N7 Nenagh to Limerick
High Quality Dual Carriageway
Archaeological Resolution Project
E3325, Carrigatogher (Harding) Site 2,
Co. Tipperary

Final Archaeological Excavation Report

for

Limerick County Council

Kate Taylor

30th December 2010

J06/15

(NGR 181530 176705)

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Summary

Scheme name: N7 Nenagh to Limerick High Quality Dual Carriageway

Scheme number: A026/000

Site name: E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Scheme sub number: n/a

Record number: E3325

Townland: Carrigatogher (Harding)

Parish: Burgesbeg

Barony: Owney and Arra

County: Tipperary

NGR: 181530 176705

OS 6" Sheet No: Co. Tipperary Sheet 020

Chainage: 25900

Client: Limerick County Council, Mid West National Road Design Office, Lissanalta House, Dooradoyle Road, Dooradoyle, Co. Limerick

Naturally occurring geology: Orange/grey sandy clayey gravel

TVAS Ireland Job No: J06/15

Licence Eligible Director: Kate Taylor

Report author: Kate Taylor

Site activity: Excavation

Site area: 467m^2

Date of fieldwork: 30th March – 25th April 2007

Date of report: 30th December 2010

Summary of results: A spread of burnt stone and six pits with burnt stone fills were excavated in a heavily disturbed area. One of the pits had corner postholes indicating an original timber lining and was dated to the Late Bronze Age. Another pit was dated to the end of the Middle Bronze Age. No artefacts were recovered.

Monuments identified: Middle to Late Bronze Age pits and undated burnt stone spread and pits

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 √30.12.2010

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Kate Taylor

Introduction

This report documents the final results of the archaeological excavation of Middle and Late Bronze Age pits, an undated burnt stone spread and four undated pits (site E3325) on the route of the N7 Nenagh to Limerick High Quality Dual Carriageway (HQDC), Carrigatogher (Harding) Site 2, Co. Tipperary (NGR 181530 176705) (Fig. 1). The excavation described here forms part of the N7 Nenagh to Limerick HQDC Archaeological Resolution Contract.

A preliminary report on the excavation was produced in July 2008 (Taylor 2008).

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 archaeological work was carried out following Ministerial Direction given under the National Monuments (Amendment) Act 2004.

Project background

The excavation was carried out on the route of the new N7 Nenagh to Limerick High Quality Dual Carriageway. The scheme starts at the existing Newport Junction in the townlands of Carrowkeel and Mountshannon, runs north-eastwards towards Nenagh (Carrigatogher) and continues to Ballintotty at the end of the Nenagh Bypass, which will be widened. The total length of the route is 35.7 km.

The archaeological work included assessment of sites previously recognised and prospection for sites without surface expression by means of mechanical test trenching. A number of archaeological sites were confirmed or recognised during this testing. As preservation *in situ* was not a reasonable option, the resolution strategy for these sites was preservation by record, i.e. full archaeological excavation.

The archaeological fieldwork and post-excavation work were funded by Limerick County Council through the National Roads Authority.

Location, topography and geology

Carrigatogher (Harding) Site 2 (E3325) was located at NGR 181530 176705 in Carrigatogher (Harding) townland, parish of Burgesbeg, barony of Owney and Arra, Co. Tipperary (Figs 1 and 2).

The route of the new Nenagh to Limerick HQDC traverses a gently undulating landscape of lowland pasture broken only by a large area of peat basin that straddles the border between Counties Limerick

and Tipperary. The region is overlooked by the Silvermines Mountains to the east and the Arra Mountains to the north and west.

Carrigatogher (Harding) Site 2 (E3325) was located north-west of a minor road on a plateau in the foothills of the Arra Mountains, overlooking the Kilmastulla valley to the east. The area was formerly the garden of a house that was demolished in advance of development. The underlying natural geological deposits are glacial till, specifically mid orange clayey gravel and the site lay at 88 m above Ordnance Datum (OD).

Archaeological and historical background

A search of documentary and cartographic sources was made. Information was gathered from, amongst other sources, the Sites and Monuments Record (SMR), Record of Monuments and Places (RMP) files, the National Monument Service website www.archaeology.ie, the *Excavations* database and publications (www.excavations.ie and Bennett 1987-2008) and from sources in the County Tipperary Local Studies Centre, Thurles.

Cartographic sources

The Down Survey map, 1655-56, of *Burges* (Burgesbeg) parish shows the townland of *Carrigtogher* (Fig. 3). A tower house and two hills are depicted within the townland. North-east of the townland is *Knockanerapesig* part of *Carrigtogher* and to the south-west is *Curraghnenane* in *Carrintogher Arabb*. To the south-east are a bog in common and a bog and wood in common.

There are a number of buildings depicted on the Ordnance Survey (OS) 1st edition 1843 map in Carrigatogher (Harding) townland (Fig. 4), most of which are located along the main road and minor roads that run through the townland. There is one lone building in among the open fields within the road take and a farmstead directly to the south-east of the site. This edition clearly marks out the division of Carrigatogher into Harding, Abbott and Ryan which follows the Down Survey Map. A Castle (in ruins) is annotated to the far east of the townland. In the south of the townland a Burial Ground (Site of) is annotated as a circular feature under the junction of two minor roads. The name of the burial ground is given as Kylecaumery. An Old Bridge is to the south-west of the burial ground. A Toll Gate is located on the major road at the boundary of Carrigatogher (Harding) and Carrigatogher (Abbott) townlands. Carrigatogher Bog, which lies to the south-east of the townland, is divided between the Harding, Abbott and Ryan divisions of Carrigatogher.

The 1851 Griffith Valuation map shows no changes in the townland.

The 1901-1902 25" OS edition however shows changes in the short 50 years from the previous map. The biggest change is the absorption of part of Patrickswell townland into Carrigatogher (Harding) townland. The boundary has been moved north-west to make a minor road the boundary consequently moving St Patrick's Well into Carrigatogher (Harding). Other significant changes are the absence of the lone building within the road take and the farmstead directly to the south-east of the site. Three disused Limekilns are annotated on the map; one by the Old Bridge, one by the Castle (in ruins) and one to the south-west of the site within the road take. The Toll Bridge on the main road has been replaced by Carrigatogher Post Office.

The 3rd edition 6" OS map, surveyed 1901-05, shows no real change from the previous map.

Sites and Monuments Record/Record of Monuments and Places

There are a number of previously recorded monuments in the townland, listed below, none of which will be directly impacted by the development.

RMP	*Description*	*Distance from site*
TN020:056	Holy well	1.10 km west
TN020:05701	Castle	400 m south-east
TN020:05702	Bawn	400 m south-east
TN020:05703	Dwelling	400 m south-east
TN020:05704	Earthwork	100 m south-east
TN020:065	Bridge	700 m south-west
TN020:06601	Children's burial ground (site)	550m south-west
TN020:06602	Enclosure (site)	550 m south-west
TN020:067	Enclosure	780 m south-west
TN020:105	Watermill	Un-located

The holy well is associated with saintly devotions from the medieval period onwards. St Patrick's Well is 'a natural spring well of rectangular plan (0.75m x 0.65m x 0.9m H) enclosed by a stone canopy set into the S face of a low rise of ground with a stream running out from the S face of the well. No votive offerings are visible' (Farrelly and O'Brien 2002, 274). According to the OS Name Books the well was visited on St Patrick's Day and every Saturday for its curative powers (O'Flanagan 1930, 115).

The castle is depicted on the Down Survey map (Fig. 3) and could be typically dated to the 15th to 16th centuries AD. 'Only the semicircular wall-footings of a small tower (H 0.5m) survive with the wall-footings of a possible bawn wall (T 1m) projecting from the N face of the possible tower. Low wall-footings of a possible building to the N of the bawn may be remains of a stone house mentioned in the Civil Survey in 1654-6' (Farrelly and O'Brien 2002, 363-4, 390). In 1985 earthworks were noted to the east south and west (Fitzgerald 1985) but a later survey found no surface trace of the earthworks (The National Monuments website www.archaeology.ie).

The bridge is located across the townland boundary with Carrigatogher (Abbott) and is described thus 'an eighteenth-century bridge (Wth 5.2m; wall T 0.48m) traversing a river consisting of a single round arch of well-cut voussoirs visible on the E face only' (Farrelly and O'Brien 2002, 341).

Children's burial grounds may have their origins in the medieval period but many continued to be used up to the latter 20th century AD. The example in Carrigatogher (Harding) was situated within 'a fort … which was taken away in the year 1810 to make the … coach road. There were a great number of human bones found … as well as the boards of coffins' (O'Flanagan 1930, 115)

The watermill is listed for Carrigatogher Abbott and Harding townlands and is mentioned in the Civil Survey as located somewhere in 'Carrigtohir' and 'Curraghnennan' where there was 'the Ruines of a mill' (Simington 1931, 147). This site is un-located at present. Watermills can date to anywhere between the early medieval and modern periods.

The Excavations *database*

A search of the *Excavations* database was made for the townland of Carrigatogher (Harding) and the neighbouring townlands of Carrigatogher (Abbott), Carrigatogher Bog (Abbott), Carrigatogher Bog (Harding), Carrigatogher (Ryan), Monaroan and Patrickswell. Investigations undertaken as part of this road scheme are not included here as they are discussed in detail elsewhere. There were two licences issued for Carrigatogher as part of the Nenagh Bypass assessment.

Carrigatogher, 96E318
Four test trenches were opened on a dry raised platform, close to the Dublin road, in an otherwise marshy field. Two low walls were present at the location of a farmstead noted on the 1st edition OS map, and they were dated to the post-medieval period (McConway 1996).

Carrigatogher/Tullahedy, 98E0160
A corridor 600 m x 20 m was monitored along the western limit of the N7, Nenagh Bypass, from Tullahedy (SMR 20:79) in the east, linking up with the N7 in the west. During monitoring, large subrectangular pits were uncovered. It was concluded that these pits form part of the extensive post-medieval/industrial archaeological landscape identified at Tullahedy. The pits appear to have been dug for the purpose of excavating the lime marl, to be used as a fertilizer in the reclaiming of the surrounding bogland. Such activity was common during the 19th century (McConway 1998).

National Museum of Ireland Topographic Files

No stray finds are recorded on the National Museum of Ireland Topographic Files for Carrigatogher (Harding) or surrounding townlands.

Documentary sources

The townland name, Carrigatogher, derives from the Irish *Carraig an Tóchair. Carraig* is the Irish for rock while *tóchar* signifies a trackway or causeway (MGL 2003).

In the Civil Survey of 1654-6 Carrigatogher is called *Carrigtoghir* and is listed with Curraghnennan. In 1640 the proprietors of Carrigatogher and Curraghnennan were 'Lewes Wailsh Esqr. Irish Papist and Richard Lennard of the Citty of Lymicke Sheoo maker an English Protestt' (Simington 1931, 147). The lands contained an estimated 300 plantacon acres, including 200 arable acres, two meadow acres, 20 pasture acres and 78 red bog acres. The land was valued at 12 li and is described below:

The sd three plds of Carrigtohir & Curraghnennane are bounded on the West wth. ye lands of Bunagurt, on the East wth ye lands of Gurrane both in this Parish, on the South wth. the Lands of Lissinenaclouty in Upp Ormond & the Parish of Kilmore, and on the North wth. the lands of Carrigmadden in the Parish of Youghill The sd. Lewes Wailsh pprietor in fee in Right of his Wife Onora of a third pte of the sd three plds, and of the other two third ptes pprietor in fee by purchas long before the Rebellion from Margarett & More Bryen Sisters to the said Onora (as wee are informed) Of wch. Three plds one pld & the Castle stands mortgadged unto Richard Lennard of the Citty of Lymicke Sheoo maker (as wee are informed). Upon these 3 plds stands a Castle & a stone house the Ruines of a mill & two thatcht Tennemts (ibid).

The Ordnance Name Book 1840 translates Carrigatogher as the 'rock of the causeway' and tells us that the family names were added later. Carrigatogher (Harding) townland is described thus:

Townland under cultivation having two orchards and a castle in the N. E. side, an Old Bridge and Turnpike in the South side there are several pieces of furze Rocks and Gravel pits in it, and the Mail road leading from Nenagh to Limerick passes through it (O'Flanagan 1930, 101).

The castle is further described as measuring approximately 5.70 m internally with a possible vault over the first floor (ibid, 114). Additionally the Old Bridge is described as *'a bridge of one arch over the stream which divides Carrigatogher Abbot from Carrigatogher Harding and the road which formerly lead from Limerick to Nenagh'* (ibid, 108).

Samuel Lewis writing in the mid 19th century describes Burges Beg parish (Lewis 1837, 231-2) but not Carrigatogher townland itself.

There are numerous tenants listed in Carrigatogher (Harding) townland but the lessor for the whole of the townland is Albert Maxwell Esq (Griffith 1851). The occupier of the land on which Site E3325 is situated was Timothy Ryan.

A study was carried out circa 1970 and looked at significant post-medieval buildings in the region; ecclesiastical buildings (including Church of Ireland examples), large houses (country and town

examples), vernacular houses, bridges and other miscellaneous items. Carrigatogher Castle was described as 150 m across two fields, a small section of a round castle, about 6 m long and 8 m wide and overgrown (An Foras Forbatha circa 1980, 2).

Environmental Impact Statement

As part of the Environmental Impact Statement (EIS) for this road project, an Architectural, Archaeological and Cultural Heritage Report was commissioned (MGL 2003). This statement of archaeology and built/cultural heritage was based on a desktop study of published and unpublished documentary and cartographic sources, supported by a field inspection and aerial inspection of the proposed route.

In addition to the Recorded Monuments described above the report identified the following areas of potential:

A farmyard with three buildings is depicted on the 1843 1st edition OS map (Fig. 4) in Carrigatogher (Harding) but these buildings differ in size on the 3rd edition OS map. The buildings are Property No. 41 and the present farmhouse is late-nineteenth century in date, while some of the farm buildings appear to be original to the property. The property lies approximately 90 m south-west of site E3325, outside the Compulsory Purchase Order (CPO).

Properties 42-45 were late 20th century dwellings deemed to be of no architectural merit (O'Brien and Quinn 2006). These structures were demolished prior to the site being excavated. Site E3325 lay within the former garden of Property 42.

The largely demolished remains of Carrigatogher House (Property 46, ID No. 47) lie 470 m north-east of the site. The house is marked on the 1843 OS map and was deemed to be of architectural merit.

A potential archaeological feature, a slightly raised level platform, was identified during the walk-over survey in a field 280 m to the east (ID No. 46). In Carrigatogher (Harding) a roughly semi-circular flat-topped platform with gentle slopes was identified as a potential archaeological site and given ID No. 41 – this was incorporated into the excavated site E2286 (Taylor 2010).

Archaeological investigation on the N7 Nenagh-Limerick HQDC

Archaeological test trenching by means of mechanically excavated centre-line and offset trenching along the route of the road project was undertaken by Aegis Archaeology Ltd and Judith Carroll and Company Ltd in early 2006. Areas of potential identified in the EIS were tested more intensively where possible and at this time the watercourses and townland boundaries were also examined. Further testing was undertaken by Headland Archaeology Ltd and TVAS (Ireland) Ltd in early 2007. This further testing was targeted on previous inaccessible areas i.e. under power lines etc. The results of the testing are not discussed except where archaeological deposits were encountered.

A number of sites were excavated in Carrigatogher (Harding) townland other than E3325; E2406, E2474, E2469, E2285 and E2286. Site 1, E2406, approximately 170 m south, contained the possible remains of a late Neolithic/Early Bronze Age roundhouse, pits and postholes, Late Bronze Age troughs and burnt spreads, early medieval hearth and post-medieval activity (MacLeod and Clarke 2009); Site 3, E2474, between 45 and 275 m west, was a large site that incorporated Middle Neolithic pottery associated with occupation, Early Bronze Age trough and burnt spreads, two Middle Bronze Age roundhouses, Middle to Late Bronze Age *fulacht fia* with associated features, Late Bronze Age metalled working surface with burnt deposits and pits and early medieval pits (Hackett 2009a); Site 4, E2469, 260 m south-west, Early Neolithic pottery, Early to Middle Bronze Age circular structure, hearth and kiln and post-medieval features (Hackett 2009b); Site 5, E2285, 600 m south-west, had Neolithic pits, three roundhouses dated to the Early and Middle Bronze Age in addition to various Middle Bronze Age, Late Bronze Age and Iron Age pits and postholes (Ruttle and Taylor 2010) and

Site 6, E2286, 660 m south-west, included the previously identified potential site ID No. 41 and revealed a Middle Bronze Age *fulacht fia,* a multi-phased early medieval ditched enclosure containing graves, a structure, a kiln, iron-working waste, pits and postholes (Taylor 2010).

Other sites nearby to E3325 include: Carrigatogher (Ryan) Site 1, E2408, 470 m east, produced evidence of a Final Neolithic/Early Bronze Age phase, a possible early medieval ditch, early medieval charcoal production pits and post-medieval linear features and furrows (O'Connell 2009); Carrigatogher (Ryan) Site 2, E2407, a large area beginning 100 m east of the site, contained Neolithic pits, Early Bronze Age pits, postholes and stakeholes, Middle and Late Bronze Age activity, Late Iron Age/early medieval charcoal production pits and kiln (MacLeod and O'Neill 2009); Carrigatogher (Ryan) Site 3, E3327, 40 m north-west, contained two roundhouses and a smaller structure, pits and a small burnt stone spread with a trough, all dated to the Middle Bronze Age (17^{th}-16^{th} century BC), in addition to a 14^{th}-12^{th} century BC hearth and a medieval pit (Mulcahy and Taylor 2010) and Carrigatogher (Ryan) Site 4, E2473, 90 m north-west, produced a large Late Neolithic/Early Bronze Age *fulacht fia* with associated pits and troughs (Hackett 2009c).

Discussion of archaeological and historical background

Other excavations within the townland and indeed the neighbouring townlands have proven that there was continuous occupation from the Middle Neolithic to the Late Bronze Age; evidence was of occupation associated with roundhouses, pottery and *fulacht fia* sites. The next phase of activity was charcoal production pits dated to the early medieval period, followed by post-medieval farming activity.

The structure in the centre of the townland depicted on the 1^{st} edition map now has no above ground expression, nor does the structure adjacent to the townland boundary with Carrigatogher (Ryan). There is however a dry-stone wall marking the townland boundary which may have been associated with the structure or the stone from the structure was re-used to build the wall.

Earlier test excavations

The area around Carrigatogher (Harding) Site 2, E3325, was not examined during the main phase of centre-line and offset testing of the road route, as the land was occupied by dwellings. The site was identified during the additional test trenching carried out following the demolition of the dwellings (MacLeod and O'Neil 2007).

The test trenching identified seven seemingly isolated spreads of burnt stone within an area 28 m across. The full extent of the site was exposed at this stage.

Following the submission of a report on the testing (ibid) the site was excavated under Ministerial Directions.

Excavation Aims and Methodology

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 30^{th} March and 25^{th} April 2007 and was directed by Kate Taylor, supervised by Jaime Parra Rizo and assisted by Denise Hennessey, Lukasz Janicki, Mary-Clare Linnane, Astrid Nathan, Waldek Podlecki, Jerzy Spyra and Slawomir Stawicki.

The excavation area was approximately rectangular, and measured 33 m by 15 m (467 m^2). Topsoil was removed during test trenching by a 20 tonne tracked mechanical excavator fitted with a 6-foot (1.80 m) toothless grading bucket and operated under direct and continuous archaeological supervision. The spoil was visually scanned for artefacts.

The archaeological features were excavated by hand.

A full written, drawn and photographic record was made according to the TVAS (Ireland) Ltd Field Recording Manual (First Edition 2003). The site was tied into the National Grid using a Global Positioning System (GPS) unit.

Excavation results (Figs 5-8, Plates 1-2)

The excavation has revealed evidence of a burnt stone spread, six pits with burnt stone fills and a drain (Fig. 5, Plate 1). The burnt stone activity is dated to the Middle and Late Bronze Age. The drain post-dated one of the pits and represents a later phase of activity. Several features remain unphased. All features and contexts are listed in Appendix 1.

The entire site appeared to have been truncated by later activity associated with the demolished dwelling and its garden. The site itself was covered with the overburden (concrete footings and rubble etc.) and were topsoil still existed it was sandy loam.

Radiocarbon dates are given to 2 sigma.

Phase 1: Middle Bronze Age

Feature 5 was a clearly defined pit that was sub-rectangular in plan, measured 2.70 m by 2.10 m and was 0.50 m deep with near-vertical sides and a flat base. The single fill, 53, was firm black sandy silt with a large amount of burnt stone and charcoal, the stone being more densely concentrated at the eastern side of the pit (Fig. 6). Hazel charcoal from deposit 53 was radiocarbon dated to 1293-1114 cal. BC (UBA13836, 2963±23 BP).

Phase 2: Late Bronze Age

Pit 8 was sub-rectangular in plan, measured 2.80 m by 2.20 m and was 0.60 m deep with steep sides and a flat base. Fill 68 was dark brown to black sandy clay with a large burnt stone component and charcoal inclusions (Fig. 7). A wheat grain from fill 68 was radiocarbon dated to 893-775 cal. BC (UBA13837, 2639±32 BP). In three of the corners of the base of the pit were stakeholes (9, 10 and 11). It is possible that a further stakehole had originally been present in the north-east corner but that it was not preserved in the loose gravel natural geology.

Stakehole 9 had a diameter of 0.20 m and a depth of 0.20 m, stakehole 10 measured 0.19 m by 0.17 m and was 0.14 m deep, whilst stakehole 11 measured 0.20 m by 0.15 m and was 0.15 m deep (Fig. 7). The stakeholes were cut into the loose natural gravel in the base of the pit and their profiles were not well-defined. All had fills of loose dark brown sandy gravel.

Un-phased features

The remaining features are likely to date to the Bronze Age period.

Pit 1 was an irregular oval in plan, measured 3.60 m by 1.50 m and was 0.28 m deep with a concave profile. There were three fills, the lowest of which, 62, was loose brownish black silty sand with burnt sandstone and charcoal inclusions. Above this deposit was a compact grey sandy silt, 52, with large

and small stone inclusions and this was overlain by the main fill, 63, a compact grey brown sandy deposit with burnt stones and a small amount of charcoal (Fig. 8).

Pit 4 was at the southern end of the site and was truncated by a later drain (Group 13). It is possible that this feature actually represents two adjacent pits with the relationship obscured by the drain. The pit was an amorphous shape with maximum dimensions of 7.44 m by 3.07 m. The profile was shallow and concave and the pit was 0.20 m deep, although it appeared to be cut into disturbed natural deposits (56, 59 & 69) and its edges were difficult to define (Fig. 8). A single fill could be definitely associated with the pit (55), a firm black sandy deposit with a large burnt stone and charcoal component.

Pit 6, oval in plan, measured 4.20 m by 1.65 m and was 0.62 m deep with a steeply concave profile and a flat base. The lower fill at the south-western end was firm grey sandy silt with few burnt stone inclusions (64). At the north-eastern end was a sterile deposit of brown sandy clay, 61, essentially redeposited natural geological material. The main pit fill, 60, was dark brown sandy clay with a high burnt stone and charcoal content (Fig. 6, Plate 2).

Pit 7, at the north-eastern end of the site, was a sub-oval shape and measured 2.60 m by 1.98 m. The pit was 0.34 m deep with concave sides and a flat base. The lower fill was dark grey to black sandy silt with burnt stone (67). Deposits 66 and 65 were located in the upper part of the centre of the pit and were grey and brown clayey silt with small fragments of burnt stone and charcoal (Fig. 6).

A spread of burnt stone material (74) was recorded at the south-eastern edge of the site (Fig. 5). The spread, measured 5 m by 1.60 m, and was composed of firm mid grey brown sandy silt with inclusions of burnt sandstone fragments and charcoal. A sewer pipe from the house that had stood on the site cut through the burnt stone spread and as a result the deposit could not be investigated any further. It is possible that the spread represented the fill of a pit.

Phase 3: Post-medieval / modern

A drain (Group 13) crossed the site on a north-west to south-east orientation. Three slots were excavated (2, 3, 12), demonstrating that the drain was 0.56-1.30 m wide and 0.26-0.52 m deep with a concave profile. The drain truncated burnt stone-filled pit 4.

A sewer pipe associated with the demolished house was also observed. This feature was aligned west to east and truncated burnt stone spread 74.

Finds

No artefacts were recovered from the site, either during excavation or during processing of the soil samples.

Samples

Thirteen bulk soil samples were taken from a range of archaeological deposits on the site. Ten of these samples were floated and wet sieved through a 300 micron mesh and then through a 2 mm mesh in order to recover charred plant material and small artefacts. A catalogue of samples and results is given as Appendix 2.

Carbonised plant remains by Rosalind McKenna

Introduction

An excavation at Carrigatogher (Harding) Site 2 (E3325) revealed archaeological deposits including six pits and a burnt stone spread.

Methods

Following selection, subsamples of raw sediment from the selected samples were processed. The samples were examined in the laboratory, where they were described using a pro forma. The subsamples were processed by staff at TVAS Ireland using their standard water flotation methods.

The flot (the sum of the material from each sample that floats) was sieved to 0.30 mm and air dried. As very little material floated, the heavy residue (the material which does not float) was washed through the same mesh, dried and additional charcoal or charred material was retrieved. The material was examined under a low-power binocular microscope at magnifications between x12 and x40.

A four point semi quantitative scale was used, from '1' – one or a few specimens (less than an estimated six per kg of raw sediment) to '4' – abundant remains (many specimens per kg or a major component of the matrix). Data were recorded on paper and subsequently on a personal computer using a Microsoft Access database.

The flot was then sieved into convenient fractions (4, 2, 1 and 0.30 mm) for sorting and identification of charcoal fragments. Identifiable material was only present within the 4 and 2 mm fractions. A random selection of ideally 100 fragments of charcoal of varying sizes was made, which were then identified. Where samples did not contain 100 identifiable fragments, all fragments were studied and recorded. This information is recorded with the results of the assessment in Table 1 below. Identification was made using the wood identification guides of Scweingruber (1978) and Hather (2000).

Taxa identified only to genus cannot be identified more closely due to a lack of defining characteristics in charcoal material.

Results

Charred plant macrofossils were present in one of the samples but were very badly preserved, and were lacking in most identifying morphological characteristics. One wheat grain and two indeterminate weed seeds were recorded (Table 2), and sent for C14 dating. Due to the low abundance, the remains are of no interpretable value.

Root / rootlet fragments were also present within three of the samples. This indicates disturbance of the archaeological features, and this may be due to the nature of some features being relatively close to the surface, as well as deep root action from vegetation that covered the site. This disturbance is further confirmed by the presence of insect remains and earthworm egg capsules, both present in single samples, and waterlogged plant macrofossils present in small numbers in one of the samples. The preservation of these was excellent and it is probable that they are modern contaminants. Those present (*Chenopodium* spp./*Atriplex* spp.) are both species often found in varying abundance in archaeological samples as a modern contaminant.

Charcoal fragments were present in all of the samples, and scored a maximum of four on the semi quantitative scale. The preservation of the charcoal fragments was relatively variable even within the samples. Some of the charcoal was firm and crisp and allowed for clean breaks to the material permitting clean surfaces where identifiable characteristics were visible. However, most of the fragments were very brittle, and the material tended to crumble or break in uneven patterns making the

identifying characteristics harder to distinguish and interpret. Table 1 below shows the results of the charcoal assessment.

The total range of taxa comprises oak (Quercus), alder (Alnus), hazel (Corylus), ash (Fraxinus), hawthorn/apple/Sorbus-group (Pomoideae), and birch (Betula). These taxa belong to the groups of species represented in the native Irish flora. A local environment with a relatively wide range of trees and shrubs is indicated from the charcoal of the site. As seen in Table 1, oak and hazel are by far the most numerous of the identified charcoal fragments, and it is possible that these were the preferred fuel woods obtained from a local environment containing a broader choice of species. With ash present in the environment, it is perhaps worth noting that oak is considerably more represented in the samples. Oak is probably the first choice structural timber, and with a local abundance it may have been used instead of ash, thereby providing more by-product fire fuel.

Generally, there are various, largely unquantifiable, factors that effect the representation of species in charcoal samples including bias in contemporary collection, inclusive of social and economic factors, and various factors of taphonomy and conservation (Théry-Parisot 2002). 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 these resources.

Bark was also present on some of the charcoal fragments, and this indicates that the material is more likely to have been firewood, or the result of a natural fire.

Conclusion

The samples produced little environmental material of interpretable value, with the exception of the charcoal remains from all samples, and the single wheat grain from sample 10. The deposits from which the samples derive probably represent the domestic waste associated with fires. These charcoal remains showed the exploitation of several species native to Ireland, with the prevalence of oak and ash being selected and used as fire wood. Oak and ash both have good burning properties and would have made a fire suitable for most purposes (Edlin 1949). Oak is a particularly useful fire fuel as well as being a commonly used structural/artefactual wood that may have had subsequent use as a fire fuel (Rossen and Olsen 1985).

The archaeological data concludes that this site may be the remains of a *fulacht fia* – where water was heated with hot stones. Due to a lack of plant macrofossils and the presence of charcoal with good burning properties, it is possible that this archaeobotanical investigation shows that the area was indeed used for burning, and possibly in the ways *fulachtaí fia* were utilised.

Numerous sites from this road scheme have produced similar material. It is thought to be problematic using charcoal records from archaeological sites, as they do not accurately reflect the surrounding environment. Wood was gathered before burning or was used for building which introduces an element of bias. Despite this, charcoal remains can provide good information about the landscapes surrounding the sites presuming that people did not travel too far to gather fuel.

The even distribution of oak charcoal throughout the sites on the scheme indicates that oak woodlands, probably with a major hazel component grew along the route. The variety of other trees identified indicates that there were also mosaics of other woodlands habitats along the road scheme. There is a small amount of evidence for wetland taxa in the remains of alder, which was also found in the Gas Pipeline to the West (O'Donnell 2007) and along the N8 road scheme (McQuade *et al.* 2009).

The environmental work from this site, along with the others from the road scheme, provides an important insight into the wood and plants gathered for consumption along the route. It is likely that when the results from all sites that were excavated along the route by the various different contractors

are combined, a more meaningful and complete overview of charcoal and plant remains in this part of Ireland can be gained.

Recommendations

The samples have been assessed, and any interpretable data has been retrieved. No further work is required on any of the samples. Any material recovered by further excavations should be processed to 0.30 mm in accordance with standardised processing methods such as Kenward *et al.* 1980, and the English Heritage guidelines for Environmental Archaeology 2002.

Table 1: Charcoal identification. Taxonomy and nomenclature follow Schweingruber (1978)

	Feature	6	6	4	1	7	5	8
	Context	60	64	55	62	67	53	68
	Sample	1	3	4	5	6	8	10
	No. of fragments	68	4	100+	10	45	100	140
	Max. size (mm)	11	8	27	20	19	27	10
Alnus glutinosa	Alder	17		4	1	3	1	8
Betula spp.	Birch					6		
Corylus avellana	Hazel	20		4	4	7	7	36
Fraxinus excelsior	Ash			4		3	24	8
Pomoideae					1		1	4
Quercus	Oak	20	2	68		5	15	24
	Indeterminable	11	2	20	4	21	2	20

Table 2: Charred plant identification. Taxonomy and nomenclature follow Stace (1997).

	Feature	8
	Context	68
	Sample	10
Triticum spp.	Wheat	1
Indeterminate weed seeds		2

Radiocarbon date

Two radiocarbon determinations were made by Queens University Belfast (Table 3, Fig. 9). The calibration curve used was IntCal09 (Reimer et al 2009) and the plot was created with OxCal v4.1.4 (Bronk Ramsey 2009).

Table 3: Radiocarbon determinations

Lab code	Cut	Deposit	Sample no.	Sample material	Radiometric age	Calendrical calibrations
UBA-13836	5	53	8	*Corylus avellana (hazel)* - charcoal	2963±23	2 sigma (95.4%) Cal BC 1293-1114 1 sigma (68.3%) Cal BC 1257-1235 (24%) Cal BC 1216-1188 (31%) Cal BC 1181-1155 (27%) Cal BC 1146-1130 (18%)
UBA-13837	8	68	10	*Triticum spp.* and indeterminate weed seeds – charred seeds	2639±32 BP	2 sigma (95.4%) Cal BC 893-877 (3%) Cal BC 845-775 (97%) 1 sigma (68.3%) Cal BC 822-795

The charred seeds would have been less than one year old at death and the hazel approximately 10 years at death thus avoiding the risk of the 'old wood effect'. Sample 8 from pit 5 is dated to the end of the Middle Bronze Age and sample 10 from pit 8 is dated to the Late Bronze Age.

Discussion

Excavation of Carrigatogher (Harding) Site 2, E3325, Co. Tipperary has revealed evidence of two phases of burnt stone generating activity in the form of a spread of burnt stone material and six pits with burnt stone components in their fills.

The deposits were not particularly charcoal-rich and in fact appeared to be generally leached out, perhaps as a result of later disturbance.

It is not clear exactly what activities were represented by the features, but it is likely that water was being heated with hot stones in a similar manner as in typical *fulachtaí fia*; in fact it is possible that the site is a heavily truncated example of this monument type. Pit 8 had small post or stakeholes surviving in three corners of its base, presumably indicating that the feature was originally plank lined. This would have allowed the pit to function as a trough for heating water that would otherwise have been impossible in the free-draining sandy gravel that naturally underlay the site. Interestingly a single wheat grain was retrieved from the fill of pit 8. Other pits may have been lined with material such as leather that has left no trace in the archaeological record.

The number and size of the pits indicates that the site was used repeatedly for heating water. The site contained approximately 15-20 m^3 of burnt stone material which represents a considerable number of heating events.

No artefacts were recovered and the activity produced two radiocarbon dates from the Middle and Late Bronze Ages. These dates are separated by over 200 years, indicating that the burning events related to the two pits could not have been contemporary. It would therefore appear that either the location was used for heating water during two separate periods, or that it was revisited occasionally over a longer time span.

Although burnt stone generating activity has produced dates ranging from the Mesolithic to the medieval period (Brindley et al. 1990), the majority of these types of sites were in use during the Bronze Age. Recent archaeological work on the Gas Pipeline to the West (Grogan et al. 2007) indicated that the main period use of *fulachtaí fia* was during the Middle and Late Bronze Age.

Nearby sites of similar dates are Site 3 E2474, Site 5 E2285, Site 6 E2286 and Carrigatogher (Ryan) Site 3 E3327. Site 3 E2474 contained Middle to Late Bronze age burnt stone generating activity including a hearth and trough (Hackett 2009a). Site 5 E2285 contained Early, Middle and Late Bronze Age activity including pits and roundhouses (Ruttle and Taylor 2010). Site 6 E2286 contained a large *fulacht fia* dated to the Middle Bronze Age (1400-1130 cal. BC) (Taylor 2010). The burnt stone filled trough at Carrigatogher (Ryan) Site 3, E3327, Area A, just 50 m to the north-east, was earlier in date than the pits at E3325, as were the roundhouses in Area B (Mulcahy and Taylor 2010). There was, however, a hearth in Area B at the same site, located 100 m to the north-east, which could potentially have been contemporary with this phase of burnt stone generating activity. Taken together these sites indicate intensive occupation of this part of the Arra Mountain foothills during the Middle and Late Bronze Age.

Further work

The results of this excavation will be published as part of a scheme monograph, hopefully in 2011-2012.

A summary of the findings of the excavation has been submitted to *Excavations 2007.*

An accessible archive of primary records (Appendix 3) has been prepared for long term storage and will be kept at the offices of TVAS (Ireland) Ltd until such time as a State archive repository becomes available.

_____

Kate Taylor
TVAS Ireland Ltd
30th December 2010

References

An Foras Forbatha, circa 1980, *North Tipperary Mountain Study: Appendix 2: Sites of Archaeological Interest*, An Foras Forbatha Teoranta

Bennett, I (ed), 1987-2008, *Excavations*, Wordwell, Bray

Brindley, A L, Lanting, J N and Mook, W G, 1990, Radiocarbon dates from Irish fulachta fiadh and other burnt mounds, *The Journal of Irish Archaeology* **5**, 25-33

Bronk Ramsey, C, 2009, Bayesian analysis of radiocarbon dates, *Radiocarbon* **51(1)**, 337-360

DAHGI, 1999a, *Framework and Principles for the Protection of the Archaeological Heritage*, Department of Arts, Heritage, Gaeltacht and the Islands, Govt. of Ireland, Stationery Office, Dublin

DAHGI, 1999b, *Policy and Guidelines on Archaeological Excavation*, Department of Arts, Heritage, Gaeltacht and the Islands, Govt. of Ireland, Stationery Office, Dublin

Edlin, H L, 1949, *Woodland crafts in Britain: an account of the traditional uses of trees and timbers in the British countryside*, Batsford, London

English Heritage, 2002, *Environmental Archaeology: A guide to the theory and practise of methods, from sampling and recovery to post-excavation*, English Heritage Publications, Swindon

Farrelly, J and O'Brien, C (compilers), 2002, *The Archaeological Inventory of County Tipperary, Volume 1 – North Tipperary,* Stationery Office, Dublin

Fitzgerald, E, 1985, *An Archaeological Survey of Castles in the Baronies of Arra and Owney, Upper Ormond and Lower Ormond*, Anco/Nenagh Heritage, Vol.III, 59-62

Griffith, R, 1851, *Primary Valuation of Ireland, Co. Tipperary,* Valuation map for Carrigatogher (Harding) townland, Sheet 20, Surveyed 1850, Published 1851

Grogan, E, O'Donnell, L and Johnston, P, 2007, *The Bronze Age Landscapes of the Pipeline to the West*, Wordwell, Bray

Hackett, L, 2009a, *N7 Nenagh to Limerick High Quality Dual Carriageway. Archaeological Resolution Project: Carrigatogher (Harding) Site 3, E2474, Co. Tipperary. Final Excavation Report,* unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

Hackett, L, 2009b, *N7 Nenagh to Limerick High Quality Dual Carriageway. Archaeological Resolution Project: Carrigatogher (Harding) Site 4, E2469, Co. Tipperary. Final Excavation Report,* unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

Hackett, L, 2009c, *N7 Nenagh to Limerick High Quality Dual Carriageway. Archaeological Resolution Project: Carrigatogher (Ryan) Site 4, E2473, Co. Tipperary. Final Excavation Report,* unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

Hather, J G, 2000, *The identification of Northern European woods; a guide for archaeologists and conservators*, Archetype Press, London

Kenward, H K, Hall, A R and Jones, A K G, 1980, 'A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits', *Science and Archaeology* **22**, 315

Lewis, S, 1837, *A Topographical Dictionary of Ireland*, Volume II, London

MacLeod, R and O'Neil, N, 2007, Report for Archaeological Testing from Ballyard Chainage 12300 to Ballintotty Chainage 36500, Registration Number E3267, unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

MacLeod, R and Clark, L, 2009, *N7 Nenagh to Limerick High Quality Dual Carriageway. Archaeological Resolution Project: Carrigatogher (Harding) Site 1, E2406, Co. Tipperary. Final Excavation Report,* unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

MacLeod, R and O'Neill, N, 2009, *N7 Nenagh to Limerick High Quality Dual Carriageway. Archaeological Resolution Project: Carrigatogher (Harding) Site 2, E2407, Co. Tipperary. Final Excavation Report,* unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

Margaret Gowen & Co. Ltd., 2003, N7 Nenagh to Limerick High Quality Dual Carriageway, Environmental Impact Statement Volume 4B, Architectural Heritage Archaeological Heritage Cultural Heritage. Margaret Gowen & Co Ltd. RPS-MCOS Scetauroute

McConway, C, 1996, '96E318, Carrigatogher, Co. Tipperary', in I Bennett (ed) *Excavations 1996,* Wordwell, Bray, entry 353

McConway, C, 1998, '98E160, Carrigatogher/Tullaheedy, Co. Tipperary', in I Bennett (ed) *Excavations 1998,* Wordwell, Bray, entry 593

McQuade, M, Molloy, B and Moriarty, C, 2009, *In the Shadow of the Galtees: Archaeological excavations along the N8 Cashel to Michelstown Road Scheme*, NRA, Dublin

Mulcahy, A and Taylor, K, 2010, N7 Nenagh to Limerick High Quality Dual Carriageway, E3327, Carrigatogher (Ryan) Site 3, Co. Tipperary, Final archaeological excavation report, unpublished TVAS (Ireland) Ltd report

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

O'Brien, E and Quinn, A, 2006, Architectural Survey for N7 Nenagh-Limerick High Quality Dual Carriageway, unpublished Tobar Archaeological Services report

O'Connell, T J, 2009, *N7 Nenagh to Limerick High Quality Dual Carriageway. Archaeological Resolution Project: Carrigatogher (Ryan) Site 1, E2408, Co. Tipperary. Final Excavation Report,* unpublished report by Headland Archaeology (Ireland) Ltd. for Limerick County Council

O'Donnell, L, 2007, 'Wood and charcoal' in E Grogan, L O'Donnell and P Johnston (eds), *The Bronze Age Landscapes of the pipeline to the west: an integrated archaeological and environmental assessment*, Wordwell, Bray, 27-69

O'Flanagan, M, 1930, *Ordnance Survey Name Books 1840*, *Tipperary North*, Vol. 2

Reimer, P J, Baillie, M G L, Bard, E, Bayliss, A, Beck, J W, Blackwell, P G, Bronk Ramsey, C, Buck, C E, Burr, G S, Edwards, R L, Friedrich, M, Grootes, P M, Guilderson, T P, Hajdas, I, Heaton, T J, Hogg, A G, Hughen, K A, Kaiser, K F, Kromer, B, McCormac, F G, Manning, S W, Reimer, R W, Richards, D A, Southon, J R, Talamo, S, Turney, C S M, van der Plicht, J, and Weyhenmeyer, C E, 2009, IntCal09 and Marine09 radiocarbon age calibration curves, 0-50,000 years cal BP, *Radiocarbon* **51(4)**, 1111-1150

Rossen, J, and Olson, J, 1985, 'The controlled carbonisation and archaeological analysis of SE US wood charcoals', *Journal of Field Archaeology* **12**, 445-456

Ruttle, E and Taylor, K, 2010, N7 Nenagh to Limerick High Quality Dual Carriageway, E2285, Carrigatogher (Harding) Site 5, Co. Tipperary, Final archaeological excavation report, unpublished TVAS (Ireland) Ltd report

Schweingruber, F H, 1978 *Microscopic wood anatomy*, Swiss Federal Institute of Forestry Research, Birmensdorf

Simington, R C, 1931, *The Civil Survey AD 1654-1656 County Of Tipperary, Vol.2, Eastern and Southern Baronies*, Irish Manuscripts Commission, The Stationary Office, Dublin

Stace, C, 1997, *New flora of the British Isles*, Cambridge University Press, Cambridge

Taylor, K, 2008, N7 Nenagh to Limerick High Quality Dual Carriageway, E3325, Carrigatogher (Harding) Site 2, Co. Tipperary, Preliminary archaeological excavation report, unpublished TVAS (Ireland) Ltd report

Taylor, K, 2010, N7 Nenagh to Limerick High Quality Dual Carriageway, E2286, Carrigatogher (Harding) Site 6, Co. Tipperary, Final archaeological excavation report, unpublished TVAS (Ireland) Ltd report

Théry-Parisot, I, 2002, 'Gathering of firewood during the Palaeolithic' in S Thiébault (ed), *Charcoal Analysis, Methodological Approaches, Palaeoecological Results and Wood Uses*, BAR International Series 1063

Web sources access Jan-Oct 2010

www.excavations.ie
www.archaeology.ie
www.askaboutireland.ie/griffith-valuation/index.xml

Appendix 1: Catalogue of features and deposits

Cut	Deposit	Group No.	Type	Finds	Samples	Phase
1	52, 62, 63		Pit	-	5	Un-phased
2	51	13	Drain slot	-	-	3
3	54	13	Drain slot	-	-	3
4	55		Pit	-	4	Un-phased
5	53		Pit	-	8, 9	1
6	60, 61, 64		Pit	-	1, 2, 3	Un-phased
7	65, 66, 67		Pit	-	6	Un-phased
8	68		Pit	-	10	2
9	71		Stakehole	-	11	2
10	72		Stakehole	-	12	2
11	73		Stakehole	-	13	2
12	57, 58	13	Drain slot	-	-	3
	50		Topsoil	-	-	-
	56		Natural deposit	-	-	-
	59		Natural deposit	-	-	-
	69		Natural deposit	-	-	-
	74		Burt stone deposit	-	-	Un-phased

Appendix 2: Catalogue of samples

Sample No	Cut	Deposit	Volume sieved (L)	Volume floated (L)	Finds	Charred plant remains
1	6	60	1.5	1.5	N	Y
2	6	61	-	-	-	-
3	6	64	1.5	1.5	N	Y
4	4	55	0.25	0.25	N	Y
5	1	62	1.5	1.5	N	Y
6	7	67	1.5	1.5	N	Y
7	4	55	-	-	-	-
8	5	53	1.5	1.5	N	Y
9	5	53	-	-	-	-
10	8	68	4	4	N	Y
11	9	71	0.5	0.5	N	N
12	10	72	0.5	0.5	N	N
13	11	73	0.5	0.5	N	N

Appendix 3: Archive contents

Category	Item	Quantity	Condition
Paper records	Number allocation sheet	1	Good
	Context index sheets	2	Good
	Context sheets	38	Good
	Section index sheets	1	Good
	Plan keys	1	Good
	Sample index sheets	1	Good
	Level sheets	5	Good
	Finds register sheets	0	Good
Plans	1:20 pre-ex plans (A2)	12	Good
	1:20 mid-ex plans (A2)	0	Good
	1:20 post-ex plans (A2)	7	Good
	1:200 post-ex plans (A2)	1	Good
Sections	Section sheets (A2)	3	Good
	1:10 section drawings (on those sheets)	12	Good
Photographs	Digital photographs	39	Digitally stored & backed-up

160000E

190000E

175000N

160000N

Nenagh
An tAonach

Broadford
An Leathan

Killaloe
Cill Dalua

Ballina
Beal an Atha

Birdhill
Birdhill
Cnocán an Eín Fhinn

O'Briensbridge
Droichead Uí Bhriain

Castleconnell
Caisleán Uí Chonaill

Newport
An Port Nua

Limerick
Luimneach

Arra Mountains
Sliabh Ara

Silvermine
Sliabh an Airgid
Mountains

Slievekimalta
or
Keeper Hill
Sliabh Coimeálta

SLIEVE FELIM
MOUNTAINS
Sliabh Eibhlinne

SLIEVEFELIM
MOUNTAINS
Sliabh
Eibhlinne

Loch Deirgeirt

Slieve Bearnagh
Sliabh Bearnach

Glenvagullagh
Mountain
Sliabh Ghleanna
na gCaillseach

Lackaleish
Mountain

Moylussa

Toonaloma
Tonn Tamhne

Parteen
An Pairtín

SITE

N

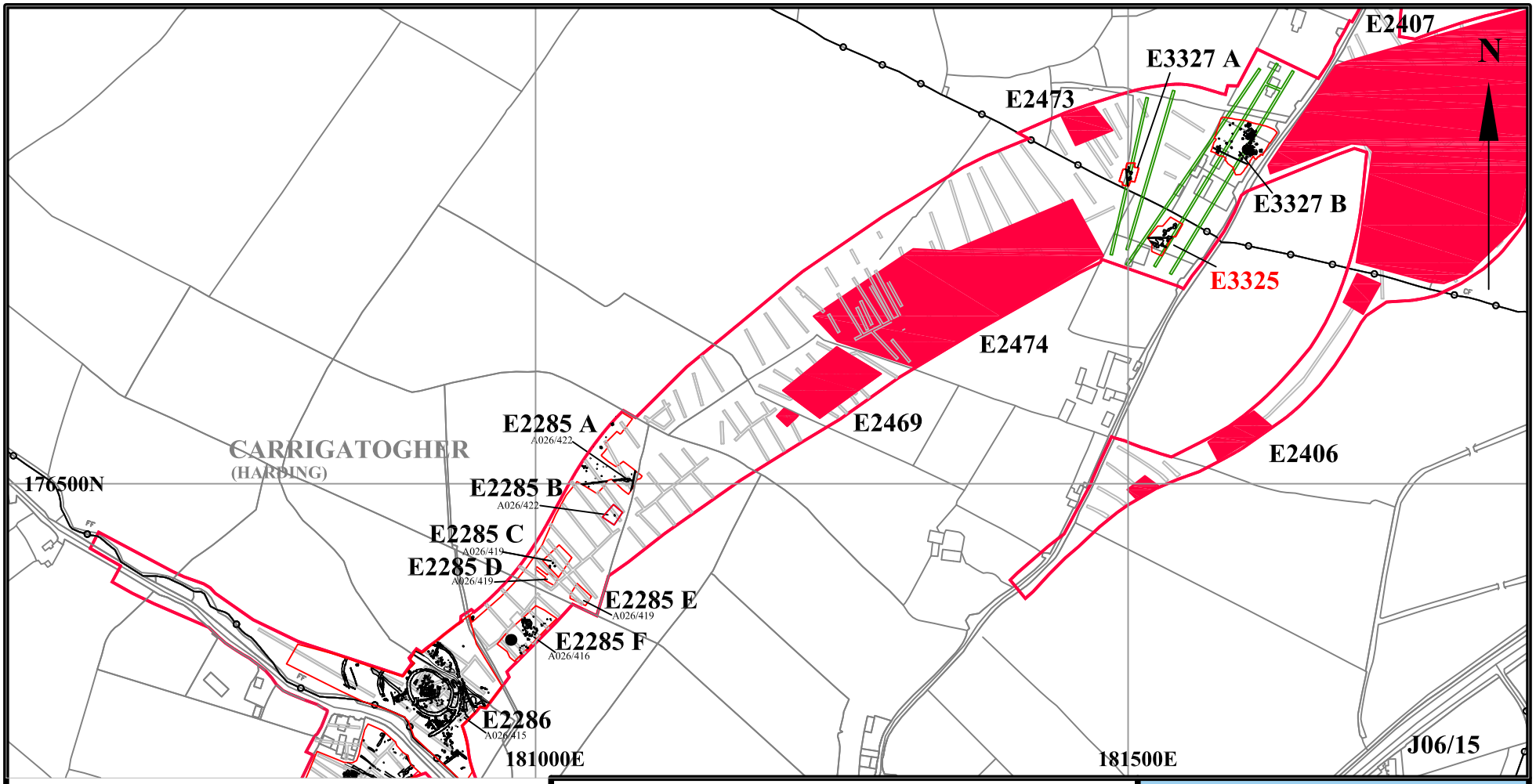
0 5km

J06/15

N7 Nenagh to Limerick High Quality Dual Carriageway
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 1: Site Location

TVAS IRELAND LTD

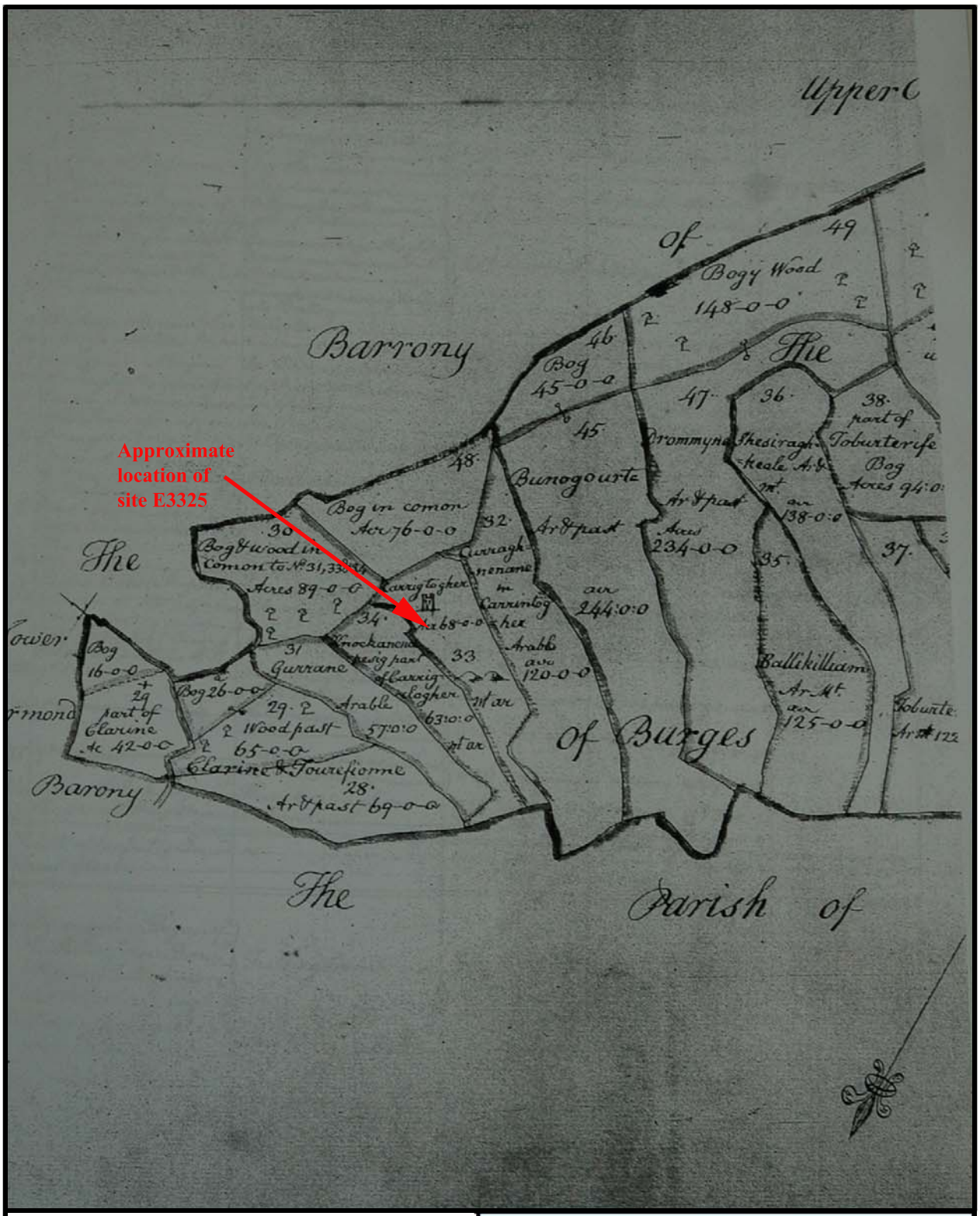


N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 2: Site location and test trenches

Scale 1:5000
Based on Ordnance Survey Ireland digital mapping

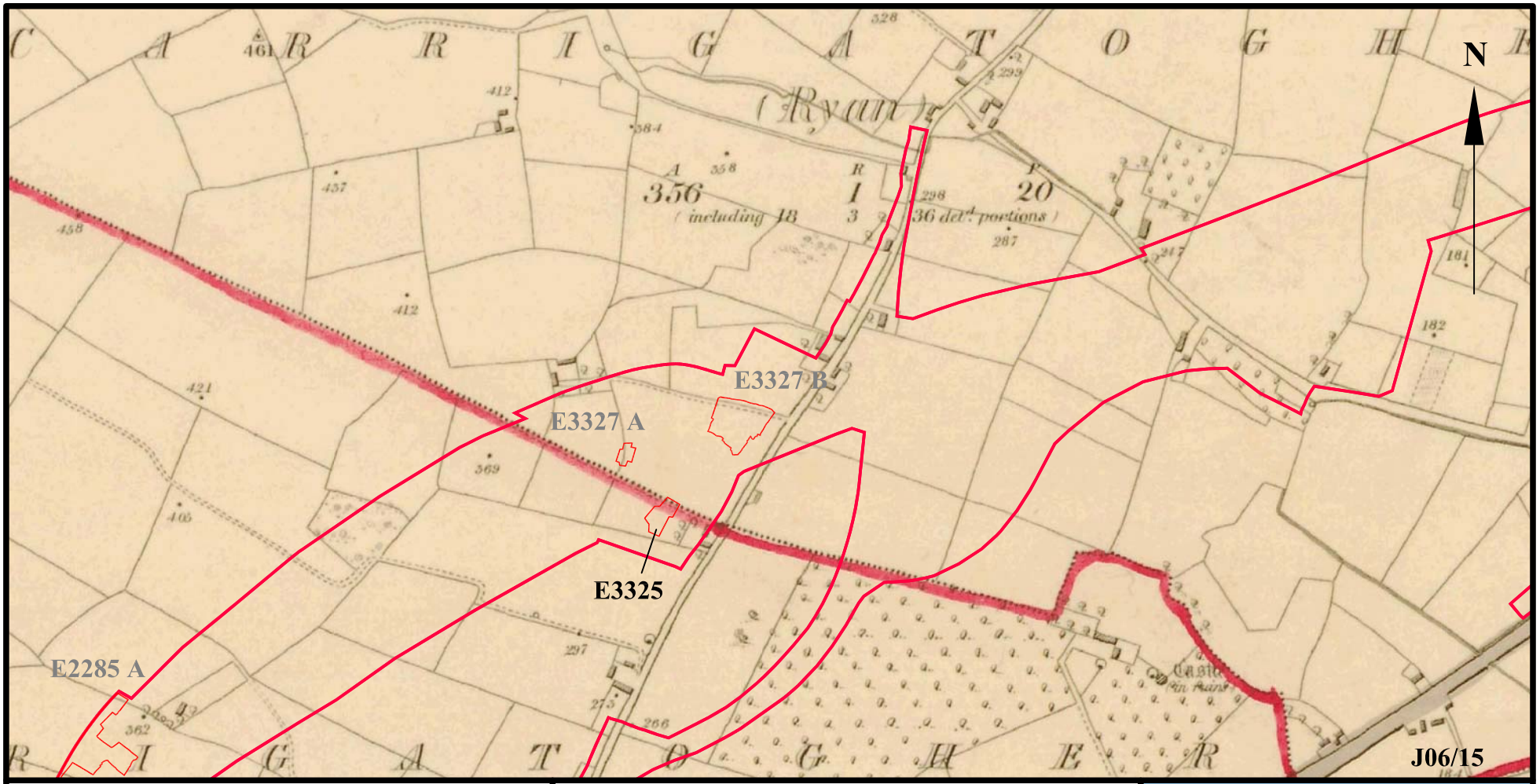
TVAS IRELAND LTD



N7 Nenagh to Limerick HQDC
E3325, Carrigatogher (Harding) Site 2,
Co. Tipperary

Figure 3:1655-56 Down Survey Map
Part of Burges (Burgesbeg) Parish

TVAS IRELAND LTD

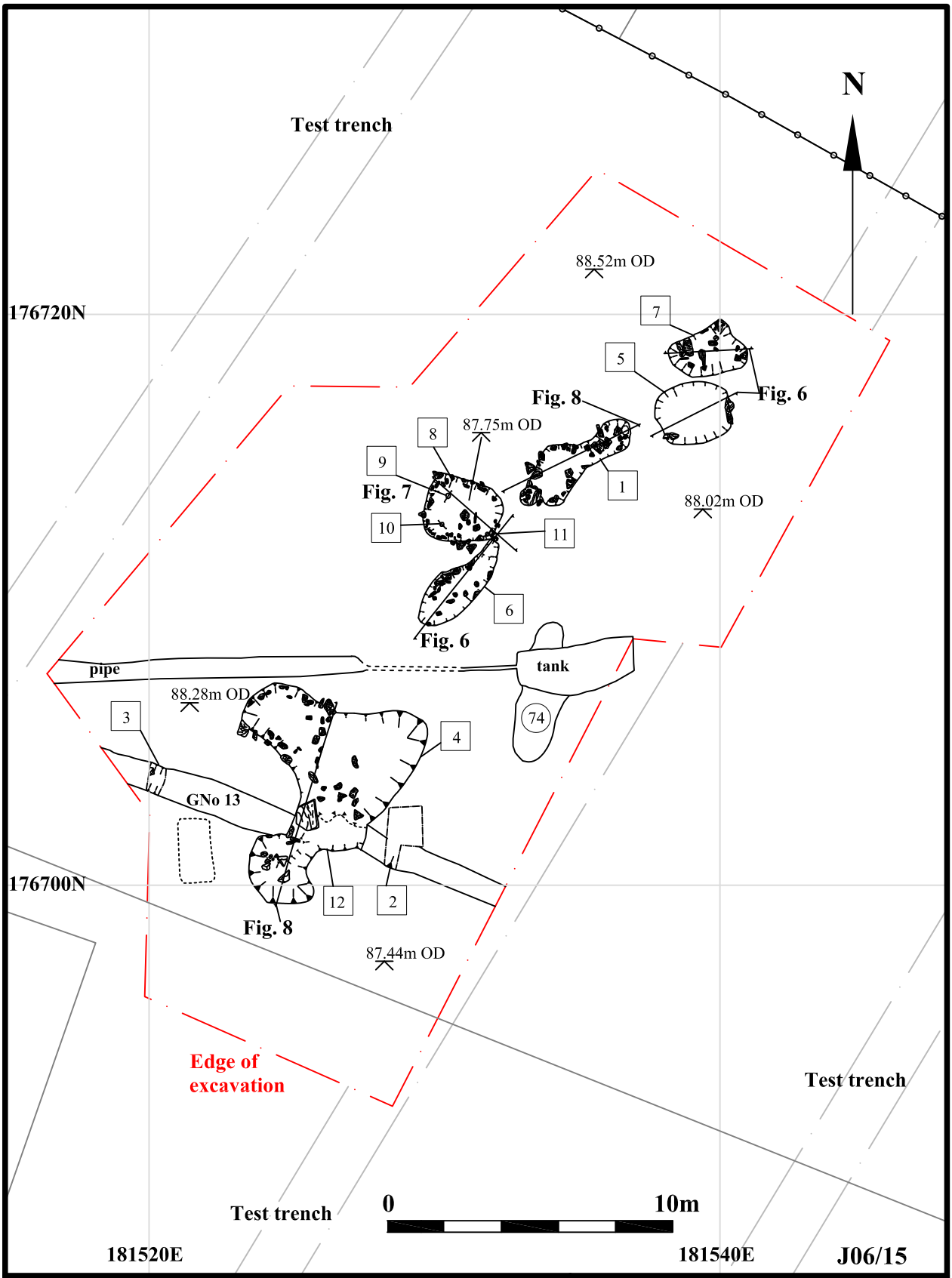


N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 4: Ordnance Survey 1st Edition Map, 1843

Scale 1:5000
Based on OS 1st Edition, Co. Tipperary Sheet 20, 6" to mile
LCCPermit: 2010/09/CCMA/Tipperary County Council

TVAS IRELAND LTD

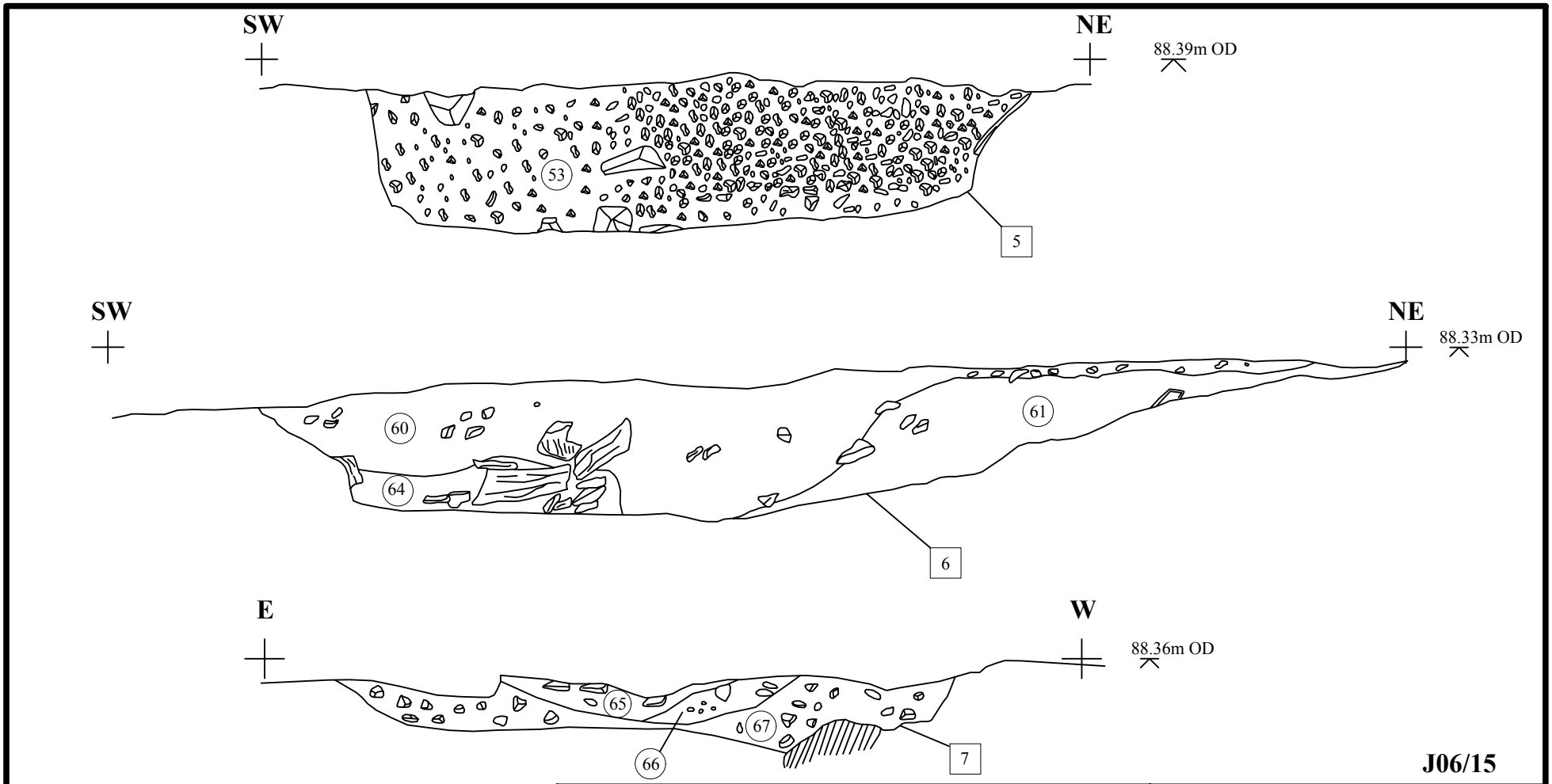


N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 5: Post-excavation plan

Scale 1:200

TVAS IRELAND LTD



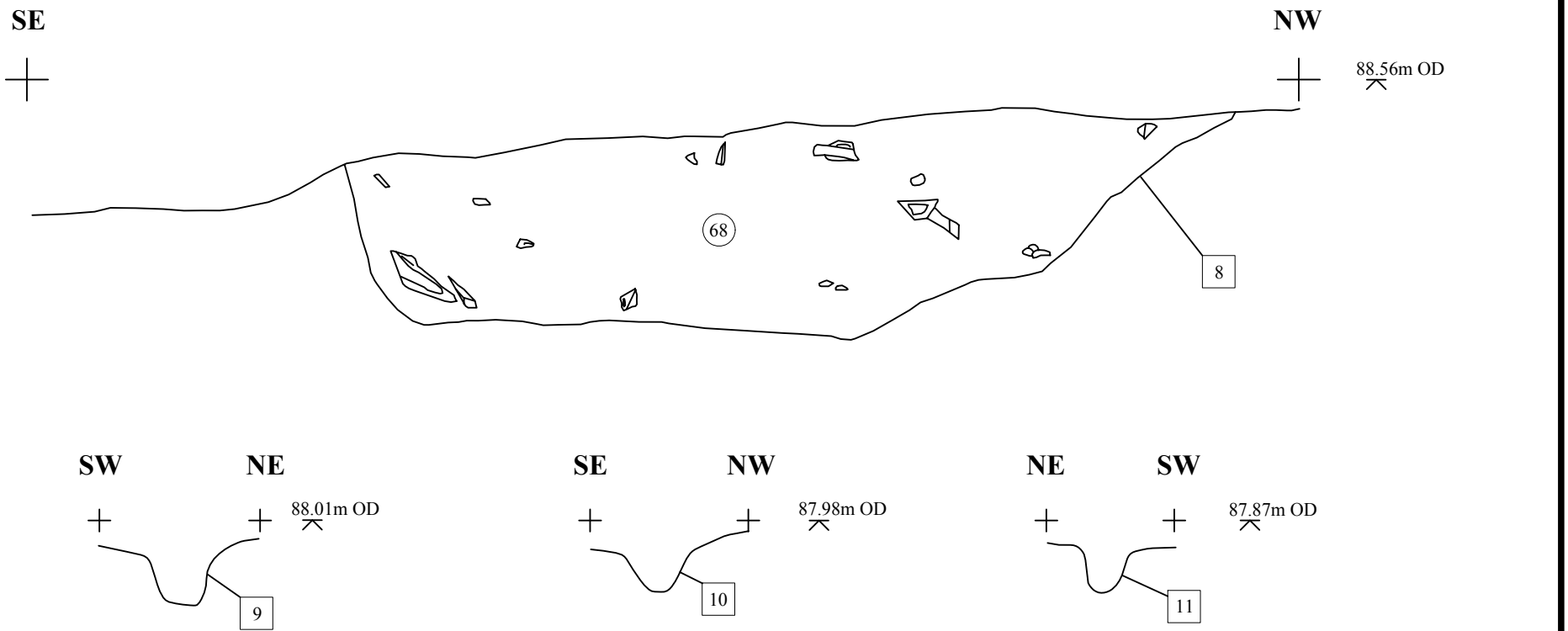
0 1m

N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 6: Sections through pits 5, 6 and 7

Scale 1:25

TVAS IRELAND LTD



J06/15

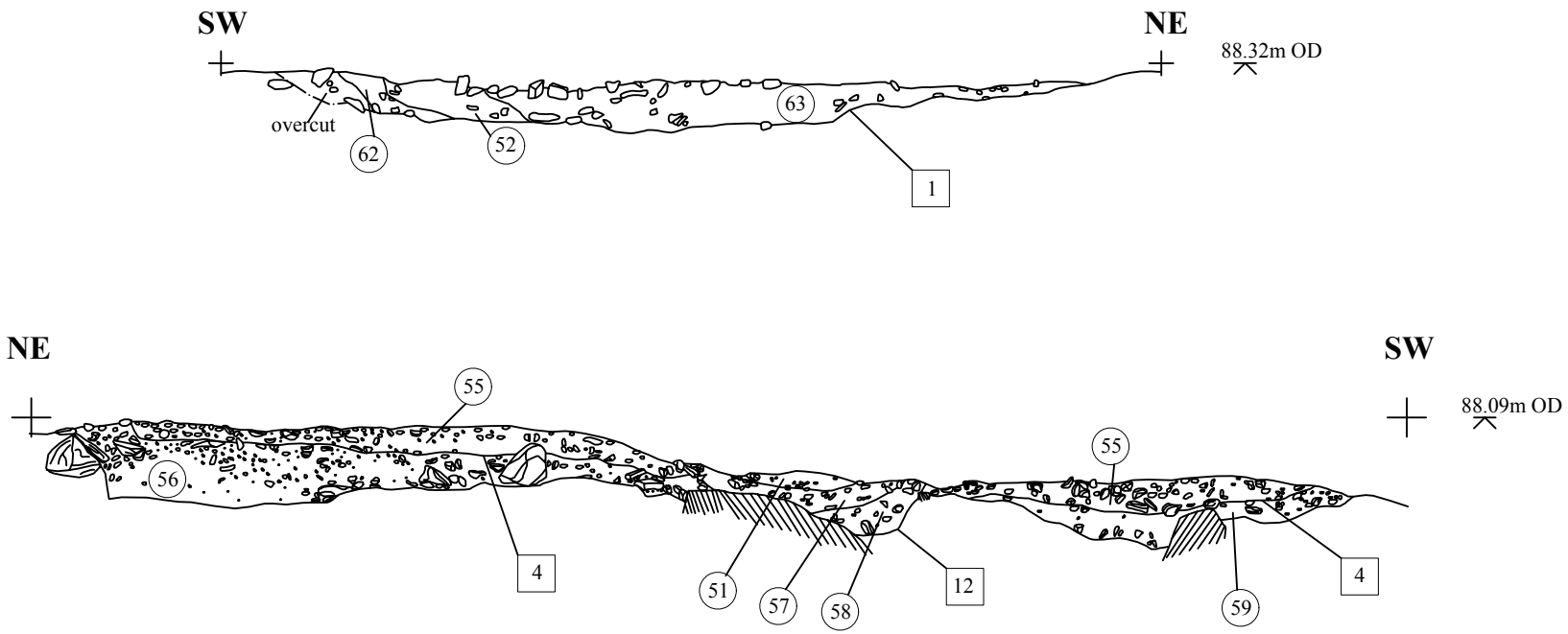
0 1m

N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 7: Sections through pit 8 and stakeholders 9, 10 and 11

Scale 1:20

TVAS IRELAND LTD



J06/15

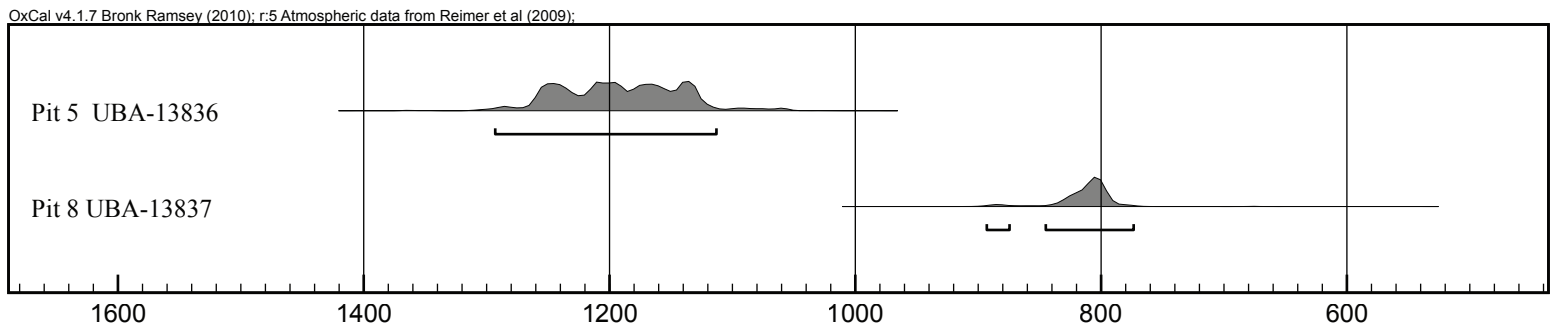
0 2m

N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 8: Sections through pits 1 and 4 and drain slot 12

Scale 1:40

TVAS IRELAND LTD



J06/15

N7 Nenagh-Limerick HQDC
E3325, Carrigatogher (Harding) Site 2, Co. Tipperary

Figure 9: Calibrated radiocarbon dates

TVAS IRELAND LTD

Plate 1: Site, fully excavated. Looking south-east. Scales 2m & 1m

Plate 2: Pit 6, half-sectioned. Looking north-west. Scales 2m & 0.5m

E3325


CARIGATOGHER
A026 E3325
9 71
N
23/4/07


CARIGATOGHER
A026 E3325
III 73
N. 23/4/07

E3325