

N8 Cashel Bypass & N74 Link Road

Phase 2 Archaeological Investigations

Licence Number: 03E0399

Site Name: Site 32

Townland: Windmill / *Baile an Mhuilinn*

Barony: Middlethird

Parish: St Patrick's Rock

County: Tipperary

NGR: 207418 / 139063 (pit 03)

OD Level: 132.99 m – 133.50 m

Excavation Area: 60 m²

Fieldwork Date: March–April 2003

Site Director: Neil Fairburn

Report Author: Richard O'Brien

Client: South Tipperary County Council

Report Status: Final Report

Report Date: June 2013



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EXECUTIVE SUMMARY

This report contains the final results of an archaeological excavation carried out as part of the N8 Cashel Bypass & N74 Link Road (03E0399). Pre-construction testing by Anne-Marie Lennon of Mary Henry Archaeological Services Ltd in advance of construction of the N8 Cashel Bypass and N74 Link Road was undertaken in 2002 (licence 02E0378). This work identified a number of archaeological features on the N74 Link Road in Windmill townland, which were sub-divided into sites 32–34 respectively (Lennon 2002). The testing revealed a single circular pit containing charcoal and pockets of red burnt clay. Further testing of this side of Windmill Hill was undertaken by JCNA Ltd in March 2003 (Site 31, licence 03E0391). No features were found in the vicinity of Site 32. Full archaeological excavation of Site 32 was conducted as part of Phase 2 archaeological resolution in March and April 2003, under excavation licence number 03E0399. No further features of archaeological significance were discovered during this work. A radiocarbon date of 1393–1221 cal BC (UBA-13785) was retrieved from the fill of the pit, placing this activity firmly in the Middle Bronze Age.

The pit was *c.* 25 m east of the possible structure on Site 33 (licence 03E0398). Although this structure was undated a nearby linear feature produced charcoal of spindle (*Evonymus europaeus*) radiocarbon dated to 1425–1313 cal BC (UBA-13784), pre-dating pit [03]. The recovery of spindle (*Evonymus europaeus*) from both sites is significant as it had been first used around Windmill as a source of wood from the Early Bronze Age.

On Site 35 *c.* 110 m to the west three features were also dated to varying stages of the Middle Bronze Age period between *c.* 1700–1100 BC. Posthole [54] was an isolated feature located at the northern end of the site and was radiocarbon dated to 1751–1616 cal BC (UBA-13794). Two other features slightly later in date were clearly contemporary although they were found *c.* 30 m apart: pit [38] and posthole [22]. Pit [38] produced 12 small pieces of bone that can be classified as fragments of long bone from a medium-sized animal such as sheep or pig and pomaceous charcoal from the same fill was radiocarbon dated to 1393–1215 cal BC (UBA-13793). These bones are very significant as they represent the earliest faunal remains from Cashel that were not subject to burning. An isolated posthole [22], in the southern portion of the site, was radiocarbon dated to cal 1370–1126 BC (UBA-13796).

Another isolated posthole identified on Site 34 c. 60 m to the west of Site 32 produced alder (*Alnus glutinosa*) which was radiocarbon dated to 1526–1397 cal BC (UBA-13787). Although this activity slightly pre-dates the Site 32 pit it reflects the continued widespread activity on Windmill Hill through out the Middle Bronze Age.

Further Middle Bronze Age dates from the Cashel excavations came from other sites in Windmill, Owen's and Bigg's-Lot and Monadreela townlands. To the south of Cashel Middle Bronze Age settlement sites were identified around the River Suir (Caherabbey Upper, Ballydrehid, Ballyegan and Cloghabreedy near Cahir, and nearer to Cashel at Dogstown and Shanballyduff (McQuade *et al.* 2009, 28). A number of Middle Bronze Age burial sites were also identified between New Inn and Cashel, within 8 km of Windmill Hill at Templenoe, Racecourse Demesne and Marlhill (McQuade *et al.* 2009, 123).

In summary, the seemingly isolated pit discovered on Site 32 was originally part of a Middle Bronze Age settlement on Windmill Hill, disparate traces of which were found on some of the other excavations on the hill. The settlement had been preceded by Early Neolithic and Early Bronze Age phases on the hillside although no traces of such earlier activity were found specifically on Site 32. Later ploughing and nearby early medieval (Windmill enclosure) and medieval activity (Leper Hospital) led to the removal of many of these features so a coherent picture of what type of activity was on the hill is difficult to determine. However, the evidence points to settlement in the Bronze Age on Windmill Hill, utilising the water sources to be found in the ponds at the base of the hill, settlement which appears to begin in the Early Bronze Age with the round house and associated Beaker pits (Site 36i). Bronze Age cremations surrounding the hillside (Sites 30iii & Site 36ii) may also have been linked to this settlement and collectively, formed part of a wider intensively-settled Bronze Age landscape around Cashel and the River Suir. There is the likelihood similar activity will be found on other parts of Windmill Hill as geophysical research begun in 2011 has revealed many additional archaeological features throughout the hillside.

There is a very high probability of archaeological features associated with Site 32 continuing southward and surviving between the N74 road and the Windmill hilltop enclosure TS061-072. This area was recently subject to geophysical investigation for research purposes (Gimson 2012, ii). The survey revealed a significant highly magnetic boundary detected to the north of the Windmill Hill enclosure; this contained a

misalignment gap or entrance possibly leading to the enclosure. To the north is a ditched enclosure containing a visible entranceway, again facing the Windmill Hill enclosure, and a large number of possible pits. It is likely that some of these geophysical anomalies may be associated with the archaeology revealed on Site 32. Therefore any proposed developments within this area should be subject to archaeological investigations of planning prior to any development taking place.

INTRODUCTION

This report contains the final results of an archaeological excavation carried out as part of the N8 Cashel Bypass & N74 Link Road. The scheme involved an 8 km bypass of the town and a 2 km link road to the N74 (Figure 1). South Tipperary County Council completed the bypass and the new roads opened in October 2004. The project was funded by the Irish Government under the National Development Plan, 2000–6. The total archaeological cost was administered by the National Roads Authority through South Tipperary County Council, as part of the Authority's commitment to protecting our cultural heritage.

Project Background

RPS Consultants Ltd carried out a desk-based archaeological survey of the N8 Cashel Bypass and N74 Link Road route in 1995, recommending an eastern bypass of the town so as to avoid direct negative impacts on the Rock of Cashel, a National Monument (Cronin 1995). There was no Environmental Impact Statement (EIS) prepared for the project. RPS Consultants Ltd compiled an archaeological impact assessment of the route in 1999 (Lane 1999). The report identified five sites of cultural significance that would be directly impacted upon by the construction of the N8 Bypass. In addition five sites of archaeological potential were discovered by the Project Archaeologist from the examination of aerial photographs and a walkover survey of the route in April 2001. Between April and May 2002, Phase 1 Pre-Construction Archaeological Testing of these ten cultural heritage sites was undertaken by Mary Henry Archaeological Services, under Excavation Licence Numbers 02E0286, 02E0287, 02E0288, 02E0374, 02E0375, 02E0376, 02E0377, 02E0378, 02E0379 & 02E0380 (Lennon 2002). Those townlands investigated were Gortmakellis, Ballyknock, Monadreela, Boscabell, George's-Land, Windmill and Farranamanagh. Archaeological features discovered during this work formed the basis of the Phase 2 investigations of the bypass in 2003.

In 2003 a joint venture company Judith Network Archaeology Ltd (JCNA) was contracted by South Tipperary County Council to undertake Phase 2 works. This involved further archaeological testing of areas of the bypass previously unavailable, carried out under

Excavation Licence Number 03E0295. Phase 2 works also involved Fixed Price archaeological resolution of a number of sites discovered in the Phase 1 works. Thus both testing and resolution works often occurred within the same field. This work began in April and continued until August 2003, during which the main construction contractor Roadbridge Ltd began on-site works. The bypass officially opened in 2004. Initial post excavation works began in August 2003 but were suspended as JCNA Ltd went into liquidation in January 2004. Over the succeeding years some preliminary reports were issued by the various licence holders on an individual basis, while some specialist works were undertaken. Between 2008–10 the bulk of report writing and specialist analysis was completed under the supervision of the NRA Project Archaeologist. Remaining work since 2011 was undertaken directly by the NRA Project Archaeologist.

Project Description

The N8 Cashel bypass began north east of Cashel town, *c.* 3.5 km from the Rock of Cashel, in the townland of Gortmakellis. The bypass generally kept to the east side of Cashel for most of its length so as to minimise visual impacts on the Rock of Cashel. It continued south through flat, good agricultural land, before rising gradually and cutting through the eastern end of Ballyknock Hill, *c.* 166 m OD, at the western end of the Slieveardagh ridge. The bypass continued south through slightly undulating ground, skirting the eastern side of the Monadreela ridge, *c.* 151 m OD. The lower part of this ridge was low-lying, heavily water-logged ground. The bypass continued southeast through relatively flat land, before terminating 2 km south of Cashel in Owen's and Bigg's-Lot townland. The mainline of the bypass measured *c.* 70–80 m wide.

The N74 Link Road began in Windmill townland *c.* 400 m from the old N8 Cork road end of the bypass, heading west and then northwest for its length. The route skirts close to the hilltop enclosure at Windmill TS061-072, before descending through Windmill along flat, good agricultural land, before cutting through a low ridge in Deerpark townland. The route descended through Farranamanagh townland continuing north toward the N74 Tipperary road. The link road was 2 km in length, and *c.* 60 m wide.

The project was designed to avoid in as much as practical all known archaeological sites located close to the CPO such as Gortmakellis ringfort TS061-003, Gortmakellis tower house TS061-011, Ballyknock ringfort TS061-008, Boscabell moated site TS061-027, Rathordan ringfort TS061-074, Windmill ringfort TS061-072, Windmill Leper Hospital (*site of*) TS061-073, Windmill moated site TS061-167 and Farranamanagh ringfort TS060-084. The investigation of the *Rian Bo Phadriag* roadway (TS061-071) was the only example where the bypass directly impacted a known RMP site and this was unavoidable as the roadway had to be traversed by the bypass.

Excavation Methodology

The investigations began across the entire bypass although lands at Owen's and Bigg's-Lot were unavailable for investigation until July. All sites were investigated by mechanical excavators under constant archaeological supervision. The topsoil was removed down to the natural glacial till, or to the top of archaeological features, depending on what was encountered first. In the main the natural consisted of compacted yellow / orange clay. In areas of water-logged conditions such as at Monadreela, George's-Land and Owen's and Bigg's-Lot the natural changed to grey / white malleable clay. In areas of higher ground in Ballyknock, Windmill and Deerpark bedrock limestone outcropped close to the base of the topsoil. In particular on the northwest-facing slope of Windmill Hill (Sites 31–35) and Windmill/Deerpark ridge the natural contained bedrock outcropping and bands of gravel (Sites 38–39). A cave is shown on the 1st Edition OS Map at the extreme southwest corner of Hughes'-Lot East, near the Corporation Boundary junction with Waller's-Lot.

A total of 56 Excavation Licence Numbers were issued by the Department of Environment, Heritage and Local Government during the course of the bypass archaeological works. This total included the general archaeological testing licence 03E0295 which was used across the scheme, the specific testing of the *Rian Bo Phadriag* roadway (TS061-071) in Owen's and Bigg's-Lot 03E1211, and the archaeological monitoring of bypass outfall drains across various townlands, 03E1087. In most instances the licence issued for specific

archaeological testing of a site was retained for the subsequent resolution of that site, as resolution followed on immediately once archaeology was definitively identified.

The following tables list those sites on the N8 Bypass mainline and N74 Link Road where excavations uncovered definitive archaeological remains (see below). What is clear from these tables is the multi-period nature of many of the sites investigated. Such discoveries have been mirrored on both NRA-funded projects north and south of Cashel, although it is clear the density of sites uncovered around Cashel is exceptional (McQuade 2009, xiii). Although it could be explained that this higher site density was due to Cashel's prominence as an ancient royal capital in the early historic era, the higher numbers of prehistoric sites appears to indicate intense settlement around Cashel from the beginnings of the Early Bronze Age. The good quality farming land, based on brown podzolic soils over limestone bedrock, was a main attraction for settlement. Coupled with this was Cashel's strategic location south of the bog lands around Littleton/Thurles, and north of the Galtee Mountains and River Suir plain. Although Cashel has no river many number of small streams (Arglo, Black, Halfmile & Maddock) fed by a widespread system of ponds served as convenient water sources: it was no coincidence that when excavations occurred beside these ponds i.e. Monadreela, Boscabell and Owen's and Bigg's-Lot, multi-period sites were uncovered.

Windmill townland is located c. 1.7 km south of Cashel town. Windmill Hill contains a hilltop enclosure (RMP No. TS061:072), the site of a medieval Leper Hospital (RMP No. TS061:073) and a moated site (RMP No. TS061-167). On the western side of the hill, in the grounds of Windmill house is ringfort, TS060-108. The RMP lists a possible enclosure, bawn and dwelling in the townland, TS060-087, TS060-08801 and TS060-08802 (Figure 2). However, there is no positive evidence for these sites (see www.archaeology.ie for updated information on these sites).

An extensive archaeological test excavation programme was carried out as part of the pre-construction phase of the project by Anne-Marie Lennon on behalf of Mary Henry Archaeological Services Ltd in 2002 (licence 02E0378). Under this licence the N74 Link Road was tested on the north side of Windmill hilltop enclosure, TS061-072, due to its proximity to this recorded monument. The testing area was termed Site 7 and spanned 160 m in length between chainages 1040-1200. The testing revealed a number of archaeological

features subsequently divided into sites 31-35 respectively. Site 32 was located in the edge of the centreline test trench between chainage 1050-1060, and consisted of a single circular pit (C17) showing evidence of burning (Lennon 2002, 02E0378, Site 7, Drawing 1, Fig. 4 & Plate 5). The pit was partially investigated to subsoil and subsequently back-filled.

Further testing of this side of Windmill Hill was undertaken by JCNA Ltd in March 2003 (Site 31, licence 03E0391). No additional features were found in the vicinity of Site 32 (Fairburn 2006d). Full archaeological excavation of Site 32 itself was conducted as part of Phase 2 archaeological resolution in March and April 2003, under excavation licence number 03E0399, directed by Neil Fairburn. No further features of archaeological significance were discovered during the excavation and the original pit (C17) identified in testing was fully excavated (Fairburn 2006e).

Site No	Licence No.	Townland	Mesolithic	Neolithic	Copper Age	Early Bronze Age	Middle Bronze Age	Late Bronze Age	Iron Age	Early Medieval	Medieval	Post Medieval
			7000–4000 BC	4000–2400 BC	2400–2200 BC	2200–1600 BC	1600–1100 BC	1100–800 BC	800 BC–400 AD	400–1200 AD	1200–1500 AD	1500–1900 AD
1i	03E0673	Ballyknock										
1ii	03E0740	Ballyknock										
1iii	03E0727	Clonmore										
5	03E0299	Monadreela										
7	03E0300	Monadreela										
8	03E0379	Monadreela										
9	03E0345	Monadreela										
10	03E0300	Monadreela										
11	03E0346	Monadreela										
12	03E0393	Monadreela										
13	03E0378	Monadreela										
14	03E0395	Monadreela										
15	03E0394	Monadreela										
16	03E0427	Boscabell										
17	03E0413	Boscabell										
18	03E0425	Boscabell										
19	03E0426	Boscabell										

		Bigg's-Lot										
42	03E0582	Gortmakellis										
T1061:071	03E1211	Owen's and Bigg's-Lot										

Table i: Excavations undertaken on the N8 Cashel Bypass mainline

Site No	Licence No.	Townland	Mesolithic 7000–4000 BC	Neolithic 4000–2400 BC	Copper Age 2400–2200 BC	Early Bronze Age 2200–1600 BC	Middle Bronze Age 1600–1100 BC	Late Bronze Age 1100–800 BC	Iron Age 800 BC–400 AD	Early Medieval 400–1200 AD	Medieval 1200–1500 AD	Post Medieval 1500–1900 AD
31	03E0391	Windmill										
32	03E0399	Windmill										
33	03E0398	Windmill										
34	03E0418	Windmill										
35	03E0424	Windmill										
36i	03E0675	Windmill										
36ii	03E0676	Windmill										
37	03E0419	Windmill										
38	03E0760	Windmill, Deerpark &										

		Farranamanagh										
39	03E0757	Farranamanagh										
40	03E0502	Farranamanagh										
41	03E0674	Farranamanagh										

Table ii: Excavations undertaken on the N74 Link Road

Table ii illustrates the very prominent geographical attraction of the upland areas of Windmill Hill and Windmill / Deerpark, being the focus of settlement and ritual activity throughout prehistory. For Windmill Hill itself (Sites 31–36i) there is an apparent hiatus in activity between the Late Bronze Age and Medieval periods, centred round the hilltop enclosure (TI061-072): it is likely the enclosure itself was occupied during this time with the surrounding fields perhaps used for agriculture rather than settlement.

Table iii lists those sites where licences were issued and investigations proved to be non-archaeological:

Site No.	Licence No.	Methodology	Townland
liii	03E0727	Resolution	Clonmore
2	03E0297	Testing	Ballyknock
3	03E0296	Testing	Ballyknock
4	03E0298	Resolution	Monadreeela
6	03E0349	Testing	Monadreeela
25vi	03E0747	Resolution	Rathordan
25a	03E0294	Resolution	Waller's-Lot
26	03E0347	Resolution	Rathordan
28	03E0292	Resolution	Waller's-Lot
43	03E1087	Monitoring	various
1, 1a, 25, 30, 36, 38	03E0295	Testing	various

Table iii: Excavations which produced non-archaeological sites

No further works were undertaken on these sites.

As the bypass was a design-and-build-type project design changes were made during the construction period in 2003. Such changes only involved works within the Compulsory Purchase Order lands (CPO), and were subject to the prior approval of South Tipperary County Council. These changes meant that some areas which had been archaeologically tested were not impacted further and therefore archaeological remains were preserved *in situ*. Such areas have been identified in each relevant final report and notified to the Archaeological Survey of Ireland:

Site	Licence	Townland	NGR	Description
Site 22	03E0503	George's-Land	209522 / 141100	ploughed-out <i>fulacht fia</i> dated to the Early Bronze Age
Site 24	03E0507	George's-Land	209520 / 140985	undated pits & ditches
Site 25ii	03E0730	Hughes'-Lot East	209380 / 140607	western portion of an Early Medieval ringfort
Site 25iv	03E0807	Hughes'-Lot East	209317 / 140363	eastern portion of an Early Medieval ringfort
Site 25v	03E0756	Rathordan	209140 / 140070	pits & ditches, one date from the Late Bronze Age

Table iv: Excavations where portions of the archaeology was preserved *in situ* within the CPO

Local Information

The route of the bypass traversed a number of upstanding townland boundaries generally consisting of high clay and/or stone banks topped with hedging, occasionally with a ditch either on one side or both. In some cases these ditches were active streams (Boscabell / George's-Land boundary; George's-Land / Hughes'-Lot East boundary). The townlands of Gortmakellis, Ballyknock, Monadreela, Boscabell, George's-Land, Kilsobin and Rathordan were located within St. Patricks Rock parish. At the George's-Land / Hughes'-Lot East boundary (Site 25i) the route entered St. John Baptist parish, formerly the Cashel Corporation Municipal Boundary too, and included the townlands of Hughes'-Lot East, Waller's-Lot, Cooper's-Lot and Owen's and Bigg's-Lot. On the link road Windmill was located within Part of St. Patricks Rock parish. At the junction of Windmill / Deerpark (Site 38) the route entered Farranamanagh in the parish of Hore Abbey. The profiles of townland boundaries were recorded during excavation and incorporated into the relevant final report. Changes to these boundaries over time can be traced in the Historical Background section below.

There are many interesting placenames around Cashel recorded cartographically and / or in historical sources, such as *Poulmawkeorish* in Castlelake; *Poulagower* in Attykit; *Foresdin* in Hill's-Lot; *Carrigeenedeen* and *Fawnsuir* in Carron; *Parknapeast*, *Turreen Spring* and *Mullenavivva Pool* in Ballinamona; *Knockananulla* in Hore Abbey; *Grancias Well* in Deerpark; *Loughroentaggart*, *Lough Nahinch* and *Doon Fort* in Farranamanagh; *Ogaunoch and Coun* [Rathcoun?] and *the hill of Tubbiradoon...a well called Tubbiradoon near Doon Fort* (Davis White 1866, 47); *Goul's Pool* in Waller's-Lot; *Corralough Well* in Corralough; *Gallows Hill* in Hughes'-Lot East; *the Fahy and the common lands of the town alias Cottyne* (Fiants 1994, 485); '*Brockroghtie and a meadow near Gallows hill called Monyarnycrohy*' (IMC 1966, 281).

GEOLOGY & SOILS

The Cashel environs are situated on the eastern edge of the Golden Vale, and the southern edge of the central limestone plains of Ireland. The landscape has been formed by glacial meltwater and morainic deposition. The bypass route traversed the low-lying, fertile, well-drained and easily worked soils with underlying calcareous tills, which sweep away from the Knockmealdown and Galtee Mountains and Slievenamon to the south.

Ballyknock, in the north of the main route, and Windmill, in the southern part of the link road, are high prominent landmarks. The undulating land is made up of gently sloping rounded ridges oriented east/west. The streams create a cross-drainage system running between the ridges and along the bottom of the slopes, eventually flowing to the west, towards the River Suir drainage basin. The rock type of the area is composed of limestones from the Carboniferous period. On the west and southwest are the Hore Abbey Limestone and Lagganstown formations. To the southeast is the Ballyadams formation, with the Killeshin Siltstone and Clogrenan formations to the northeast and north respectively. The Hore Abbey formation consists of pale grey bedded limestone with chert, with the Lagganstown formation made up of dark thin cherty limestone. The Ballyadams formation is a Burren-type limestone with thick ledges. The Clogrenan formation is bluish-grey limestone with irregular nodules of black or blue chert, wackestones and packstone limestones. The Killeshin Siltstone formation is composed of muddy siltstone and silky mudstone (Archer, Sleeman & Smith 1996).

Geological features such as swallow holes are recorded in Cooper's-Lot and Owen's and Bigg's-Lot. There is a cave marked on the 1st Edition OS six-inch map at the southwestern edge of Hughes'-Lot East near its junction with Waller's-Lot: the site is not recorded on later mapping. Locations of stepping stones and fords are first recorded on the 2nd Edition OS six-inch map in Hughes'-Lot East, possibly associated with the Cashel Reservoir on the Dualla Road. On the same map disused limekilns are shown in many townlands such as Farranamanagh, Rathcoun, Rathordan, Spafield and Windmill. The dominant soil type is the grey brown podzolic which are fertile, well-drained soils ranging in depth from 0.20 – 0.60 m. It is an excellent soil type for agriculture, in particular horse breeding, for which this area of south Tipperary is renowned for.

ARCHAEOLOGY OF THE CASHEL AREA

Prior to the bypass archaeological excavations little was recorded of Cashel's prehistory, with a few uncontexted finds from around Cashel including a stone axe head, and various artefacts of bronze (axes, javelins / spearheads) and curiously, 262 bronze rings (see Appendix i). No prehistoric settlement sites were recorded – a situation that was to change with the bypass investigations. To the east of Cashel a Bronze Age burial had been discovered in Fussough townland, Dualla in 1933: a stone-lined cist burial containing an urn and human bones was dug up from a sandpit at the western base of the Kill Hills TS053-096 (O'Brien 2007, 93–4; Waddell 1990, 134).

The prehistory of Cashel has emerged slowly from beneath the citadel of the Rock of Cashel, whose mix of ecclesiastical and secular architecture generally dominates all discussion and research. The discovery from the middle of the 19th century onwards of metal artefacts from around Cashel, mainly bronzes such as axes, hinted at prehistoric activity in the area (Shearman 1852, 203). The recovery of artefacts from the Rock of Cashel summit is recorded from as early as 1849, with a bronze bell being found (Wyse Jackson 1956, 18). Perhaps the first archaeological excavation in Cashel occurred in the 1850's with investigations inside the Round Tower on the Rock (Fitzgerald 1857, 292). This may have been spurred by the establishment of the Cashel Chapter House Museum on John Street by Mr. Newport B. White in 1855. Two publications by his brother Rev. John Davis White listed a range of objects housed in the Museum, many of which were described as being found from around Cashel (Woodworth 1989, 149).

John Davis White included amongst the museum collection a large helmet [and human bones] found in Farranavarra, northeast of Cashel, possibly associated with the 1170's battle between the Irish and Anglo-Normans (Davis White 1892, 12). In his history of Ireland Giraldus Cambrensis described earthworks being thrown up near Cashel during a battle between the Anglo-Normans and Irish – *As [Raymond le Gros] was advancing towards Cashel...he heard that the men of Thomand had...come to block his path in the pass of Cashel. By laying down broken branches of trees and digging trenches they had greatly broken up a terrain already naturally difficult, and had also built a very strong palisade right across the path...the stockade was completely broken down and destroyed, not without great loss of life among the defenders, and they opened up a path with their swords, and then enlarged it* (Scott and Martin 1978, 161–3). The location of this ancient pass of Cashel is still unknown. Davis White also reported on the discovery of human skulls and bones in Doon Fort, Farranamanagh, possibly associated with the Desmond Rebellion of 1581 (Davis White 1866, 46–7).

Following in the footsteps of Davis White a later cleric, Rev. Robert Wyse Jackson began recording antiquities around Cashel's hinterland in the 1950's, and some of the objects he discovered are listed in Appendix i (Wyse Jackson 1956a, 21). Cashel's Anglo-Norman moated sites were included in Barry's seminal study of this monument type in the 1970's, including the Boscabell moated site TS061-027 (Barry 1977). These and the other rural sites around Cashel were visited and listed as part of Reynolds's 1975 survey of Tipperary South Riding, followed by Cahill's 1982 study of the barony of Middlethird, as part of an unpublished Master's thesis for UCC. Local historians such as A. Finn, P. J. Davern, J. Knightly, M. 'Bob' O'Dwyer and E. Dalton have over the years lectured and occasionally published about Cashel (see Moloney 1994).

Prior to the bypass excavations in 2003 no discoveries of Mesolithic sites had been made in the Cashel area – the nearest such activity was represented by the uncontexted flints found at Ballybrado House, near Cahir (Woodman & Finlay 2001, 189); a Mesolithic date from the Bronze Age site of Curraghatoor, Co. Tipperary is considered unreliable (Cleary 2007, 39); a single Mesolithic macro flint was found in a medieval context in Toureen Peakaun near Cahir (Ó Carragáin 2011, 341–2) while a possible Mesolithic object, a single retouched jasper point from Chancellorsland, Co. Tipperary is paralleled with objects from the later Mesolithic site at Ferriter's Cove, Co. Kerry (Doody 2008, 329).

Cashel did not feature as a place of recorded Neolithic activity with no megalithic monuments nor house sites known. Only three flints were retrieved from the Rock of Cashel excavations in the 1990's – no further details are known at present (www.homepage.eircom.net/~dunamase/Dunamase.html) There are a number of undated megalithic structures around Clonoulty and Hollyford northwest of Cashel, recorded by the Archaeological Survey of Ireland. The nearest megalithic tomb is the portal tomb at Lissava TS075-045 near Cahir, c. 18 km south of Cashel. In Rathcoun townland southwest of Cashel four undated barrows TS060-107007–TS060-107010 and one unclassified cairn TS060-107011 are recorded clustered together.

A number of the metal artefacts now in the National Museum of Ireland have been assigned in the Early Bronze Age period (Grogan 2005, Fig. 3.1–3.4, 24–29) – see Appendix i below. Recently three standing stones have been identified northeast of Cashel and are now RMP sites: Palmer's Hill TS061-052, Corralough TS061-053 and Ballyknock TS061-054 – these may date to sometime in the Bronze Age and significantly are located along the prominent Ballyknock ridge, as is a newly discovered ploughed-out burnt spread / *fulacht fiadh*, overlooking many of the N8 Bypass prehistoric sites (O'Brien 2003 17–26; O'Brien 2006, 15–23; O'Brien 2007, 87–

96; O'Brien 2009, 72–4). Other recent discoveries around Cashel have been made from field walking including further ploughed-out burnt spreads / *fulacht fia* in Ballinamona (two sites), Ballinree (one site), Carron (two sites), Gortmakellis (one site), Kilsobin (one site) and Newtown (eight sites) (O'Brien 2008, 73–82), and artefacts such as a thumbnail scraper from Ballinamona, worked flint from Boscabell and Kilsobin, slag from Ballyknock, stone spindle whorls from Ballykelly, George's-Land and Ballinamona respectively, and a hammer stone from Ballinree and George's-Land (O'Brien 2003a, 48–52; www.facebook.com/rathnadrinna). These discoveries have been incorporated into the relevant final reports.

In later prehistory high status activity in the wider area is well represented; the discovery of two Late Bronze Age gold rings at Ardmayle, beside the River Suir and dated to the late 13th – early 12th centuries BC (Cahill 1989, 146), a Late Bronze Age Class IV sword from Aughnagomaun dated *c.* 700 BC (O'Brien 2007, 89–90), and a gold reel containing small gold balls (NMI W306) recorded as being found from Cashel (Cahill 1995, 66). The discovery of the Aughnagomaun sword is significant as earlier Middle / Late Bronze Age evidence was found in the same townland at (E2361) on the M8 North Project (Moore *et al* 2009, i). The lack of Bronze Age settlement sites was highlighted by Doody (1997, 94).

Iron Age Cashel was best represented in literature and with very occasional archaeological discoveries: the Clonura leather shield, *c.* 20 km northeast of Cashel. However recent excavation in advance of development has identified potential and definitive Iron Age sites: the discovery of a blue glass bead in Deerpark (Sherlock 2008, 350) may point to Iron Age activity and in the wider Cashel area a possible ritual site in Knockgraffon. The latter site consisted of an arc of eight postholes dated to 380–50 cal BC (SUERC–25889) while an internal posthole to the arc was contemporary, dated to 380–90 cal BC (SUERC–25890). Artefacts recovered included unidentified prehistoric pottery, a polished stone axe, three highly polished stones, two copper-alloy fragments and cremated bone (MacLeod 2012, 200–1).

Although Cashel was located on the south-eastern periphery of the Discovery Programme's North Munster Project nevertheless its inclusion saw a number of sites traditionally and locally classified as ringforts re-classified as prehistoric. Upstanding monuments such as Camus TS060-028 [classified as a ringfort on www.archaeology.ie], Carron / *Rathnadov* TS069-002001 [also classified as a henge], Knocksaintlour TS060-179, Lalor's-Lot / *Rathnadrinna* TS061-089001 and Windmill TS061-072 were classified as hilltop enclosures (Grogan 2005, Fig. 7.6, 116). A number of other monuments perhaps could be added to this list; Ballyknock TS061-008 due to its very prominent location at over 180 m OD, Hughes'-Lot East enclosure 05E0671 (143 m OD), Rathordan TS061-074 at 140 m OD, and the multi-ramparted Ballinree TS060-110 are

worthy of future study. Based on current evidence the nearest hillfort to Cashel is Kedrah TS075-040, located on the eastern side of the River Suir near Cahir, c. 16 km south of Cashel. The only definitive crannog in south Tipperary is recorded from Marhill TS069-072 just south of Rockwell College. Significantly this site is located in the same townland as a Middle Bronze Age site (E2269) and Medieval sites (E2124 & E2268) discovered on the M8 Cashel to Mitchelstown Road Project (see below).

The *Dhuvclloy* earthwork TS061-022 (road / hollow-way) in Charterschool Land TS061-022 has recently been associated with kingship processional rites (Gleeson 2012). In the extents of the Lands of Monecurialy of 1688 the highway from Cashel to Deansgrove was mentioned and the blacke ditch commonly called the *Doocly* (Davis White 1863, 5). Another road TS060-025 which serves as the townland boundary between Farranananagh and Rathcoun is now classified as a redundant record (www.archaeology.ie/NationalMonuments/Flex/Viewer/). However on the 1st Edition OS six-inch map the boundary is shown as *Boheragaddy* and a much earlier reference and description of *Bothar Gadie*, ‘a double-ditched road (*a biffosario lapideo*)’ is found in an Inquisition taken at Clonmel in 1553 (Curtis 1941, 15). In the same source another road called *Botherewolyngyhy* has been equated with Windmill (www.logainm.ie).

Exotic material is represented by the Roman-period occultist’s stamp from Spital-Land in Golden, c. 7 km west of Cashel (Bateson 1973, 74), and the Roman-type fibula, a dolphin brooch (Type H), the earliest datable find from the Rock of Cashel (Cahill 1982a, 101). The evidence of international trade is further represented by Romano-British pottery sherds and Bii amphorae sherds from the Rock of Cashel; the Bii amphorae were also found at Derrynaflan c. 15 km northeast of Cashel (Kelly 2010, 59–60). Other well-known objects from Cashel include bronze bells, a silver brooch (decorated with Scandinavian thistle design from the late Norse period), a gilded copper crozier-head (set with turquoise and sapphire), the Kennedy-Crux Crozier, the silver-gilt Cashel Pyx, and various chalices and seals (Wyse Jackson 1956, 18–20; see Appendix i). A rare zoomorphic pennanular brooch dated to c. 600 AD was found in *Loughnafina*, west of Cashel town (Henry 2000, 200–1).

Early medieval Cashel is well attested in historical sources with the dominance of kings on the Rock under *Éoganachta*, *Uí Briain* and *Meic Carthaig* dynasties (see Historical Background below; Hodkinson 1994; Collins 1997; Gleeson 2012). In Rathcoun a complex of ecclesiastical sites include a church TS060-107002, recorded as (*site of*) *Templemabee* [Mobhi], the unclassified religious house TS060-107003 (*site of*) *Monastery*—the only monastic site marked around Cashel and holy well TS060-107004. Rathcoun and Templenoe are two townlands southwest of Cashel that preserve the word ‘temple’ in their name.

The plethora of ringforts and possible *Óenach* sites in the region point to a vibrant early medieval hinterland. Some of the forts around Cashel are recorded in historical sources. In the *Life of Saint Declan of Ardmore* a stone fort called *Rath na nIrlann* is specifically identified as being on the western side of Cashel (Power 1914, 28) – this fort may equate with Ballinree TS060-110. *Lis na nUrlann* (location unknown) is recorded in the Yellow Book of Lecan as being associated with the twelfth-century inauguration of the kings of Munster (Fitzpatrick 2004, 178–9). In a description of the lands of James Boiton recorded in the Calendar of the Patent and Close Rolls Elizabeth I 1594–6 local names such as ‘*High Rathe on the east*’ and ‘*the lands of Asmon, otherwise Boiton Rath*’ [Boytonrath] are recorded (Morris 1862, 392). Could the ‘*High Rathe on the east*’ either be referring to one of the Ballyknock forts TS061-008 or else to the Hughes’-Lot East enclosure [05E0671], (see below)? In the Patent Rolls of James I, Pat. 7 c. 1610 the following entry for the Windmill area is very informative – ‘*the stone house, towns and lands of the Windmill, Fleming’s Rath, and Parkinigrogory in the southern part of Cashell*’ (IMC 1966, 146). Could *Fleming’s Rath* be Windmill hilltop enclosure TS061-072?

King Brian Uí Briain is recorded as fortifying Cashel c. 995 (AI) - this annalistic reference may not be restricted to fortifying of the Rock itself. King Muircheartach Uí Briain had a house at Cashel c. 1091 (AFM) and within 10 years had handed over the Rock to the church in 1101 (Bracken & Ó Riain-Raedel 2006). Cormac’s Chapel, with its’ renowned Romanesque architecture was consecrated in 1134 (Ó Carragáin 2010). Although the OPW-funded excavations of the 1990’s on the Rock still remain unpublished, two of the burials excavated in Area 1 have been dated by the Mapping Death Project to cal AD 1029–1155 and cal AD 1033–1155 (Gleeson 2013, 22). These burials are contemporary with activity at two of the bypass sites: oats from the lower fill of a cereal-drying kiln in Boscabell (Site 19, 03E0426), and a single adult femur displaying trauma, from the upper levels of the Hughes’-Lot East bivallate fort (Site 25ii, 03E0730); see respective final reports.

The archaeological inventory for South Tipperary has been updated and new data added to RMP sites around Cashel, see www.archaeology.ie. A recent rural excavation unearthed evidence of a ploughed-out ringfort / enclosure at Hughes’-Lot East (Hurley 2005, 348). Significantly, this site was located on a hillock to the southeast of the town, and its discovery suggested every such elevated location around Cashel was utilised as some form of defended settlement.

The last 20 years witnessed profound development changes in and around Cashel town itself, with a corresponding increase in the number of licence archaeological excavations taking place (Hughes & Ó Droma 2011, 19–20). Despite the large number of investigations little in the way of pre-13th/14th century AD material has come to light, equally compounded by a lack of

publication. One of the more significant Cashel excavations was that in Friar Street in 1998 (O'Donovan 2004). New discoveries are still being made in Cashel town: a medieval carved head in the Dominican Friary (O'Brien 2010) and, a carved capital, probably from the Franciscan Friary was found built into a wall on the Dualla Road in Hughes'-Lot East (Hughes 2011).

A number of Anglo-Norman moated sites are recorded around Cashel including an elevated example at Windmill TS061-167 and one at Boscabell TS061-027, which was located close to the edge of the bypass (Sites 18–20). Gortmakellis tower house TS061-011 is a fine example of a five-storey late medieval structure, and the bypass was designed to avoid all impacts on this castle and its' environs.

Recent NRA Excavations Around Cashel

From 2005–7 archaeological discoveries around rural Cashel greatly increased - south of Cashel as far as the county boundary with Limerick on the M8 Cashel to Mitchelstown road and north of Cashel as far as the county (and provincial) boundary with Kilkenny on the M8 Cullahill to Cashel road. These excavations revealed sites containing multi-period activity similar to that found on most of the Cashel excavations too.

The following list summarises the archaeological excavations made south of Cashel on the M8 Cashel to Mitchelstown Road Project, final reports for which were produced in 2007 (all townlands are in Co. Tipperary unless otherwise stated).

Neolithic sites - Suttonrath (E2128), Caherabbey Lower (E2266), Loughfeedora (E2292) & Caherabbey Upper (E2298)

Early Bronze Age sites - Ballylegan (E2265), Ballydrehid (E2267), Cloghabreedy (E2273), Dogstown (E2288), Dogstown (E2289), Templenoe (E2290), Racecourse Demesne (E2297), Caherabbey Upper (E2298), Caherabbey Upper (E2299), Carrigane (E2303 Co. Cork) & Brackbaun (E2338 Co. Limerick)

Middle Bronze Age sites - Killemly (E2126), Suttonrath (E2128), Ballydrehid (E2267), Marlhill (E2269), Knockgraffon (E2270), Knockgraffon (E2271), Cloghabreedy (E2273), Cloghabreedy (E2274), Shanballyduff (E2275), Dogstown (E2289), Clonmore North (E2294), Raheen (E2295), Lissava (E2296), Caherabbey Upper (E2299), Carrigane (E2303 Co. Cork), Brackbaun (E2306 Co. Limerick) & Brackbaun (E2339 Co. Limerick)

Late Bronze Age sites - Killemlly (E2126), Suttonrath (E2128), Ballylegan (E2265), Ballydrehid (E2267), Knockgraffon (E2270), Cloghabreedy (E2274), Loughfeedora (E2292) & Caherabbey Upper (E2299),

Iron Age sites - Killemlly (E2126), Ballylegan (E2265), Caherabbey Lower (E2266), Ballydrehid (E2267), Knockgraffon (E2270) & Knockgraffon (E2272),

Medieval sites - Marlhill (E2124), Marlhill (E2268), Suttonrath (E2127), Ballylegan (E2265), Knockgraffon (E2271), Tincurry (E2293) & Brackbaun (E2339 Co. Limerick)

Post Medieval sites - Loughfeedora (E2291) & Cloheenafishogue (E2302).

The following list summarises the archaeological excavations made north of Cashel on the M8 Cullahill to Cashel Road Project, final reports for which were produced in 2010 (all townlands are in Co. Tipperary unless otherwise stated):

Neolithic sites - Borris (E2491), Fennor (E2384) & Islands (E2388, Co. Kilkenny)

Late Neolithic sites - Gortmakellis (E2816)

Early Bronze Age sites - Borris (E2378), Borris (E2491), Inchirourke (E2383), Fennor (E2384), Fennor (E2385), Islands (E2386, Co. Kilkenny), Islands (E2388, Co. Kilkenny) & Warrenstown (E2390, Co. Kilkenny)

Middle Bronze Age sites - Parkstown (2368), Rathcunikeen (E2372), Borris & Blackcastle (E2374), Borris (E2375), Borris (E2376), Borris (E2378), Borris (E2379), Inchirourke (E2383), Islands (E2386, Co. Kilkenny), Islands (E2387, Co. Kilkenny), Islands (E2389, Co. Kilkenny) & Foulkscourt (E2391, Co. Kilkenny)

Late Bronze Age sites - Aughnagomaun/Ashhill (E2361), Ballydavid (E2370), Coolcroo (E2818), Borris (E2376), Inchirourke (E2382), Islands (E2386, Co. Kilkenny), Islands (E2388, Co. Kilkenny), Islands (E2389, Co. Kilkenny), Foulkscourt (E2391, Co. Kilkenny) & Glashare (E2394, Co. Kilkenny)

Iron Age sites - Coolkip (E2362), Coolkip (E2363), Ballydavid (E2370), Borris (E2376), Borris (E2491), Inchirourke (E2382) & Glashare (E2394, Co. Kilkenny)

Early Medieval sites - Parkstown (2368), Ballydavid (E2370), Borris (E2376) & Borris (E2491)

Late Medieval sites - Moycarky (E2365), Moycarky (E2366), Moycarky (E2367), Parkstown (E2368), Borris & Blackcastle (E2374), Borris (E2376) & Inchirourke (E2382)

The results of some of these excavations are incorporated into various Cashel final reports, can be viewed at www.nra.ie/archaeology and see McQuade (2009, 2, Table 1.1). The apparent lack of Mesolithic discoveries on either of these major road projects was mirrored on earlier infrastructure projects in south Tipperary - the Gas Pipeline of 1981–2 (Cleary 1987, vii), the Gas Pipeline of 1986 (Gowen 1988, vii), the Lisheen Mine Project 1996–8 (Gowen 2005, 61), and more recently again from the research excavation at Curraghatoor (Cleary 2007, 39). Clearly then, the hinterland of Cashel, where four townlands spread across the bypass produced Mesolithic material and/or radiocarbon dates, featured significantly in the movement of both people and materials during the Mesolithic. This movement was in no small part facilitated by Cashel's closeness to the River Suir.

Recent Geophysical Investigations Around Cashel

Between 2009–12 a number of research-led geophysical surveys were conducted on a number of sites around Cashel. Earthsound Archaeological Geophysics Ltd undertook geophysical surveys at Rathnadrinna fort TS061-089001 and TS061-089002 in Lalor's-Lot. This work revealed complex multi-period sites, with evidence of large-scale earthworks predating the known fort (O'Brien *et al* 2011, 26). Also in 2011 Earthsound undertook geophysical survey at Hughes'-Lot East (Site 25ii, 03E0730) in order to identify the full extent of the Early Medieval ringfort beyond the CPO (Bonsall 2012). The western edge of the ringfort was identified and the results have been incorporated into the final report for that site. Further research work centred on Windmill Hill sites TS061-072, TS061-073 and TS061-167 in 2011 by UCC and the University of Bradford / NRA and in 2012 by Earthsound Archaeological Geophysics identified archaeological features, some of which appeared to relate to the activity discovered on sites 31–36i (Gimson 2012). These results are incorporated into the various Cashel final reports.

Appendix i: Catalogue of objects from Cashel in the National Museum of Ireland

- Object: Copper alloy harness mount
 NMI No: 2004:178
 Find-spot: Ballytarsna
 Description: Copper alloy harness mount found by Mr. Alfie Coyle in a potato field on the southern side of the old N8 road, near the junction with Killock Quarry.
- Object: Medieval pot sherd
 NMI No: 2004:146
 Find-spot: Rock of Cashel, surface find at exterior base of Cathedral south wall
 Description: Curved pot sherd probably belonging to a medieval vessel. The outer surface of the sherd is glazed. This glazing is green in colour with random dark green and brown dots. On one area of the outer surface of the sherd, there are traces of five incised lines. Max L 5.25; max W 3.28; T 6.90
- Object: Socketed iron axehead
 NMI No: 2002:88
 Find-spot: St. Patrick's Rock, garden of Mr. Dinny O'Brien
 Description: Iron axehead with modern iron spike thru the shaft hole. The axehead has a widely splayed blade the sides of which curve inwards towards the shaft hole. This is triangular in shape and folds back to form the perforation to take the handle. In poor condition. Max L of axehead 13.15; W of blade 10.00; max T of blade, max 2.1
- Object: Copper alloy ferrule
 NMI No: 1992:29
 Find-spot: Garden in Dogstown, New Inn
 Description: Copper alloy ferrule, decorated bronze mount
- Object: Wood
 NMI No: 1984:107
 Find-spot: Curraghtarsna, Cashel
 Description: Trough of *fulacht*, reused from a dug-out canoe. Excavated timber C14 dated to 3120_35 BP (GrN 12618)
- Object: Bronze spearhead or javelin head
 NMI No: 1968:285
 Find-spot: Cashel
 Description: Rounded blade with ornamental deep grooves close to the ridge of the socket, broad ribbon loops on the large squat socket. l. 6.4cm, l of loop 1.5cm, w of loop 2.1cm, diameter of socket mouth 2cm
- Object: Bronze spearhead or javelin head
 NMI No: 1968:282
 Find-spot: St John Baptist Cashel
 Description: Bronze spearhead, socketed, looped, with bevelled edges on the blade and decorative ribbing. Conical socket. Loops are lozenge-shaped and placed midway between blade and mouth of socket. l. 11.3cm, l of blade 6cm, w of blade 3.5cm, l of loop 1.8cm, diameter of mouth 1.9cm
- Object: Iron spike
 NMI No: 1953:9
 Find-spot: Hummocky' field near Ballysheehan Motte-and-Bailey
 Description: Iron spike
- Object: Fragment of an iron horseshoe
 NMI No: 1953:10
 Find-spot: Hummocky' field near Ballysheehan Motte-and-Bailey,
 Description: Fragment of an iron horseshoe
- Object: Five medieval pottery sherds
 NMI No: 1953:11-5
 Find-spot: Hummocky' field near Ballysheehan Motte-and-Bailey
 Description: Five medieval pottery sherds

- Object: Bronze spearhead
NMI No: 1938:8589
Find-spot: Cashel vicinity
Description: Bronze spearhead
- Object: Socketed bronze axehead
NMI No: 1937:3678
Find-spot: Cashel vicinity
Description: Socketed bronze axehead
- Object: Silver seal matrix
NMI No: 1912:59
Find-spot: Co. Tipperary
Description: Matrix of seal silver with a green stone set inside. The device on the stone is a sea horse. The legend reads S.IOKIS-CASELL-ARCHID. The matrix was formerly in the possession of Sir William Betham. It has been in the RIA collection for many years. The seal measures 1 1/6inch x 15/16inch.
- Object: Stone adze
NMI No: 1909:33
Find-spot: Near Cashel
Description: Of very unusual form, of close grained hard black stone. It measures 9 & 1/8 in length and 2 1/2 in breadth. It has a label gummed on which reads "ancient Irish stone adze found at Cashel Co. Tipperary."
- Object: Casts of Cormac's Chapel north doorway
NMI No: 1911:5
Find-spot: Rock of Cashel
Description: Casts of cormac's chapel north doorway also arcading from interior and side of ornamented stone coffin.
- Object: Bronze axehead
NMI No: 1892:49
Find-spot: Near Cashel
Description: Socketed celt. Bronze looped cutting edge curved socket fractured filleted near mouth. Extreme length 2 1/4in. greatest width 1 7/8in. external diameter at mouth of socket 1 1/4in.
- Object: Copper axehead
NMI No: 1881:133
Find-spot: Dundrum, found in 1842
Description: Copper, broad and flat, surface rough, narrow and straight large gaps in one end of cutting edge, workmanship very rude. Extreme length 6 1/2inches thickness at centre 1/4inch, greatest width 4 inches, width at narrow end 1 3/4inches
- Object: Bronze axehead
NMI No: 1880:15
Find-spot: From Cashel
Description: Socketed celt, bronze, brownish, patinated, looped, cutting edge curved, mouth of socket nearly round portion battered by hammering, length 2 7/8in. width at cutting edge 2 1/4in. greatest external diam. Of socket 1 1/2inch
- Object: Silver paten
NMI No: 1880:98
Find-spot: Found when digging a grave in burial ground adjoining Cormac's Chapel, Rock of Cashel
Description: Silver circular and thin rim broad and flat centre portion slightly concave cracked in several places part of rim detached diameter 4 1/2in width 5/8ths inch length detached portion 3 11/16ths inches wt. 1oz. 9dwt. 11gr.
- Object: Silver coin Edward II
NMI No: 1875:122
Find-spot: Northeast part of Cathedral, Rock of Cashel
Description: Edward II, found with Bronze pin No. 121

- Object: Bronze pin
 NMI No: 1875:121
 Find-spot: Northeast part of Cathedral, Rock of Cashel
 Description: Pin bronze, stem tapering to a fine point and slightly diminishing towards head, on upper half of its length ornamented with diagonal hatchings, head formed by two horse's faces turned outwards, length 3 5/8inches, and greatest thickness of stem more than 1/8inch
- Object: Copper and silver coins
 NMI No: 1877:16
 Find-spot: Cashel
 Description: Copper square Youghal Token 9/16 inch square.
 Silver Mecklenburg shilling
- Object: Iron key
 NMI No: 1877:12
 Find-spot: Cashel
 Description: Iron brown much rusted, pipe in shank, bow semi-oval and attached to shank by two scrolls. Extreme length 3 3/8inches, greatest width of bow 1 15/16inch. Measurement across shank and bit 1 inch
- Object: Stained glass
 NMI No: 1877:11
 Find-spot: Cormac's Chapel, Rock of Cashel
 Description: Fragment of stained glass. Greenish with reddish brown stripes. Portion of latter forming lozenge shaped ornamentation with central circlet of same colour. Pattern similar to that of fresco painting on walls of Cormac's Chapel, in which structure it was found. Greatest length 1 3/4inch, extreme width 1 1/2inch
- Object: Bell metal portions
 NMI No: 1877:10
 Find-spot: Cormac's Chapel, Rock of Cashel
 Description: Portions of bell metal (2) brownish green, respective measurements 1 1/2inch x 7/16inch, and 3/4 inch x 1/2inch
- Object: Copper alloy Lion
 NMI No: 1877:1
 Find-spot: Found in open space between Cormac's Chapel & Cathedral, Rock of Cashel
 Description: Brass lion, greenish in sitting posture, rectangular socketed projection in rear of hind legs, base oblong and irregularly rounded in front, height 2 ft 20inches length of base 7/16th inch width 5/8th inch
- Object: Glass fragment
 NMI No: 1877:14
 Find-spot: Cashel
 Description: Greenish grey remains of 'bull's eye' on one of the faces. Extreme length 3 1/8inches greatest width 1 1/4inch greatest thickness 5/8inch
- Object: Wooden bow
 NMI No: R:2470
 Find-spot: Near Dundrum
 Description: Wooden bow, found in the moat of a square rath near Dundrum
- Object: Gold bracelet
 NMI No: W307-309
 Find-spot: Cashel
 Description: Three individual gold bracelets
- Object: Gold ball & reel
 NMI No: W306
 Find-spot: Cashel
 Description: Gold ball & reel

Object: Copper alloy bell
NMI No: W2 WK209
Find-spot: Cashel
Description: Copper alloy bell

Object: Bronze rings (262)
NMI No: W232-493
Find-spot: Cashel
Description: Bronze patinated and tarnished. Apparently solid. Annular but one is cut through showing it to be solid. Some are circular in cross-section. Some are regular on the inside and some seem to be rough or unfinished casting. The sizes range from 1.50 external diam with 1.40 internal diam to 2.90cm

HISTORICAL SOURCES

For the historical background to Cashel town and its environs see White (1863: 1866 & 1892), Gleeson (1927), Finn (1930), Bradley (1985), Fogarty (2000), MacShamhráin (2004), Marnane (2007), and more recently Marnane & Darmody (2011). Some key dates in the history of Cashel include:

- AD 370 Traditional date of Kings of Munster ruling from Cashel.
- 448 Traditional date for Saint Patrick's visit to Cashel, and baptism of King Aengus.
- 580 Cairpre, King of Cashel died.
- 593 Feidlimid, King of Cashel died.
- 662 Maenach, King of Cashel died.
- 666 Cú-cen-Máthair, King of Cashel [& Munster] died.
- 713 The battle of Carn Feradaig, in which Cormac King of Cashel, died.
- 742 Cathal, King of Cashel died.
- 820 Feidlimid, son of Crimthann, took the kingship of Cashel.
- 821 Artrí, King of Cashel died.
- 847 The first recorded king-bishop of Munster died in Cashel.
- 976 Brian Boru was crowned King of Munster.
- 995 The fortifying [building] of Cashel, Inis Locha Gair, and Inis Locha Sainglenn, and many buildings besides, by King Brian Boru.
- 1093 Diarmait, son of Tairdelbach Ua Briain, submitted to Muirchertach, i.e. his brother, and they made peace and a covenant in Cashel and in Les Mór, with the relics of Ireland, including the Staff of Jesus, as pledges, and in the presence of Bishop Ua hÉnna of Cashel and the nobles of Mumu.
- 1095 Cashel [the Rock] was burned [cause of burning unknown].
- 1101 Muirchertach O'Brien, King of Munster bequeathed the Rock to the church.
- 1102 Cashel was attacked and burned by the *Éili* of north Tipperary.
- 1107 Cashel [the Rock] was burned by lightning.
- 1115 Cellachán Ua Cellacháin of Cashel was slain.
- 1118 Mael Sechnaill Ua Faeláin was treacherously slain in Cashel.
- 1127–34 Traditional date for the building of the Cormac's Chapel on the Rock.
- 1130's Benedictine monks settle on the Rock of Cashel
- 1141 The bishopric of Cashel was made Metropolitan.
- 1172 King Henry II of England presided over a synod in Cashel.
- 1178 Cashel was plundered by the Normans.
- 1179 Cashel [the Rock] was burned [cause of burning unknown].
- 1194 Tadc, son of Mathgamain Ua Briain, was put to death by the foreigners in Cashel, despite the protection of the legate Archbishop Ua hÉnne of Cashel and Patrick.
- 1216 Cashel was designated as a borough town.
- 1220's References to the old and new *vill* (town) of Cashel survive.
- 1224–37 Sir David Latimer founded a Leper Hospital of St. Nicholas in Cashel.
- 1228 King Henry III returned the town to the ownership of the Archbishop, and a Fair was granted.
- 1243 Foundation of the Dominican Friary of Cashel, north of the town wall.
- 1265 Foundation of the Franciscan Friary of Cashel, east of the town wall.

- 1272 Foundation of the Cistercian monastery of Hore Abbey, south of the Rock.
- 1279 Letters of protection for two years for Adam Stripling, merchant of Cashel, about by the King's licence to go to parts beyond the sea.
- 1317 Edward Bruce of Scotland visits Cashel during his invasion of the country.
- 1320 Grant to the bailiffs and worthy men of Cashel, in aid of enclosing the town with a stone wall, that they may take the following customs in the accustomed form for five years from every crannock of wheat, peas, beans and every kind of corn, 1d.
- 1346 Commission to Adam Preston of custody of the castle of Cashel, during the King's pleasure, with the accustomed fee.
- 1378 King Richard II confirmed all the privileges of Cashel' Corporation; in Cashel Royal Service was proclaimed.
- 1378 King Richard II learned that there was no law, justice or good governance in any parts around the town of Cashel, but rather rebellion, extortion, murder, killing, robbery and open war made by the King's Irish enemies and rebels upon that town, so that the provost and commons of that town can scarcely be kept without great relief by the King in this part.
- 1381 The town of Cashel was situated in the march and was so devastated by invasions of the King's enemies that it cannot support the household of the King's Lieutenant and other officers except in the houses of the Friars Preachers and Friars Minor of that town; and because of the destruction of the surrounding parts where the said friars are wont to receive alms for sustenance, they have scarcely enough on which to live. Order to pay the Friars Preachers 5m as an aid for repairing their church and houses.
- 1494 The Earl of Kildare, Gerald Mór burned St. Patrick's Cathedral, believing the bishop to be hiding inside!
- 1540 The religious institutions of Cashel were seized by the English Crown.
- 1581 During the Desmond Rebellion cattle raids in Cashel result in the deaths of 60 townsmen.
- 1637 King Charles II of England granted a Charter to the town: it was to be known as '*City of Cashel*'.
- 1622 Archbishop Miler Magrath of Cashel died.
- 1641 The town of Cashel was invaded by the O'Dwyer Clan and many English settlers killed.
- 1647 The Rock of Cashel was conquered by forces loyal to the English Parliament, led by Irish man Lord Inchiquin.
- 1687 King James II of England granted Cashel a Charter.
- 1749 The roof of St. Patrick's Cathedral was removed.
- 1869 Following a Parliamentary inquiry the Corporation of Cashel was dissolved.

Townland History

The name 'Windmill' is given to the fort, hill and townland, yet no structural remains exist of a mill or any such type structure in the vicinity. Logainm links Windmill and Hore Abbey together via the placename *Ballymolan* for the year 1275 {Archdall's Monasticon Hibernicum, 648 is the link}, and via the placename *Ballyvellane* for the year 1611 in the Calendar of Patent Rolls for

King James I (www.logainm.ie). Windmill townland has been associated with a named road recorded in the Ormond Deeds, Volume V. The association is found on www.logainm.ie and the original reference in the Ormond Deeds is as follows:

“Inquisition taken at Clonmel Wednesday April 5th, 1553. Patrick Sale of Cashel forcibly entered upon a part of the King’s way of said town leading from the double-ditched road (a biffosario lapideo) of that town to the similar road called Bothar Gadie and thence to the similar road called Botherewolyngyhy near said town, and made a great ditch on the said way, and forcibly occupys said part to this day to the grave damage of all the King’s people going that way, against the King’s peace, etc” (Curtis 1941, 15). The description of the roadway as ‘double-ditched’ is significant when one considers a number of the townland boundaries around Cashel are high, flat-topped clay and stone banks with a deep ditch on either side. The best example is the Boscabell / George’s-Land townland boundary at Site 22 which still contains metalling on the bank surface (McKinstry & Fairburn 2004a).

Calendar of Patent Rolls

The earliest definitive reference to Windmill townland is found amongst the Calendar of Patent Rolls for King James I. For the years 1609, 1611 and 1614 Windmill is listed. The most revealing entry is for 1609 referring to ‘*the stone house, towns and lands of the Windmill Fleming’s Rath, and Parkinigrogory in the southern part of Cashell, ½ cople*’ {Pat. 7 James I, 146} (IMC 1966, 146). The stone house (TS060-088001) and bawn (TS060-088002) are both still unidentified (see www.archaeology.ie).

Civil Survey for County Tipperary

In the Civil Survey for County Tipperary 1654 the following entry is recorded for Windmill, in the Parish of Patricks Rock:

“Proprietor in 1640 Derby Ryan of Cashell Irish Papist. Windmill cont : fower colp Acres of ye old extent. Estimate of 181 plantation acres. Profitable lands 120 of arable and 61 of pasture. No lands unprofitable, £12 Value of ye whole & each of ye sd lands. The sd lands are bounded on the South with the lands of Logh Inidory in this parish, on the West with Knockbulloge in this parish, on ye North with Hoareaby in this parish ; & on the east with the Comons of Cashell. The sd Derby Ryan Inheritor by descent from his ancestors. The sd lands is at prsent wast without Impvemt.” (Simington 1931, 225)

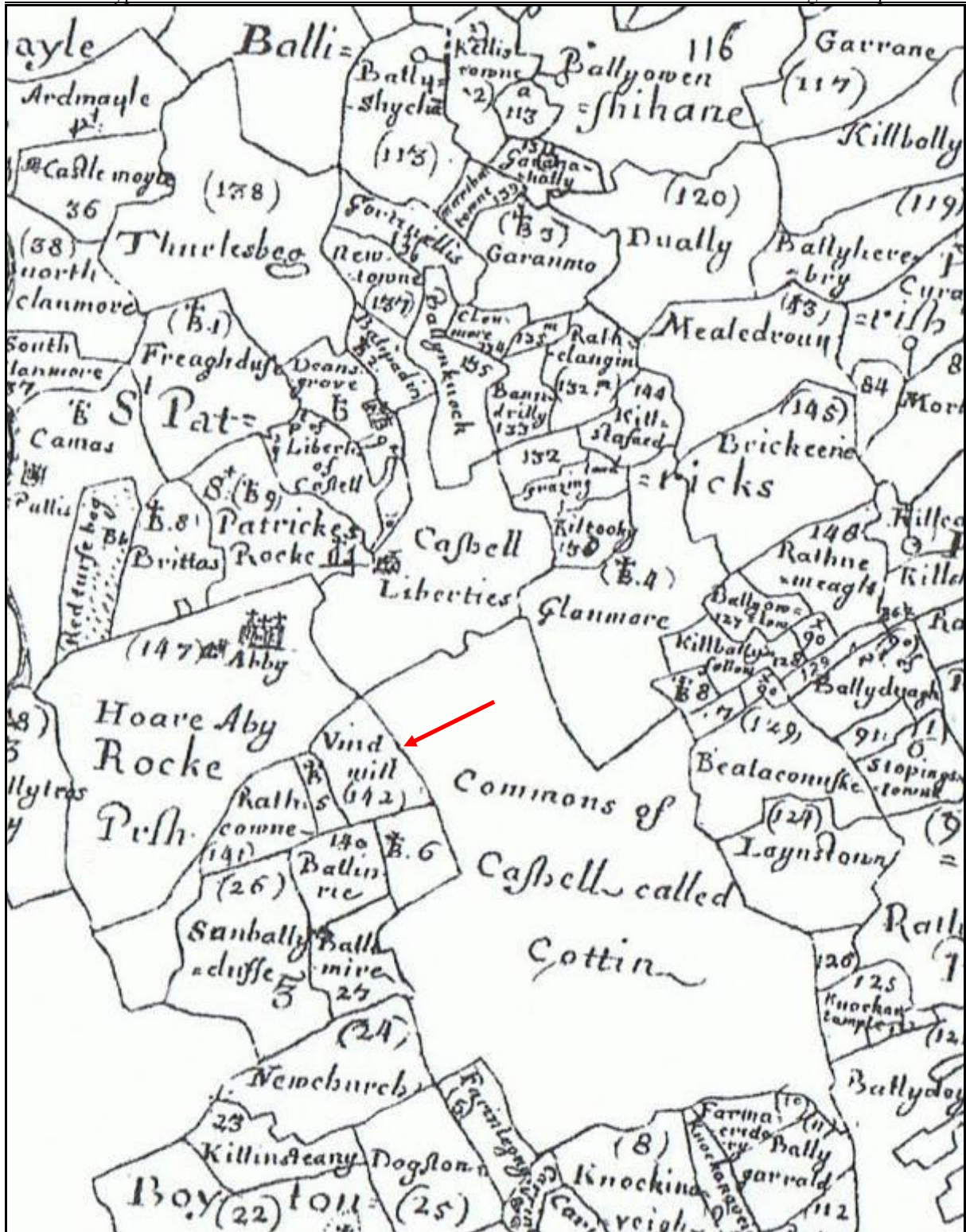


Figure i: Down Survey Map of the Barony of Middlethird by W. Petty, 1654. 'Vindmill' is marked (142).

Books of Survey and Distribution for County Tipperary

In the Books of Survey and Distribution for County Tipperary, the following proprietors are listed in 1640 for St. Patrick's Rock, amongst the townlands investigated on the bypass:

Proprietor	Townland
Edmond Stapleton, Gortmakellis	Gortmakellis
Walter Sall, Garrane	Bandrilly &
Clonmore	
John Hanly, Cashel	Kilscobin
Derby Ryan, Cashel	Windmill

Table v: Extracts from the Book of Survey and Distribution for St. Patrick's Rock, 1640

There is no one recorded as living in Windmill in the Census of Ireland for 1659 (Pender 1939).

Tipperary Hearth Money Records

In the Tipperary Hearth Money Records can be found the following information for those townlands where excavations took place on the bypass:

[Year] 1665 Baronia de Middle Third. Parochia De St. Patrick's Rocke		
[Name]	Hths.	s.
John Kearney, de Kyllscobyne	1	2
James Hyad	1	2
Math. Pennyfeather, Gortmcellis	2	4
Hugh Sterman, Rathordan	1	2
Thomas Kealy	1	2
Teige Kealy	1	2
William Dwegin	1	2
Edmond Rushell, Windymill	1	2

Table vi: Tipperary Hearth Money Records for 1665 (Laffan 1911, 13)

[Year] 1666-7 Barony of Middlethird. Parishes of St. Pates, Rock...					
[Name]	Hths.	s.		Hths.	s.
*Ballyfarsny			Rathdangin		
Edmund Leary	2	4	Morrish Hackett	1	2
Richard McJames	1	2	Richard Brittine	1	2
Connor Harrell	1	2	Donnogh Carny	1	2
Teige O'Kelly	1	2	James Head	1	2
Daniel Scully	1	2	Richard Carny	1	2
John Boyton	1	2	Windmill		
Teige Rian	1	2	Edmund Russell	1	2
Gortmaceill	Hths.	s.	Rathordane	Hths.	s.
Mathew Pennyfather	2	4	Thomas Kelly	1	2
William Hackett	1	2	James Woodlocke	1	2
Edmond Lahy	1	2	Teige Kelly	1	2
Gerald Listune	1	2	Thomas Hickey	1	2
David Nolane	1	2	John Kent	1	2
			John Carny	1	2
Kilscobin	Hths.	s.			
Mr. Richey	1	2			

*Most likely this is Farnamanagh as it is in the Parish of St. Patrick's Rock and next to Hoar Abbey.

Table vii: Tipperary Hearth Money Records for 1666-7 (Laffan 1911, 97-8)

Mr. Edmund Russell is the only named individual for Windmill. Could Mr. Russell's dwelling have been the stone house referred to in the Calendar of Patent Rolls for 1609?

Smith-Barry Cashel Estate

Much land around Cashel had been granted to the Protestant Mr. Erasmus Smith [later of the Smith-Barry estate] for services rendered to the Crown following the Cromwellian confiscations in 1652. Windmill is listed amongst Smith's lands in 1670, now comprising 167 plantation acres of profitable land all forfeited to the Crown, a reduction from the 181 plantation acres recorded from 1640 (www.downsurvey.tcd.ie/landowners). In 1702 Windmill *alias* Miltowne is listed amongst lands in a settlement between Mr. Standish Hartstonge and Erasmus Smith, (Limerick Papers NLI, 11). One of the descendants, John Smith-Barry inherited these lands in 1755 and Windmill formed part of the grant. In his analysis of the Smith-Barry Estate valuable information relating to townlands investigated during the bypass has been recorded by Marnane (2001).

Tenant	Denomination	Acres	Rent p.a.	Tenure
Barnaby Phelan	Gortmakellis, Newtown & Clonmore	260	£79	3L/1740
Wm. Pennefather	Monadreela	73	£18	3L/1729
Richard Lockwood	Windmill & Ballinree	318	£80	3L/1731

Table viii: The Smith-Barry Cashel Estate c. 1755. 'Irish acres, 3L = three lives from that date' (Marnane 2001, 99)

Richard Lockwood is the only tenant listed for Windmill.

Tenant	Denomination	Rent p.a.
Barnaby Phelan	Gortmakellis	£79
Thomas Pennefather	Monadreela	£72
Sundry tenants	Monadreela	£116

Table ix: Rental of Smith-Barry Cashel Estate November 1813 (based on Marnane 2002, 60–1)

Richard Lockwood is no longer listed as tenant for Windmill.

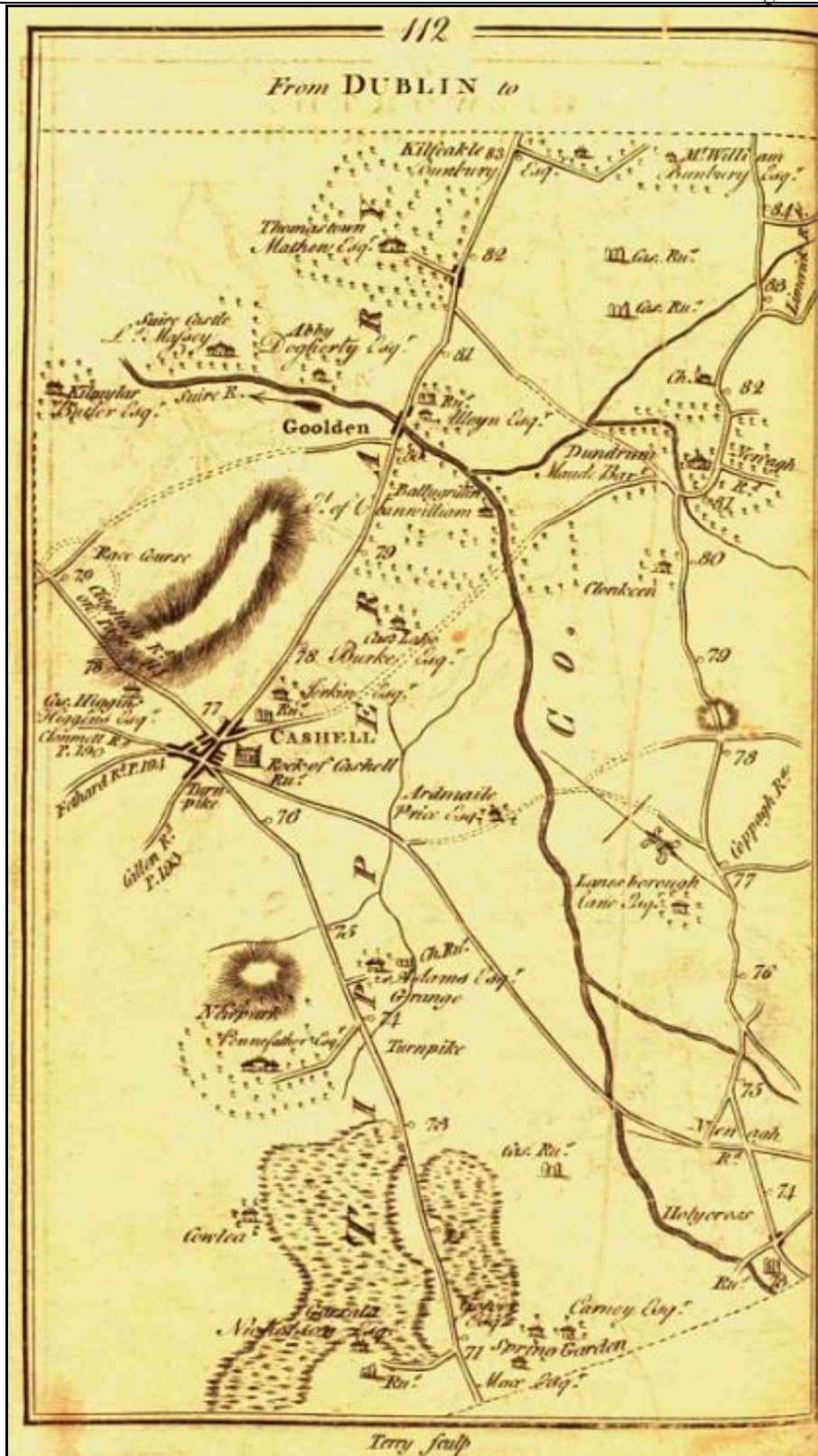


Figure ii: Taylor Skinner Road Map 1778 showing the Cashel to Golden road. Windmill is not indicated.

In the Tithe Applotment Books for Cashel dating from 1827 47 surnames are listed for Windmill/Wuid, although many of these entries are duplicates (www.titheapplotmentbooks.nationalarchives.ie). Both Mr. J. Smith-Barry and Mr. Thomas Kennedy were still listed in the Griffiths Valuations (see below). Windmill was located outside the remit of Cashel Corporation.

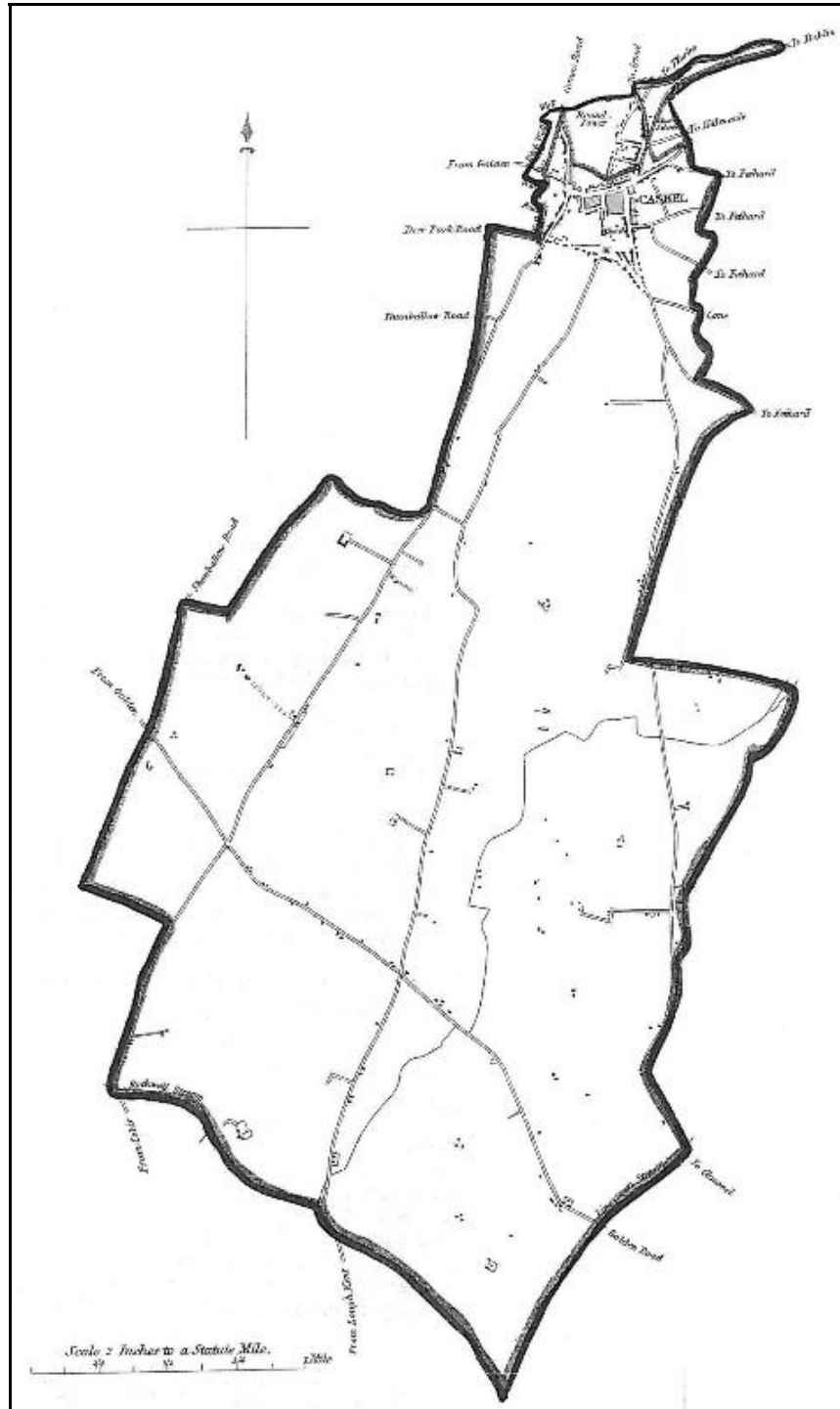


Figure iii: Municipal Corporation Boundaries (Ireland) Proposed Municipal Boundary of the Borough of Cashel, December 1831.

Windmill is recorded as follows:

‘Windmill or Milltown. Baile An Muillin, town of the mill. Windemill--Down Survey. West of & bordered by the road from Cork to Cashel bordering the Parish of St. John’s and in the By. of Middlethird. Is all under tillage and pasture here is a circular fort close to which are some ancient walls. Are they the ruins of the Leper House said to have been founded in Ballinree by Sir David Le Lattimer.’ (O’Flanagan 1930, 141).

Separately under ‘Ruins’ the following information is provided:

‘Ruins of Church or Leper’s Hospital}—Field Exr. Ruin of Leper Hospital—J.O’D. Leper Hospital (in ruins). T. land of Windmill or Milltown By. of Middlethird County Tipperary. Close to Old Church and on Eastern boundy. of the Ph.’ (ibid, 147)

Ordnance Survey Letters for Co. Tipperary 1840

Under the title ‘*Chronological history of Cashel from the various annals, and descriptions of the antiquities*’ the following information is relevant:

‘Cashel (County of Tipperary) (Gough’s Camden). The new Town of Cashel was granted by the Pope 1224 to Archbishop O’Brien, who granted or confirmed it to a Provost, Knights, Burgesses and his Seneschal. Sir David le Latimer founded here a Lazar house united to the Cistercian Abbey 1272 (Archdall 647).’ (ibid, 135).

In the same source under ‘Hospital’ the following information is recorded:

‘Hospital. An hospital for sick and infirm poor, with 14 beds and 3 Chaplains was founded here to the honour of St. Nicholas by Sir David le Latimer, Seneschal to Marian, who was Archbishop of Cashel from the year 1224 to 1238 (War. Bps. p.471; King p.407); the said Archbishop granted to this hospital two flagons of ale out of every brewing made for sale within the limits of 30 messuages in this town (King, p.404) and David, a succeeding prelate, did by force and violence unite the hospital to the Cistercian Abbey about the year 1272 – (War. Bps., p.471).’ (ibid,141).

This date is significant in relation to the traditional date for the founding of a Leper Hospital in Cashel by Sir David Latimer, seneschal to Archbishop Marian O’Brien around 1230 AD (Long 1897, 27).

There are substantial remains of the Leper Hospital visible on the 1st Edition OS six-inch map, to the northeast of the Windmill enclosure and north of a quarry (Figure iv). The longer axis of the building is aligned east/west, the building appears complete and is indicated as 'Leper Hospital (*in ruins*)'. A trigonometrical point (trig. point) (height 481 feet) is shown on the northern bank of the enclosure. A north/south aligned field boundary separated the Hospital from the hilltop enclosure. The field containing sites 31–35 is much longer (at 27.86 acres) extending northward towards Cashel town, with no internal field boundaries.



Figure iv: 1st Edition OS six-inch map 1840, Site 32 indicated. Source: www.osi.ie

These census returns reveal the full extents of the Great Irish Famine in the Cashel area.

Census Year	1841				1851				
	Townland	Houses	Male	Female	Tot. Persons	Houses	Male	Female	Tot. Persons
	Gortmakellis	14	-	-	95	8	-	-	43
	Ballyknock	13	-	-	88	6	-	-	39
	Clonmore	4	-	-	23	2	-	-	9
	Monadreea	10	35	33	68	2	4	8	12
	Boscabell	16	49	48	97	8	23	25	48
	George's-Land	1	4	2	6	1	3	5	8
	Kilscobin	2	3	5	8	2	2	3	5
	Hughes'-Lot East	10	28	33	61	8	21	22	43*
	Rathordan	27	102	92	194	18	58	58	116
	Waller's-Lot	6	27	14	41	9	31	25	56*
	Cooper's-Lot	7	14	18	32	5	15	18	33
	Owen's & Bigg's-Lot	5	17	15	32	5	20	13	33
	Windmill	20	57	61	118	8	26	16	42
	Deerpark	2	6	8	14	1	4	4	8
	Farranamanagh	47	160	159	319	34	92	83	175

Table x: Census Returns for 1841 & 1851. *indicates part included in Cashel Urban District (Dalton 1994, 167–8; Meskell 1987, 254–6)

Such comparative information allows the full impacts of the Famine to be realised at local level. These figures should be treated with caution, however, as Smyth (2012, 13) has recently illustrated the inaccuracies in the 1841 statistics. Townlands like Clonmore and Windmill saw a 50 % or more reduction in the number of houses over the 10 year period represented in the censuses. Monadreea lost eight of its 10 houses and suffered a drastic reduction in population (68 persons reduced to 12). This would have had enormous negative impacts on the locality, both socially and economically. In Monadreea, the remains of the dwelling discovered on Site 14 may represent one of these mud-walled houses abandoned during the Famine.

Primary Valuation of Tenements in St. Patrick's Rock & St. John Baptist Parishes

In the Primary Valuation of Tenements recorded in Griffith's Valuation for South Tipperary taken in August 1850 the following information is of relevance for those townlands investigated on the bypass.

Townland	Acres (roods & perches)	Land £	Buildings £	Total £
Gortmakellis	357 (1 r. 18 p.)	£302 16s	£15 8s	£318 4s
Ballyknock	250 & 27 perches	£200 3s	£10 7s	£210 10s
Clonmore	65 & 15 perches	£47 18s	£4 11s	£52 9s
Monadreea	20 & 38 perches	£68 13s	£2 3s	£70 16s
Boscabell	268 (1 r. 5 p.)	£165 3s	£10 1s	£175 4s
George's-Land	104 (2 r. 5 p.)	£70 8s	£1 2s	£71 10s
Kilsobin	117 (1 r. 16 p.)	£86 2s	£3 4s	£89 6s
Hughes'-Lot East	413 (9 p.)	£680 7s	£140 14s	£821 1s
Rathordan	842 (3 r. & 4 p.)	£848 11s	£37 5s	£885 16s
Waller's-Lot	153	£314 13s	£24 16s	£339 9s
Cooper's-Lot	199 (1 r. 20 p.)	£245 4s	£8 19s	£254 3s
Owen's & Bigg's-Lot	143 & 27 perches	£148 10s	£3 19s	£152 9s
Windmill	299 (2 r. & 31 p.)	£382 15s	£11 5s	£394
Deerpark	152 (3 r. 9 p.)	£276 7s	£35 17s	£312 4s
Farranamanagh	655 (3 r. 10 p.)	£565 16s	£51 5s	£617 1s

Table xi: Extract from the Primary Valuation of Tenements in St. Patrick's Rock & St. John Baptist parishes recorded in the Griffith's Valuation, August 1850, listed per total value of land and buildings.

In Windmill Michael Foley occupied the fields that comprised sites 31–36i inclusive (Figure v). His total holding was 11 acres (1 rood & 7 perches) with no buildings and the value was £18, 7 shillings: the Immediate Lessor was the Court of Chancery. Elsewhere in Windmill thirteen tenants were listed as having houses in addition to land. Of particular interest a John Murray (the Immediate Lessor being the Court of Chancery) was listed with a house and garden of less than one acre (1 rood & 32 perches), valued at only 1 shilling and buildings at 11 shillings, with a cumulative value of 12 shillings; Thomas Carey (the Immediate Lessor being Charlotte Green) was listed with an office and land, 45 acres (9 perches) valued at £63, 3 shillings and buildings at 6 shillings, with a cumulative value of £63 9 shillings. Only two houses were vacant (the Immediate Lessor being Edmund Dunne) valued at 11 shillings and 17 shillings each. The total acreage for Windmill was 299 acres (2 roods & 31 perches), with land valued at £382, 15 shillings, buildings at £11, 5 shillings, giving a total value of £394.

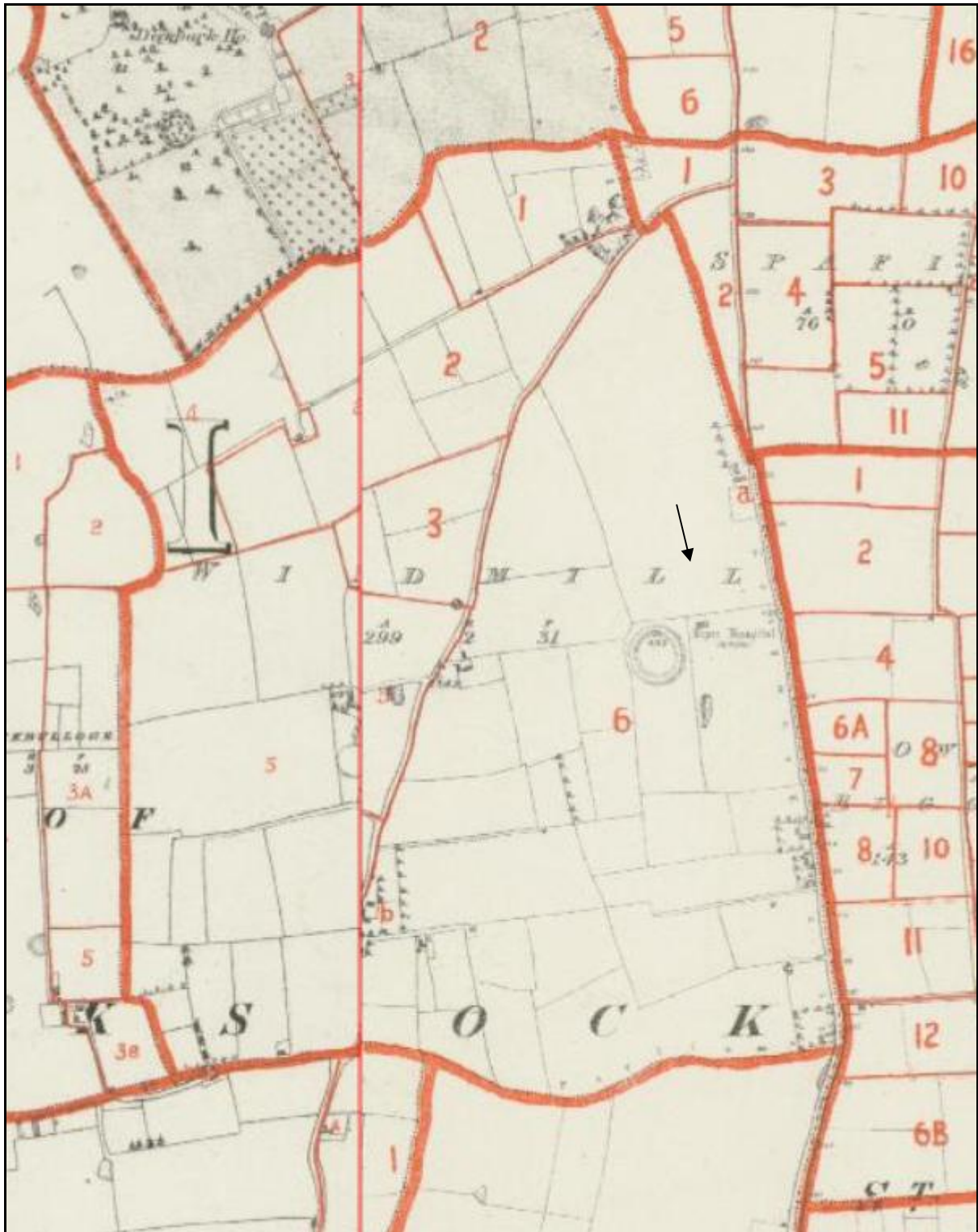


Figure v: Griffith's Valuation Map c. 1850, Site 32 indicated. Source: www.askaboutireland.ie

1st Edition OS 25-inch map

The Hospital is substantially denuded by the time of the 1st Edition OS 25-inch map with its western wall completely removed (Figure vi). In addition the southern wall survives to a lesser extent than the northern wall. The field boundary has been removed. Trees are depicted inside and on the banks of the enclosure for the first time while the 'trig. Point' has been moved outside

and to the south of the enclosure. The large field has now been divided into three smaller fields, with sites 31–35 located in a field 14.93 acres in extent. No features are depicted where the excavations were located.

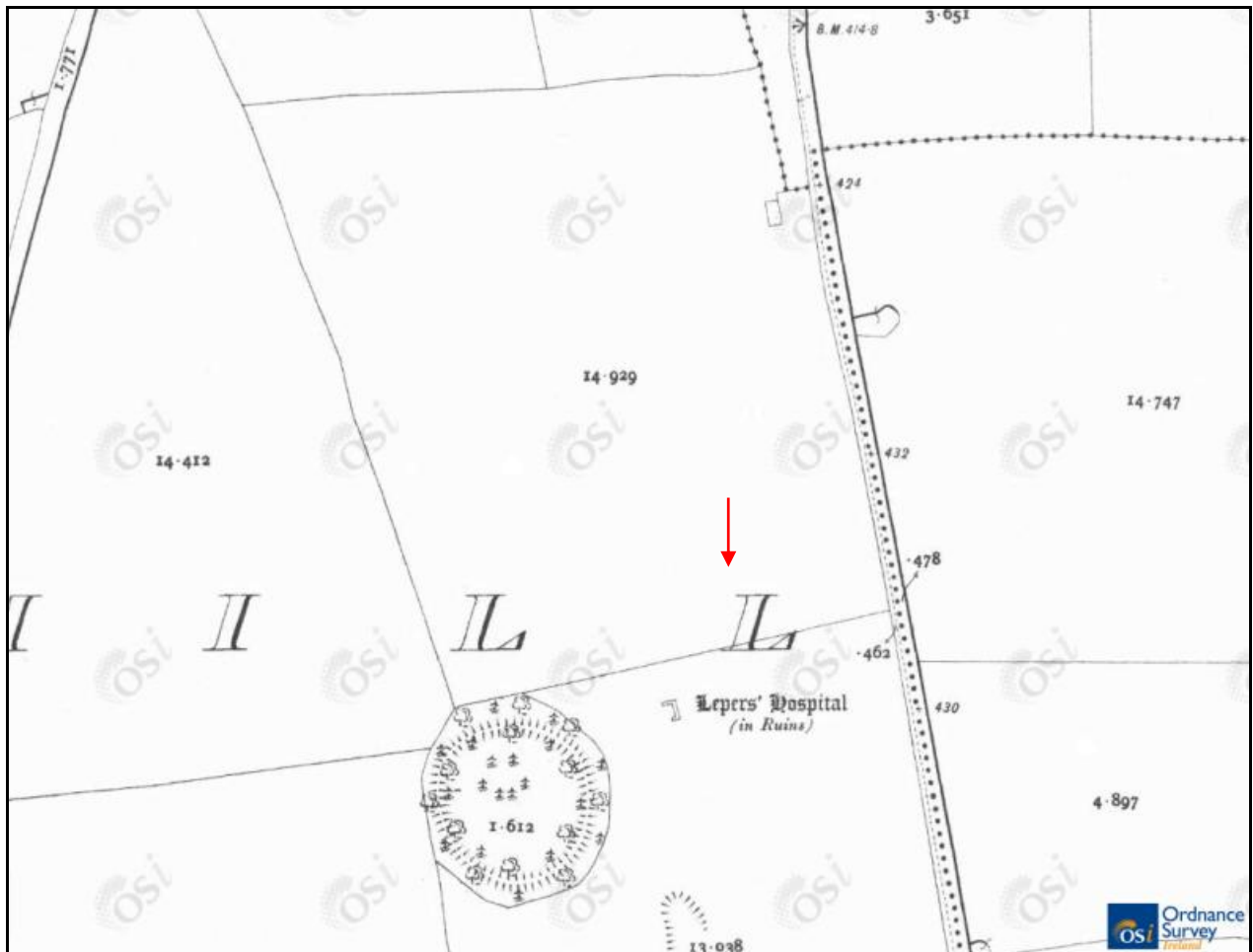


Figure vi: 1st Edition OS 25-inch map location of Site 32,1901–05. Source: www.osi.ie

2nd Edition OS six-inch map

On the 2nd Edition OS six-inch map ‘Lepers' Hospital (*in Ruins*)’ is marked by a small dot on the map to the northeast of the hilltop enclosure (Figure vii). The ‘trig. Point’ (height 475 feet) is indicated in the same location as previous, while to the south-east at the roadside another ‘trig. Point’ has a height of 425.2 feet. A number of trees are shown inside the hilltop enclosure.

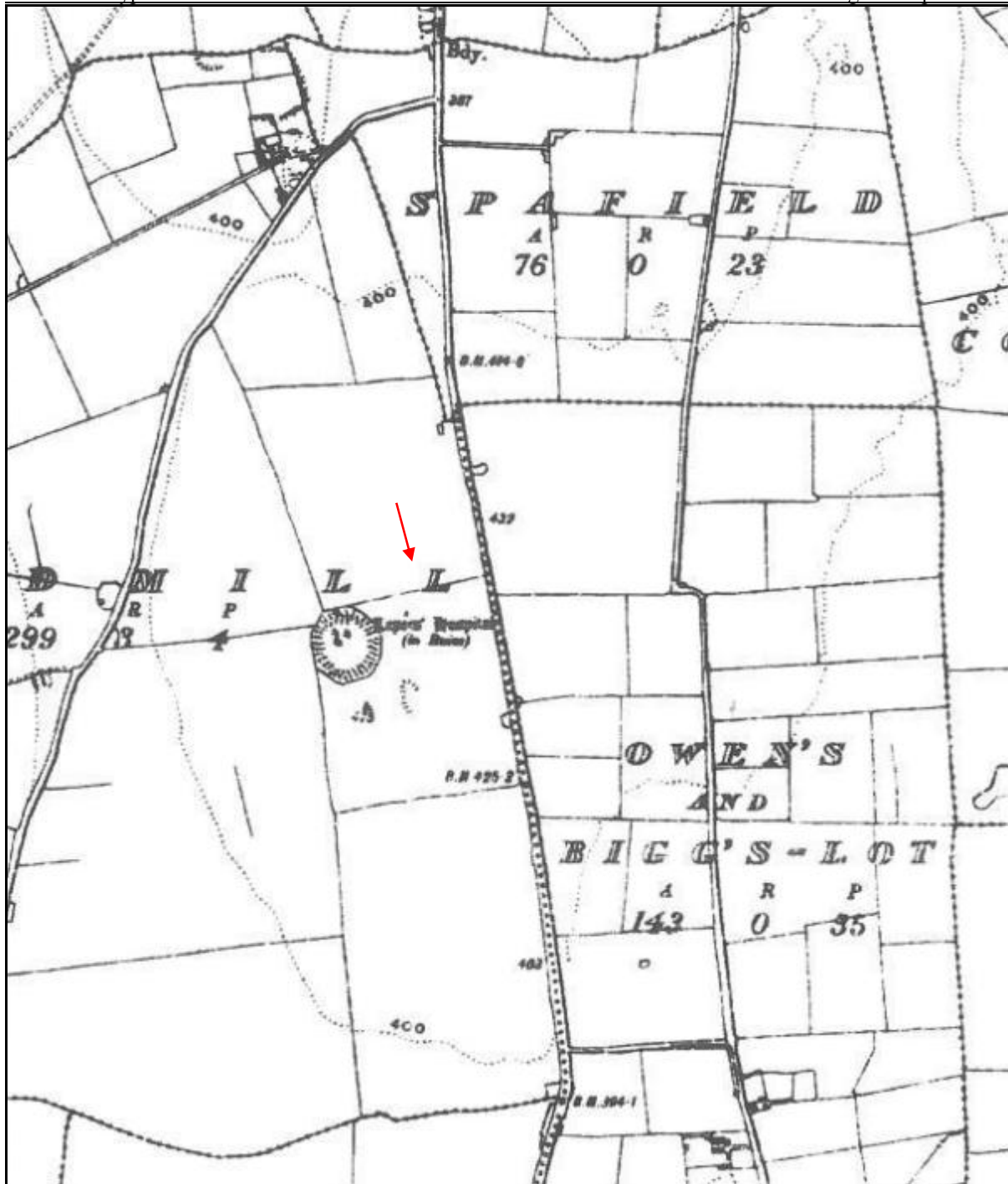


Figure vii: 2nd Edition OS six-inch map location of Site 32, published in 1906 (revised 1903, reprinted 1935)

3rd Edition OS six-inch map

On the 3rd Edition OS six-inch map 'Lepers Hospital (Site of)' is marked with a '+' (Figure viii). Trees are indicated on the edge of the hilltop enclosure as well as the interior. The main changes occur along the Haig's Terrace road north of Site 36i and 36ii, where the terrace of houses has been built. The adjoining fields have been subdivided into smaller units. The field which encompassed sites 31–36i has been divided into one large field with two smaller units at the northern end, where a roadside dwelling is now built. The former single triangular-shaped field

which encompassed Site 36i has also been sub-divided into three fields with two new boundaries running east/west.

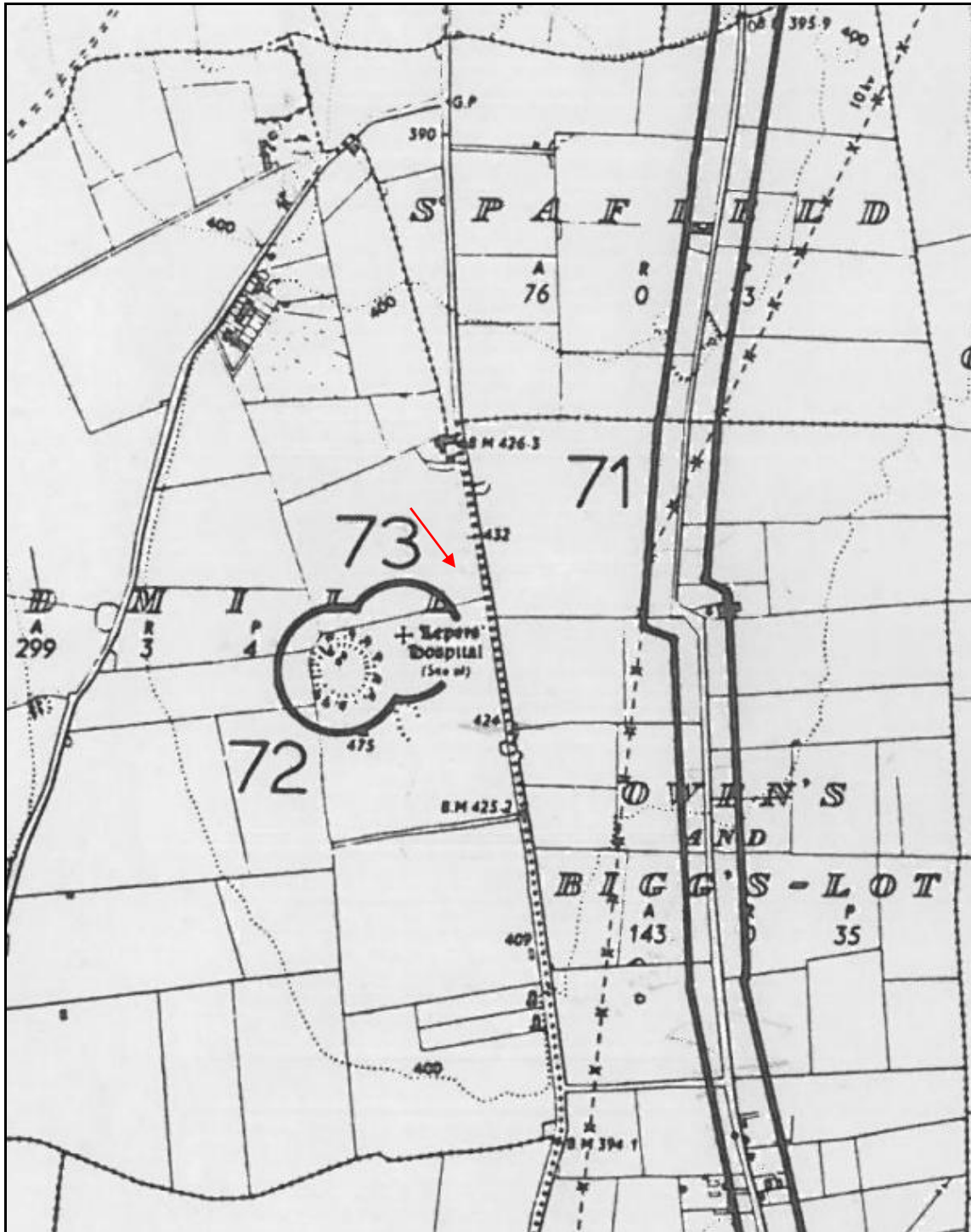


Figure viii: 3rd Edition OS six-inch map location of Site 31, published in 1954 (revised 1952 & 1954, reprinted 1954)

Local Information

Information from local Cashel historian Martin 'Bob' O'Dwyer relates that children (himself included) regularly played in the ruins of the leper hospital in the 1950s, after which the stones were dispersed and the site covered over. This is confirmed by the former landowner Paddy Meaney. Anecdotally, the children were afraid of cutting themselves for fear of catching the disease (O'Dwyer pers. comm.). The fields have been used for cattle grazing in the last few decades and there has been no ploughing in living memory.



Plate 1: Vertical aerial image of Windmill townland taken in 1994; N to left. The curving stone wall at left is the southern townland boundary edge with Deerpark / Farranamanagh. This is also the parish boundary between St. Patrick's Rock and Hore Abbey parishes (source: South Tipperary County Council).



Plate 2: Vertical aerial image of Windmill townland at lower right, taken in 2000; N to left (source: Kilkenny County Council)

EXCAVATION (Figures ix–x, 3–5)

The sequence of investigations in Windmill was informed by the results of the Phase 1 archaeological test excavations (Lennon 2002). It was decided in consultation with South Tipperary County Council that the areas be sub-divided for either further testing (sites 31 & 36) or fixed price resolution works (sites 32, 33, 34, 35 & 37). The aim of the excavation of Site 32 was the full investigation of pit (C17) found during testing in Phase 1 and to discover if any other archaeological features were present. The area designated for stripping and resolution measured 10 m x 6 m, 60 m² (Plate 3). A 360° mechanical excavator with toothless bucket stripped the topsoil down to the level of subsoil and the archaeological features, whichever was encountered first. The subsoil was subsequently cleaned by hand and the feature investigated and recorded. The feature was photographed using a digital camera and the layout of the site was recorded using DGPS surveying equipment. The ground level prior to excavation measured 133.50 m OD; the depth of excavation was measured at 132.99 m OD.

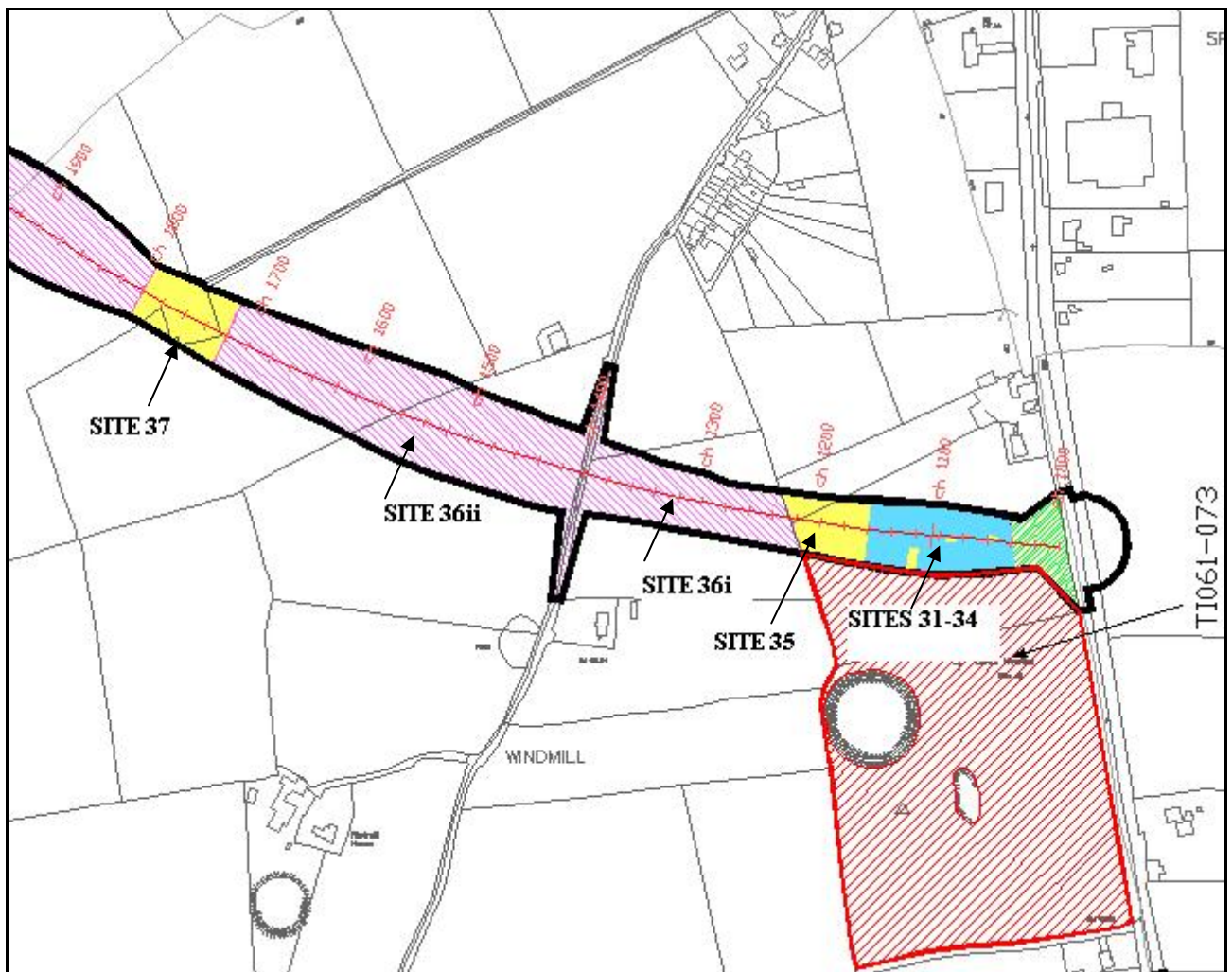


Figure ix: Archaeological investigations in Windmill in 2003, Sites 31–37

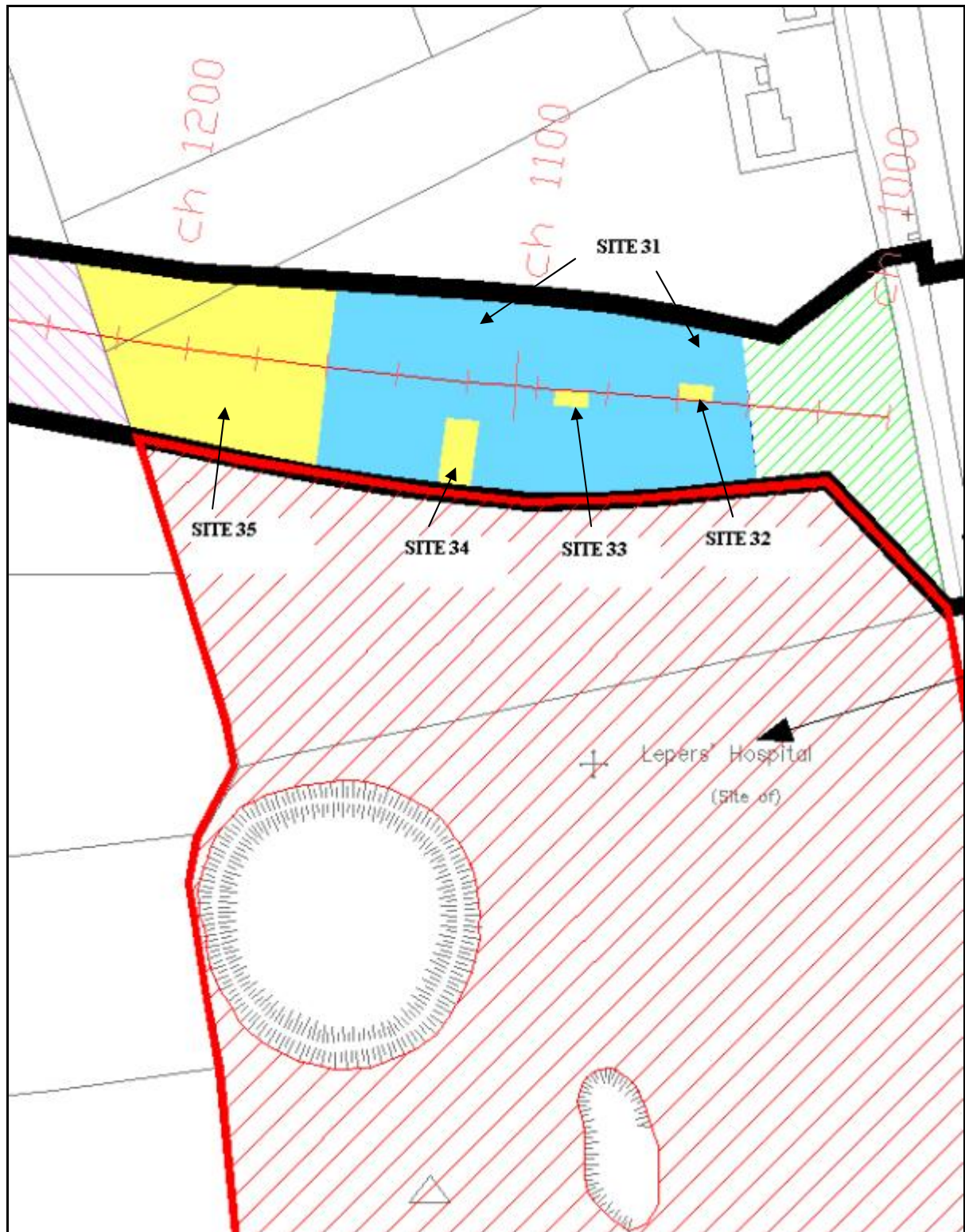


Figure x: Archaeological investigations in Windmill in 2003, Sites 31–35

Topsoil

The topsoil (01) consisted of mid-brown silty clay with an average depth of between 0.15–0.3 m. The variation in depth was due to the slope of the hillside from south to north. Eight artefacts

were retrieved from the topsoil (01); five fragments of red brick (03E0399:01–03E0399:03, 03E0399:05 & 03E0399:08), two sherds of post-medieval pottery (03E0399:06 & 03E0399:07) and an iron shears blade tip (03E0399:04), see Appendices 7 & 8 below. These artefacts most likely represent ‘night soil’ deposited from Cashel town. The red bricks may also be associated with the 17th century stone house and bawn, currently unlocated.

Subsoil

The subsoil (02) was compact orange silty clay found directly beneath topsoil (01).

Natural

Limestone gravel (05) was found beneath (02) in places across the site.



Plate 3: Site 32 looking west, with pit [03] at edge of baulk

Prehistoric Feature

Middle Bronze Age Pit (Plates 4–6)

The circular pit (C17) found in the Phase 1 testing was re-located and fully excavated by hand. It was renamed [03] and measured 0.57 m long, 0.48 m wide and 0.35 m deep. The pit had a sharp break of slope top, a gradual break of slope base, steep sides and a rounded base. It was cut into subsoil (02) and filled by a silty sand deposit (04). This fill included frequent flecks of charcoal, pieces of red burnt clay and occasional medium sized sub-angular stones. Charcoal from spindle (*Evonymus europaeus*) / hazel (*Corylus avellana*) was identified and returned a radiocarbon date of 1393–1221 cal BC (UBA-13785), placing this activity in the Middle Bronze Age period. No

finds were recovered from the pit and no other archaeological features were identified from the excavation.



Plate 4: Mid-excavation of pit [03]



Plate 5: Mid-excavation of pit [03], looking south



Plate 6: Post-excitation of pit [03], looking east

DISCUSSION

Due to its prominent topographical expression in the Cashel landscape, it is unsurprising that Windmill Hill was a focus for human activity. Excavations in the townland along the N74 Link Road on sites 32–36 inclusive revealed some of the earliest information from the bypass scheme: the Mesolithic (worked flints from Site 36ii, 03E0676), the Early Neolithic (Site 35, licence 03E0424, 3763–3638 cal BC (UBA-13798)) to the High Medieval Period (Site 35, licence 03E0424, cal AD 1217–1376 (UBA-13799)). However, there was a notable concentration of dates from the Bronze Age across the sites (see Table ii).

On the hill only one feature, pit [03], was discovered on Site 32. Two undated stakeholes identified during additional testing within a 5 m radius may have been associated with pit [03] but could not be linked stratigraphically (Site 31, licence 03E0391). Furthermore, c. 25 m to the west an undated large oval pit discovered in the 2002 Phase 1 testing had clear evidence of *in situ* burning (Lennon 2002, 02E0378, Site 7, Drawing 1, Fig. 5 & Plate 6, C13). Unfortunately this pit was not re-identified by JCNA during the 2003 excavations (see Site 33 Final Report).

Pit [03] was cut into subsoil (02) and filled by a silty sand deposit (04). This fill included frequent flecks of charcoal, pieces of red burnt clay and occasional medium sized sub-angular stones. It was unclear whether any of these stones had been burnt. Charcoal from spindle

(*Evonymus europaeus*) / hazel (*Corylus avellana*) was identified and returned a radiocarbon date of 1393–1221 cal BC (UBA-13785), the Middle Bronze Age period. Although little can be said about a seemingly isolated pit the excavation did produce some interesting results. Pit [03] was a fairly substantial feature (0.57 m x 0.48 m wide x 0.35 m), one of the largest and deepest archaeological features discovered on Windmill Hill. The dark grey silty sand deposit contained evidence of burning and as there was no scorching of the pit base, this activity seemed to represent a rubbish pit. No botanical remains were recovered in sampling and the charcoal, although recovered in relatively high concentrations, was thought to derive from firing debris associated with activities within the pit (Appendix 6). On Site 33 (licence 03E0398), *c.* 25 m to the west spindle (*Evonymus europaeus*) charcoal from a linear feature was radiocarbon dated to 1425–1313 cal BC (UBA-13784), slightly earlier in date than pit [03] (see Site 33 Final Report). The recovery of spindle from both sites is significant as it had been first used around Windmill as a source of wood from the Early Bronze Age (see Site 34 Final Report).

Almost identical dates to pit [03] were retrieved from nearby sites on the summit and lower slopes of Windmill Hill: Site 35 (licence 03E0424), to the west and in the same field produced a date of 1393–1215 BC (UBA-13793) from the fill (37) of pit [38]; the same deposit also contained animal bones. In the adjoining townland of Owen's and Bigg's-Lot to the south, excavations at Site 30iii (licence 03E1086) produced a date of 1398–1217 cal BC (UBA-13931) from the fill (73) of pit [42], and the primary fill of a ditch was dated to 1389–1212 cal BC (UBA-13947). In Monadreela 3 km to the east, on Site 11 (licence 03E0346), oat grain from deposit (149) was dated to 1391–1260 cal BC (UBA-13732). Cumulatively, there is an abundance of activity firmly dated to the Middle Bronze Age period in Cashel, in particular during the 15th to 13th centuries BC (see Tables i & ii above).

To the south Middle Bronze Age settlement sites were identified around the River Suir (Caherabbey Upper, Ballydrehid, Ballyegan and Cloghabreedy near Cahir, and nearer to Cashel at Dogstown and Shanballyduff (McQuade *et al.* 2009, 28). A number of Middle Bronze Age burial sites were also identified between New Inn and Cashel, within 8 km of Windmill Hill at Templenoe, Racecourse Demesne and Marlhill (McQuade *et al.* 2009, 123). To the northeast a significant number of Middle Bronze Age sites were discovered on the M8 Cullahill to Cashel Road Project (see Recent NRA Excavations Around Cashel section above), the nearest being a site in Parkstown townland (McCullough, Breen, Hardy & Green 2010).

CONCLUSION

All excavation works have finished in association with the N8 Cashel Bypass & N74 Link Road. The earliest recorded archaeology on Site 32 was a seemingly isolated pit from the Middle Bronze Age period. Regarding function the nature of the deposit suggested domestic activity in the form of pitting, for dumping, perhaps from a nearby hearth / structure of the settlement located on this side of Windmill Hill (and represented by features excavated on sites 33–36i). Further Middle Bronze Age dates from the Cashel excavations came from nearby sites in Windmill, Owen's and Bigg's-Lot and Monadreela townlands.

No further archaeological activity was identified on the site but associated activity may have been removed when the Windmill Hilltop Enclosure, the Leper Hospital and possible Moated Site were established. It is significant that Windmill Hill was inter-visible with the majority of the archaeological sites identified and excavated between Cashel and Cahir on the M8 Cashel to Mitchelstown Motorway Scheme. Due to its prominent topographical expression in the Cashel landscape it is unsurprising that Windmill Hill was such a focus for human activity. The hill would have acted as a key landmark north of the River Suir.

Due to its prominent topographical expression in the Cashel landscape it is unsurprising that Windmill Hill was a focus for human activity. It is significant the hill was inter-visible with the majority of the archaeological sites identified and excavated between Cashel and Cahir on the M8 Cashel to Mitchelstown Motorway Scheme. The Middle Bronze Age pit is linked to the other sites on the hillside, and underscores an unbroken occupation on Windmill Hill in this period. Contemporary burial activities on both sides of the hill provide the final link and reflect that throughout the Bronze Age, Windmill Hill was an important landmark for prehistoric settlers. This view is further reinforced by the very important lithic and pottery assemblages that have survived from the excavations. The hill would have acted as a key landmark north and east of the River Suir, a quick and safe route through which people had access to the fertile lands around Cashel.

There is a very high probability of archaeological features associated with sites 32–35 continuing southward and surviving between the N74 road and the Windmill Hilltop Enclosure TS061-072. This area was recently subject to geophysical investigation for research purposes (Gimson 2012, ii). The survey revealed a significant highly magnetic boundary detected to the north of the Windmill Hill Enclosure; this contained a misalignment gap or entrance possibly leading to the enclosure. To the north is a ditched enclosure containing a visible entranceway, again facing the Windmill Hill Enclosure, and a large number of possible pits (see Site 35 Final Report, Figures 8

& 9). It is likely that some of these geophysical anomalies may be associated with the archaeology revealed on sites 31–35. Therefore any proposed developments within this area should be subject to archaeological investigations prior to any development taking place.

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Appendix 1 Context Register

Context No.	Type	Description
(01)	Deposit	Topsoil. Grey brown silty clay with occasional stones of all sizes. Depth 0.15–0.3 m.
(02)	Deposit	Subsoil. Light orange/brown sandy clay.
[03]	Cut	Cut of circular pit. Filled by (04), equates to C17 in the testing phase. Measured 0.57 m long x 0.48 m wide x 0.35 m deep. It had a sharp break of slope top, a gradual break of slope base, steep sides and a rounded base. Cut into natural subsoil (02).
(04)	Fill	Fill of pit [03]. Loose, dark grey, silty sand fill with frequent flecks of charcoal, pieces of red burnt clay and occasional medium sized sub-angular stones. Charcoal (spindle / hazel) was dated to 1393–1221 BC (UBA-13785).
(05)	Deposit	Natural - Out-cropping of limestone gravel was found beneath (02) sporadically across the site.

Appendix 2 Finds Register

Find No.	Context No.	Description
03E0399:01	(01)	Red brick fragment
03E0399:02	(01)	Red brick fragment
03E0399:03	(01)	Red brick fragment
03E0399:04	(01)	Iron blade tip fragment
03E0399:05	(01)	Red brick fragment
03E0399:06	(01)	Post-medieval pottery. Rim sherd of Black glazed ware pancheon or large shallow dish
03E0399:07	(01)	Post-medieval pottery. Rim sherd of Glazed red earthenware, slip trailed plate
03E0399:08	(01)	Red brick fragment

Appendix 3 Drawing Register

There is one post excavation plan on file of the excavation.

Appendix 4 Sample Register

Sample No.	Context No.	Description
1	(04)	Fill of pit [03]

Appendix 5 Photography Register

Photo Number	Description
1	Site 32 Mid-ex of pit [03]
2	Site 32 Post-ex of pit [03]
3	Site 32 excavation facing west
4	Site 32 excavation facing south

Appendix 6

Environmental Report

Scheme – N8 Cashel Bypass & N74 Link Road

Site Name- Site 32 Windmill

Excavation number –03E0399

County – Tipperary

Job code – ENV/083

Author- Susan Lyons

Date – 28/05/10

Plant Macrofossil Remains & Charcoal Report

Contents

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- Table 2 Charcoal Identifications from Site 32, Windmill (03E0399)

1 INTRODUCTION

This report discusses the plant macrofossil remains and charcoal remains recorded from the soil samples associated with the archaeological excavations at Site 32 Windmill (03E0399). While the carbonized plant remains and the charcoal are both constituted as environmental remains, they represent the results of two separate human activities. The remains of charred/waterlogged cereal remains and wild taxa can suggest evidence for arable farming and the selection of crops and plants brought to the site. The wood charcoal material on the other hand is characteristic of the wood species selected as a fuel resource and can go some way to understanding the local woodland environment.

The primary objective of the plant remains and charcoal project is to identify, analyse and interpret the botanical remains present in order a) highlighting the function of certain areas of the site or indeed the features recorded within and b) to help with understanding the change in the floral environment and activities at the site over time.

This report will later form part of an overall scheme-wide synthesis of environmental archaeological remains from the excavations along the N8 Cashel Bypass and N74 Link Road (Lyons, *forthcoming*).

2 BACKGROUND

Site 32 was excavated as part of the archaeological mitigation programme associated with the N8 Cashel Bypass and the N74 Link Road under archaeological excavation licence number 03E0399. Site 32 was situated in an area of good quality grazing land on the northern slope of Windmill Hill. Phase 1 testing works identified a single circular pit containing charcoal and pockets of oxidised clay. No further features were identified during the subsequent excavation (Fairburn, 2009).

Just one flot sample from pit (C3) was analysed for plant macrofossils and charcoal remains.

3 METHODOLOGY

3.1 Plant remains

The sample was ¹processed by Eachtra Archaeological Projects Ltd (Eachtra Archaeological Projects Ltd, 2009).

3.1.1 Sample processing (after Eachtra Archaeological Projects Ltd)

The processing technique employed for bulk dry soil samples is one of floatation. This is where each sample is soaked in water and agitated by hand to loosen any charred remains from the soil particles which allows for this material to be separated and float to the surface. This floating material (flot) is poured off and trapped in a sieve (mesh size 250 µm) and, once dried, scanned for plant remains using a binocular microscope. The larger residual material left behind (retent) is washed through a 1mm, 2mm and 5mm mesh or sieve and air-dried. Once dry, each retent is sorted by eye and any material of archaeological significance removed.

3.1.2 Quantification and identification of plant remains

The flot samples are viewed under a low powered binocular microscope (magnification x0.8 to x5). Where preservation allowed, all charred remains recovered were identified to species level where applicable and the constituents quantified numerically. Those plant remains which were abraded or fragmented were recorded using an abundance key to highlight the concentrations of material identified from each sample:

+ = rare (1-10), ++ = occasional (11-50), +++ = common (51-100) and ++++ = abundant (>100)

Plant species are made using reference to the author's seed collection and standard seed atlases and references; *Flora of the British Isles* (Clapham, A R, Tutin, T G, Warburg, E F, 1957), *Zadenatlas der Nederlandsche Flora* (Beijerinck, W.1976), *New Flora of the British Isles 2nd Edition* (Stace, C, 1997) and *Digital Seed Atlas of the Netherlands* (Cappers, R.T.J., R.M. Bekker and J.E.A. Jans, 2006).

3.2 Charcoal

¹ Soil samples are processed according to the standards and guidelines outlined in the Institute of Archaeologists of Ireland (IAI) 'Environmental Sampling Guidelines for Archaeologists', (IAI, 2006) and

Palaeoethnobotany: Handbook of Procedures. 2nd edition, San Diego: Academic Press (Pearsall, D 2000)

3.2.1 *Quantification of charcoal remains*

Quantifying charcoal samples can be difficult as many wood species can be affected by heat in different ways and hence become fragmented into an arbitrary number of fragments. Due to the potential for a very high number of charcoal fragments from the samples, a representative sample of 50 charcoal fragments (Keepax, 1988) are randomly chosen from larger samples for identification and analysis. In the case of smaller samples all charcoal fragments within are identified. The charcoal fragments of each species identified are counted, weighted (grams) and bagged according to species.

3.2.2 *Identification of charcoal remains*

Wood charcoal identifications were undertaken in accordance with Section 25 of the National Monuments Act, 1930, as amended by Section 20 of the National Monuments Amendment Act 1994, to alter an archaeological object.

The flint remains were sieved through a bank of sieves (2mm, 1mm and 0.5mm) to separate the larger charcoal samples from the much smaller charcoal fibres, which would prove more difficult to identify.

The larger sized charcoal fragments (>3mm in width) were fractured to view the three planes [transverse, radial and tangential sections] necessary for microscopic wood identification. The wood species identifications were conducted under a binocular microscope using incident light and viewed at magnifications of 100x, 200x and 400x where applicable. Where applicable the number of growth rings and the curvature of the rings are also noted, which can help with determining if the material is from trunk wood or smaller branches/twigs.

Wood species identifications are made using wood reference slides and wood keys devised by Franklin and Brazier (1961), Schweingruber (1978), Hather (2000) and the International Association of Wood Anatomists (IAWA) wood identification manuals and (www.lib.ncsu.edu/insidewood) by Wheeler, Bass and Gasson (1989).

4 RESULTS

The plant remains recorded from Site 32 are presented in **Table 1**.

The charcoal identifications from Site 32 are presented from **Table 2**.

Charcoal – Fragmented charcoal was recovered in relatively high concentrations from pit **C3**.

Wood charcoal identifications – Just two species totalling 50 identifications were identified from **C3**. Hazel (*Corylus avellana*) and spindle (*Evonymus europaeus*) were both recorded from this context.

5 DISCUSSION

The samples recorded from Site 32 did not contain any botanical remains associated with domestic or occupational activity, such as carbonized cereal grain, nutshell or wild taxa. As a result it is difficult to ascertain the exact function of pit **C3** in the absence of such material.

Charcoal is a common result of occupational activity on archaeological sites and usually reflects the use of hearths and burning activities in and around the site and/or cleaning out and dumping of this burnt debris into nearby open features. At Site 32 the spindle and hazel charcoal for the most part is likely to represent the remains of firing debris associated with activities within **C3**.

Spindle tree is a small tree or shrub which grows in marginal woodland areas or scrubland. The wood is used for making spindles, pegs and makes for a suitable charcoal (Gale and Culter, 2000, 107). Hazel woodlands replaced birch in the early post-glacial forests and remains on some shallow limestone soils to the present day (Pilcher & Hall, 2001). The species can tolerate most soil types, but not waterlogged conditions and forms a small deciduous tree or shrub. It commonly occurs in understorey of oak and/or ash woodlands, where it may grow to a height of 10m or more. In open areas or woodland glades hazel grows as a shrub. Hazel is a common species recorded from Irish archaeological sites and its widespread presence is highlighted in pollen diagrams from the Neolithic to the medieval period (Caseldine, 1996). It produces good firewood and is a suitable wood for kindling. The wood is soft enough to be split yet flexible and strong enough to be used in rope making and basketry. It has also proved a useful resource in the construction of hurdles, wattling, palisades and trackways from prehistoric times (Pilcher & Hall, 2001).

5 Conclusions

The analysis of the plant remains and wood charcoal from pit (C3) at Site 32, Windmill provided the opportunity to highlight and interpret the archaeobotanical material recorded at the site.

No botanical remains indicative of arable agriculture, such as cereal remains, were recorded at the site. The presence of hazel and spindle charcoal represents some of the fuel used at the site however, without a larger charcoal assemblage it is difficult to fully establish the use of wood at the site. Both spindle and hazel would have grown in clearances or marginal woodland.

6 Recommendations

1. There is no further identification work required on these samples from Site 32, Windmill. Any additional processed samples associated with features excavated at the site should also be scanned to determine if there are any other plant remains present, which may help with the interpretations put forward.
2. All flot samples associated with Site 32 should be retained permanently in accordance with the National Monuments Act 1930 (Section 2) and the National Monuments Act 1994 (Section 9) and for future archaeobotanical research studies to be carried out.
3. A record of the methodology and results of this analysis should be included in any final report

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Table 1. Composition of plant remains from Site 32, Windmill (03E0399)

Context number	Sample number	Flot volume (grams)	Context description	Wood charcoal	Comments
4	1	9.3 grams	Fill of pit C3	++++	No other botanical remains

Key: + = rare (1-10), ++ = occasional (11-50), +++ = common (51-100) and ++++ = abundant (>100)

Table 2. Charcoal Identifications from Site 32, Windmill (03E0399)

Context number	Sample number	Flot volume (grams)	Context description	Wood Species Identifications	No. of fragments	Charcoal weights (grams)	No. of growth rings	Growth ring curvature	Comments
4	1	9.3 grams	Fill of pit C3	<i>Corylus avellana</i> (hazel)	46	3.3 grams	2 - 5 rings		
				<i>Evonymus europaeus</i> (spindle)	6	1.6 grams	2 - 4 rings		

Appendix 7 Small Finds Report
by TVAS Ireland Ltd & Marcella Laughman

N8 Cashel Bypass & N74 Link Road

03E0399, Site 32, Windmill, Cashel, Co. Tipperary

Small Finds Report

Five red brick fragments (03E0399:01, 03E0399:02, 03E0399:03, 03E0399:05 & 03E0399:08) and one iron fragment (03E0399:04) were recovered during the excavation at Site 32 at Windmill. All finds came from topsoil (01). Table 1 gives more detailed description and dimensions of the finds.

Find No.	Context	Category	Type	Identification	Description
03E0399:01	(01)	Brick	Brick	Fragment	Red brick fragment. L: 76.9 mm; W: 66.1 mm; T: 51 mm. Weight: 207 g.
03E0399:02	(01)	Brick	Brick	Fragment	Red brick fragment. L: 79 mm; W: 61 mm; T: 48.9 mm. Weight: 227 g.
03E0399:03	(01)	Brick	Brick	Fragment	Red brick fragment. L: 26 mm; W: 24 mm; T: 18.7 mm. Weight: 12 g.
03E0399:04	(01)	Shears	Iron	Iron blade fragment	Iron blade tip from a large set of shears. Blade fragment, straight back sloping slightly at tip, curved cutting edge. Triangular section. L 81 mm; W 26 mm; T 88 m. Weight: 49 g.
03E0399:05	(01)	Brick	Brick	Fragment	Red brick fragment. L: 54.1 mm; W: 51 mm; T: 46 mm. Weight: 92 g.
03E0399:08	(01)	Brick	Brick	Fragment	Red brick fragment. L: 54.1 mm; W: 32 mm; T: 24.1 mm. Weight: 18 g.

Table 1: Site 32 Finds Overview

Appendix 8 Post Medieval Pottery Report**The pottery****from****Site 32: Windmill (03E0399)****N8 by-pass and the N74 link road, Cashel, Co. Tipperary****Clare McCutcheon MA MIAI****Introduction:**

Two sherds of pottery were presented for study both dating to the 18th-19th century.

Methodology:

The material has been identified visually and the information has been entered on an Access database.

Black glazed ware:

Black glazed wares are most commonly found in Dublin and the east coast, originating from Lancashire and north Wales i.e. the so-called Buckley wares. The amount of these wares in Cork is limited, their place being filled by the glazed red earthenwares (below). Both fabrics are the successors of the North Devon gravel tempered wares, large vessels used for the dairy, kitchen and toilet. Some tablewares such as cups and jugs are also made, but equally, roof-tiles are also made in these wares. In contrast, the industrial production of tableware in Staffordshire supplanted the corresponding 17th century North Devon sgraffito wares.

Black glazing results from the addition of iron to lead glaze on the red earthenware fabrics. The fabric is often highly fired to near stoneware purple, although other varieties have a white marbled appearance. The fabric of the black glazed wares made in Ireland appears to be a less highly fired red earthenware (Meenan 1997, 349).

The sherd from this site is the rim of a pancheon or large shallow dish.

Glazed red earthenware:

Glazed red earthenware or 'brownwares' were made widely in Britain and Ireland from the later 17th century through to the 19th century (Dunlevy 1988, 24-5). Because of the standardisation of the clay and vessel form it is always difficult to specify a particular production site but a typical kiln was excavated at Tuam, Co. Galway with milk pans and dishes comprising a majority of the vessels (Carey & Meenan 2004). The fabric is generally sandy earthenware, usually oxidised buff to light orange through to brown. The clear lead glaze takes its colour from the fabric with variations due to firing conditions (Jennings 1981, 157).

The sherd from this site is the rim of a plate with an applied wavy line decoration around the rim, appearing yellow under the clear lead glaze.

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Registration No	Context No	Item	Simple Name	Full Name	Material	Dimensions	No of parts	Habitat	NMI Habitat
03E0399	1	7	Pottery	GRE: slip trailed	Ceramic	Rim			
03E0399	1	6	Pottery	Black glazed ware	Ceramic	Rim			

Table 1

Appendix 9 Radiocarbon Date

Site 32: 03E0399	Lab code UBA-13785	Context (04) Sample 1: <i>Evonymus europaeus</i> (spindle) / <i>Corylus avellana</i> (hazel)	Radiocarbon Age 3043 +/- 22	Calibration data set: intcal 09.14c # Reimer <i>et al</i> 2009
		% area enclosed	cal AD ranges	Relative area under distribution
		68.3 (1 sigma)	cal BC 1376–1338	0.489
			1320–1290	0.394
			1281–1270	0.117
		95.4 (2 sigma)	cal BC 1393–1260	0.989
			1228–1221	0.011

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Queens University Belfast
42 Fitzwilliam Street
Belfast BT9 6AX
Northern Ireland

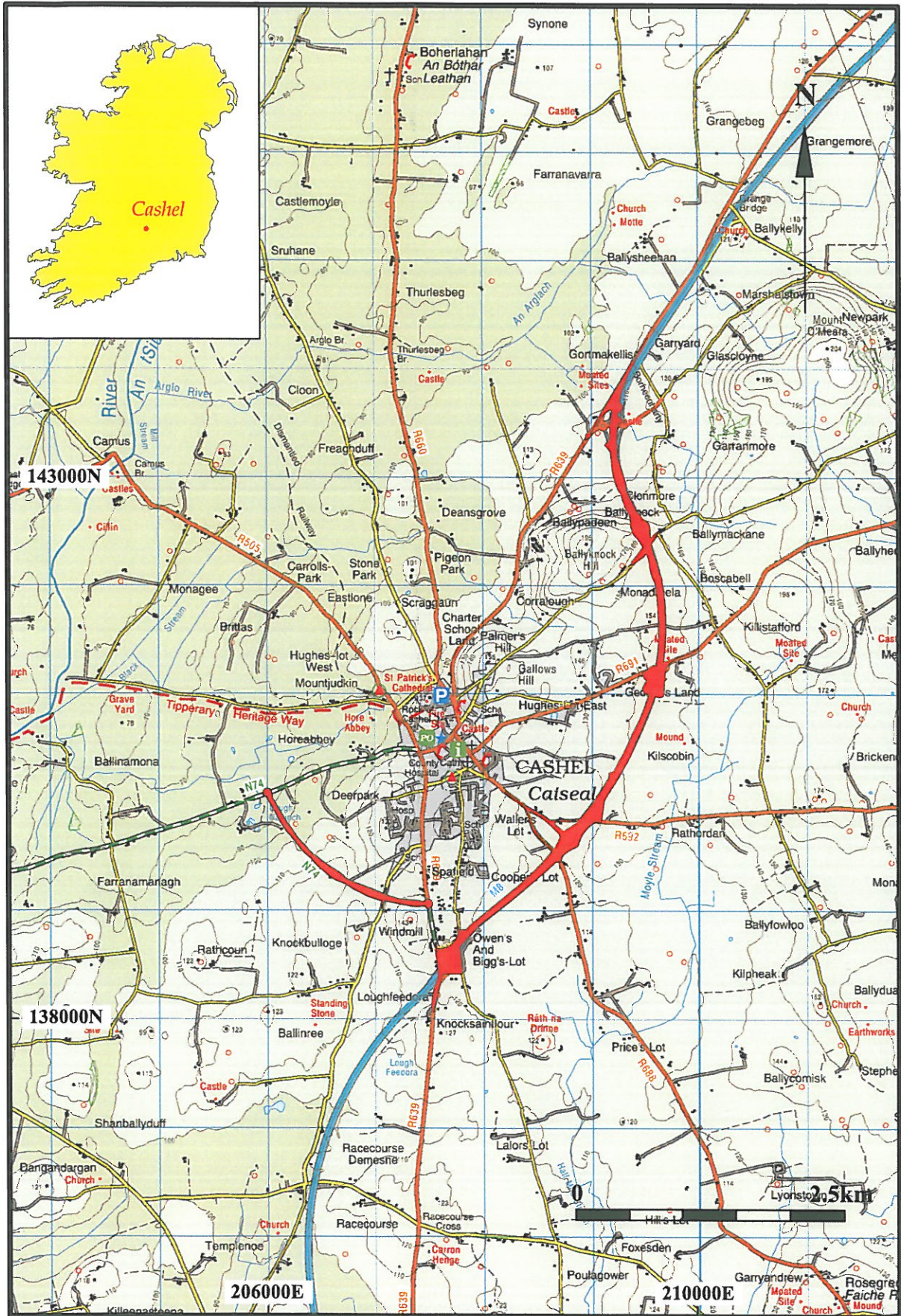
Radiocarbon Date Certificate

Laboratory Identification: UBA-13785
Date of Measurement: 2010-07-02
Site: N8Cashel Bypass Site32 03E0399
Sample ID: 32 S1 32004
Material Dated: charcoal
Pretreatment: AAA
Submitted by: Graham Hull TVAS

¹⁴C Date: 3043±22

AMS δ¹³C: -18.9

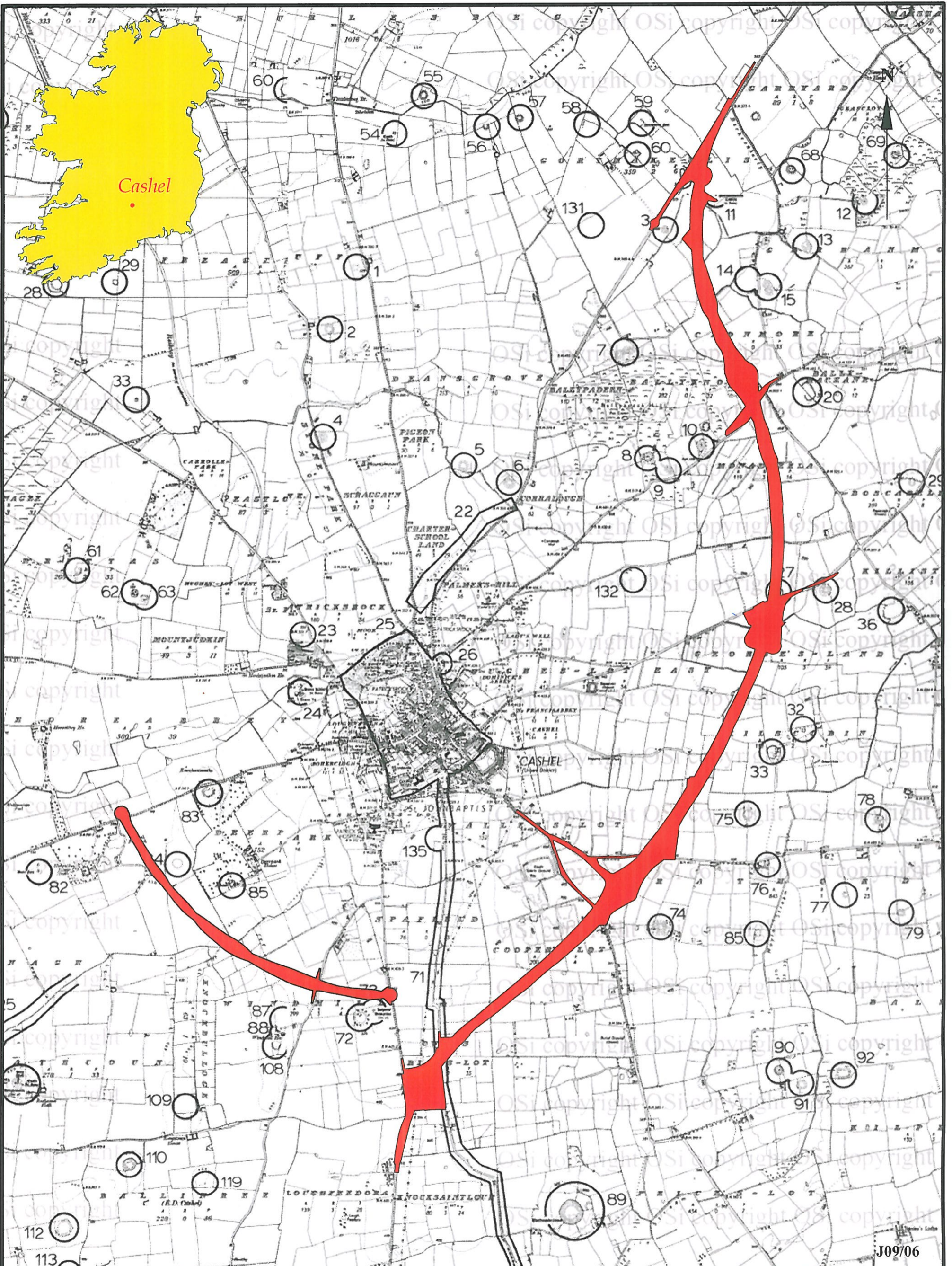
68.3 (1 sigma)	cal BC 1413- 1377	0.718
	1337- 1321	0.282
95.4 (2 sigma)	cal BC 1425- 1313	1.000
32 S1 3200		
UBA-13785		
Radiocarbon Age BP	3043 +/- 22	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution
68.3 (1 sigma)	cal BC 1376- 1338	0.489
	1320- 1290	0.394
	1281- 1270	0.117
95.4 (2 sigma)	cal BC 1393- 1260	0.989
	1228- 1221	0.011
34 S1 3400		
UBA-13786		
Radiocarbon Age BP	3569 +/- 22	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution
68.3 (1 sigma)	cal BC 1941- 1891	1.000
95.4 (2 sigma)	cal BC 2013- 1998	0.028
	1978- 1878	0.953
	1840- 1828	0.019
34 S3 3400		
UBA-13788		
Radiocarbon Age BP	3645 +/- 23	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution
68.3 (1 sigma)	cal BC 2035- 1961	1.000
95.4 (2 sigma)	cal BC 2129- 2087	0.165
	2048- 1941	0.835
36i S1 4		
UBA-13789		
Radiocarbon Age BP	3413 +/- 22	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution
68.3 (1 sigma)	cal BC 1740- 1690	1.000
95.4 (2 sigma)	cal BC 1768- 1659	0.963
	1654- 1637	0.037
36i S30 36		
UBA-13790		
Radiocarbon Age BP	2901 +/- 21	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution
68.3 (1 sigma)	cal BC 1125- 1047	1.000
95.4 (2 sigma)	cal BC 1192- 1174	0.043
	1164- 1143	0.048
	1132- 1009	0.910
36i S36 36		
UBA-13791		
Radiocarbon Age BP	3315 +/- 23	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution
68.3 (1 sigma)	cal BC 1623- 1603	0.267
	1588- 1534	0.733
95.4 (2 sigma)	cal BC 1666- 1648	0.047
	1644- 1522	0.953
36i S21 58		
UBA-13792		
Radiocarbon Age BP	3515 +/- 23	
Calibration data set:	intcal09.14c	# Reimer et al. 2009
% area enclosed	cal AD age ranges	relative area under probability distribution



**N8 Cashel Bypass & N74 Link Road,
Co. Tipperary**

Figure 1: Location of N8 Scheme
 Scale 1:50 000
 Based on Ordnance Survey Ireland Discovery Series 2nd Edition 2001-3, 1:50000.
 Reproduced at 1:50 000, Copyright OSI & Govt. of Ireland, OSI Licence No. AR00494 10





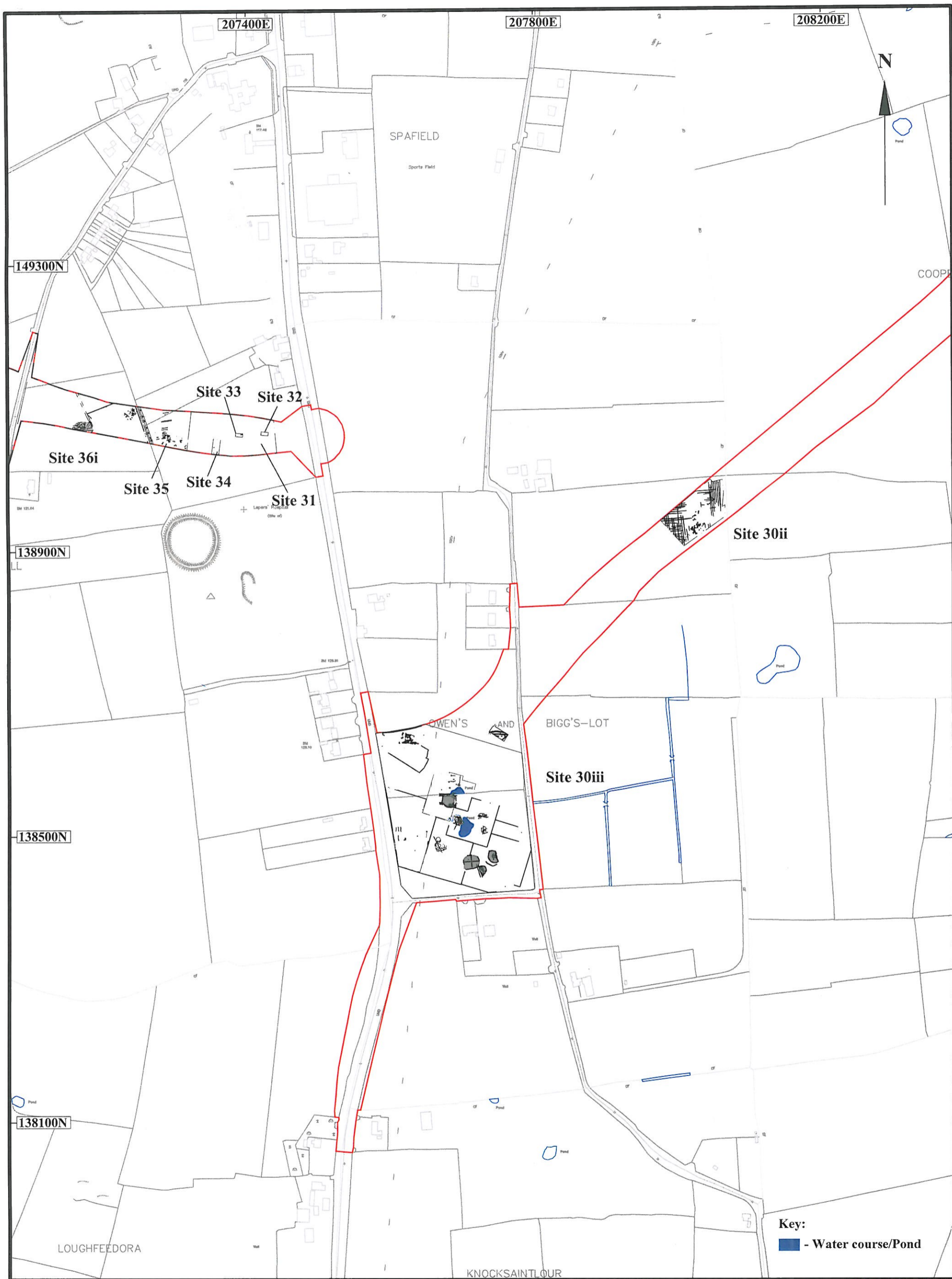
N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Based on RMP Map (1998) (SR) - sheet 52, 53, 60, 61, 68, 69.

Figure 2: Scheme Location & RMP Details
Scale 1:20 000

0 1km

TVAS
IRELAND
LTD



Key:
 - Water course/Pond

N8 Cashel Bypass & N74 Link Road, Co. Tipperary

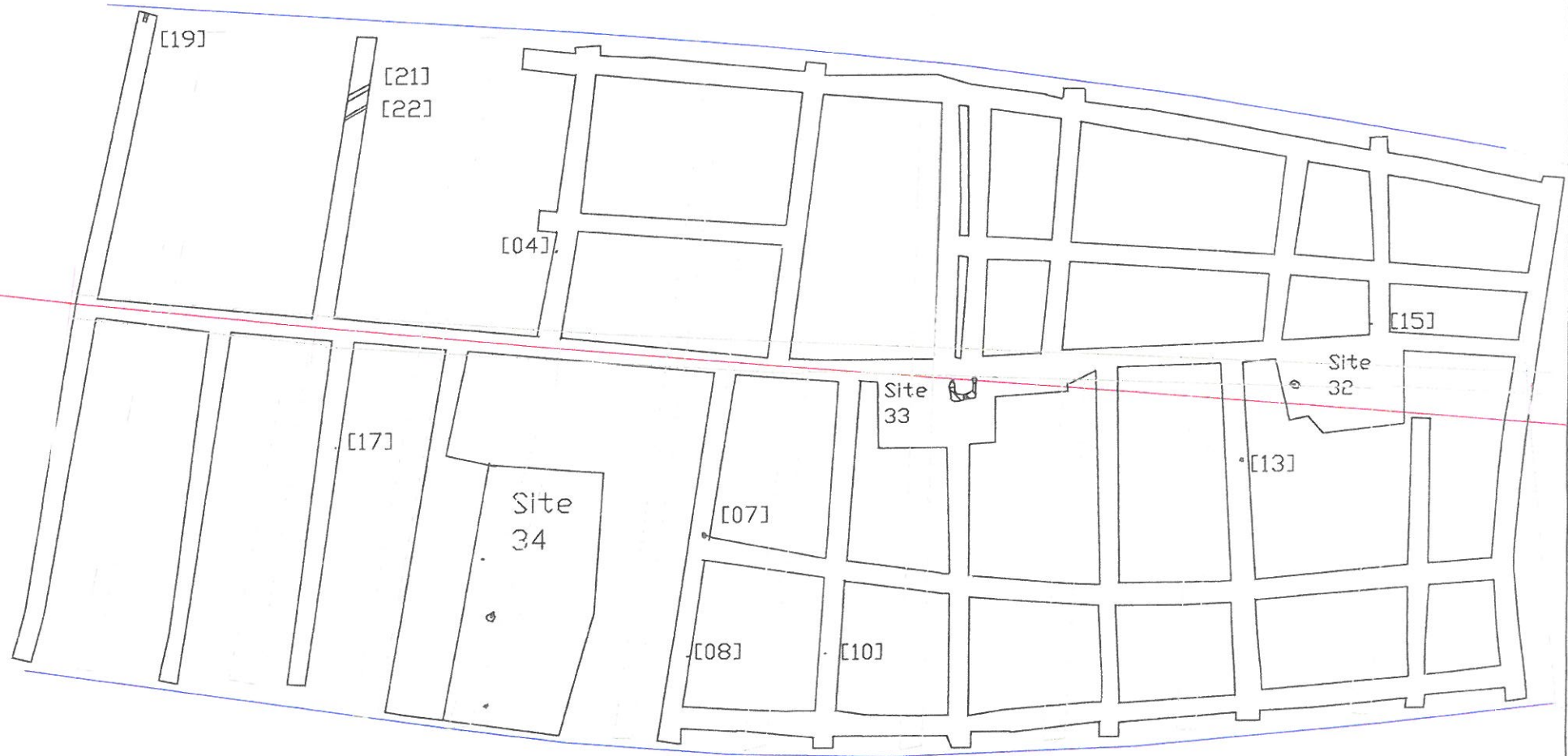
Figure 3: Location of Sites 30ii-36i

Scale 1:5000
 Based on Ordnance Survey 1st Edition, Co. Tipperary, Sheet 61, 6"
 Surveyed 1840-41, Copyright OS & Govt. of Ireland, OS Licence: AR0049410



T V A S
 I R E L A N D
 L T D

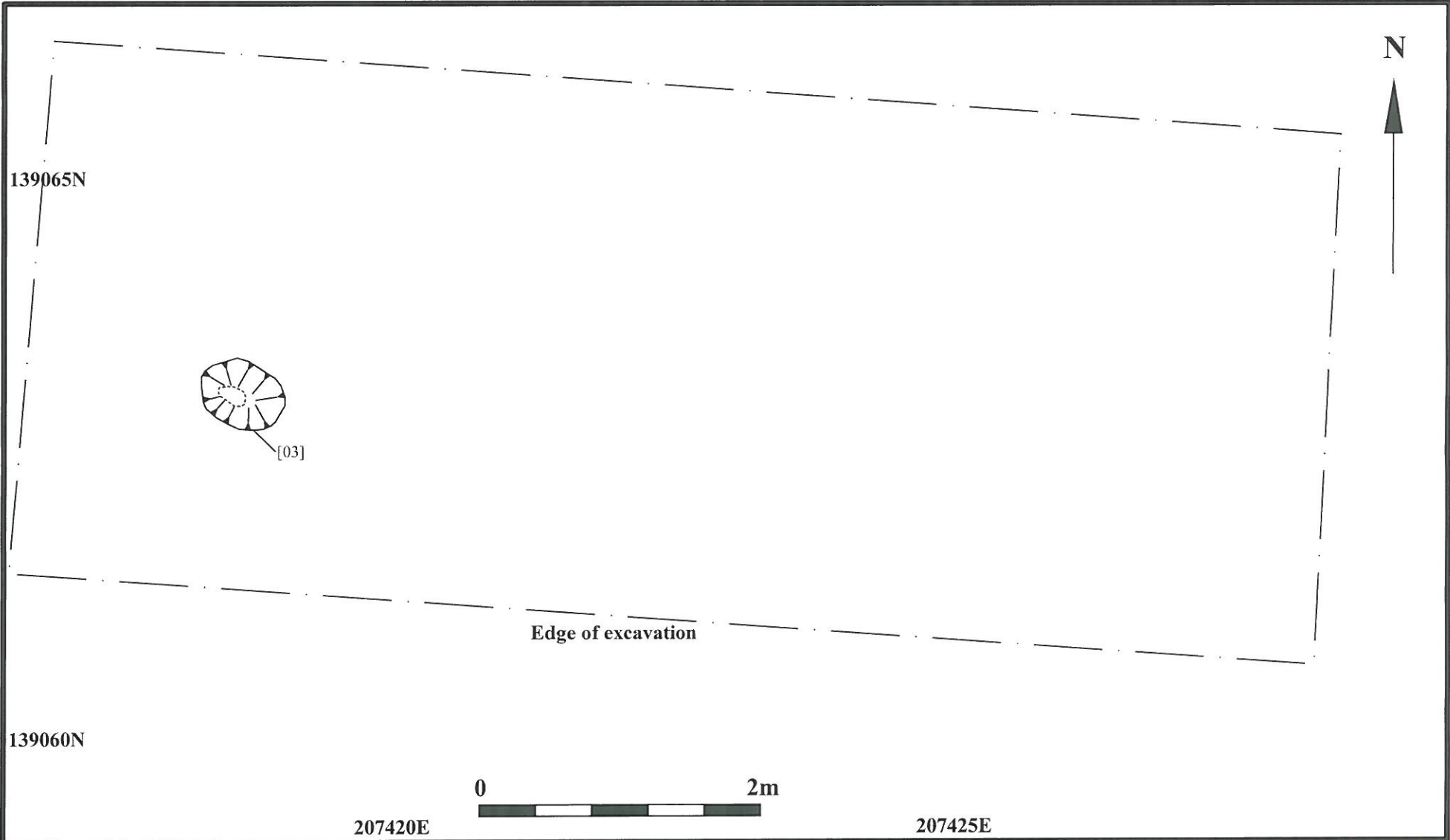
SITE NORTH
←



30.00m
Scale = 1:750

Phase 1 Test Trenches shown in green

NOTES Licence No.: 03E0391							Client SUFFERY (SOUTH RIDING) COUNTY COUNCIL COUNTY HALL CLONING CO. WEXFORD			Design FRANKIE RIDGES REGIONAL DESIGN OFFICE FRANKIE RIDGES CO. WEXFORD			Approved by: Checked by: Drawn by:		Project Title: N8 Cashel Bypass & N74 Link Road Phase 2 Archaeological Investigations			HRA Project No. TS/99/100 WH Project No. TS/00/01	
	13 Poplar Drive, Dublin 7 1 01 856 467 7 01 877 1216 • j@jcna.com												Date: November 2007		Drawing Title: Windmill Testing Plan Report			Dep. No. Figure 4 Rev.	



N8 Cashel Bypass & N74 Link Road

Site 32 Windmill 03E0399

Figure 5: Post-excavation plan of pit [03]

Scale 1:50

T V A S
I R E L A N D
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