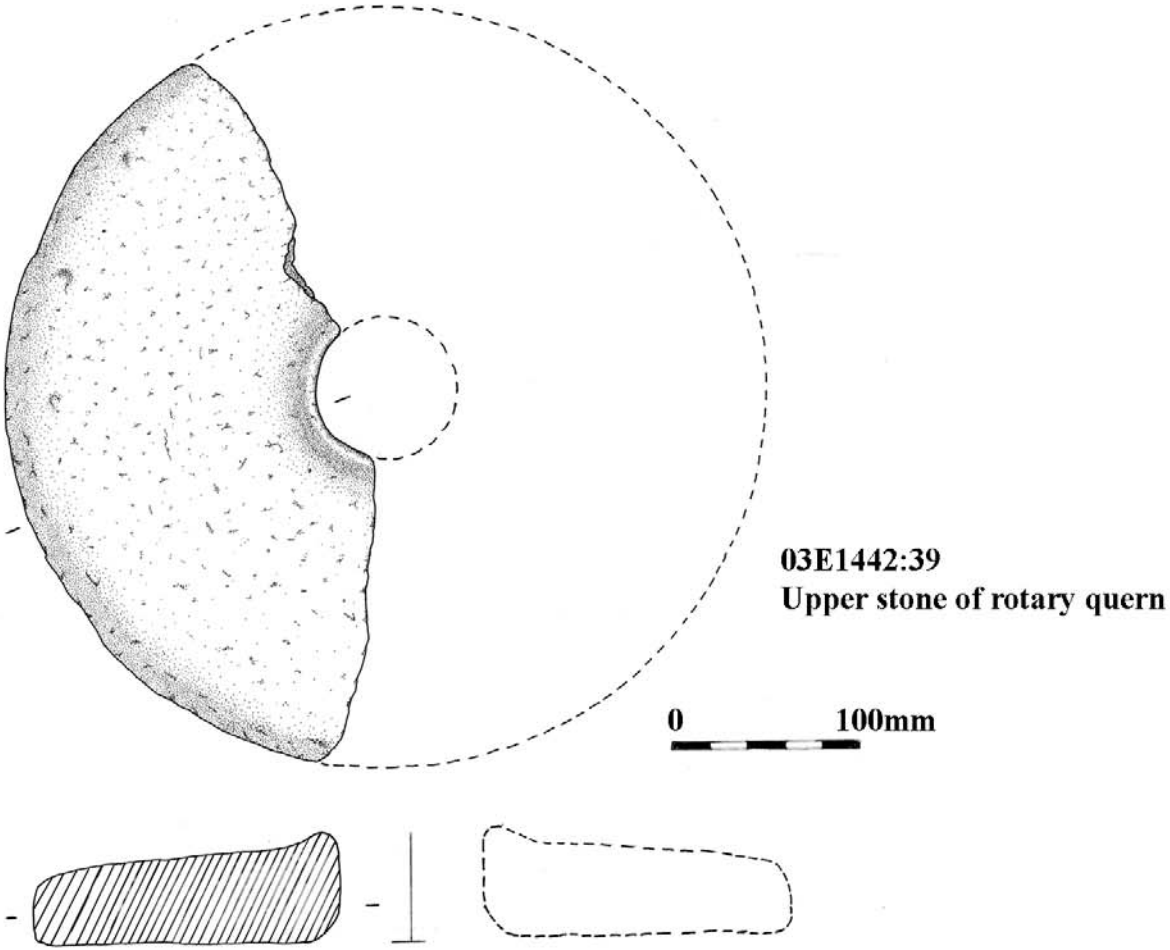

N18 Ennis Bypass, Site AR25, Carrowdotia, Co. Clare, 03E1442

Figure 11: Quern stone

Drawn Astrid Nathan

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Plate 1: Burnt spread. Looking south-east. Scales 1m, 0.5, and 0.2m

Plate 2: Cashel prior to cleaning. Looking west

Plate 3: Cashel after cleaning and removal of rubble. Looking west

Plate 4: Slot through cashel wall and interior. Looking north-west. Scales 1m, 0.5m, 0.2m and 0.1m

Composite photo.

03E1442