

N8 Cashel Bypass & N74 Link Road

Phase 2 Archaeological Investigations

Licence Number: 03E0507

Site Name: Site 24

Townland: George's-Land / *Fhearann Sheoirse*

Barony: Middlethird

Parish: St. Patricks Rock

County: Tipperary

NGR: 209520 / 140985 (centre of site)

ITM: 609498 / 640952

OD Level: 141.05 m (surface of exposed *fulacht fia*)

Excavation Area: c. 2,806 m²

Fieldwork Date: July 2003

Site Director: Liam McKinstry (Judith Carroll Network Archaeology Ltd)

Report Author: Richard O'Brien

Client: South Tipperary County Council

Report Status: Final Report

Report Date: May 2014



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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 (03E0507). Site 24 (chainages 5780–5860) was situated in the townland of George's-Land. The site was located in an area of low-lying pasture with several field boundaries flanked by waterfilled ditches, ponds and peat-filled basins located in the vicinity. Phase 1 investigations comprising of an extensive archaeological test excavation programme (under excavation licence 02E0377) held by Anne Marie Lennon for Mary Henry Archaeological Services) were conducted in 2002. This work identified a number of subsoil-cut features of archaeological significance including a *fulacht fia*, pits, postholes and ditches. The report recommended that further archaeological investigations would be necessary to ascertain the nature and extent of features identified, and to fully resolve those features in advance of road construction.

Phase 2 archaeological investigations were conducted by Liam Mckinstry for J.C.N.A. Archaeology Ltd on behalf of South Tipperary County Council under Excavation Licence No. 03E0507 in July 2003. The topsoil at Site 24 was stripped from an area measuring 2,806 m² using a mechanical excavator under archaeological supervision. The subsequent excavation uncovered significant archaeological remains in addition to those previously identified during Phase 1 testing, with a peat-filled hollow extending east into Site 23. The main features identified were a *fulacht fia*—heavily disturbed—associated trough, both lying to the immediate north of the hollow, plus undated features at the north-west corner of the site, subsequently preserved *in situ*.

Any discussion on the archaeological discoveries should be read along with the Site 23 discoveries, as Site 24 merely represented the western portion of a wider, prehistoric activity-cluster, centred on the hollow (see 03E0508 Final Report). It was likely this hollow was water-filled in prehistory, proving an ideal attraction for human settlement, albeit probably season. The environmental evidence from Site 24 was retrieved from timber, alder (*Alnus glutinosa*) and oak (*Quercus* sp.); in addition waterlogged peat deposits within trough [07], and charcoal—willow (*Salix* sp.) and oak (*Quercus* sp.)—from the associated *fulacht fia* (01). Willow and alder, typical species in wetland and riparian woodland habitats may have been sourced locally from such an environment. Specialist analysis of the un-carbonised wild taxa retrieved from the trough indicated the surrounding environment included areas of open grassland, disturbed ground, heath and scrubby hedgerows. This fits in well with the projected paleoenvironmental picture of open grassland on the nearby dry ground, disturbed ground

from the activities around the *fulachtaí fia*, peat formation in the hollow, with scrubby hedgerows and water-tolerant trees lining the sides of the small stream/boundary ditch.

A radiocarbon determination was retrieved from *fulacht fia* (01) where oak charcoal was dated to cal. AD 780–971 (UBA-13759). This was the only date from George's-Land which was associated with the Early Medieval period; dates from adjacent Sites 22 and 23 derived from the Developed and Late Iron Ages, or earlier in prehistory. Oak favours well-drained soils and is unlikely to have shared a habitat contemporary with willow. It can be shown the oak was present in the trough and on adjacent Site 23 too, and would likely date from the Early Bronze Age period. Therefore this later date is considered intrusive, representing activity perhaps associated with agricultural practices from the nearby early medieval enclosure sites at Boscabell Site 20 (c. 300 m to the north-east) and at Hughes'-Lot East Sites 25ii & 25iv (less than 1 km to the south). The *fulacht fia* was undoubtedly associated with the *fulachtaí fia* found nearby on Site 23, dated to the Early Bronze Age period and the findings here form part of a wider landscape of prehistoric and early medieval activity in this area.

Subsequent field walking in the field by the Project Archaeologist has revealed lithics such as lithics, rubbing stones, pounders, faceted pebbles, a spindle whorl and sherds of medieval pottery; details of some of these finds have been included in the Site 22 Final Report (03E0503). As the features at the north-west corner of the site were preserved *in situ* any future developments in the field should be cognisant of these discoveries.

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 March 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 south-east 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 north-west for its length. The route skirts close to the hilltop enclosure at Windmill TI061-072, 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 TI061-003, Gortmakellis tower house TI061-011, Ballyknock ringfort TI061-008, Boscabell moated site TI061-027, Rathordan ringfort TI061-074, Windmill ringfort TI061-072, Windmill Leper Hospital (*site of*) TI061-073, Windmill moated site TI061-167 and Farranamanagh ringfort TI060-084. The investigation of the *Rian Bo Phadriag* roadway (TI061-071) 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 in spring 2003 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 north-west-facing slope of Windmill Hill (Sites 31–35) and Windmill / Deerpark ridge the natural contained limestone bedrock outcropping overlaid by bands of gravel (Sites 38–39). A cave is shown on the 1st Edition OS Map at the extreme south-west 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 (TI061-071) 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 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.

George's-Land

Prior to excavations commencing there was only one RMP site in George's-Land/Killistafford, (TI061-036), an enclosure which lay on the north-eastern boundary between both townlands. The enclosure does not appear on any addition of the OS mapping and was identified via aerial photography as a sub-oval anomaly.

A comprehensive programme of archaeological testing was undertaken by Mary Henry Archaeological Services Ltd during Phase 1 testing in spring of 2002. Under excavation licence number 02E0377 an anomaly identified by the Project Archaeologist in George's-Land was investigated by excavating two test trenches near chainage 5980: nothing of archaeological significance was revealed and the anomaly may have been a field drain (Lennon 2002, Drawing 1, Plates 1 & 2). In tandem with this work a more extensive, a 260 m length of the bypass was tested in the same field, under excavation licence number 02E0286. This work was designated as Strip Area 2 and lay between chainages 5720–6000 in George's-Land townland, between the upstanding field boundaries of Boscabell (at north) and Hughes'-Lot East (at south). This work identified definitive archaeological features in the form of ploughed-out *fulachtaí fia* C1 and C9, pits, linears, ditches and drains which became designated as Sites 22, 23 and 24 respectively (Lennon 2002, Figures 1–3, Plates 1–4, Contexts C1–C10).

As the design of the bypass here was to include a number of elevated roundabouts the width of the CPO was very wide, between 170–210 m (see Figure ix). Consequently, the further investigation of the bypass in George's-Land was sub-divided into three separate sites: Site 22 measuring 60 m long by c. 90 m wide at the north-west corner of the townland, specifically located at the *fulacht fia* C9; Site 24, an L-shaped area measuring 60 m long by c. 30 m wide, and 20 m long by c. 90 m wide at the south-west corner of the townland, specifically located at the *fulacht fia* C1; Site 23, extending the full length of the field between chainages 5720–6010 to test between the known sites in the remainder of the CPO. Consequently, some of the archaeological features found during these investigations would be associated with one another and certain features, such as the water-filled ditch was common to both sites 23 and 24 (Kavanagh 2006b; McKinstry 2006b; McKinstry 2006c; Elder & O'Meartha 2010a).

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
1i	03E0673	Ballyknock										
1ii	03E0740	Ballyknock										
1iii	03E0727	Clonmore										
5	03E0299	Monadreela										
7	03E0300	Monadreela										
8	03E0379	Monadreela										
9	03E0345	Monadreela										
10	03E0392	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										
20	03E0470	Boscabell										
21	03E0480	Boscabell										
22	03E0503	George's-Land										
23	03E0508	George's-Land										
24	03E0507	George's-Land										
25i	03E0731	Kilscobin & Hughes'-Lot East										
25ii	03E0730	Kilscobin & Hughes'-Lot East										
25iii	03E0746	Hughes'-Lot East										
25iv	03E0807	Hughes'-Lot East										
25v	03E0756	Rathordan										
27	03E0289	Waller's-Lot & Rathordan										

29	03E0287	Waller's-Lot											
30i	03E0754	Cooper's-Lot											
30ii	03E0762	Cooper's-Lot											
30iii	03E1086	Owen's and Bigg's-Lot											
42	03E0582	Gortmakellis											
TI061:071	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
1iii	03E0727	Resolution	Clonmore
2	03E0297	Testing	Ballyknock
3	03E0296	Testing	Ballyknock
4	03E0298	Resolution	Monadreela
6	03E0349	Testing	Monadreela
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 place names 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; *Grantias Well* in Deerpark; *Loughroentagart*, *Lough Nahinch* and *Doon Fort* in Farranamanagh; *Ogaunoch and Coun* [Rathcoun?] *and the hill of Tubbiradoon...a well called Tubbiradoon near Doon Fort* (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 melt water and moraine 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 limestone from the Carboniferous period. On the west and south-west are the Hore Abbey Limestone and Lagganstown formations. To the south-east is the Ballyadams formation, with the Killeshin Siltstone and Clogrenan formations to the north-east 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 limestone. 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 south-western 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 TI053-096 (Waddell 1990, 134; O'Brien 2007, 93–4).

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, north-east of Cashel, possibly associated with the 1170's battle between the Irish and Anglo-Normans (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 [TI060-082], possibly associated with the Desmond Rebellion of 1581 (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 TI061-027 (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 on these objects at present (www.homepage.eircom.net/~dunamase/Dunamase.html) There are a number of undated megalithic structures around Clonoulty and Hollyford north-west of Cashel, recorded by the Archaeological Survey of Ireland. The nearest megalithic tomb is the portal tomb at Lissava TI075-045 near Cahir, c. 18 km south of Cashel. In Rathcoun townland south-west of Cashel four undated barrows TI060-107007–TI060-107010 and one unclassified cairn TI060-107011 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 north-east of Cashel and are now RMP sites: Palmer's Hill TI061-052, Corralough TI061-053 and Ballyknock TI061-054 – 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 *fulacht fia*, 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 2009a, 72–4). Other recent discoveries around Cashel have been made from field

walking including further ploughed-out *fulacht fia* in Ballinamona (two sites), Ballinree (one site), Carron (two sites), Gortmakellis (one site), Kilscobin (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 Kilscobin, 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 heroic literature and with very occasional archaeological discoveries: the Clonura leather shield, from *c.* 20 km north-east of Cashel. However recent excavation in advance of development has identified both 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 TI060-028 [classified as a ringfort on www.archaeology.ie], Carron / *Rathnadov* TI069-002001 [also classified as a henge], Knocksaintlour TI060-179, Lalor's-Lot / *Rathnadrinna* TI061-089001 and Windmill TI061-072 were classified as hilltop enclosures (Grogan 2005, Fig. 7.6, 116). A number of other monuments perhaps could be added to this list; Ballyknock TI061-008 due to its very prominent location at over 180 m OD, Hughes'-Lot East enclosure 05E0671 (143 m OD), Rathordan TI061-074 (140 m OD), and the multi-ramparted Ballinree TI060-110 are worthy of future study. Based on current evidence the

nearest hillfort to Cashel is Kedrah TI075-040, 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 TI069-072 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 *Dhuvclo* earthwork TI061-022 (road / hollow-way) in Charterschool Land TI061-022 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 as the *blacke ditch* commonly called the *Doocly* (White 1863, 5). Another road TI060-025 which serves as the townland boundary between Farranamanagh 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 north-east 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; Gleeson 2014). In Rathcoun a complex of ecclesiastical sites include a church TI060-107002, recorded as (*site of*) *Templemabee* [Mobhi], the unclassified religious house TI060-107003 (*site of*) *Monastery*—the only monastic site marked around Cashel—and holy well TI060-107004. Rathcoun and Templenoe are two townlands south-west 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 TI060-110. *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). King Brian Uí Briain is recorded as fortifying Cashel c. 995 (AI) - this annalistic reference may not be restricted to fortification of the acropolis itself. King Muirheartach 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 early 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.

In the Fiants of the Tudor Sovereigns, under Elizabeth I 1576 the '*high rathe to the north*' [Ballyknock?] and Lepers Hospital [Windmill] are listed amongst local names around Cashel (Fiants 1994, 485). 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 (Morrin 1862, 392). Could the '*High Rathe on the east*' either be referring to one of the Ballyknock forts TI061-008 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 Parkinigrory in the southern part of Cashell*' (IMC 1966, 146). Could *Fleming's Rath* be Windmill hilltop enclosure TI061-072?

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 south-east 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 licenced archaeological excavations taking place (Hughes & Ó Droma 2011; Moloney 2013). 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 medieval 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). The medieval town itself continues to be a focus of research (Slattery 2007; Hughes & Farrelly 2009; Hughes 2011a; O'Doherty 2012 & O'Brien, N. 2013). The most recently published excavations in the town—numbering three—revealed no archaeological features and, remarkably, no artefacts of any nature (see accounts in Bennett 2010).

A number of Anglo-Norman moated sites are recorded around Cashel (Barry 1977), including an elevated example at Windmill TI061-167 and one at Boscabell TI061-027, the archaeological zone of potential of which was investigated (Sites 18–20). Gortmakellis tower house TI061-011 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 - Killemlly (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), 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)

Post Medieval sites - Borris & Blackcastle (E2374)

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 in and around Cashel. In 2009 and 2010 Earthsound Archaeological Geophysics Ltd undertook geophysical surveys at Rathnadrinna fort TI061-089001 and TI061-089002 in Lalor's-Lot. This work revealed a complex multi-period site, with evidence of large-scale earthworks predating the known fort (O'Brien *et al* 2009; O'Brien *et al* 2010; O'Brien *et al* 2011, 26). In 2011 Earthsound undertook a 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 (see 03E0730). A survey was conducted in the fields north of the Rock of Cashel in St Patricks Rock townland in 2011 (Gleeson 2014) and in the grounds of Cashel Palace Hotel in 2012 (Gimson & Regan 2012). Further research work in 2011 and 2012 centred on Windmill Hill sites TI061-072, TI061-073 and TI061-167 by Earthsound Archaeological Geophysics, UCC and the University of Bradford / NRA—identifying archaeological features—some of which may be associated with the activity discovered on Sites 31–36i (Gimson 2012). These results are incorporated into the various Cashel final reports.

Recent Research Excavations in Rathnadrinna Fort (TI061-089001), Lalor's-Lot, Cashel

Recent excavation funded by the Royal Irish Academy since 2012 has revealed multi-period activity at this site. The fort was classified as a hilltop enclosure (Grogan 2005, Fig. 7.6, 116), and evidence of prehistoric occupation on the hillside has been dated to the Early Bronze Age by the recovery of a chert arrowhead of the period. A large linear ditch predating the fort ramparts was in use in the Late Bronze Age period; willow charcoal from deposits within the ditch were dated 748–405 cal. BC (UBA-24977), and 771–485 cal. BC (UBA-24975) respectively. The Early Medieval period is also represented on site. Found from topsoil within the fort was a copper alloy/lead stud mount from a house-shaped shrine, inlaid in gold in a design of four entwined snakes surrounding the centre, stylistically of 8th century AD date, or perhaps earlier. Carbonised oat from the basal fill of a cereal-drying kiln discovered outside the southern fort bank was dated cal. AD 777–980 (UBA-24976). A lens of charcoal-rich clay found in the central fort ditch was dated cal. AD 890–991 (UBA-24974). The preliminary findings from Rathnadrinna have been incorporated into the Cashel Bypass final reports where applicable.

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. 1.11.3cm, 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: North-east part of Cathedral, Rock of Cashel
Description: Edward II, found with Bronze pin No. 121
- Object: Bronze pin
NMI No: 1875:121
Find-spot: North-east 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 $7/16^{\text{th}}$ inch width $5/8^{\text{th}}$ 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 $3 \frac{1}{8}$ inches greatest width $1 \frac{1}{4}$ inch greatest thickness $5/8$ inch

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 lighting.
- 1115 Cellachán Ua Cellacháin of Cashel was slain.
- 1118 Mael Sechnaill Ua Faeláin was treacherously slain in Cashel.
- 1127–34 Traditional dates for the building of 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 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.
- 1870 Following a Parliamentary inquiry the Corporation of Cashel was dissolved.

Townland History

George's-Land is located in the Parish of St. Patricks Rock. In the Civil Survey it comprised 'one colpe Acre old extent'. The townland consisted of 64 Plantation Acres; 60 acres arable, four acres pasture, valued at £3, none unprofitable. The Proprietors names in 1640 were 'Richard Haly of Cashell Redmond Everard of Fethard Irish Papist. The sd lands are bounded on the South with the lands of Kilsobene in this parish; on the West with the Corporation of Cashell on the North with the sd Corporation of Cashell & Rathdangan in this parish, & on the east with the lands of Kylstafford in this pish. The sayd Richard Hally pprietor by descent & mortgaged to Redmond Everard of Fethard for one hundred pounds long before the Rebellion. This land is wast without Impvemt.' (Simington 1931, 222). The latter description was particularly apt considering the water-logged condition of the fields here.

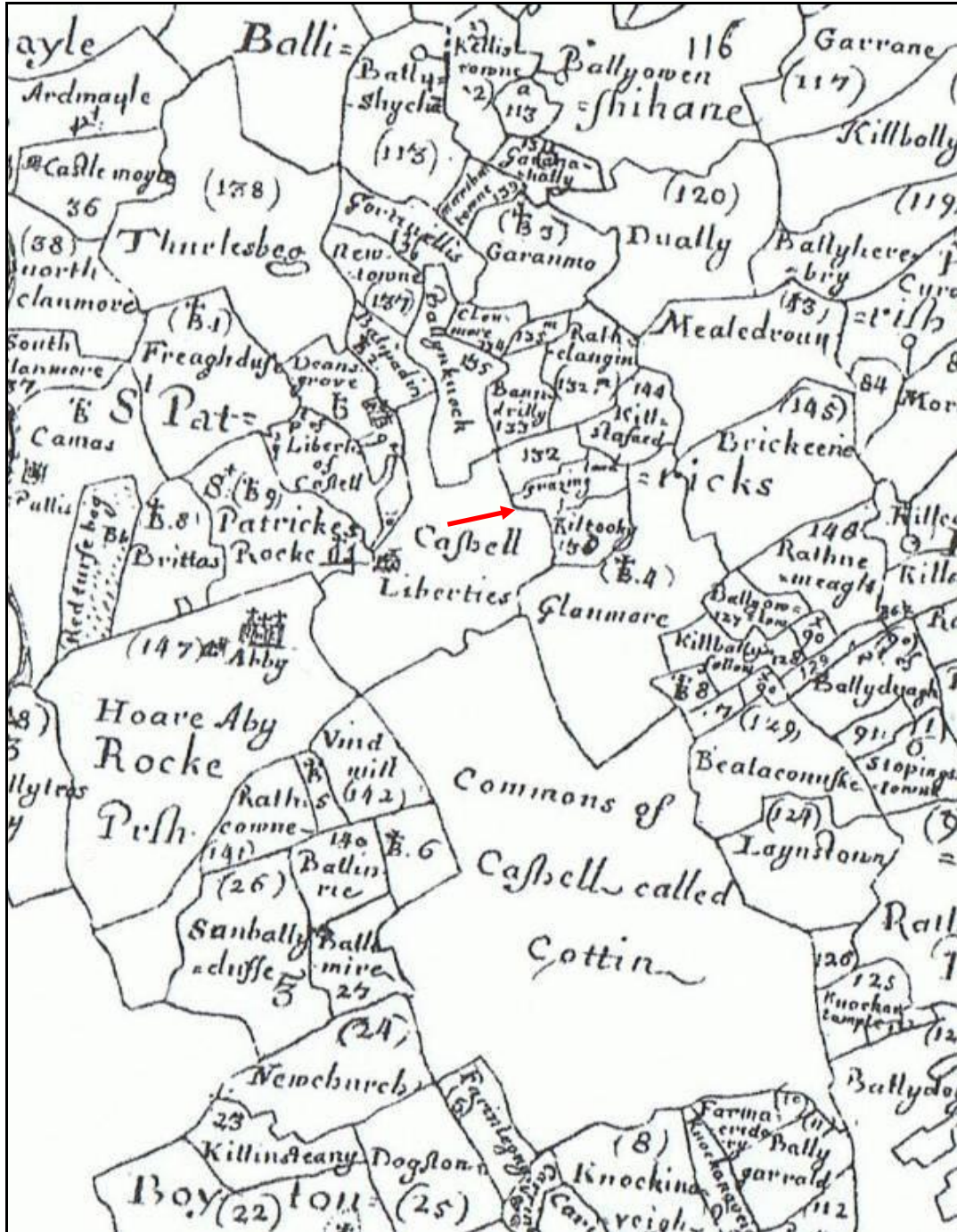


Figure i: Down Survey Map of the Barony of Middlethird by W. Petty, 1654-6.

Books of Survey and Distribution for County Tipperary

In the Books of Survey and Distribution the following proprietors are listed in 1640 for the townlands in the parish of St. Patrick’s Rock that were 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 Books of Survey and Distribution for St. Patricks Rock, 1640 (Marnane 2001).

Walter Sall was a member of the influential Sall family who lived in Cashel (MacCotter 1999). For instance, under the Charter granted to the City of Cashel by James II, 1638 John Sall was named Mayor of Cashel, both Robert and Francis Sall free burgesses, Geoffrey Sall merchant and both John Sall Fitz-Geoffrey and John Sall Fitz-Walter apothecaries (Finn 1930, 6–7).

Other 17th Century Sources

In Petty's Census of Ireland for 1659 can be found the following information for those townlands where excavations took place on the bypass:

Parishes	Places	No. of People	Tituladoes Name	English	Irish
St Patrickes rocke Parish	Georg island	7	Oliver Lathom gent Anne Salli Widdow gent		7
	Killstobine	3	as above		3
	Rathardin	22	Thomas Perkins	2	20
	Gort McEllice	29	Mathew Pennyfether gent	2	27
The additional upon review					
St Patricks rock P'ish	Rathardin	2	?		2
The Number of People in ye Barony of Middlethird Eng, 134 Irish, 3,778, Total Eng & Irish, 3,912					

Table vi: Census of Ireland c. 1659 (Pender 1939, 306–9).

Seven Irish natives are listed for George's-Land with Mr. Oliver Lathom and the widow, Ms. Anne Salli [Sall] listed as owners. It is likely Ms. Anne Salli was linked to the Sall family of Cashel town.

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 Roche		
[Name]	Hths.	s.
John Kearney, de Kyllscobyne	1	2
James Hyad	1	2
Math. Pennyfeather, Gorttmcellis	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 vii: 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
Killscobin	Hths.	s.	John Carny	1	2
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 viii: Tipperary Hearth Money Records for 1666–7 (Laffan 1911, 97–8).

Although George's-Land is not specifically mentioned there were people inhabiting the surrounding townlands. Is it possible the seven individuals recorded in 1659 for George's-Land did not make a hearth tax return? In 1669 the modern spelling of the name is first recorded, while a record from c. 1685 spells the name 'Graringland' (www.logainm.ie). The Cashel Corporation records for April 13th 1691 note '*...nor to hinder the passage of cattle through the little lane to the fields of severall tenants who hold betwixt that Kilscobin and George's Land*' (White 1876, 77). The reference to 'the little lane' may be the Abbey road from Cashel, or else the *cul-de-sac* still known locally as the Kilscobin road. The reference clearly shows the lands around here were farmed by tenants, most likely paying rents to Cashel Corporation, for which much has been written (Finn 1930; Marnane 2007).

18th Century Sources

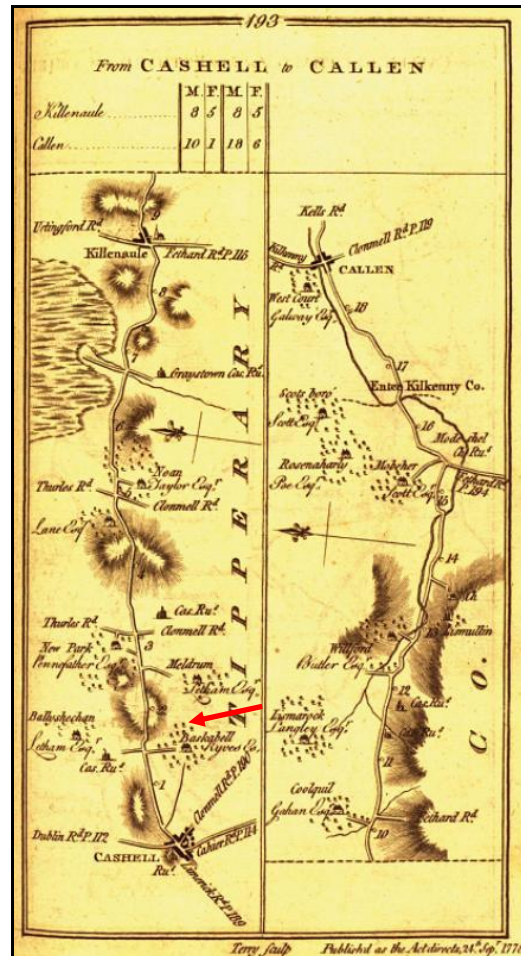


Figure ii: Taylor Skinner Road Map 1778. Around George's-Land only 'Baskabell Ryves Es.' is marked.

19th Century Sources

Finn (1930, 27) published details of a land lease from 29th September 1802 for 'Georgesland', granted to Mr. Richard Pennefeather for an annual rent of £15, for a duration of 99 years.

Tithe Applotment Books for Cashel

In the Tithe Applotment Books for Cashel dating from 1827 four persons are listed under George's-Land; Mr. John Hogan, Mr. Jn Hogan, Mr. JJ Fitzgerald and Mr. Robert Stephenson. It is likely the reference to Mr. Hogan is a duplicate

(www.titheapplotmentbooks.nationalarchives.ie). Apart from Mr. JJ Fitzgerald none of these persons is recorded in the Griffith's Valuation of 1850 (see below).

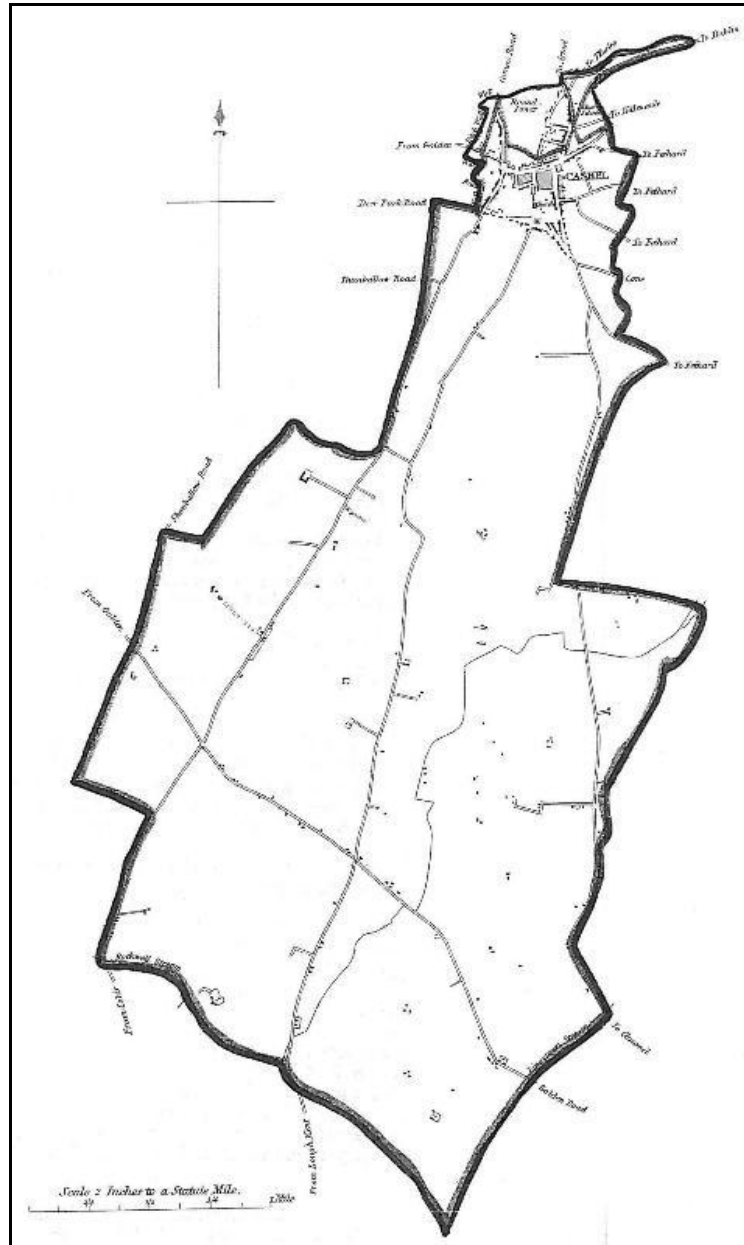


Figure iii: Municipal Corporation Boundaries (Ireland) Proposed Municipal Boundary of the Borough of Cashel, December 1831.

The following two entries are extracted from the Appendix to the First Report of the Commissioners. Part I. 1835 House of Commons Report Municipal Corporation Boundaries (compiled in Cashel by Messrs Hanna and King in 1833).

Local Acts of Parliament.]	<p>40. There are not any Local Acts of Parliament that we have discovered for the regulation or government of Cashel. In the statute 28 Henry VIII. c. 3, there is a saving clause for "the liberties, privileges, and franchises of the portriffs, burgesses and commons of the town of Fithirde and of the town of Cashell." This Act of Parliament is entitled, "The Act of Absentees," and it enabled the King to seize into his hands certain lands in Ireland, the property of the absentees therein mentioned, saving the rights of other persons therein mentioned, and with the saving or proviso as to the towns of Feathard and Cashel, above stated.</p> <p>The 7 Geo. III. c. 1. granted £800 for completing and furnishing the cathedral and parochial church in the city of Cashel.</p>																		
STATISTICAL DETAILS.	<p>41. The population of the city was returned in 1821 at 5,974. Upon the enumeration of 1831, it appears there were:—</p> <table style="margin-left: 40px;"> <tr> <td>Males, 3,279; females, 3,692. Total</td> <td style="text-align: right;">6,971</td> </tr> <tr> <td>Families chiefly employed in agriculture</td> <td style="text-align: right;">511</td> </tr> <tr> <td> " " in trade, manufactures, and handicraft</td> <td style="text-align: right;">596</td> </tr> <tr> <td> " not comprised in the two preceding classes</td> <td style="text-align: right;">257</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">1,364</td> </tr> </table> <table style="margin-left: 40px;"> <tr> <td>Houses inhabited</td> <td style="text-align: right;">1,051</td> </tr> <tr> <td> " uninhabited</td> <td style="text-align: right;">76</td> </tr> <tr> <td> " building</td> <td style="text-align: right;">7</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">1,134</td> </tr> </table>	Males, 3,279; females, 3,692. Total	6,971	Families chiefly employed in agriculture	511	" " in trade, manufactures, and handicraft	596	" not comprised in the two preceding classes	257	Total	1,364	Houses inhabited	1,051	" uninhabited	76	" building	7	Total	1,134
Males, 3,279; females, 3,692. Total	6,971																		
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Total	1,364																		
Houses inhabited	1,051																		
" uninhabited	76																		
" building	7																		
Total	1,134																		
Religion.	<p>The population of Cashel, including the liberties and commons, may be near 12,000 persons; of whom, we were informed, the majority were Roman Catholics, perhaps in the proportion of twenty to one.</p>																		
State of the Town.	<p>42. The State of the Town is by no means thriving or prosperous, and there is a great number of poor persons in it in a state of distress. This is ascribed partly to the want of sufficient employment for the poorer classes, and partly to the influx of persons who have been ejected from their farms since the Subletting Act, and who generally come into the town in great poverty and distress.</p>																		

RENTAL OF THE CORPORATION OF CASHEL.

Tenant's Name.	Number of Acres, Roods and Perches.			Denominations.	Yearly Rent.	
	A.	R.	P.			
1. Representatives of Richard Pennefather, Esq. deceased.....	1548	3	5	{Attykett; Carrigfreagh, Loughnamaine, and Foxes' Den; Fowke's Lot; Owen and Biggs' Lot; Gortnadrang, alias Rathnadrang, Giamore, Knockermiddybuck, Cussaneduffe, and Knockanena; Christeen; Harrison's Lot, St. Nicholas Gatehouse, and Pulvertoft's Garden,}	86 7 9	{Lease for 99 years from 25th March 1830. This Lot, by Lease, is estimated only at 1314s. 3s. 3d.
2. Thomas Price.....	93	0	0	Gallows Hill; Broadcroft and Price's Lot.....	61 7 8	No Counterpart of Lease to be found.
3. Edward Pennefather.....	50	0	0	Plummer's Lot, and the Burgagery Lands.....	11 1 6½	Lease for 99 years from 25th March 1802.
4. Representatives of Richard Pennefather.....	92	2	0	George's Land.....	14 8 5½	.. 99 years from 25th March 1830.
5. Same, formerly William Lockwood.....	26	2	37	Great Green, beyond the Gouts.....	0 18 5½	.. 99 years from 25th March 1812.
6. Representatives of Paul Phelan.....	50	0	0	Alderman Morgan Wogan's Lot.....	7 7 8	.. 99 years from 25th March 1784.
7. Representatives of Bernard Phelan.....	.	.	.	Premises, Canopy Gate.....	2 1 6	.. 99 years from 29th June 1772.
8. Same.....	.	.	.	Premises in Friar-street.....	0 10 2	.. 99 years from 25th March 1771.
9. Representatives of Thomas Pennefather.....	.	.	.	Loughnafory Green, and Wood's Lot.....	2 6 2	.. 99 years from 25th March 1792.
10. Representatives of Garrett Hayes.....	.	.	.	Premises in Friar-street.....	5 5 0	.. 99 years from 29th September 1786.
11. Matthew Pennefather, Esq.....	141	1	18	{Butterfield's Lot; Knocknagopple and Cradock's Lot.....}	13 16 11	.. 99 years from 25th March 1831.
12. Avary Jordan.....	.	.	.	Small Plot of Ground on the Green.....	1 16 11	{Holds under an Agreement for a Lease for 41 years, which is not yet executed.
13. Representatives of Matthew Pennefather.....	.	.	.	Great Green.....	0 18 5½	99 years from 29th June 1769.
14. Avary Jordan.....	.	.	.	Stallage of Market House.....	10 0 0	Tenant at will.
15. Representatives of Richard Pennefather.....	.	.	.	Lot of Ground whereon the Shambles are built.	0 9 2½	Lease not to be found.
16. Representatives of B. Lockwood.....	.	.	.	Lot of Ground on the Green.....	1 1 0	99 years from 25th March 1789.
17. Rev. J. M. Poole and Churchwardens.....	.	.	.	School House on the Green.....	0 1 0	If demanded. Forty-nine years from 29th June 1823.
18. The Incorporated Society.....	21	0	0	{Cotterill's Lot, together with the Garden and Fields thereto adjoining.....}	A Peppercorn,	{If demanded. Lease not to be found. The Order for granting this Lease was made 29th September 1745, for 99 years from 25th March 1746.
19. The Governor of the County Infirmary.....	0	2	30	{Piece or Plot of Ground, whereon the Infirmary is now built.....}	0 1 0	If demanded. Lease not to be found.
Total.....	2,024	0	0	Total.....	£219 18 10½	

The Rental describes a number of denominations within the Corporation Boundary 'the Commons' that were not recorded by the Ordnance Survey of 1840. For instance, *Gortnadrang, alias Rathnadrang* may equate with Rathnadrinna, while the location of *Knockermiddybuck* remains unknown.

Census Returns for 1841 & 1851

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
Gortmakellis	14	-	-	95	8	-	-	43
Ballyknock	13	-	-	88	6	-	-	39
Clonmore	4	-	-	23	2	-	-	9
Monadreela	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
Farranamagh	47	160	159	319	34	92	83	175

Table ix: 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. Monadreela 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. However, in George's-Land the number of houses—one—remained occupied and the populace increased from six to eight persons, one of the few examples in the above Table.

1st Edition OS six-inch map 1840 (surveyed 1839)

According to cartographer John Ó' Donovan the townlands name, George's-Land, translates as *Fearan Sheóirse* (O'Flanagan 1930, 134). On this map George's-Land is bounded on the north by Boscabell, on the north-east and east by Killistafford, on the south-east by Rathordan, on the south by Kilscobin, and on the south-west and west by Hughes'-Lot East. The boundary with Hughes'-Lot East also served as part of the parish boundary between St. John Baptist and St. Patricks Rock. The boundary with Killistafford served as part of the parish boundary between St. Patricks Rock and Brickendown parishes. The route of the bypass bisected the western side of the townland in a south-west/north-east direction. Un-named streams are indicated.

A laneway led from the south-west corner of George's-Land due west into Cashel, through Hughes'-Lot East. The laneway appears to terminate at the George's-Land townland boundary where a single dwelling in [Hughes'-Lot East] is depicted on the south side of the boundary. The laneway [the same as referred to in 1691?] appears to form a footpath (indicated as two broken lines) and runs along a portion of the southern townland boundary before changing course to the north-east, and heading due east through the townland. A dwelling with an un-named anomaly to its east—possibly a defunct pond—is located north of the footpath, approximately in the centre of the townland. No trace of this dwelling was discovered during excavations and the anomaly was found to be a former pond sealed in recent times by dumping animal refuse from Cashel's abattoir in William Street. The footpath terminated in the eastern end of the townland at another, larger dwelling formed by yards and tree-lined small plots, with two conjoined buildings and a separate building to the south. These dwellings are the only buildings shown on the map and they likely belonged to Mrs. Burke (see next).

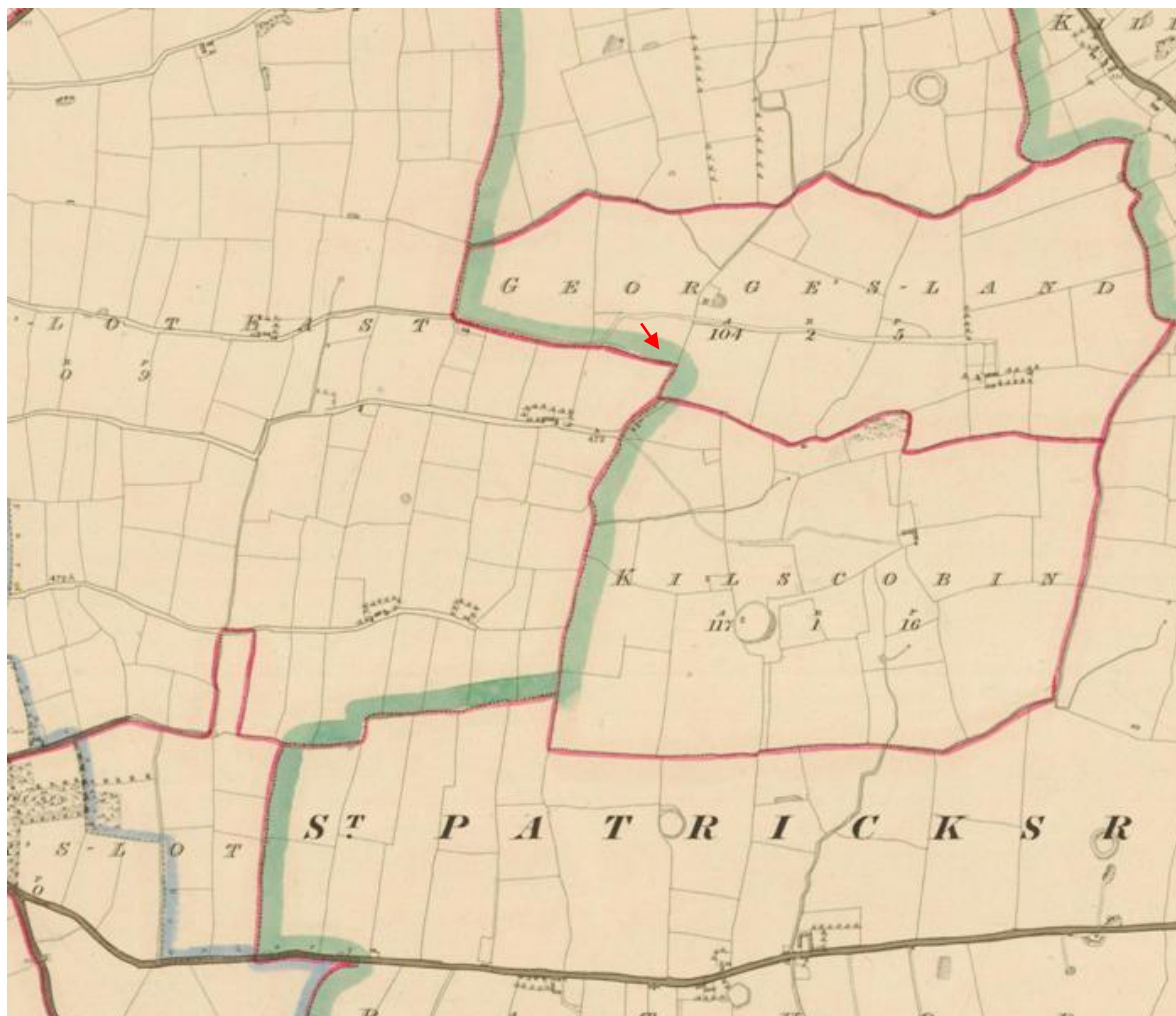


Figure iv: 1st Edition OS six-inch map, Site 24 indicated. Source: www.osi.ie

Primary Valuation of Tenements recorded in Griffith's Valuation for St Patrick's Rock Parish, August 1850

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
Monadreelea	120 & 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
Kilscobin	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 x: 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.

For George's-Land Mr. James Horan and a Mrs. Burke were listed as tenants. James Horan (the Immediate Lessor being Sir John J. Fitzgerald) was listed as having 104 acres (35 p.), valued at £70 5s. Mr. Horan was also the Immediate Lessor to Mrs Burke who had a house and garden of less than one acre (1 r. & 10 p.), the garden valued at 3s and the house at £1 2s with a cumulative value of £1, 5s. The total acreage for George's-Land was 104 acres (2 r. 5 p.), with land valued at £70, 8s, buildings at £1, 2s giving a total value of £71 10s. Obviously, Mr. Richard Pennefeather had disposed of his 99-year lease to Sir John J. Fitzgerald by this time.



Figure v: Griffith's Valuation Map c. 1850, Site 24 indicated. Source: www.askaboutireland.ie

1st Edition OS 25-inch map 1901–05

By the time the 25-inch map was recorded at the beginning of the 20th century significant changes around the site had occurred (Figure vi). The laneway / footpath is no longer indicated, perhaps suggesting the eastern dwelling was now un-occupied. The single dwelling [in Hughes'-Lot East] is also not shown. A section of wetland is indicated approximately where the eastern boundary of Site 22 was located.

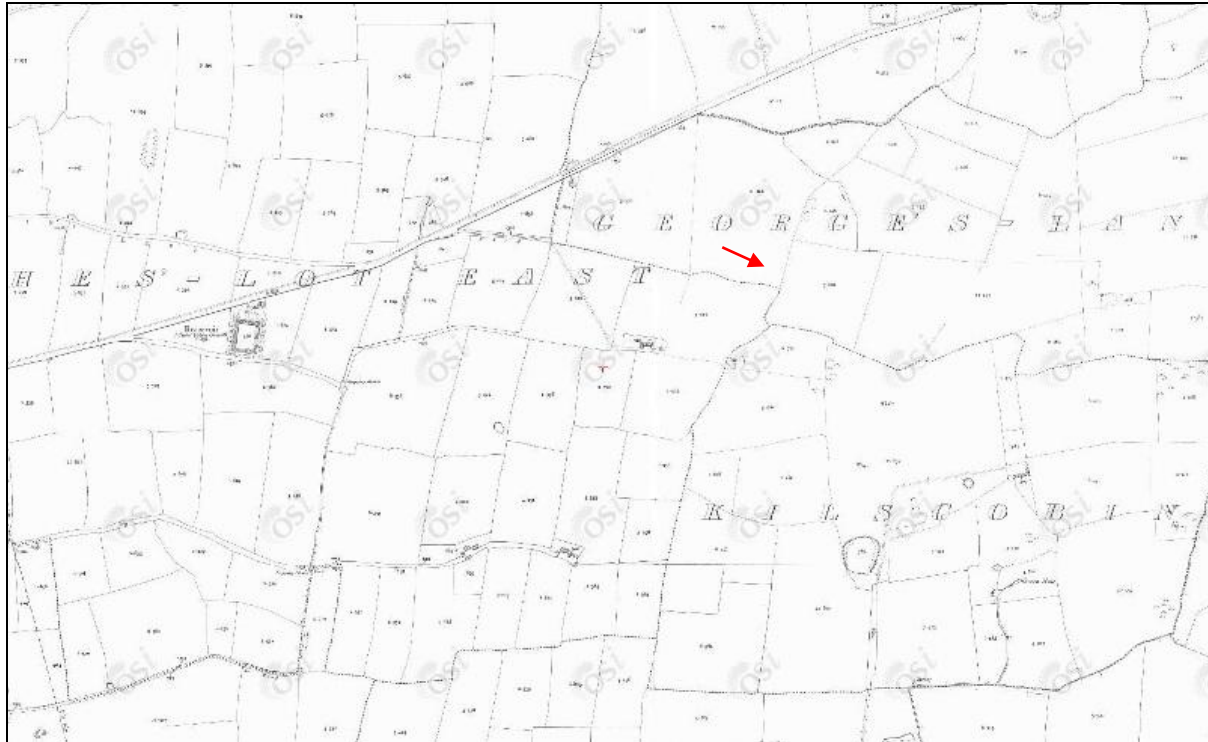


Figure vi: 1st Edition OS 25-inch map location of Site 24, 1901–05. Source: www.osi.ie

Census Returns of 1901 and 1911

The Census Returns of 1901 record the Croke and Colvil households; Thomas and Catherine Croke and their new-born son Michael; the elderly Patrick and Honora Colvil, both 75 years of age. In the 1911 Census Returns the Crokes now have eight year old Mary as a sister to Michael while the Colvils are gone, probably deceased (www.census.nationalarchives.ie). Mary and Michael Croke never married and lived all their lives in George's-Land, Mary dying last in 1982.

2nd Edition six-inch OS Map (surveyed 1903, publ. 1906) & 3rd Edition OS Map 1952–4

There was no change in the area of Site 24 on either the 2nd or 3rd Edition OS six-inch maps (see Figures vii & viii).

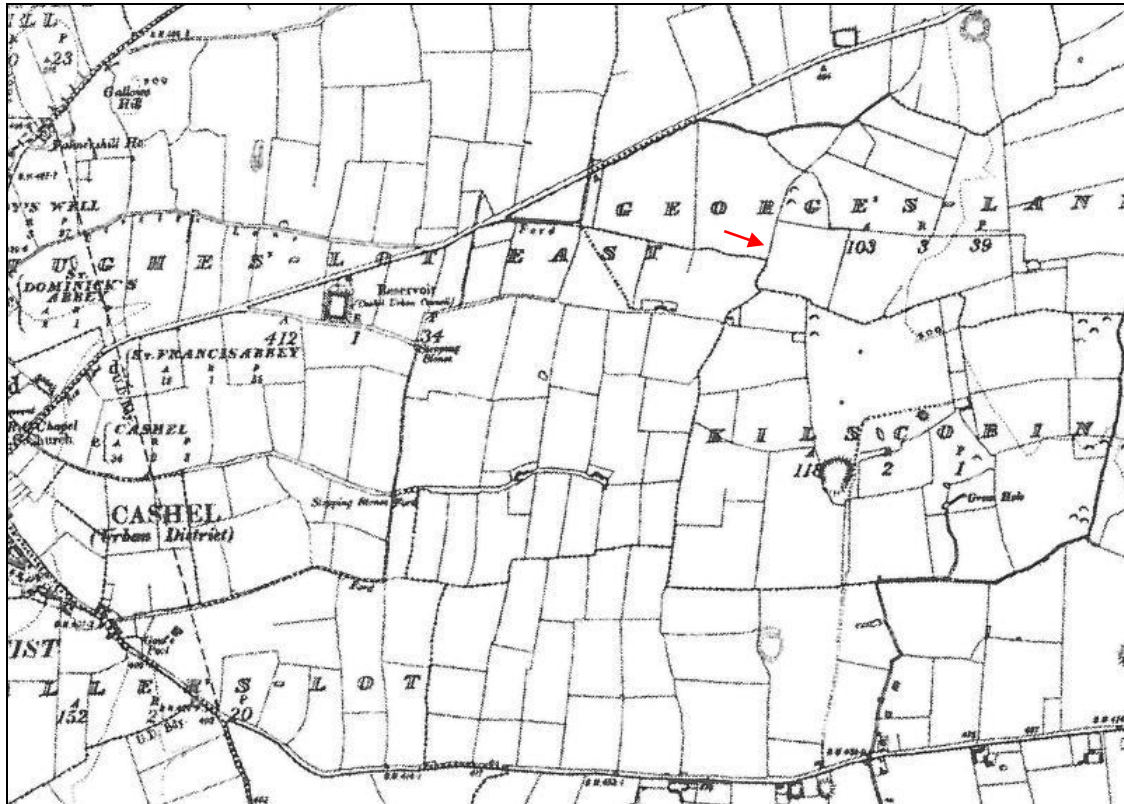


Figure vii: 2nd Edition OS six-inch map location of Site 24, surveyed 1903, pub. 1906. Source: www.osi.ie

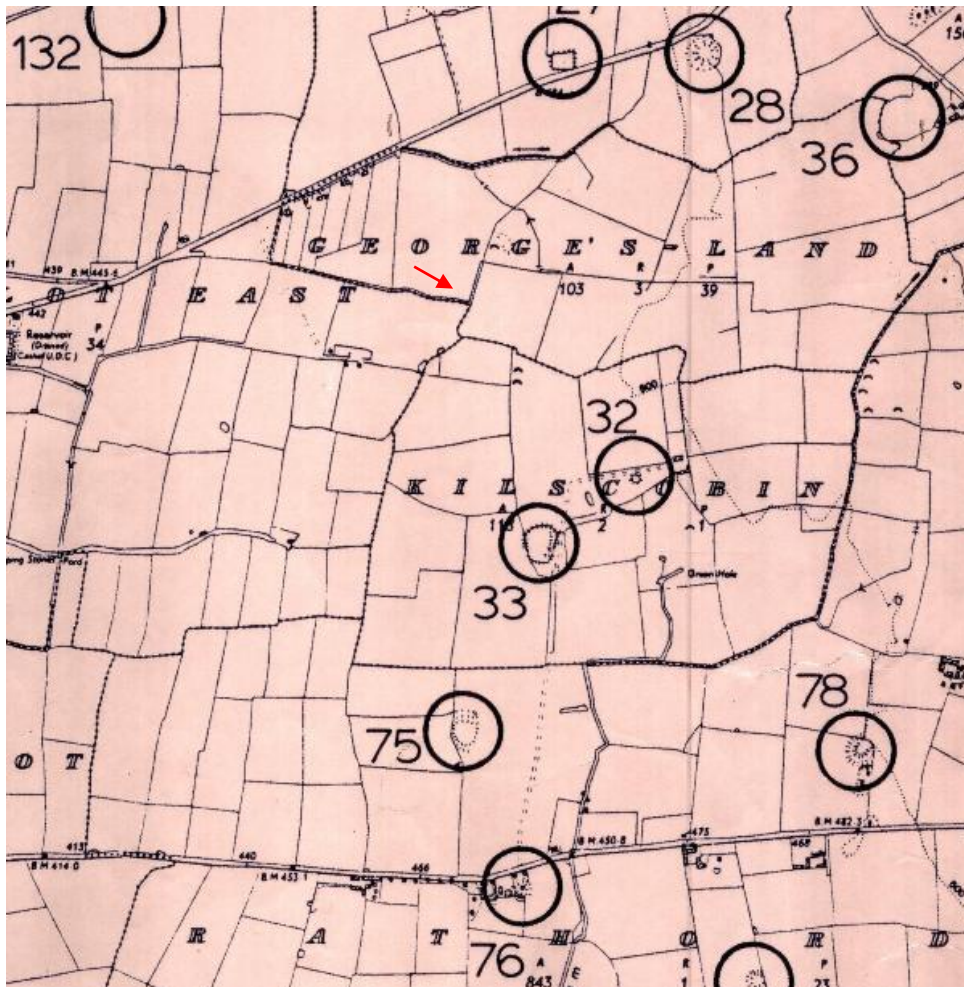


Figure viii: 3rd Edition OS six-inch map location of Site 24, 1954 (revised 1952 & 1954). Source: www.osi.ie

Vertical Aerial Information

By comparing Figure viii and Plate 1 only slight changes can be traced since the 1950s. The short north-east/south-west field boundary at the junction with Boscabell townland has been removed. The removal of such boundaries was a common occurrence post the 1950s as a consequence of increased mechanisation of agriculture, favouring larger fields over small units (Feehan 2003, 375–77). A closer examination of Plates 1 and 2 also reveals widespread field drains, the traces of which were revealed in the excavation (see below).



Plate 1: Vertical aerial image of George's-Land townland taken in 1994; N to left (source: South Tipperary County Council)



Plate 2: Vertical aerial image of George's-Land townland taken in 2000; N to left (source: Kilkenny County Council)

EXCAVATION (Figures ix, 3–7 & Plates 3–17)

In July 2003 Site 24 was fully topsoil stripped, c. 2,806 m² in area, and excavation commenced uncovering those features originally found in the Phase 1 testing.

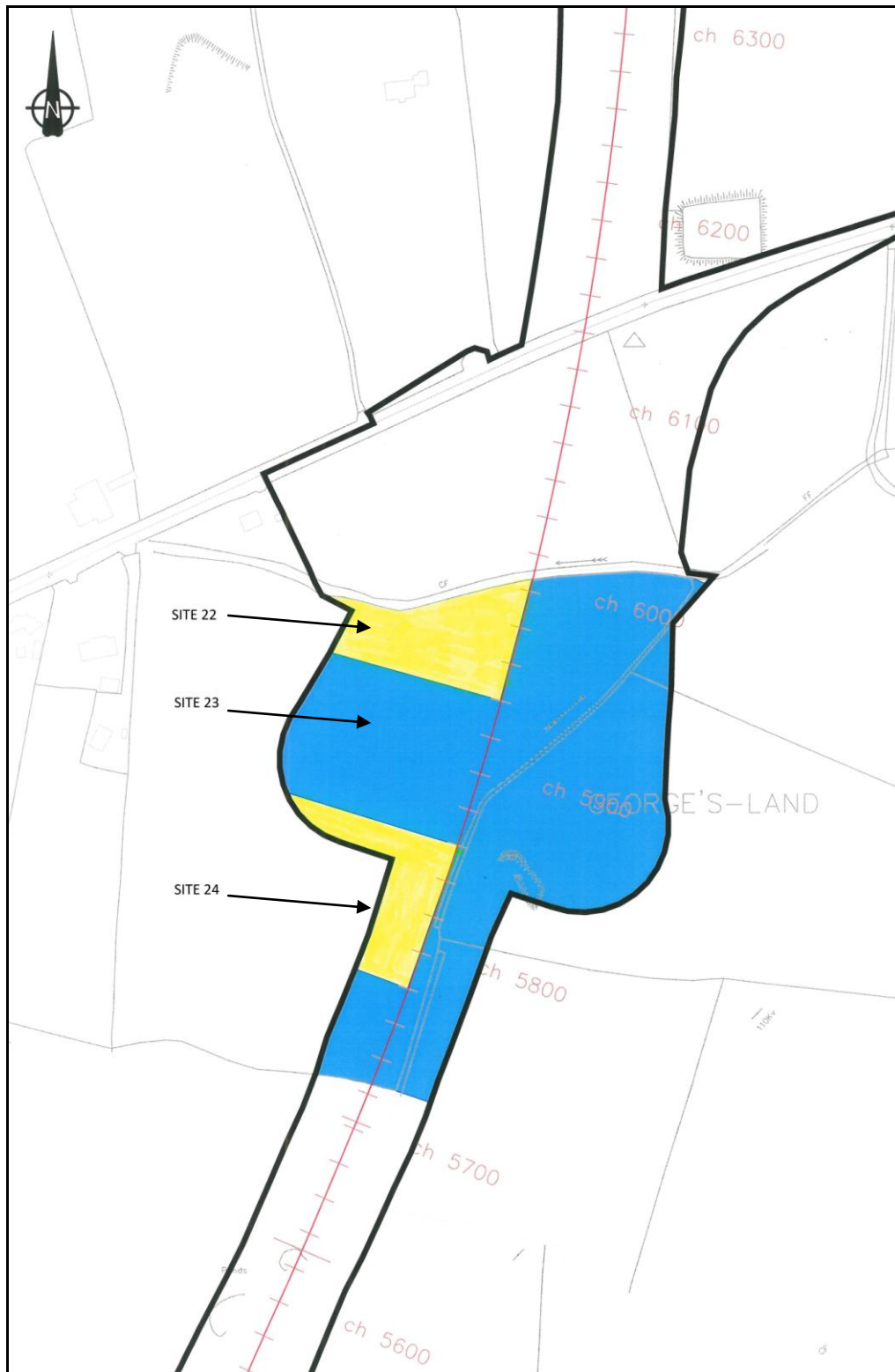


Figure ix: Archaeological investigations in George's-Land in 2003, Sites 22–24.

Topsoil

The topsoil (20) comprised of loosely compacted brown sandy silt with occasional stones. Ubiquitous throughout the excavated area and measured 0.1–0.15 m deep.

Subsoil

The subsoil (17) comprised of yellow-grey sticky malleable clay with occasional small to medium stones. It was more waterlogged in low-lying areas with macerated stones. The OD level measured on top of the features preserved *in situ* at the north-west corner of the site was 141.38 m and 141.42 m.



Plate 3: General excavation view of hollow [02] infilled with water, facing north, scale 2 m



Plate 4: Post-excavation of pit [11] facing east, scales 1 m & 2 m

Fulacht fia (Figures 4, 6 & 7)

The *fulacht fia* (01) identified during Phase 1 testing was uncovered and fully exposed. The *fulacht* comprised of a subsoil-cut sub-rectangular trough beneath a denuded mound of charcoal and heat-shattered stones. The *fulacht* was located in a low-lying part of the site adjacent to an infilled pond and a field boundary.



Plate 5: Pre-excavation of *fulacht fia* (01) facing east, scales 2 m



Plate 6: Mid-excavation of *fulacht fia* (01) facing east, scale 2 m



Plate 7: Mid-excavation of *fulacht fia* (01) facing east, scales 2 m

Trough (Figures 4, 6 & 7)

The subsoil-cut trough [07] measured 3.4 m long by 1.6 m wide and 0.75 m deep, with steep sides breaking sharply to a flattish base (Figure 7 Section C-D). The trough contained four fills (10), (11), (09) and (08). The basal fill (10) was a mottled dark-brown mixture of peat and clay with inclusions of roundwood timbers and branches. This measured 3.4 m long north-south by 1.6 m wide and 0.38 m deep. The primary fill (11) was confined to a small area at the south of the trough. It was a pale yellow fine silt, with dark brown clay inclusions throughout and gritty sand inclusions at the base. The secondary fill (09) above (10) and (11) was dark brown peat with timber and branch roundwoods, measuring 0.5 m long north-south by 0.3 m wide and 0.3 m deep. The upper fill (08) above (09) and (11), was grey-yellow clayey silt with occasional charcoal and heat-shattered stones. The presence of peat deposits within the trough is indicative of the trough being left open and waterfilled for a period of time, after it fell into disuse. It is likely timbers (T60 & T61) represent wood fallen/thrown into the trough and were not indicative of a timber lining (see Appendix 7). Deposit (03) was identified north of the trough and represented upcast natural subsoil from the original construction of the trough (Figure 7 Section A-B).



Plate 8: Mid-excavation of trough [07] & timbers (T60 & T61) facing east, scales 1 m & 2 m



Plate 9: Mid-excavation of trough [07] facing south, scales 2 m

Fulacht fia (Figures 4, 6 & 7)

A mound of charcoal and heat-shattered stones (01) was located above and extending north of trough [07]. The mound was an irregular oval shape in plan, measuring a minimum of c. 10.5 m long north-south by 5.75 m wide and 0.18 m deep within the site. It comprised of c. 70 % heat-shattered stones, predominantly sandstone, in a charcoal-rich silt matrix (Figure 7 Section A-B & C-D). A radiocarbon date of cal. AD 780–971 (UBA-13759) was obtained from a sample of oak charcoal retrieved from (01). The *fulacht fia* had extended beyond the site to the east where all traces of it were removed when the field boundary was created.

Further disturbance centred on the area of the double gates leading into the adjoining field, as several deposits of clay inter-leaved with deposits of charcoal and heat-shattered stones {(04), (05) & (06)} had been laid down by the farmer, providing a better surface for vehicular access.

POST MEDIEVAL FEATURES (Figures 4 & 6)

Field boundaries

A north-south orientated field boundary comprised of a clay and stone bank (19) and ditch [18], clearly post-dated the *fulacht fia*. The boundary is depicted on all editions of the OS maps, first depicted on the 1st Edition OS six inch map (Figure iv). The bank had been almost entirely removed but it was possible to determine it had been formed by clay and stones, topped by a hedgerow comprised of intermittent mature trees and scrub vegetation. On its west side only the bank was flanked a water-filled ditch [18], which had been regularly cleaned-out by the farmer. The ditch measured c. 1.5 m wide and 0.5 m deep with a U-shaped profile.



Plate 10: Testing alongside the field boundary facing south, scale 2 m

Farmtrack and gateways

An east-west orientated farmtrack was depicted on the 1st Edition OS six inch map running centrally across the site (Figure iv). The farmtrack crossed a culverted section of the field boundary ditch [18] via a double-gateway, defined by concrete piers. An area of the *fulacht fia* measuring *c.* 10 m² had been disturbed and modified to create the culverted ditch crossing. The gateways were still in use at the time of excavation and several wheel ruts noted in the surface levels of the *fulacht* were the result of tractors using the gateway. No other trace of the farmtrack was identified within the area of the road-take. It is likely this was an unmetalled surfaced as subsequent field-walking has not revealed traces of any surface. Beyond the gateway to the east on Site 23 the farmtrack survived as an earthen bank with a scrub hedgerow field boundary.

Drains

Two linear drains [12] and [14] were located adjacent to ditch [18]. Ditch [14] was orientated south-west/north-east, measured *c.* 100 m long by 0.46 m wide and 0.14 m deep. It was filled by mid brown clay with frequent stones (15). Drain [12] was orientated west-north-west/east-south-east, measured *c.* 100 m long by 0.1 m wide and 0.14 m deep. It was filled by mid brown clay with frequent stones with a plastic pipe at the base (13). Both drains were clearly modern but may have been on the line of earlier field drains; both drained into ditch [18].



Plate 11: Example of a George's-Land field drain facing east, scale 2 m

UNDATED FEATURES (Figure 5)

A cluster of features were located at the west of the site on an area of slightly elevated ground, *c.* 1.3 m higher than the location of the *fulacht fia*. Here the CPO narrowed to *c.* 17 m wide and the features were concentrated within a 25 m long area. These features correspond with features C3, C5 and C8 identified in Phase 1 testing (Lennon 2002). They were re-exposed, cleaned and recorded but due to revisions in the bypass design it was unnecessary to excavate them, and they were preserved *in situ*. The lack of any clear indication of heat-shattered stones may preclude an association with the *fulachtaí fia* activity to the east. These features are described as follows:

An irregular linear [224] was orientated west-north-west/east-south-east, measured 11.77 m long by 1.14 m and 2.48 m wide and filled with (234). Its north-western end had a rounded terminal while the south-eastern was straight-sided. Two slight northern projections along its length were recorded. Two possible pits and a stakehole were located adjacent to the south-eastern end of the feature.



Plate 12: Pre-excavation of linear [224] facing east, scale 1 m

Possible pit [222] was irregular/oval-shaped measuring 2.17 m long by 1.4 m wide. It was filled with (233), heavily charcoal-flecked dark blackish-brown silty clay with small and medium stones at the surface, with the centre of the pit containing less charcoal. This may be indicative of a back-filling episode sealing the charcoal-rich fill? Possible pit [223] was also oval-shaped but significantly smaller at 0.73 m long by 0.56 m wide and filled with (232), dark blackish-brown silty clay with small stones at the surface. As both pits were close to the edge of linear [224] it was possible they represent further projections of that linear.



Plate 13: Pre-excavation of pit [222] facing south, scale 1 m



Plate 14: Pre-excavation of pit [223] facing south, scale 0.5 m

Possible stakehole [225] was circular in plan, measured 0.22 m in diameter and filled with (226), dark blackish-brown silty clay with small stones at the surface.



Plate 15: Pre-excavation of stakehole [225] facing east, scale 0.5 m

Two linears located to the east and south-east of the above cluster were possibly related. The northern linear [227] measured 4.2 m long, 0.3–0.5 m wide and filled with (229). The linear narrowed towards the east and terminated at rounded terminals. The southern linear [228] measured 3.8 m long, 0.3–0.4 m and filled with (230). In shape it was slightly curvilinear/irregular in plan with the outside of the curve to north. Both linears were filled with heavily charcoal flecked dark blackish-brown silty clay, with small and medium stones at the surface. Traces of possible stone-lining at the eastern end of linear [228] may indicate this feature was a cereal-drying kiln. The profile was not too dis-similar to that of cereal-drying kiln [183] on Site 19 in Boscabell townland c. 300 m to the north-east (see 03E0426 Final Report).



Plate 16: Pre-excitation of linear [227] facing east, scales 1 m & 2 m



Plate 17: Pre-excitation of linear [228] facing east

DISCUSSION

Any discussion on the archaeological discoveries should be read along with the Site 23 discoveries, as Site 24 merely represented the western portion of a wider, prehistoric activity-cluster, centred on the hollow (see 03E0508 Final Report). It was likely this hollow was water-filled in prehistory, proving an ideal attraction for human settlement, albeit probably season. The evidence from the site consisted of a *fulacht fia*—heavily disturbed—with associated trough, both lying to the immediate north of the hollow, plus undated possible pits, stake-hole and linears at the north-west corner of the site, subsequently preserved *in situ*. No finds were retrieved from this site.

The environmental evidence from Site 24 was retrieved from timber, alder & oak and waterlogged peat deposits within trough [07], and charcoal—willow and oak—from the associated *fulacht fia* (01). Willow and alder, typical species in wetland and riparian woodland habitats may have been sourced locally from such an environment. Specialist analysis of the un-carbonised wild taxa retrieved from the trough indicated the surrounding environment included areas of open grassland, disturbed ground, heath and scrubby hedgerows. This fits in well with the projected paleoenvironmental picture of open grassland on the nearby dry ground, disturbed ground from the activities around the *fulachtaí fia*, peat formation in the hollow, with scrubby hedgerows and water-tolerant trees lining the sides of the small stream/boundary ditch.

Specialist analysis of the un-carbonised wild taxa retrieved from peat samples within the trough indicates the environment in the vicinity of the *fulacht fia* included areas of open grassland, disturbed ground, heath and scrubby hedgerows. The uncharred seeds of buttercup, bramble/blackberry, clover, sedge, dock, goosefoot and cinquefoil were recorded in varying concentrations from the trough deposits (09), (10) and (11). This material was very dried out and too fibrous to be identified to any species (Appendix 6). This fits in well with the projected paleoenvironmental picture of open grassland on the nearby dry ground, disturbed ground from the construction of *fulachtaí fia* and other settlement sites in the vicinity, peat formation occurring in the large natural depression to the south with scrubby hedgerows and water-tolerant tree species lining the sides of the small stream. The findings from Site 24 form part of a wider landscape of prehistoric and early medieval activity in this area, with several *fulachtaí fia* situated adjacent to water in the low-lying areas and some evidence for other prehistoric activity nearby on surrounding higher ground.

A radiocarbon determination was retrieved from *fulacht fia* (01) where oak charcoal was dated to cal. AD 780–971 (UBA-13759). This was the only date from George’s-Land which was associated with the Early Medieval period; dates from adjacent sites 22 and 23 derived from the Developed and Late Iron Ages, or earlier in prehistory. Oak favours well-drained soils and is unlikely to have shared a habitat contemporary with willow. It can be shown the oak was present in the trough and on adjacent Site 23 too, and would likely date from the Early Bronze Age period. Therefore this later date is considered intrusive, representing activity perhaps associated with agricultural practices from the nearby early medieval enclosure sites at Boscabell Site 20 (c. 300 m to the north-east) and at Hughes’-Lot East Sites 25ii & 25iv (less than 1 km to the south). The *fulacht fia* was undoubtedly associated with the *fulachtaí fia* found nearby on Site 23, dated to the Early Bronze Age period and the findings here form part of a wider landscape of prehistoric and early medieval activity in this area.

Prehistoric Discussion

Evidence for twenty *fulachtaí fia* and burnt mounds were identified at four sites along the route of the bypass. Two major concentrations were noted: Site 30iii in Windmill townland and Sites 22–24 in George’s Land townland. The *fulachtaí fia* on the scheme were noted to be, without exception, situated in low-lying locations adjacent to water. The siting of this monument in close proximity to a water source such as a stream, lake or bog is well established. The limestone geology of the region has had a profound influence on the local hydrology. The Cashel region is characterised by a number of surface water courses, ponds,

sluggaire/swallow holes, seasonally flooded wetlands and peat filled basins. All of these features have been extensively modified through drainage and land reclamation. Both Site 30iii and Sites 22–24 are located in low-lying areas with numerous ponds, peat-filled basins and streams.

The arrangement of an un-lined sub-rectangular trough situated beneath a mound of heat-shattered stone identified on Site 24 has strong parallels with many excavated examples throughout Ireland. One such similar site was excavated at Lissava, Co. Tipperary on the route of the N8 Cashel to Mitchelstown road scheme (McQuade *et al* 2010, 95–6). At this site a sub-rectangular trough dated to the Middle Bronze Age (1769–1540 cal. BC) was situated beneath the southern edge of a mound of heat-shattered stones. Oak charcoal from the *fulacht fia* at Site 24 was dated to the early medieval period, cal. AD 780–971 (UBA-13759). This date range, even considering the “old wood” effect experienced with using oak wood, is outside of the main period of use of *fulachtaí fia* which is firmly within the Bronze Age. It is possible that the trough and mound are much earlier in date than the radiocarbon date from the mound indicates. It is likely the mound was re-used/disturbed in the Early Medieval period, and the radiocarbon date relates to this later period. An example of such a *fulacht fia* being re-used in the Early Medieval period is known from Ballymackeanmore, Co. Limerick where heat-shattered stones were dated to 2461–2204 cal. BC, and a later intrusive pit was dated to cal. AD 790–990 (Grogan *et al* 2007, 250–1). See Hawkes, 2012 for an analysis of other medieval dates from *fulachtaí fia*.

The location of both the Site 24 and the Lissava *fulachtaí fia* in low-lying ground close to a watercourse are typical of the monument. However, the spatial arrangement of a sub-rectangular trough with an associated mound located to the north, hints at a similar pattern of activity being carried out at both sites. The morphology of the Site 24 *fulacht fia* suggests that it dates to the prehistoric period, with a later intrusive episode of burning dating to the early medieval period similar to what occurred at Ballymackeanmore. The mound of heat-shattered stones on Site 24 would have provided a stable and relatively dry site for activities taking place adjacent to the stream in this later period. A similar scenario occurred at Tullahedy where *fulachtaí fia* mounds were utilised as dry-areas adjacent to bog in the early medieval period (O’Brien 2001, 179–180).

Post medieval features

The post-medieval remains from the site comprised of field boundaries and drainage features. The low-lying waterlogged nature of the land in George's-Land suggests that it was marginal and relatively unproductive land. It is likely to have been unsuitable for crop cultivation and

would have likely been utilised as grazing land in the drier months of the year: in the 1650's the area is described as 'Grazing Land', perhaps fit for only sheep (see Figure i above). Several field boundaries were located in this area. It is noted that the field boundaries are often located adjacent and run parallel to streams and waterlogged areas. It is likely that the watercourses formed pre-existing field divisions which were formalised and enhanced by the construction of earthen banks running alongside the water. The townland boundaries in this area were partly defined by the watercourses. On Site 24 the western limit of the site was bounded by a waterfilled ditch [18] situated adjacent to an earthen bank defining an extant field boundary. The waterfilled ditch may represent a pre-existing watercourse that was canalised and incorporated into the field boundary during its construction. The siting of the *fulacht fia* adjacent to this possible paleochannel suggests that the watercourse at this location is of considerable antiquity. Attempts were made to improve the productivity and usefulness of the land through drainage and land reclamation. One of the ponds was infilled and several land drains were laid across the field, evidence of which was found through-out the excavation. The relatively modern date of some of this work is confirmed by the presence of a plastic waterpipe at the base of one of the features.

Undated features

The cluster of undated features located on the higher ground at the west of the site are of unknown date and function. The surface morphology of these features includes circular and oval subsoil-cut pits and post-hole type features. When the location, layout and fill characteristics are considered these features are thought to be archaeological and perhaps structural in nature. The features were preserved *in situ*, covered in terram and topsoil. The following photographs were taken in the late 2000's and appear to show a levelled enclosure, directly west of where the group of undated features was identified. The location of this potential site has been notified to the statutory authorities.



Plate 18: Selection of worked stones found from annual field walking beside Sites 22–24 in George's-Land



Plate 19: Ploughed-out possible enclosure with Sites 22–24 at left, facing south-west



Plate 20: Ploughed-out possible enclosure with Site 24 at right, facing north-west

CONCLUSION

All excavation works have finished in association with the N8 Cashel Bypass & N74 Link Road. The excavation undertaken on Site 24 (03E0507) identified no further archaeological activity and following the recording and excavation the road was built over the portion of the site not preserved *in situ*. The radiocarbon determination of cal. AD 780–971 (UBA-13759) retrieved from *fulacht fia* (01) date is considered intrusive, representing activity perhaps associated with agricultural practices from the nearby early medieval enclosure sites at Boscabell Site 20 (c. 300 m to the north-east) and at Hughes’-Lot East Sites 25ii & 25iv (less than 1 km to the south). The *fulacht fia* was undoubtedly associated with the *fulachtaí fia* found nearby on Site 23, dated to the Early Bronze Age period and the findings here form part of a wider landscape of prehistoric and early medieval activity in this area (see Site 23 Final Report). The final activity on site related to early modern agricultural improvements and the in-filling of the hollow.

RECOMMENDATIONS

As the features at the north-west corner of the site were preserved *in situ* any future developments in the field should be cognisant of these discoveries. It is highly likely that associated archaeological features survive nearby in the field and should the field be subject to development, it is recommended that advanced archaeological investigations are undertaken as a condition of planning approval is granted. Annual field walking has identified a possible ploughed-out enclosure plus yielded a variety of worked stones (see Site 22 Final Report).

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Appendix 1 Context Register

Context No.	Type	Description
(01)	Deposit	<i>Fulacht</i> material associated with trough [07]. Composed of 70 % heat-shattered stones, predominantly sandstone, in a black sandy silt with frequent charcoal inclusions. Above (02), (03) & (09). Measured <i>c.</i> 11 m long (N/S) by 6 m wide & 0.18 m deep. Cut by drain [14]. Oak charcoal was dated to cal. AD 780–971
[02] = [409] on Site 23	Cut	Hollow extending from site 24 into site 23 & beyond the E limit of excavation for an unknown distance. Measured <i>c.</i> 27 m long (E/W) by 0.9 m wide & 1.3 m deep. Contained a number of peat & clay layers
(03)	Deposit	Grey-yellow clayey silt with white grit & brown organic flecks. Re-deposited natural & preserved vegetation. Below (01). Extents unknown, measured 0.18 m deep
(04)	Deposit	Yellow clayey silt with frequent heat-shattered stones. Measured <i>c.</i> 5 m long (E/W) by 2.76 m wide & 0.09 m deep. Above (01) & (05). Modern farming disturbance
(05)	Deposit	Grey-blue clayey silt deposit. Measured <i>c.</i> 1.4 m long by 0.4 m wide & 0.14 m deep. Above (06). Modern farming disturbance
(06)	Deposit	Yellow silty clay with frequent heat-shattered stones. Measured <i>c.</i> 1.5 m (N/S) long by 0.5 m wide & 0.14 m deep. Modern farming disturbance
[07]	Cut	Sub-rectangular trough, sharp breaks of slope top, steep near vertical sides, breaking sharply to a flat slightly concave base. Measured 3.4 m long (N/S) by 1.6 m wide & 0.75 m deep. Filled by (10), (11), (09) & (08)
(08)	Fill	Upper fill of trough [07]. Grey-yellow clayey silt with occasional charcoal & heat-shattered stones. Cut by drain [12]. Above (09)
(09)	Fill	Secondary fill of trough [07]. Dark brown peat with timber & branch roundwoods. Measured 2.2 m long (N/S) by 1.6 m wide & 0.2 m deep. Above (10) & (11)
(10)	Fill	Basal fill of trough [07]. Mottled dark brown peat & clay, with timbers & branch roundwoods. Measured 3.4 m long (N/S) by 1.6 m wide & 0.38 m deep. Below (11)
(11)	Fill	Primary fill of trough [07]. Pale yellow fine silt with dark brown clay inclusions throughout & gritty sand inclusions confined to the base. Found at S side of trough only. Measured 0.5 m long (N/S) by 0.3 m wide & 0.3 m deep. Above (10).
[12]	Cut	Modern drain with plastic pipe at the base. Measured <i>c.</i> 100 m long by 0.1 m wide & 0.14 m deep. Cuts (08). Filled by (13)
(13)	Fill	Fill of drain [12]. Mid brown clay with frequent stones
[14]	Cut	Field drain. Measured <i>c.</i> 100 m long by 0.46 m wide & 0.14 m wide. Cuts [01]. Filled by (15)
(15)	Fill	Fill of drain [14]. Mid brown clay with frequent stones
(16)	Deposit	Pale yellow grey clay. Modern farming disturbance
(17)	Deposit	Subsoil. Compact blue-grey marl with occasional stones
[18]	Cut	N/S orientated field boundary ditch. Filled by (19). Measured <i>c.</i> 200 m long by 1.5 m wide & 0.5 m deep. Not excavated. Only the base of this ditch which was partly removed during topsoil clearance is depicted on the site plan
(19)	Deposit	Clay & stone field boundary bank of ditch beside ditch [18]. Not investigated
(20)	Deposit	Topsoil. Brown silty clay measuring 0.1–0.15 m deep
21–221		Not used
[222]	Cut	Irregular, oval pit. Measured 2.17 m long (N/S) by 1.4 m wide. Filled by (233). Not excavated
[223]	Cut	Oval pit. Measured 0.73 m long (N/S) by 0.56 m wide. Filled by (232). Not excavated
[224]	Cut	Irregular linear with rounded projections at N. Measured 11.77 m long by 1.14 m wide. The NW projection measured 1.34 m long (N/S) by 1.09 m wide; the NE projection measured 0.67 m long (N/S) by 0.67 m wide. Filled by (231). Not excavated
[225]	Cut	Circular stakehole, possible. Measured 0.22 m in diameter. Filled by (226). Not excavated
(226)	Fill	Fill of stakehole [225]. Dark blackish-brown silty clay.
[227]	Cut	Linear orientated WNW. Undulating slightly along its length with narrow, rounded terminals. Measured <i>c.</i> 4.2 m x 0.3–0.5 m wide. Filled by (229). Not excavated
[228]	Cut	Linear orientated WNW, slightly curvilinear along its length. Measured <i>c.</i> 3.8 m x 0.3–0.4 m wide. Filled by (230). Not excavated
(229)	Fill	Fill of linear [227]. Dark blackish-brown silty clay, small & medium stones at the surface
(230)	Fill	Fill of linear [228]. Dark blackish-brown silty clay, small & medium stones at the

		surface
(231)	Fill	Fill of linear [224]. Dark blackish-brown silty clay, small stones at the surface
(232)	Fill	Fill of possible pit [223]. Dark blackish-brown silty clay, small stones at the surface
(233)	Fill	Fill of possible pit [222]. Dark blackish-brown silty clay, small & medium stones at the surface

Appendix 2 Finds Register

There were no finds recorded from the excavation.

Appendix 3 Drawing Register

Sheet No.	Scale	Description
1	1:10	West facing section of burnt mound (01)
1	1:20	West facing section of burnt mound (01) & [07]
2	1:10	West facing section of burnt mound (01) (inked version)
2	1:20	West facing section of burnt mound (01) & [07] (inked version)
3	1:20	North facing section of burnt mound (01)

Appendix 4 Sample Register

Sample No.	Context No.	Description
1	(01)	<i>Fulacht fiadh</i> mound
2	(09)	Middle fill of trough [07]
3	(10)	Basal fill of trough [07]
4	(11)	Middle fill of trough [07]

Appendix 5 Photography Register

There were 563 digital images recorded from the excavations on adjoining Sites 23 and 24, and these have been retained in the archives.

Appendix 6

Environmental Report

Scheme – N8 Cashel Bypass & N74 Link Road

Site Name- Site 24 George's Land

Excavation number –03E0507

County – Tipperary

Job code – ENV/083

Author- Susan Lyons

Date – 25/05/10

Plant Macrofossil Remains & Charcoal Report

Contents

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- 3 Methodology
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Tables

Table 1 Composition of plant remains from Site 24, George's Land (03E0507)

Table 2 Charcoal Identifications from Site 24, George's Land (03E0507)

1 INTRODUCTION

This report discusses the plant macrofossil remains and charcoal remains recorded from the soil samples associated with the archaeological excavations at Site 24 George's Land (03E0507). 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 24 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 03E0507. Site 24 contained a large *fulachta fiadh* and associated trough, a pit, a posthole and a stake-hole and a post medieval field boundary and two post medieval drainage ditches. It partially sealed the trough (24007), but truncated by a post medieval drain at its eastern side (McKinstry, 2009)

Four flot samples from fulacht material (**C1**) and trough **C7 (C9, C10 and C11)** were analysed for plant macrofossils and charcoal remains. One radiocarbon date was obtained for the site:

Context No.	Sample No.	Material type	C14 date (2 sigma Cal)
1	1	Oak charcoal	Cal. AD 780–971 (UBA-13759)

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.

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)

3.1.2 Quantification and identification of plant remains

The flint 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

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 24 are presented in **Table 1**.

The results of the charcoal identifications are presented in **Table 2**.

Charcoal – Fragmented charcoal was recovered in low concentrations from fulacht material **C1**. Just four willow (*Salix* sp.) charcoal identifications were recorded from **C1**.

Uncarbonized wild taxa – The uncharred seeds of buttercup (*Ranunculus* sp.), bramble/blackberry (*Rubus* sp.), clover (*Trifolium* sp.), sedge (*Carex* sp.), dock (*Rumex* sp.), goosefoot (*Chenopodium* sp.) and cinquefoil (*Potentilla* sp.) were recorded in varying concentrations from trough **C7 (C9, C10 and C11)**.

Uncarbonized plant remains – A high concentration of uncarbonized plant fibres and root material were recorded from all **C9, C10 and C11**. This material was very dried out and too fibrous to be identified to any species.

5 DISCUSSION

The samples recorded from Site 24 did not contain any other botanical remains associated with domestic or occupational activity. While charcoal is a common occurrence from burnt mound/*fulachta fiadh* sites, fulacht material (**C1**) was the only feature to contain any charcoal remains. Other plant remains such as cereals and wild taxa are extremely rare from these site types (O'Neill, 2000), however when they are recovered they are recorded in very low numbers and usually interpreted as residual material redistributed across the site from another source.

The presence of uncarbonized plant fibres and wild taxa within the samples may represent what were once waterlogged or peaty deposits. The presence of buttercup, dock and clover are indicative of open grassland and disturbed areas, while brambles reflect scrubby hedgerows and sedge more heath environments. These species may have been brought to the site in peat deposits, which would have

been used as a form of fuel or insulation within the trough. It is also possible that these plant remains entered this open feature as a result of natural re-deposition over time.

Just four willow (*Salix* sp.) identifications were recorded from fulacht material (**C1**). Willow was the only wood species recorded from (**C1**). There are a number of different species of willow which cannot be differentiated through wood anatomy. They grow rapidly, and can be easily propagated from cuttings. General comments only about the genus can be made, as there are different varieties of it. They are not naturally a woodland species, although shrubby growth may occur under light woodland cover. All willows appear to favour wet conditions, and it may be a pioneer species on wet soils. The use of willow depends on the species concerned, for some grow as shrubs and others as trees, and a species may be particularly suited to some purpose. In general, the flexibility of willow shoots has led to coppicing or pollarding to produce the raw materials for baskets, frames, hurdling etc. (Orme & Coles, 1985). The main Irish native willows are grey willow (*Salix cinera*), goat willow (*Salix caprea*) and eared willow (*Salix aurita*).

It is expected that species such as willow grew close to *fulacht fiadh* sites as these site types were usually constructed close to wet or marshy ground (Waddell, 1998, 174). While willow certainly represent some of the fuel used in **C1**, it is difficult based on such a small charcoal assemblage to make any viable interpretation of the material.

6 Conclusions

The analysis of the plant remains and wood charcoal from fulacht material (**C1**) and trough **C7** (**C9**, **C10** and **C11**) at Site 24, George's Land 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 potentially waterlogged wild taxa many reflect the remains of peat deposits or plants which grew close to trough **C7** and entered this feature inadvertently over time. The presence of willow 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.

7 Recommendations

1. There is no further identification work required on these samples from Site 24, George's Land. 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 24 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 24, George's Land (03E0507)

Context number	Sample number	Flot volume (grams)	Context description	Wood charcoal	Wood fibres	Uncarbonized wild taxa	Comments
1	1	0.7 grams	Fulacht/Deposit of charcoal and heat-shattered stones	+			
9	2	32.3 grams	Middle peaty fill of pit/trough C7, which contained timbers			++++	<i>Ranunculus</i> sp. ++++ <i>Carex</i> sp. +++ <i>Rumex</i> sp. +
10	3	4.2 grams	Basal clay/peat mix fill of pit/trough C7			+++	<i>Rubus</i> sp. ++ <i>Ranunculus</i> sp. ++ <i>Carex</i> sp. + <i>Rumex</i> sp. +
11	4	3 grams	Middle silty clay fill of pit/trough C7		+++	++++	<i>Rubus</i> sp. ++++ <i>Ranunculus</i> sp. ++ <i>Trifolium</i> sp. ++ <i>Chenopodium</i> sp. ++ <i>Potentilla</i> sp. ++ <i>Rumex</i> sp. +

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

Table 2. Charcoal Identifications from Site 24, George's Land (03E0507)

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
1	1	0.7 grams	Fulacht/Deposit of charcoal and heat-shattered stones	<i>Salix</i> sp. (willow)	4	0.4	2 - 3 rings		

**REPORT ON WOODEN REMAINS FROM
GEORGE'S-LAND TOWNLAND
CASHEL, CO. TIPPERARY
SITE 23 03E0508 &
SITE 24 03E0507**

ELLEN O'CARROLL

APRIL 2010

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1. Introduction

This report details an assemblage of wood recovered during excavations at George's-Land townland, Cashel, Co. Tipperary carried out as part of the N8 Cashel Bypass and N74 Link Road.

On Site 23 (03E0508) the timbers were found in association with heat-shattered stones (275) situated on the northern edge of a large peat-filled hollow [409]. On the southern side of the hollow two subsoil-cut troughs and *fulacht fia* (278) were discovered. Hazel (*Corylus avellana* sp) from one of the troughs was dated to 2006–1772 cal. BC (UBA-14365): the burnt stones of the *fulacht fia* itself was contemporary, with ash (*Fraxinus excelsior* sp) charcoal dated to 2007–1775 cal. BC (UBA-14367). A polished stone axe was also found from these burnt stones.

On Site 24 (03E0507) to the immediate west, *fulacht fia* (01) was found, on the edge of the same hollow. A trough beneath the southern edge of the *fulacht fia* contained wooden timbers. A radiocarbon date from oak (*Quercus* sp) charcoal of cal. AD 780–971 (UBA-13759) from the mound is considered intrusive and the trough most likely was contemporary with the adjacent Early Bronze Age activity.

2. The Wood Assemblage

Seven pieces of wood were recovered during the excavations at George's-Land and all were examined for this report (**Table 1**). The samples ranged in size from a twig of L1m; Diam. 0.22m to L 0.28m; Diam. 0.036m. Four of the wood samples were recorded as being in a moderate condition and three were in poor condition (**Table 2**).

3. Recording and Species Identification Methodology

The wooden assemblage from George's-Land was sampled in 2003 by the excavation crew and no wood recording sheets were used on site. They appeared to have been wrapped in their entirety and labelled accordingly. The wood was then brought to the offices of the author of this report and each sample was unwrapped, washed, identified to species and recorded on wood working sheets.

The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). Thin slices were taken from the transversal, tangential and longitudinal sections of each piece of wood and sampled using a razor blade. These slices were then mounted on a slide and glycerine was painted onto the wood to aid identification. Each slide was then examined under a microscope at magnifications of 10x to 450x. By close examination of the microanatomical features of the samples, the species was determined. The diagnostic features used for the identification of wood are micro-structural characteristics such as the vessels and their arrangement, the size and arrangement of rays, vessel pit arrangement and also the type of perforation plates.

Where appropriate, the wood samples were measured and described in terms of their function and wood technology. This included point types, split types and individual toolmarks such as facets (individual tool marks) and tool signatures. Annual tree rings were counted where possible, partially under a microscope and partially by eye (therefore it is only an approximate age). The annual tree ring counts for the split timbers do not give a real estimate of the age of the parent tree when it was cut down, as splitting implies division and therefore only partial remains of the parent tree will survive unless

sapwood/bark to the pith survive. Average growth rates were also established. A fast growth rate is around 4mm per year. As different factors (weather and soil conditions) determine growth rates of trees and growth rates vary across each sample average growth rates were calculated for each sample. The growth rates for some samples varied significantly therefore these samples were classified as slow to moderate, moderate to fast and so on (see **Table 2**).

Table 1: Overview of examined samples

Element Type	No. of Records	Species identified
Unworked wood/possibly natural tree timbers	6	Oak
Brushwood (under 6cm in diameter)	1	Alder

4. Results

The wood examined for this report is discussed below based on the classifications outlined below in **Table 1** above. Discussion of woodworking evidence is confined to samples examined by the author. It should be noted that in the case of some very poorly preserved samples it was not possible to determine measurements and ring counts and only taxa type could be ascertained.

Unworked timbers / wood

Six samples in total from both excavations were recorded as being gnarly oak (*Quercus* sp) timbers and resembled natural timbers which may have grown in the area prior to it being inundated with peat (Plates 1 and 2). T1–5 came from (297) on Site 23 - additional timbers T6–9 from (297) were too fragmentary for any analysis. T61 came from the basal fill (10) of trough [07] on Site 24. No woodworking evidence was recorded on any of the analysed timbers.



Plate 1: Site 23 T1-5 in situ facing east



Plate 2: Site 23 Eastern end of T4 & T5 in situ



Plate 3: Site 23 Close-up of T4 in situ



Plate 4: Site 23 Close-up of end of T4 in situ



Plate 5: Site 23 T9 in situ facing south-east

Brushwood

T60 came from the secondary fill (09) of trough [07] on Site 24 and consisted of a brushwood timber which may once have been pointed but the sample, at the time of recording by the author, was too degraded to determine whether there was evidence for any detailed woodworking. It was identified as alder and was 0.28cm in length and 0.26m in diameter

5. Discussion

The worked wood assemblage from George's-Land was very small and in poor condition. There was no detailed woodworking evidence on any of the timbers although Timber Element 6 from Site 24 may have originally been pointed.

Two taxa types were identified from the wood assemblage and these were oak (*Quercus* sp) and alder (*Alnus glutinosa*) in order of representation (**Tables 1 and 2**). The samples were too gnarled and degraded to count their annual tree rings.

The oak wood was very hard and had the appearance and structure of natural wood. Natural oak wood is commonly found close to *fulachtaí fia*, as seen at Caheraphuca and Srangallon in Co. Clare (O Carroll 2008a) and also at Cormacmacmullan & Drumalure in Co. Cavan (O Carroll 2008.). The oak wood identified from George's Land may have belonged to an oak wood which grew in the area in the past. A date for this oak wood is unclear but other dated examples of bog oak have shown that they range between 2,000 and 6,000 years old. Trees need nutrients to grow so whenever trees are found in a peatland/wetland/fen environment this means they must have been in contact with nutrient-rich water or underlying mineral-rich soil. The oak trees probably established themselves on the mineral soils and then when the water table began to rise and the peat layers began to develop the trees may have died and subsequently became preserved in the peat layers.

Sessile oak (*Quercus petraea*) and pedunculate oak (*Quercus robur*) are both native and common in Ireland and the wood of these species can not be differentiated on the basis of their anatomical characteristics. Pedunculate oak is found growing in areas of heavy clays and loams, particularly where the soil is alkaline. Sessile oak is found on acid soils and often in pure stands. Unlike pedunculate oak, it thrives on well-drained soils but is tolerant of flooding (Beckett 1979, 40-41). Both species of oak grow to be very large trees (30-40m high). Oak also has unique properties of great durability and strength and was frequently used in the manufacture of posts and wooden planks. Oak was one of the most prevalent trees growing in Ireland throughout the medieval period. The anglicised form of the Irish name for oak *derry* is included in many townland names today. Out of 62,000 townlands in Ireland about 1,600 contain the word *derry* in one form or another, either as a prefix or suffix (Mc Cracken 1971, 23). Oak is a dense wood and is very suitable for charcoal production. It also makes good firewood when dried and will grow in wetland areas when conditions are dry.

Alder is a widespread native tree and occupies wet habitats along stream and river banks. Though it thrives where its main roots are just above the water, alder is also tolerant of stagnant water. The wood of the tree is white when growing, but when it is cut, turns red. It is a very durable wood and was specially selected for boat-making and for dug-out canoes, as it is an easily worked and split timber and therefore quite commonly manufactured into planks. Alder was used by the Romans for water-pipes, bridges and as a revetting timber for riverbanks. It loses about a third of its weight and a twelfth of its bulk in drying, but does not warp, so that it is suitable for wood-turning and is a common timber in barrel- and wheel-making. According to MacCoitir (2006, 38), in folklore, alder was associated with kingship, war and death. Alder has a lower calorific value than other woods, but for this reason, is useful where a slow heat is required. Because of its almost waterproof nature, wood and charcoal analysis has shown that alder wood was used to line troughs associated with burnt spread/*fulachtaí fia* sites. A large alder trunk was used to line the base of the trough associated with a *fulacht fia* dated to the Middle Bronze Age at Ballycorrick, Co. Clare (02E1186; O'Donnell 2005).

6. Conclusions

The remains of three *fulachtaí fia* were found on the edge of a large, peat-filled hollow [409], that once would have held water. On Site 23 *fulachtaí fia* (275) and (278) comprised of heat shattered stones and charcoal on the northern and southern edge of the hollow. An adjacent peat layer (296) was enriched with charcoal and heat shattered stones, thought to have been displaced from these nearby features. Hazel (*Corylus avellana* sp) from one of the troughs beneath (278) was dated to 2006–1772 cal. BC (UBA-14365): the burnt stones of the *fulacht fia* itself was contemporary, with ash (*Fraxinus excelsior* sp) charcoal dated to 2007–1775 cal. BC (UBA-14367). A polished stone axe was also found from these burnt stones. A number of large oak timbers (297, T1–5) were situated at the northern edge of the hollow, close to *fulacht fia* (275). The timbers, although unworked, are thought to have been deliberately placed at this location. They are thought to represent the remains of a platform adjacent to the edge of the hollow.

On Site 24 (03E0507) to the immediate west, *fulacht fia* (01) was found on the north-western edge of the same hollow. A trough [07] beneath the southern edge of the *fulacht fia* contained wooden timbers. Unworked oak (T61) came from the basal fill (10) of trough [07]; alder brushwood (T60) which may once have been pointed, came from the secondary fill (09) of the same trough. Trough [07] was subsequently sealed by heat shattered stone and charcoal (01), from which a radiocarbon date from oak (*Quercus* sp) charcoal of cal. AD 780–971 (UBA-13759) is considered intrusive. The trough was most likely contemporary with the troughs on Site 23, dated to the Early Bronze Age period.

The wood types, consisting of oak with one sample of alder, are associated with primary woodlands and a wetland area. The oak wood points to the presence of primary oak woodlands in existence in the area of George's-Land prior to the construction of the *fulachtaí fia*. The wood assemblage from George's-Land provided no real evidence of the tools used on site although the alder brushwood may have originally been pointed and acted as a post in association with a possible platform. The platform may have been used to aid in the collection of water from the hollow. These sites were part of a wider Early Bronze Age activity around Cashel centred on utilising the resources around these hollows, which once held water.

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Plate 6: Oak timbers under excavation located above deposit (275), Site 23



Plate 7: Oak T4 during recording on Site 23

Table 2: Catalogue of wooden remains

Site	Context	Timber Element	Min. no. of fragments	Facets	Length	Diameter	Artefact Type	Preservation	Identifications	Ring count	Woodworking	Comment	Context type
23	297	T1	N K		32cm	16cm	Unworked timber	Poor - Very fragile.	Oak			Natural oak wood	Natural timbers
23	297	T2	2		85cm	21cm	Unworked timber	Moderate	Oak			Natural oak wood	Natural timbers
23	297	T3	1		53cm	18cm	Unworked timber	Moderate	Oak			Natural oak wood	Natural timbers
23	297	T4			68cm	22cm	Unworked timber	Poor - Very fragile.	Oak	Indt	Large gnarly oak wood	Natural oak wood	Natural timbers
23	297	T5	1		50cm	17cm	Unworked timber	Moderate	Oak			Natural oak wood	Natural timbers
24	09	T60	2		28cm	3.6cm	Brushwood	Poor and dried out	Alder			Possibly once pointed but now too degraded to tell	Deposit
24	10	T61			1m	25cm x 11cm	Plank or post fragment with tapered end	Moderate	Oak wood	Indt	No	Natural oak wood	Natural timbers

Appendix 8 Radiocarbon Date

UBANo	Sample ID	¹⁴ C Age ±	AMS δ ¹³ C	F14C	±	
UBA-13738	16 S6 16164	3865	30	-27.8	0.6181	0.0023
UBA-13742	19 S8 19079	2930	27	-27.3	0.6944	0.0023
UBA-13744	19 S30 19041	3059	28	-28.2	0.6833	0.0024
UBA-13750	20 S18 20143	3046	27	-26.4	0.6844	0.0023
UBA-13751	20 S23 20235	1381	26	-27.2	0.8420	0.0027
UBA-13752	23 S3 23212	2201	29	-27.9	0.7604	0.0027
UBA-13753	23 S4 23214	2492	21	-25.5	0.7333	0.0019
UBA-13754	23 S26 23319	3793	25	-22.7	0.6237	0.0020
UBA-13756	23 S8 23340	2328	28	-26.7	0.7484	0.0026
UBA-13757	23 S13 23280	3396	21	-26.0	0.6553	0.0017
UBA-13758	23 S48 23379	2793	21	-25.4	0.7063	0.0019
UBA-13759	24 S1 24001	1151	24	-28.7	0.8665	0.0026
UBA-13760	25iiS14 252375	2031	21	-25.5	0.7766	0.0020
UBA-13761	25iiS22 252384	1097	27	-28.6	0.8724	0.0029
UBA-13762	25iiS34 252402	1236	22	-23.0	0.8574	0.0024
UBA-13763	25iiS35 252402	1295	22	-28.5	0.8512	0.0023
UBA-13764	25iiS55 252580	2024	20	-30.2	0.7773	0.0020
UBA-13765	25ii147 25797	1192	24	-27.9	0.8621	0.0026
UBA-13766	25iiiS16 296	2276	29	-27.4	0.7532	0.0027
UBA-13767	25iiiS17 288	2425	20	-27.1	0.7395	0.0019
UBA-13768	25iiiS22 294	2221	45	-28.9	0.7584	0.0042
UBA-13769	25iiiS24 253	3602	25	-23.0	0.6387	0.0020
UBA-13770	25iiiS28 305	3608	21	-24.0	0.6381	0.0017
UBA-13771	25iiiS36 41	3571	24	-24.2	0.6411	0.0019

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Northern Ireland

Radiocarbon Date Certificate

Laboratory Identification: UBA-13759
Date of Measurement: 2010-06-08
Site: N8Cashel Bypass Site24 03E0507
Sample ID: 24 S1 24001
Material Dated: charcoal
Pretreatment: AAA
Submitted by: Graham Hull TVAS

¹⁴C Date: 1151±24

AMS δ¹³C: -28.7

Information about radiocarbon calibration

RADIOCARBON CALIBRATION PROGRAM*

CALIB REV6.0.0

Copyright 1986-2010 M Stuiver and PJ Reimer

*To be used in conjunction with:

Stuiver, M., and Reimer, P.J., 1993, Radiocarbon, 35, 215-230.

Annotated results (text) - -

Export file - c14res.csv

16 S6 1616

UBA-13738

Radiocarbon Age BP 3865 +/- 30

Calibration data set: intcal09.14c

% area enclosed cal AD age ranges

68.3 (1 sigma) cal BC 2456- 2419
2406- 2376
2351- 2289

95.4 (2 sigma) cal BC 2464- 2278
2251- 2229
2221- 2210

Reimer et al. 2009
relative area under
probability distribution

0.254

0.227

0.518

0.916

0.060

0.024

19 S8 190

UBA-13742

Radiocarbon Age BP 2930 +/- 27

Calibration data set: intcal09.14c

% area enclosed cal AD age ranges

68.3 (1 sigma) cal BC 1208- 1202
1195- 1140
1134- 1111
1103- 1081
1065- 1056

95.4 (2 sigma) cal BC 1258- 1232
1217- 1038
1034- 1028

Reimer et al. 2009
relative area under
probability distribution

0.036

0.518

0.224

0.157

0.065

0.067

0.926

0.007

19 S30 190

UBA-13744

Radiocarbon Age BP 3059 +/- 28

Calibration data set: intcal09.14c

% area enclosed cal AD age ranges

68.3 (1 sigma) cal BC 1388- 1305

95.4 (2 sigma) cal BC 1409- 1263

Reimer et al. 2009
relative area under
probability distribution

1.000

1.000

20 S18 201

UBA-13750

Radiocarbon Age BP 3046 +/- 27

Calibration data set: intcal09.14c

% area enclosed cal AD age ranges

68.3 (1 sigma) cal BC 1380- 1335
1323- 1290
1280- 1270

95.4 (2 sigma) cal BC 1403- 1258
1232- 1219

Reimer et al. 2009
relative area under
probability distribution

0.533

0.363

0.104

0.974

0.026

20 S23 202

UBA-13751

Radiocarbon Age BP 1381 +/- 26

Calibration data set: intcal09.14c

% area enclosed cal AD age ranges

68.3 (1 sigma) cal AD 642- 664

95.4 (2 sigma) cal AD 612- 673

Reimer et al. 2009
relative area under
probability distribution

1.000

1.000

23 S3 2321

UBA-13752

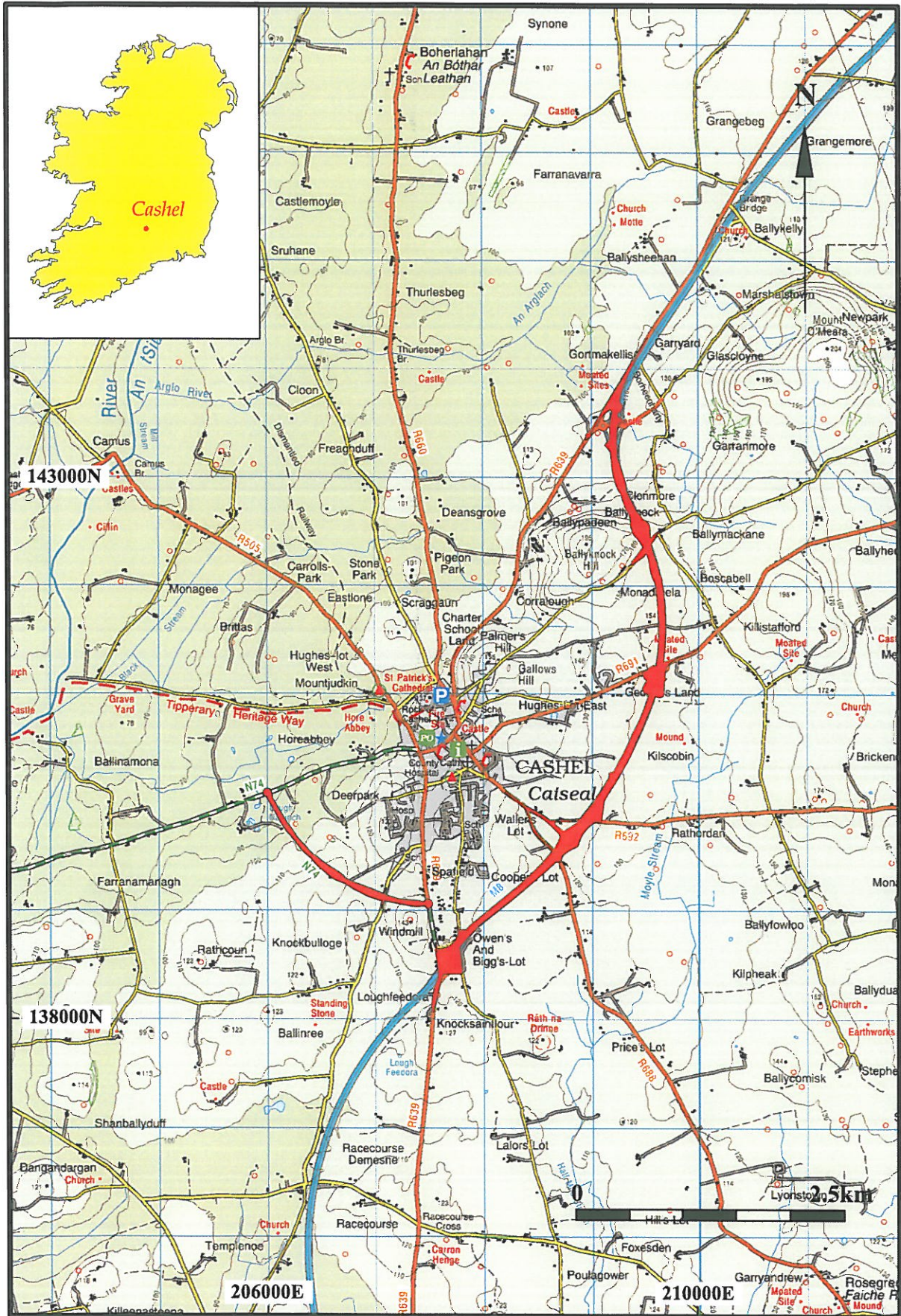
Radiocarbon Age BP 2201 +/- 29

Calibration data set: intcal09.14c

% area enclosed cal AD age ranges

Reimer et al. 2009
relative area under
probability distribution

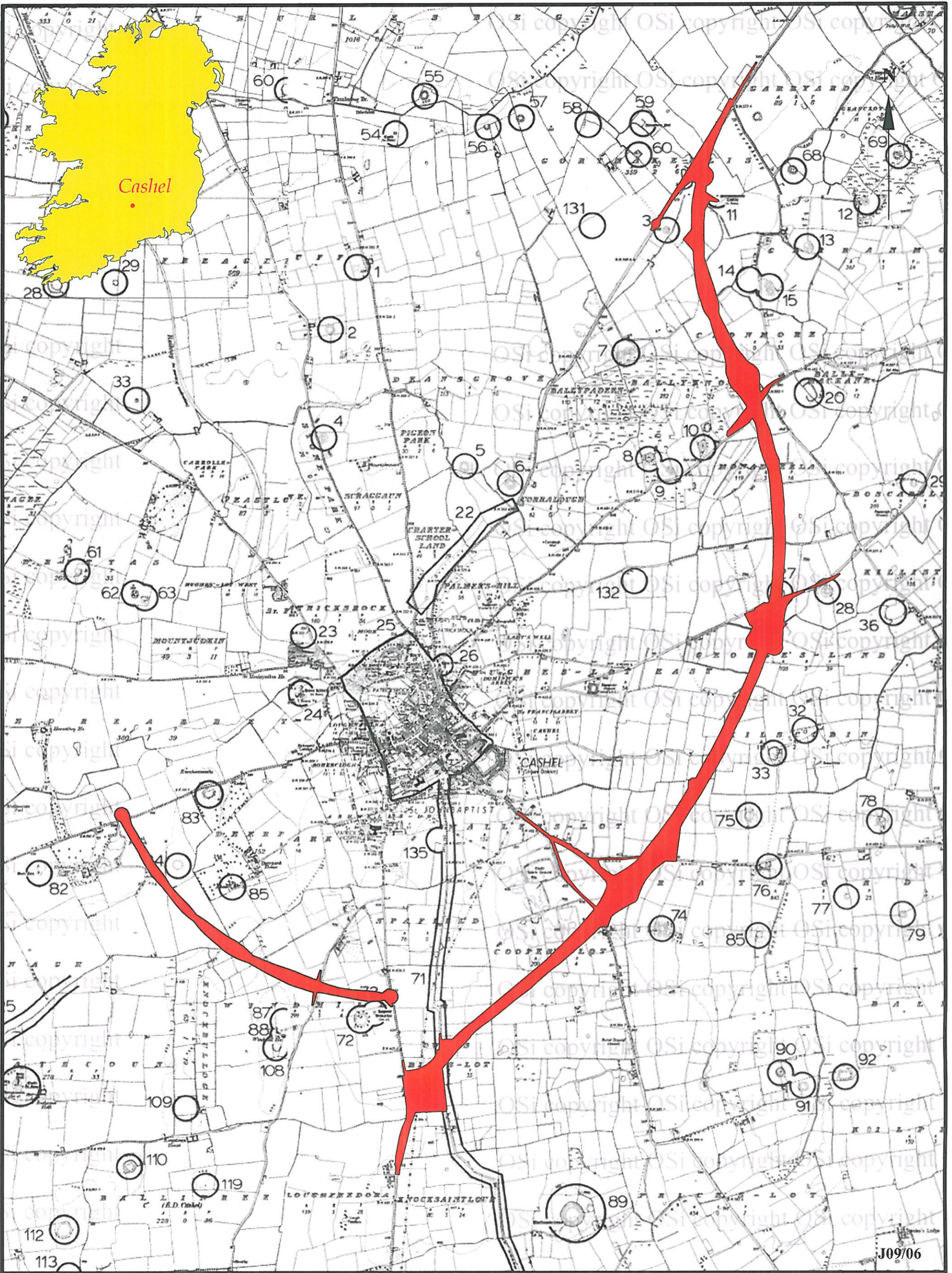
68.3 (1 sigma)	cal BC 357- 338	0.176
	330- 283	0.440
	257- 245	0.085
	235- 203	0.298
95.4 (2 sigma)	cal BC 374- 195	1.000
23 S4 2321		
UBA-13753		
Radiocarbon Age BP 2492 +/- 21		
Calibration data set: intcal09.14c		
% area enclosed	cal AD age ranges	# Reimer et al. 2009 relative area under probability distribution
68.3 (1 sigma)	cal BC 757- 740	0.128
	689- 684	0.045
	669- 663	0.045
	648- 549	0.782
95.4 (2 sigma)	cal BC 767- 538	1.000
23 S26 233		
UBA-13754		
Radiocarbon Age BP 3793 +/- 25		
Calibration data set: intcal09.14c		
% area enclosed	cal AD age ranges	# Reimer et al. 2009 relative area under probability distribution
68.3 (1 sigma)	cal BC 2283- 2248	0.472
	2233- 2198	0.401
	2163- 2152	0.127
95.4 (2 sigma)	cal BC 2294- 2187	0.784
	2184- 2140	0.216
23 S8 2334		
UBA-13756		
Radiocarbon Age BP 2328 +/- 28		
Calibration data set: intcal09.14c		
% area enclosed	cal AD age ranges	# Reimer et al. 2009 relative area under probability distribution
68.3 (1 sigma)	cal BC 404- 387	1.000
95.4 (2 sigma)	cal BC 485- 462	0.022
	450- 441	0.007
	417- 360	0.956
	274- 259	0.015
23 S13 232		
UBA-13757		
Radiocarbon Age BP 3396 +/- 21		
Calibration data set: intcal09.14c		
% area enclosed	cal AD age ranges	# Reimer et al. 2009 relative area under probability distribution
68.3 (1 sigma)	cal BC 1739- 1706	0.577
	1698- 1668	0.423
95.4 (2 sigma)	cal BC 1744- 1634	1.000
23 S48 233		
UBA-13758		
Radiocarbon Age BP 2793 +/- 21		
Calibration data set: intcal09.14c		
% area enclosed	cal AD age ranges	# Reimer et al. 2009 relative area under probability distribution
68.3 (1 sigma)	cal BC 976- 952	0.404
	946- 910	0.596
95.4 (2 sigma)	cal BC 1009- 896	1.000
24 S1 2400		
UBA-13759		
Radiocarbon Age BP 1151 +/- 24		
Calibration data set: intcal09.14c		
% area enclosed	cal AD age ranges	# Reimer et al. 2009 relative area under probability distribution
68.3 (1 sigma)	cal AD 830- 837	0.049
	868- 900	0.411
	917- 965	0.540
95.4 (2 sigma)	cal AD 780- 791	0.034
	806- 907	0.542
	911- 971	0.425



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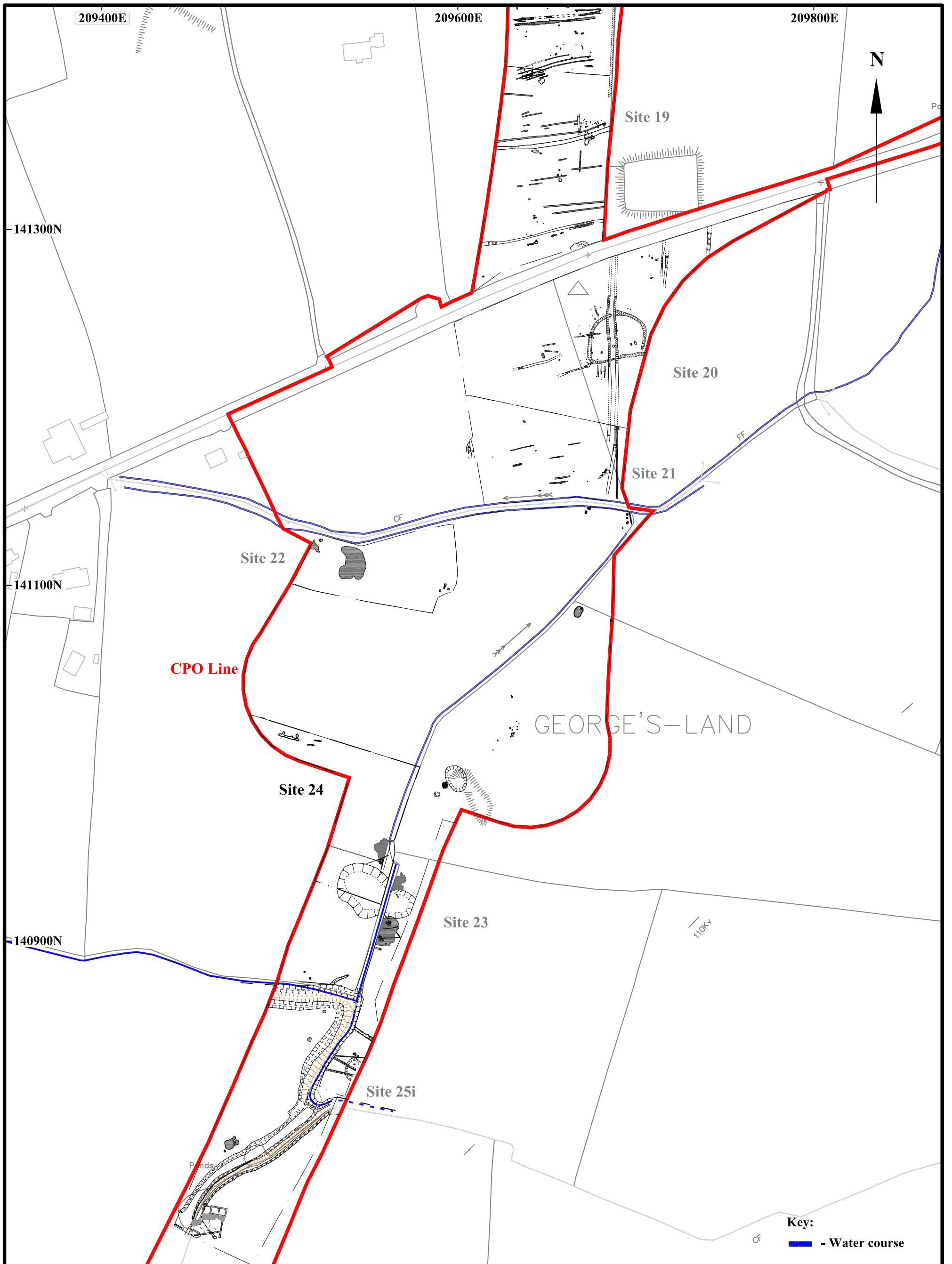
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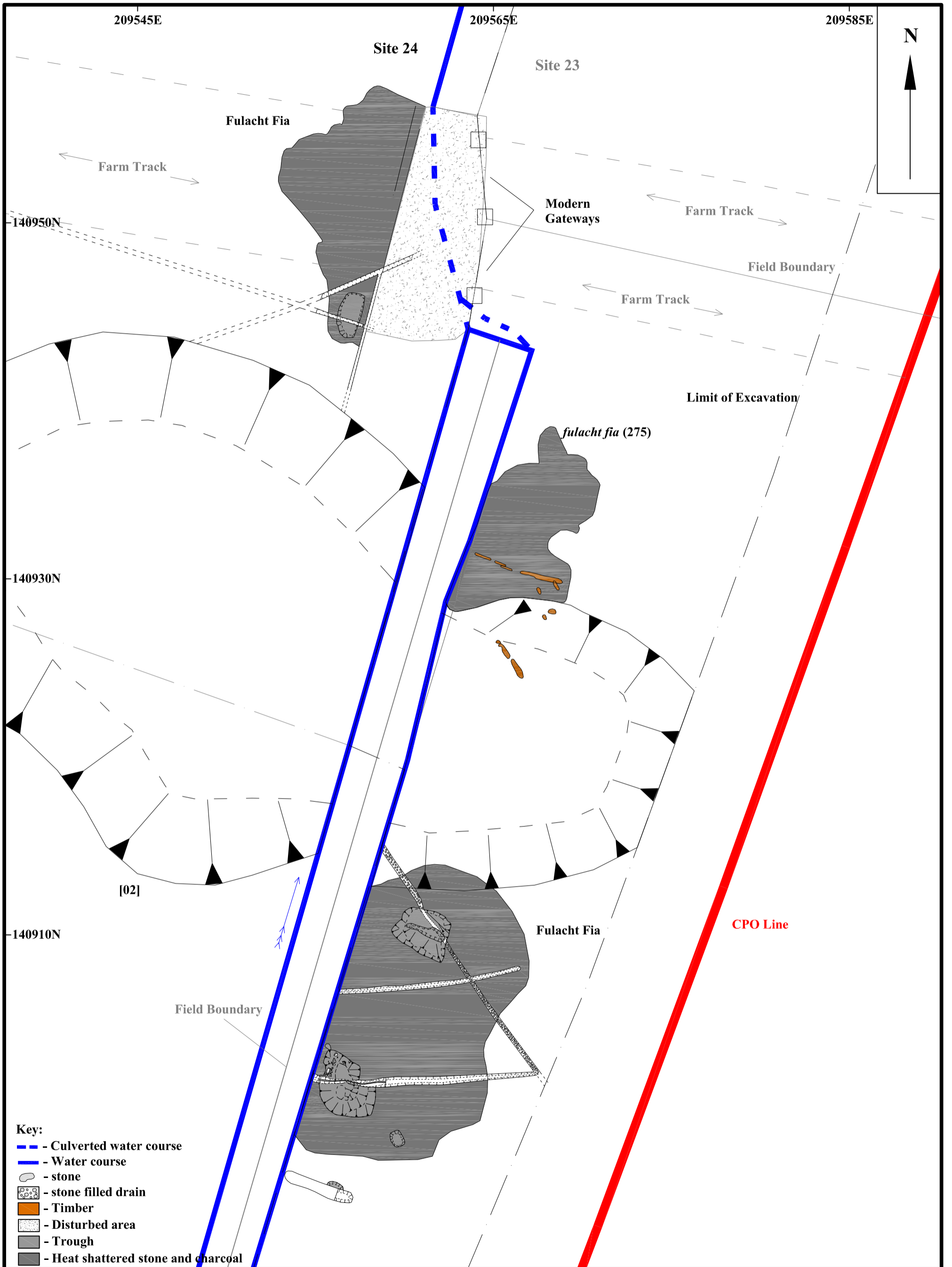
Based on RMP Map (1998) (SR) - sheet 52, 53, 60, 61, 68, 69.

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



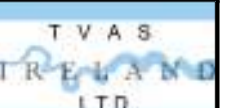
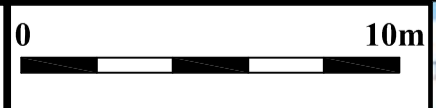


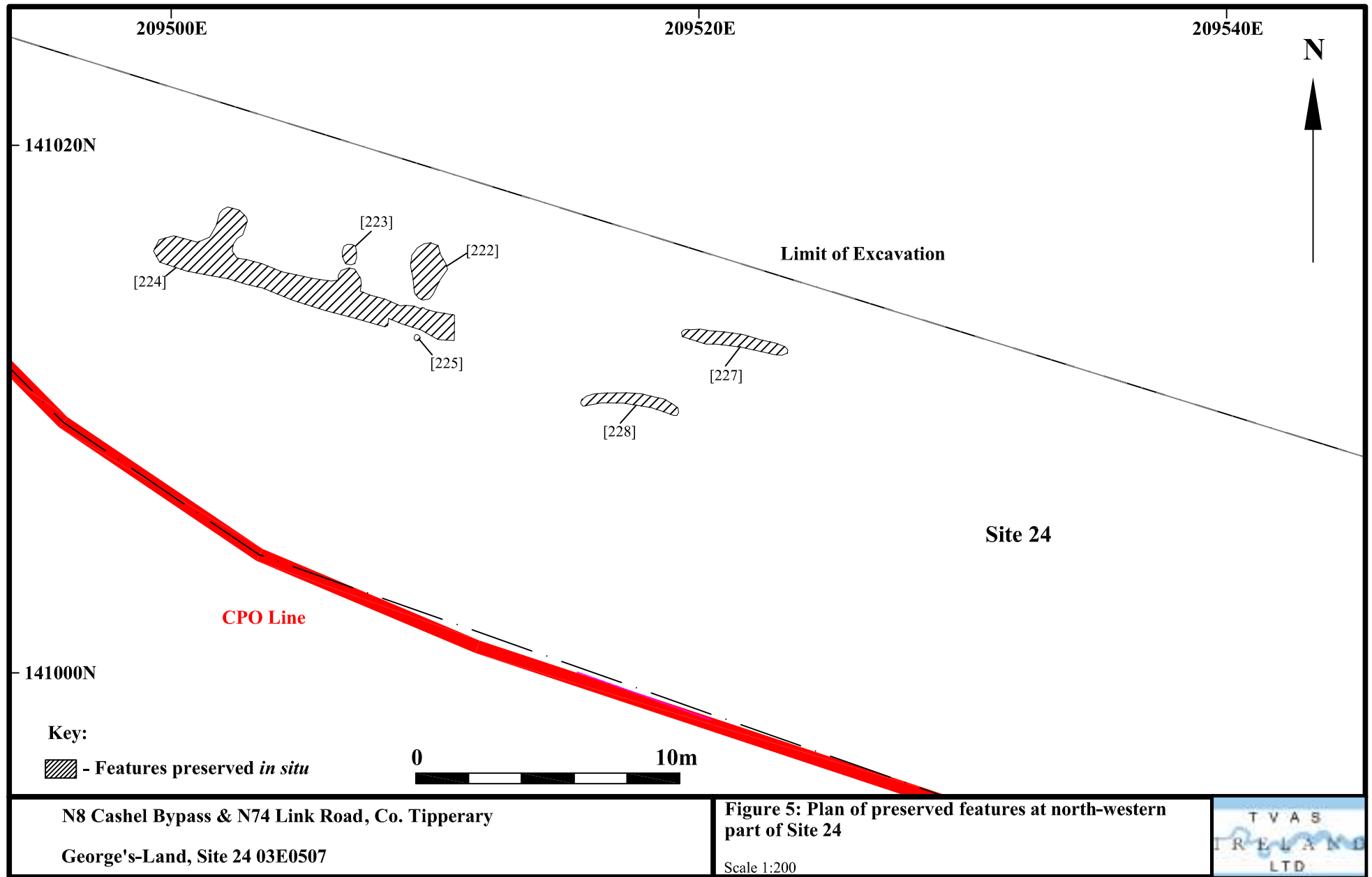
Key:
 - Water course



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George's-Land, Site 24 03E0507

Figure 4: Post-excavation plan of Fulachtai Fia, Sites 23 & 24
Scale 1:200





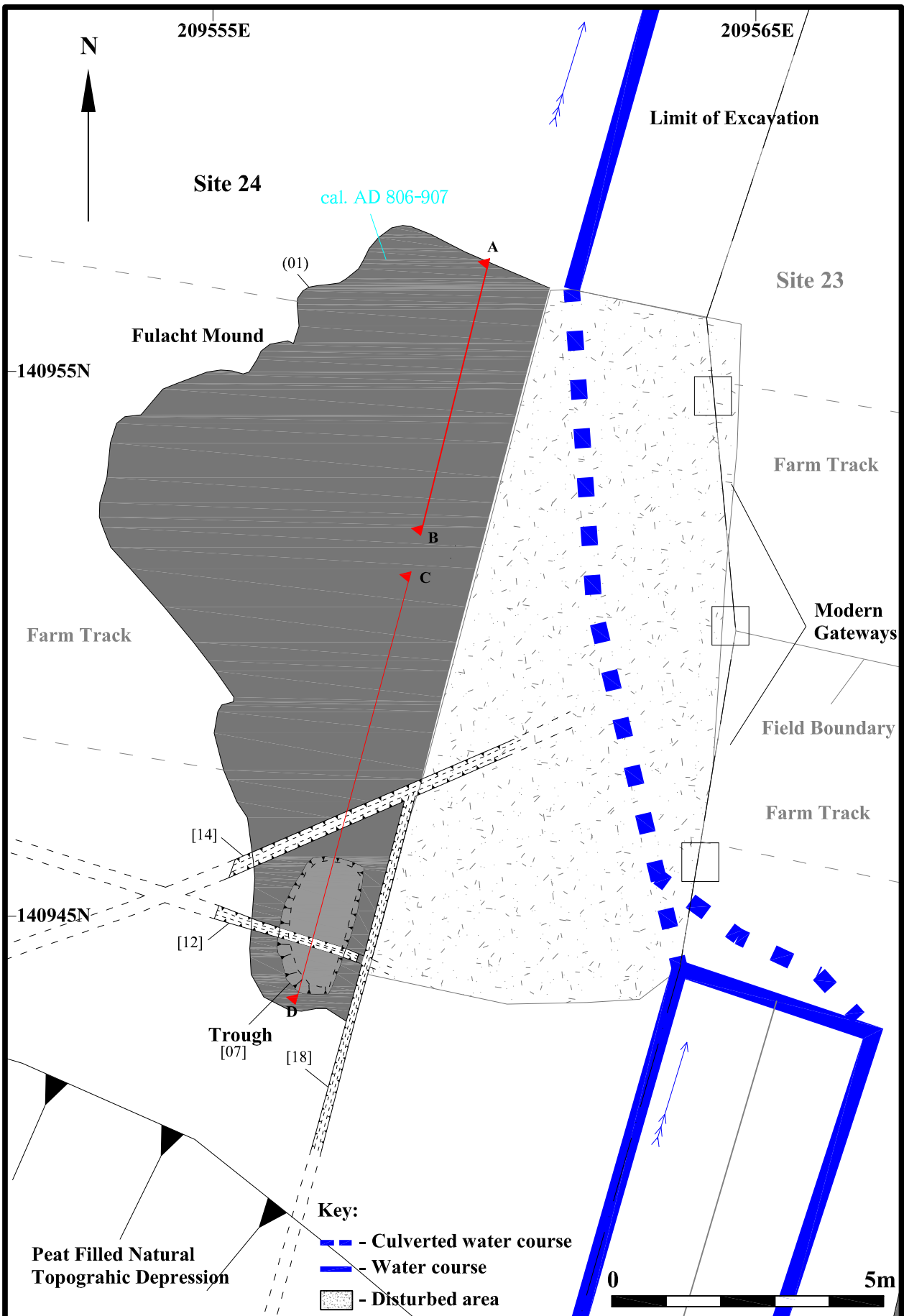
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George's-Land, Site 24 03E0507

Figure 5: Plan of preserved features at north-western part of Site 24

Scale 1:200



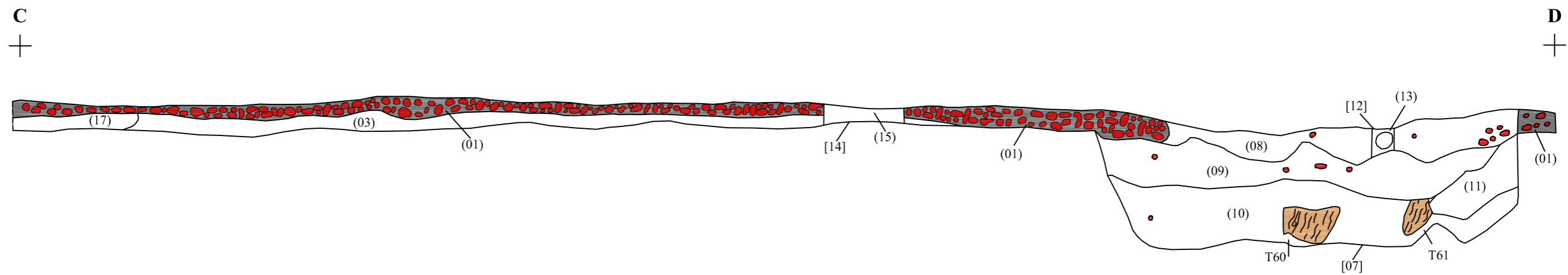
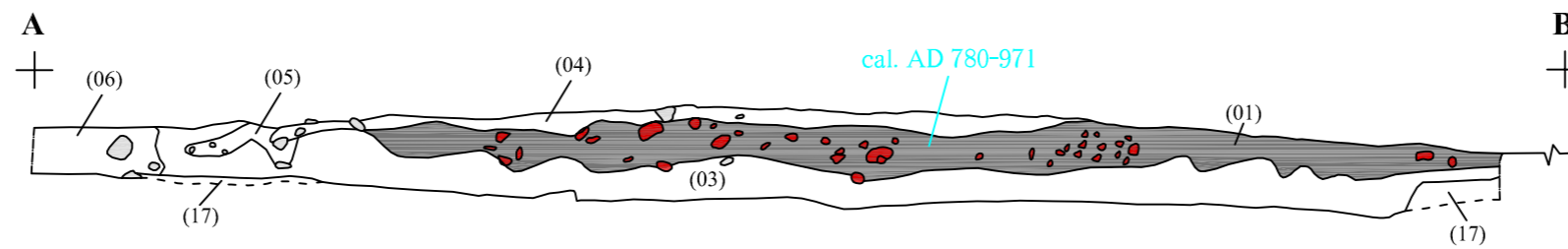


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



Figure 6: Post-excavation plan of *Fulacht Fia*

Scale 1:100





Key:

-  - wood
-  - charcoal and heat shattered stones
-  - heat shattered stones
-  - stone

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Figure 7: West facing section through *Fulacht Fia*, Site 24
Scale 1:25

