N8 Cashel Bypass & N74 Link Road

Phase 2 Archaeological Investigations

Licence Number:	03E0426
Site Name:	Site 19
RMP:	Zone of Potential of TS061-027
Townland:	Boscabell / *An Ráth Dhaingean*
Barony:	Middlethird
Parish:	St Patrick's Rock
County:	Tipperary
NGR:	209655 / 141350 (centre of site)
	209644 / 141290 (kiln 183)
OD Level:	144.70 m (centre of site)
Excavation Area:	7,700 m²
Fieldwork Date:	May–June 2003
Site Director:	John Kavanagh
Report Author:	Richard O'Brien
Client:	South Tipperary County Council
Report Status:	Final Report
Report Date:	June 2013

South Tipperary COUNTY COUNCIL
Comhairle Contae Thiobraid Árann Theas

NRA National Roads Authority
An tÚdarás um Bóithre Náisiúnta

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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. Site 19 (chainage 6150–6260) was located on the south facing slope of a low hill immediately to the west of the Boscabell moated site (TI061-027). An extensive archaeological test excavation programme was carried out as part of the pre-construction phase of the project by Mary Henry Archaeological Services Ltd in 2002 under excavation licence 02E0376. The test excavation uncovered the remains of agricultural field systems, several possible pits, postholes and stakeholes. The report recommended that further archaeological investigations would be required to ascertain the nature and extent of the features uncovered.

Phase 2 archaeological works were conducted in May 2003 under licence 03E0426 issued to Judith Carroll Network Archaeology Ltd (JCNA Ltd), under the direction of John Kavanagh. The subsequent excavation uncovered the remains of several phases of activity. In summary, the excavation revealed a multi-period site, with activity in the Early Neolithic, Late Neolithic, Copper Age, Middle Bronze Age, Medieval, Later Medieval and Post Medieval periods.

The defining discovery was the heavily ploughed-out remains of a small rectangular-shaped house (Structure 1), dated to the Early Neolithic period on ceramic evidence with six sherds of Early Neolithic Carinated Bowl pottery of *c.* 4000–3500 BC. The Late Neolithic evidence was confined to a pit containing burnt bones, unidentifiable as human or animal. A number of rpasting pits / pot boilers were dated to the Copper Age period, and represent another element of the widespread activity on the hillside in this period. Three Middle Bronze Age structures (Structures 2, 3 and 4) including a round-house and two possible animal pens were found, as well as evidence for contemporary activity associated with a former wetland area on the site.

Medieval evidence in the form of a corn-drying kiln, identified towards the southern limit of the site, clearly pre-dated the nearby Boscabell moated site, but was likely associated with the nearby Site 20 enclosure—possibly the *airlise* of nearby ringfort TI061-028—excavated across the Dualla road. The lack of medieval finds/features contemporary with that site would suggest the fields west of the moat were agrarian in the 13th and 14th centuries. The final phase of activity was represented by the remnants of post-medieval agricultural field systems. Clearly then, the excavation as represented by the Site 19 investigations uncovered significant archaeological remains, adding substantial information to our understanding of settlement patterns, and land use, in Boscabell townland and Cashel

itself. The fulcrum of such activity was the ready supply of water, represented by small streams and ponds, plus the good quality soils on which farming could prosper.

This report must be read alongwith the final report for Site 18 Boscabell (03E0425) as both sites involved the excavation of contemporary archaeological features, in particular features comprising the Early Neolithic rectangular structure, the only one of its kind found in South Tipperary on NRA road projects. It is recommended that suitable environmental samples be submitted for radiocarbon dating to reinforce the dating evidence from this site.

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 baulk 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 ofpass 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.

Boscabell

At the time of writing there were three RMP sites within the townland. Two ringforts, RMP TI061-028 and TI061-029 (one of which may be eponymous with the 17th century name), indicate habitation during the Early Medieval era. The third is a moated site, TI061-027, possibly of 13th century date, lying immediately adjacent to the road-take (Barry 1977, 197). The southern portion of the moat was impacted by the construction of the Dualla road in the late 19th century (compare Figures iv and vii below).

Phase 1 pre-construction testing undertaken by Mary Henry Archaeological Services Ltd in 2002 (licence 02E0376) identified definitive archaeological features in the townland of Boscabell (Lennon 2002, Strip Area 5, Drawing 1, Figures 1–7, Plates 1–7). Phase 2 resolution of Site 19 in May 2003 was directed by John Kavanagh on behalf of Judith Carroll Network Archaeology (JCNA) Ltd, under licence (03E0426). This work identified pits, ditches, possible postholes, cultivation furrows and drains (Kavanagh 2006; Kavanagh 2007a).

Site No	Licence No.	Townland	Mesolithic	Neolithic	Copper Age	Early Bronze Age	Middle Bronze Age	Late Bronze Age	Iron Age	Early Medieval	Medieval	Post Medieval
			7000–4000 BC	4000–2400 BC	2400–2200 BC	2200–1600 BC	1600–1100 BC	1100–800 BC	800 BC–400 AD	400–1200 AD	1200–1500 AD	1500–1900 AD
1i	03E0673	Ballyknock										
1ii	03E0740	Ballyknock										
1iii	03E0727	Clonmore										
5	03E0299	Monadreela										
7	03E0300	Monadreela										
8	03E0379	Monadreela										
9	03E0345	Monadreela										
10	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 *fulacht fia* 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, Kilscobin 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; *Granias Well* in Deerpark; *Loughroentaggart*, *Lough Nahinch* and *Doon Fort* in Farranamanagh; *Ogaunoch and Coun* [Rathcoun?] *and the hill of Tubbiradoon…a well called Tubbiradoon near Doon Fort* (Davis White 1866, 47); *Goul's Pool* in Waller's-Lot; *Corralough Well* in Corralough; *Gallows Hill* in Hughes'-Lot East; *the Fahy and the common lands of the town alias Cottyne* (Fiants 1994, 485); '*Brockroghtie and a meadow near Gallows hill called Monyarnycrohy*' (IMC 1966, 281).

GEOLOGY & SOILS

The Cashel environs are situated on the eastern edge of the Golden Vale, and the southern edge of the central limestone plains of Ireland. The landscape has been formed by glacial 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 (Davis White 1892, 12). In his history of Ireland Giraldus Cambrensis described earthworks being thrown up near Cashel during a battle between the Anglo-Normans and Irish – *As [Raymond le Gros] was advancing towards Cashel…he heard that the men of Thomand had…come to block his path in the pass of Cashel. By laying down broken branches of trees and digging trenches they had greatly broken up a terrain already naturally difficult, and had also built a very strong palisade right across the path…the stockade was completely broken down and destroyed, not without great loss of life among the defenders, and they opened up a path with their swords, and then enlarged it* (Scott and Martin 1978, 161–3). The location of this ancient pass of Cashel is still unknown. Davis White also reported on the discovery of human skulls and bones in Doon

Fort, Farranamanagh [TI060-082], possibly associated with the Desmond Rebellion of 1581 (Davis White 1866, 46–7).

Following in the footsteps of Davis White a later cleric, Rev. Robert Wyse Jackson began recording antiquities around Cashel's hinterland in the 1950's, and some of the objects he discovered are listed in Appendix i (Wyse Jackson 1956a, 21). Cashel's Anglo-Norman moated sites were included in Barry's seminal study of this monument type in the 1970's, including the Boscabell moated site 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 *Dhuvcloy* 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* (Davis 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) Templemobee* [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 Muircheartach Uí Briain had a house at Cashel *c.* 1091(AFM) and within 10 years had handed over the Rock to the church in 1101 (Bracken & Ó Riain-Raedel 2006). Cormac's Chapel, with its' renowned Romanesque architecture was consecrated in 1134 (Ó Carragáin 2010). Although the OPW-funded excavations of the 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 Parkinigrogory 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 - Killemly (E2126), Suttonrath (E2128), Ballydrehid (E2267), Marlhill (E2269), Knockgraffon (E2270), Knockgraffon (E2271), Cloghabreedy (E2273), Cloghabreedy (E2274), Shanballyduff (E2275), Dogstown (E2289), Clonmore North (E2294), Raheen (E2295), Lissava (E2296), Caherabbey Upper (E2299), Carrigane (E2303 Co. Cork), Brackbaun (E2306 Co. Limerick) & Brackbaun (E2339 Co. Limerick)

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

Iron Age sites - Killemly (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* 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 blade10:00; max T of blade, max 2.1

Object: Copper alloy ferrule
NMI No: 1992:29
Find-spot: Garden in Dogstown, New Inn
Description: Copper alloy ferrule, decorated bronze mount

Object: Wood
NMI No: 1984:107
Find-spot: Curraghtarsna, Cashel
Description: Trough of *fulacht*, reused from a dug-out canoe. Excavated timber C14 dated to 3120_35 BP (GrN 12618)

Object: Bronze spearhead or javelin head
NMI No: 1968:285
Find-spot: Cashel
Description: Rounded blade with ornamental deep grooves close to the ridge of the socket, broad ribbon loops on the large squat socket. l. 6.4cm, l of loop 1.5cm, w of loop 2.1cm, diameter of socket mouth 2cm

Object: Bronze spearhead or javelin head
NMI No: 1968:282
Find-spot: St john Baptist Cashel
Description: Bronze spearhead, socketed, looped, with bevelled edges on the blade and decorative ribbing. Conical socket. Loops are lozenge-shaped and placed midway between blade and mouth of socket. l.11.3cm, l of blade 6cm, w of blade 3.5cm, l of loop 1.8cm, diameter of mouth 1.9cm

Object: Iron spike
NMI No: 1953:9
Find-spot: Hummocky' field near Ballysheehan Motte-and-Bailey
Description: Iron spike

Object: Fragment of an iron horseshoe
NMI No: 1953:10
Find-spot: Hummocky' field near Ballysheehan Motte-and-Bailey,
Description: Fragment of an iron horseshoe

Object: Five medieval pottery sherds
NMI No: 1953:11–5
Find-spot: Hummocky' field near Ballysheehan Motte-and-Bailey
Description: Five medieval pottery sherds

Object: Bronze spearhead
NMI No: 1938:8589
Find-spot: Cashel vicinity
Description: Bronze spearhead

Object: Socketed bronze axehead
NMI No: 1937:3678
Find-spot: Cashel vicinity
Description: Socketed bronze axehead

Object: Silver seal matrix
NMI No: 1912:59
Find-spot: Co. Tipperary
Description: Matrix of seal silver with a green stone set inside. The device on the stone is a sea horse. The legend reads S.IOKIS-CASELL-ARCHID. The matrix was formerly in the possession of Sir William Betham. It has been in the RIA collection for many years. The seal measures 1 1/6inch x 15/16inch.

Object: Stone adze
NMI No: 1909:33
Find-spot: Near Cashel
Description: Of very unusual form, of close grained hard black stone. It measures 9 & 1/8 in length and 2 ½ 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 ¼in.

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 ½inches thickness at centre ¼inch, greatest width 4 inches, width at narrow end 1 ¾inches

Object: Bronze axehead
NMI No: 1880:15
Find-spot: From Cashel
Description: Socketed celt, bronze, brownish, patinated, looped, cutting edge curved, mouth if socket nearly round portion battered by hammering, length 2 7/8in. width at cutting edge 2 ¼in. greatest external diam. Of socket 1 ½inch

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 ½in 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 ¾inch, extreme width 1 ½inch

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 ½inch x 7/16inch, and ¾ inch x ½inch

Object: Copper alloy Lion
NMI No: 1877:1
Find-spot: Found in open space between Cormac's Chapel & Cathedral, Rock of Cashel
Description: Brass lion, greenish in sitting posture, rectangular socketed projection in rear of hind legs, base oblong and irregularly rounded in front, height 2 ft 20inches length of base 7/16th inch width 5/8th inch

Object: Glass fragment
NMI No: 1877:14
Find-spot: Cashel
Description: Greenish grey remains of 'bull's eye' on one of the faces. Extreme length 3 1/8inches greatest width 1 ¼inch greatest thickness 5/8inch

Object: Wooden bow
NMI No: R:2470
Find-spot: Near Dundrum
Description: Wooden bow, found in the moat of a square rath near Dundrum

Object: Gold bracelet
NMI No: W307–309
Find-spot: Cashel
Description: Three individual gold bracelets

Object: Gold ball & reel
NMI No: W306
Find-spot: Cashel
Description: Gold ball & reel

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

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

HISTORICAL SOURCES

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

AD 370 Traditional date of Kings of Munster ruling from Cashel.
448 Traditional date for Saint Patrick's visit to Cashel, and baptism of King Aengus.
580 Cairpre, King of Cashel died.
593 Feidlimid, King of Cashel died.
662 Maenach, King of Cashel died.
666 Cú-cen-Máthair, King of Cashel [& Munster] died.
713 The battle of Carn Feradaig, in which Cormac King of Cashel, died.
742 Cathal, King of Cashel died.
820 Feidlimid, son of Crimthann, took the kingship of Cashel.
821 Artrí, King of Cashel died.
847 The first recorded king-bishop of Munster died in Cashel.
976 Brian Boru was crowned King of Munster.
995 The fortifying [building] of Cashel, Inis Locha Gair, and Inis Locha Sainglenn, and many buildings besides, by King Brian Boru.
1093 Diarmait, son of Tairdelbach Ua Briain, submitted to Muirchertach, i.e. his brother, and they made peace and a covenant in Cashel and in Les Mór, with the relics of Ireland, including the Staff of Jesus, as pledges, and in the presence of Bishop Ua hÉnna of Cashel and the nobles of Mumu.
1095 Cashel [the Rock] was burned [cause of burning unknown].
1101 Muirchertach O'Brien, King of Munster bequeathed the Rock to the church.
1102 Cashel was attacked and burned by the *Éili* of north Tipperary.
1107 Cashel [the Rock] was burned by lighting.
1115 Cellachán Ua Cellacháin of Cashel was slain.
1118 Mael Sechnaill Ua Faeláin was treacherously slain in Cashel.
1127–34 Traditional date for the building of 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.
1869 Following a Parliamentary inquiry the Corporation of Cashel was dissolved.

Townland History

Boscabell is located in the Parish of St Patricks Rock, east of Cashel town. The name Boscabell is a mid-17th century application celebrating the escape of Charles II who hid in an oak tree in Boscobel after the battle of Worcester in 1652. Oak Apple day was celebrated by royalists following the restoration in 1666, and into the 20th century. It would have been a celebratory event in Cashel's early Corporation calendar. In the Tipperary Hearth Money Records for 1666–7 the Irish name Rathdangin is still listed (see Table viii) Therefore the name can only have arrived to Cashel in the early 1670's, undoubtedly brought over by English settlers to Cashel who were given land following the Cromwellian confiscations in

Ireland in the 1650's. The Placenames Database of Ireland (www.logainm.ie) translates Boscabell as *An Ráth Dhaingean* / *na Rátha Daingne* meaning the fort of Daingean / Daingeans fort, the name *Boscobell* first appearing around 1773 (www.logainm.ie).

Civil Survey for County Tipperary 1654–6

In the Civil Survey for County Tipperary 1654 the Parish of Patricks Rock was described as follows: '*The sd Parish lyeth intirely in the Barony of Middlethird & County of Tipperary. The Tythes of the sd Parish is an intire Viccarage belonging to the Sea of Cashell. The whole Tythes was worth in 1640 £100. The sd parish containeth the severall Townshipps following with their old extent of Irish Acres whereof…Kylscoubine one acre, Georgesland one Acre. Rathdangen three acres; Banadrily one acre, Ballin Knuck five acres. Gort McEllis two acres…Windmill fower Acres…*' (Simington 1931, 219–20).

In the Civil Survey Boscabell was known as Rathdangan comprising '*three Acres old extent*'. The townland consisted of 160 Plantation Acres; 97 acres arable, 60 acres pasture and three acres of meadow, valued at £10, none unprofitable. The Proprietors names in 1640 were '*Thomas Kearney of Cashell Alderman Irish Papist Archybald Lord Archbishopp of Cashell. The sayd lands are bounded on the South by the lands of Kyltafford in this parish, on the West with the Corporation of Cashell, on the North with the lands of Banadrilly in this parish, on the east with ye lands of Garranmore in this parish, and Dwally in the parish of Ballyshyane. The sd Thomas Kearney Inheritor mortgaged the sd lands to Archyball Lord Archbishopp of Cashell long before the Rebellion (as wee are informed). The sd land is at prsent wast without impvemt.*' (ibid, 223).

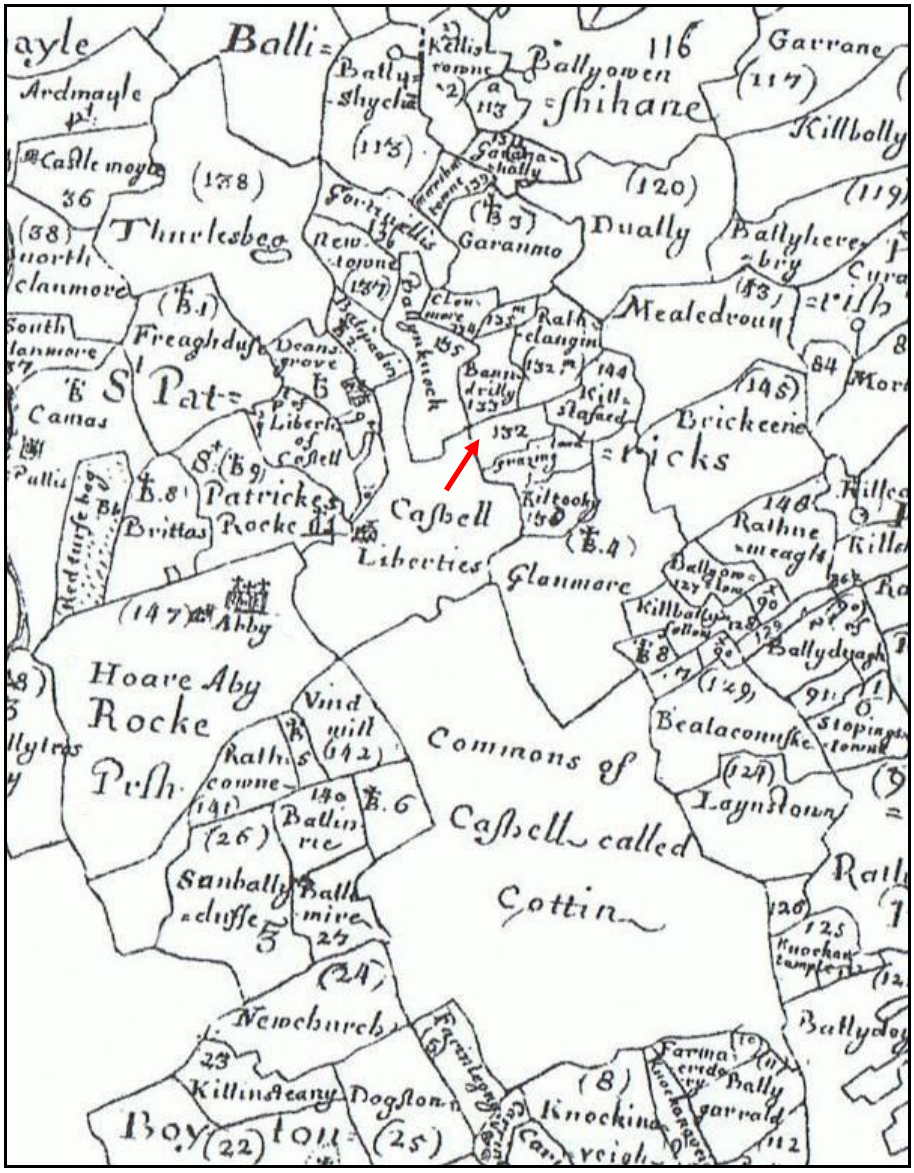

Figure i: Down Survey Map of the Barony of Middlethird by W. Petty, 1654. *Rathdangin* is marked (132).

It appears that Croke's Lane was marked on this map as the linear boundary separating *Banndrilly* (Monadreela) and *Rathdangin* (132), and led directly into Cashel (Figure i).

Books of Survey and Distribution for County Tipperary

In this source the following proprietors are listed in 1640 for St. Patricks Rock, amongst the townlands investigated on the bypass:

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

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

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 additionals 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 circa 1659 (Pender 1939, 306–9)

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 Midlle Third. Parochia De St. Patrick's Rocke		
[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
			John Carny	1	2
Killscobin	Hths.	*s.*			
Mr. Richey	1	2			

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

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

For *Rathdangin* five houses paid the Hearth Tax for 1666–7 but none were listed for the preceding year. Of the named individuals Morrish Hackett was of the well-known family of that name, associated with Ballytarsna, north-east of Cashel; Donnogh and Richard Carny [Kearney] may have been associated with that well-known Cashel family.

The Taylor Skinner Road Map clearly shows Croke's Lane extending as a by-road off the Cashel to Killenaule road, 'the hill road', before terminating at 'Baskabell Ryves Es.' This evidence proves Croke's Lane is at the earliest mid-18th century in date, but it is likely to be somewhat older as it would have been a direct route to Meldrum Castle, and also was the only route between the Cashel to Killenaule and Cashel to Fethard roads (see Figure iv below).

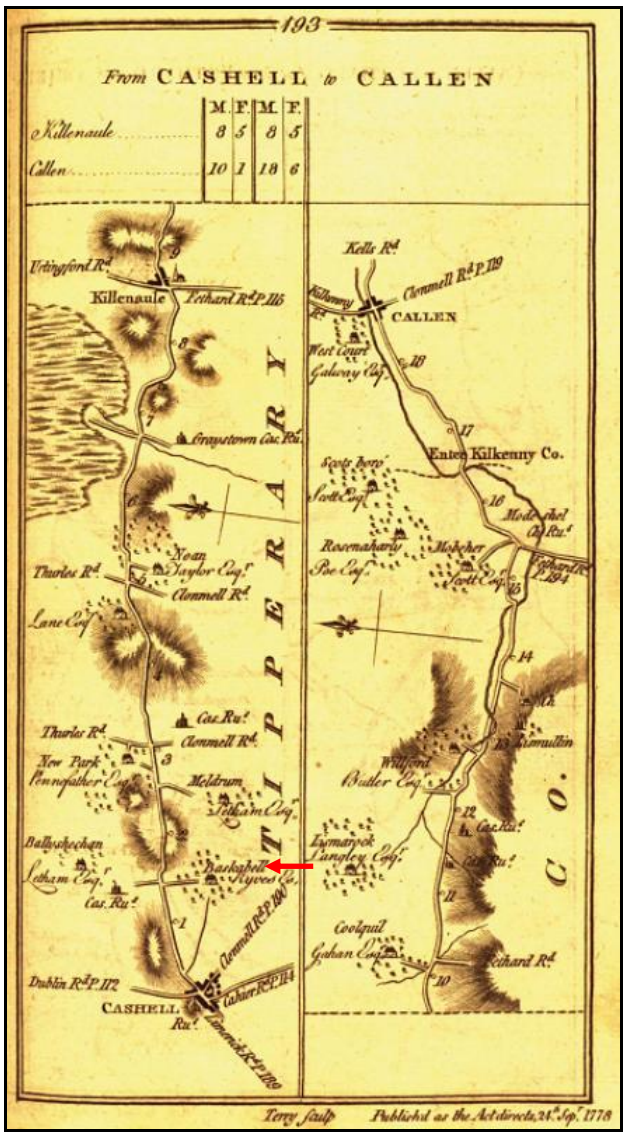

Figure ii: Taylor Skinner Road Map 1778. '*Baskabell Ryves Es*.' is marked.

Tithe Applotment Books for Cashel

In the Tithe Applotment Books for Cashel dating from 1827 nine surnames were listed under Boscabell - Butter, Cushian, Dee (x2), Fagarty, Maher, Mara, Martin and Murphy; listed under *Rathdangan / Boseobel* were 10 surnames - Butler, Dee (x2), Fogarty, Maher, Mara, Martin, Murphy, Power and Quishion (www.titheapplotmentbooks.nationalarchives.ie). There was obvious duplication and errors in spelling amongst the entries. Names including Mara and Power were still listed in the Griffiths Valuations of 1850 (see below).

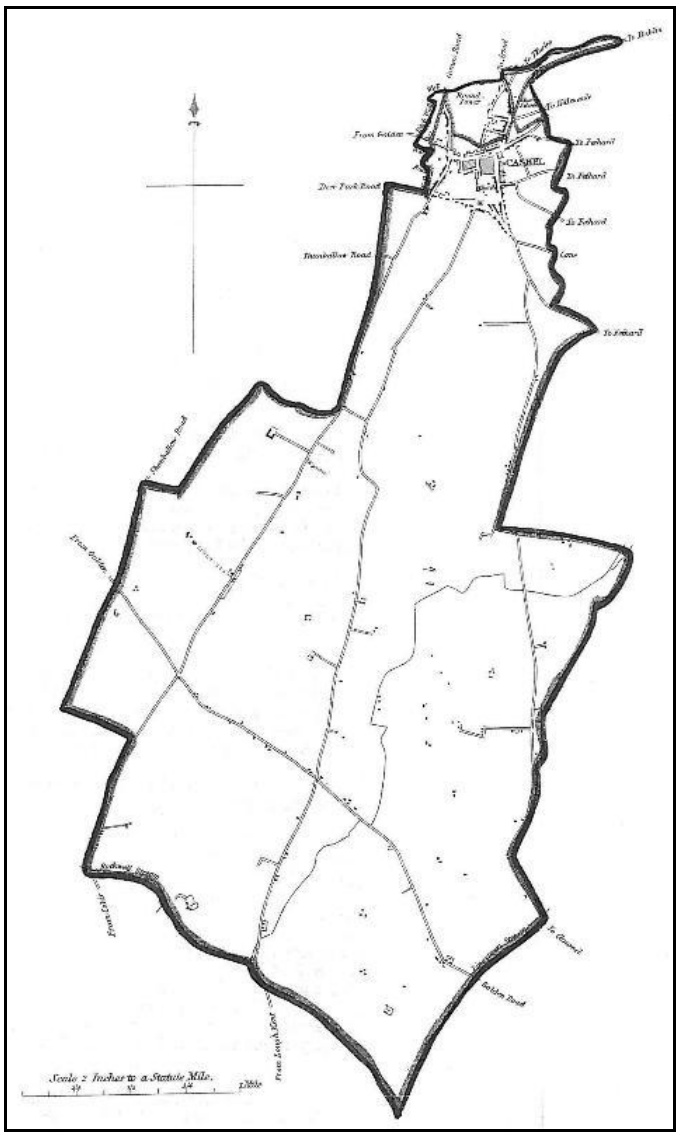

Figure iii: Municipal Corporation Boundaries (Ireland) Proposed Municipal Boundary of the Borough of Cashel, December 1831.

Although Boscabell was located outside the remit of the Corporation, the previous tenants, the Pennefathers had exercised almost autocratic control of Cashel Corporation from the 18th century (Finn 1930, 27; Fogarty 2000).

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**	**Tot. Persons**
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
Farranamanagh	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. In Boscabell the number of houses decreased from 16 to eight in the period covered, with a corresponding decrease in population from 97 to 48 persons. However, these figures should be treated with caution, 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. In Monadreela, the remains of the dwelling discovered on Site 14 may represent one of these mud-walled houses abandoned during the Famine (O'Brien 2013e).

1st Edition OS six-inch Map

On the 1st Edition OS Map Boscabell is bounded on the west and north by Monadreela, on the north by Ballymackane and Garranmore, on the east by Ballyheens and Meldrum, on the south by Killistafford and George's-Land and on the south-west by Hughes'-Lot East. The bypass dissected the western portion of the townland in a north-south direction, where the townland narrowed to two fields in width only, lying between both 500ft contours. Several houses are shown on the south side of Croke's Lane, which runs along the northern townland

boundary, all to the west of the land-take. Houses are also shown on the northern side of Croke's Lane, at Site 14 excavated under licence no. 03E0395. No houses were located within the area of the bypass (Sites 15–21) in Boscabell.

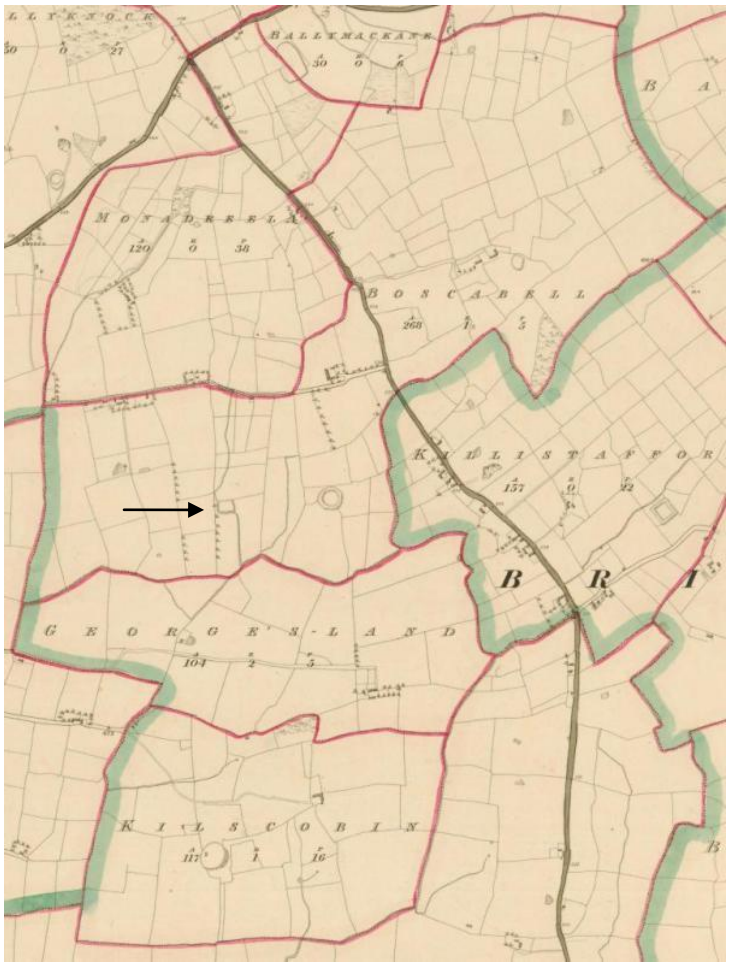

Figure iv: 1840 1st Edition OS six-inch map of Boscabell with Site 19 indicated. Source: www.osi.ie

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

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

Townland	Acres (roods & perches)	Land £	Buildings £	Total £
Gortmakellis	357 (1 r. 18 p.)	£302 16s	£15 8s	£318 4s
Ballyknock	250 & 27 perches	£200 3s	£10 7s	£210 10s
Clonmore	65 & 15 perches	£47 18s	£4 11s	£52 9s
Monadreela	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 viii: Extract from the Primary Valuation of Tenements in St. Patrick's Rock & St. John Baptist parishes recorded in the Griffith's Valuation, August 1850, listed per total value of land and buildings.

In Boscabell all the land bar one tenant was held in fee of Mr John Power, Esq. who held the most substantial holding in nearby Ballyknock townland. Tenant John Cully (the Immediate Lessor being Thomas Mara) had a house valued at 9s Tenant Mary Ryan had a house only valued at £1 7s. Thomas Mara himself had a house and land held from Mr John Power, 66 acres and 37 perches valued at £33 19s and buildings at £2 9s, with a cumulative value of £36 and 8s. In addition to Mr. Mara four other tenants were listed with house and land, with Edward Daniel being the poorest having 1 acre (2 r. 29 p.), valued at 13s and house at 6s with a cumulative value of only 19s. The total acreage for Boscabell was 268 acres (1 r. 5 p.), with land valued at £165 3s, buildings at £10 1s giving a total value of £175 4s.

The listed occupier of the Boscabell lands impacted by the bypass (Sites 15–21) was Walter Grace, held in fee of Mr John Power, Esq. Mr. Grace held a house and land on the south-west side of Croke's Lane, valued at 16 acres (2 r. 37 p.), with land valued at £13 19s, buildings at 16s giving a total value of £14 15s.

Figure v: Griffith's Valuation (this map depicts the Cashel-Dualla road, with field boundaries across it! the road was not built this early).

1st Edition OS 25-inch Map 1901–05

On the 1st Edition OS 25-inch map shows no change in Croke's Lane from previous mapping; to the south the Cashel to Dualla road has now been constructed (Figure vi). Fundamental changes have occurred in the size of adjoining fields; formerly 12 fields lay between the moated site and Croke's Lane – now all the boundaries had been removed to form two single fields of 10.779 and 9.872 acres respectively. Some of these east-west aligned boundaries were rediscovered during the excavations in Boscabell (Sites 17–21, see individual Final Reports). The stream leading from Croke's Lane to the Boscabell moat, and then continuing south again to the George's-Land townland boundary, was diverted, filled-in or drained.

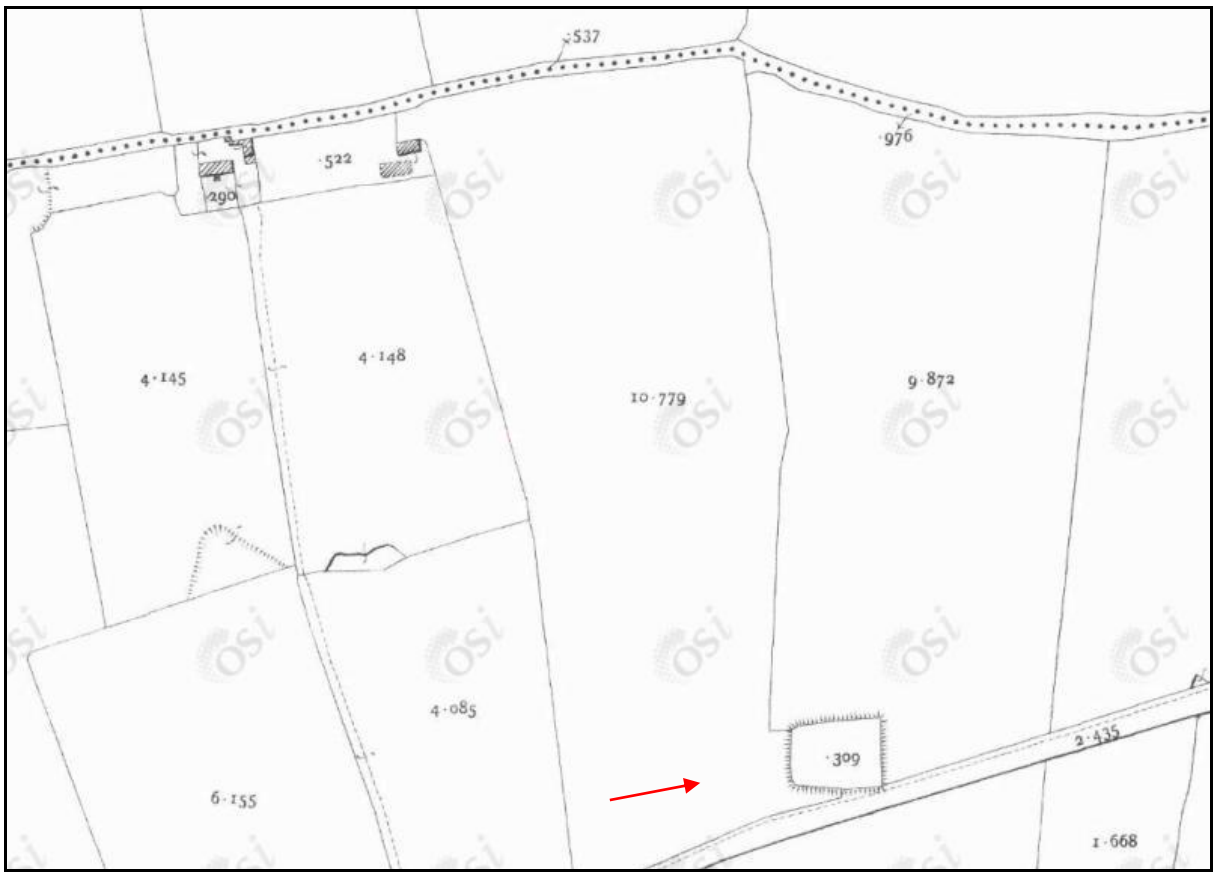

Figure vi: 1st Edition OS 25-inch map of Boscabell 1901–05, with Site 19 indicated. Source: www.osi.ie

2nd Edition 6inch OS Map (surveyed 1903, publ. 1906) & 3rd Edition OS Map 1952–4

No dwellings are indicated on the route of the bypass on this map. The major cartographic change was the construction of the Dualla road in the last decades of the 19th century (forming the boundaries between Sites 20 and 21) which ran south-west /north-east through the south of the townland. This road impacted on the south-east corner of the Boscabell moated site but kinked to avoid impacting the ringfort further to the east (TI061-028). The

Dualla road construction also split a number of larger, north-south orientated fields the boundaries of which still survive today. The common north-south field boundary (found on Sites 5-21) was removed south of the Dualla road as it does not appear on this map. It was subsequently re-identified during the Site 20 excavations (see Site 20 Final Report).
As the 3rd Edition OS Map 1952–4 depicted the north-south orientated field boundary at the eastern end of the site. As this was gone by the 1990's its removal occurred relatively recently.

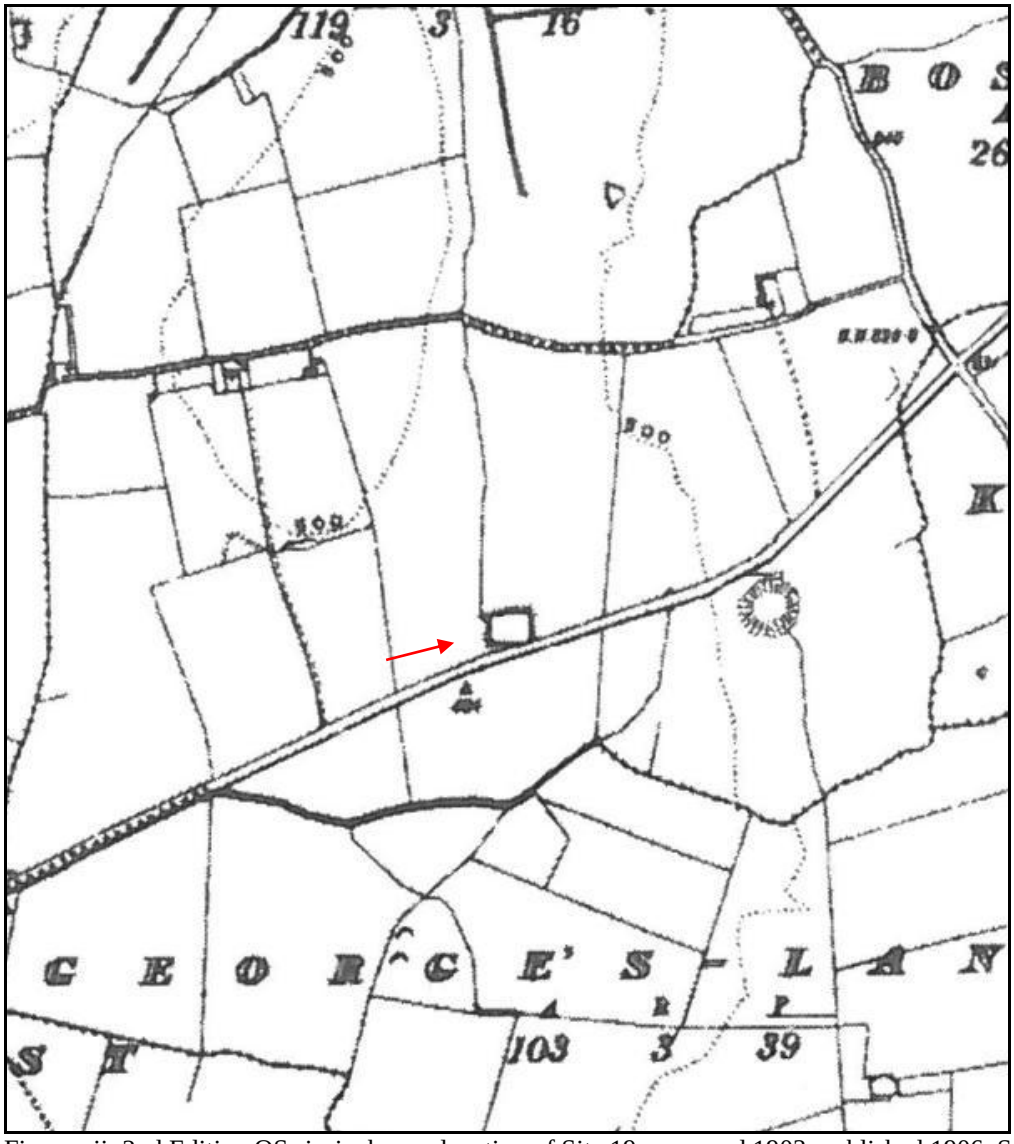

Figure vii: 2nd Edition OS six-inch map location of Site 19, surveyed 1903, published 1906. Source: www.osi.ie

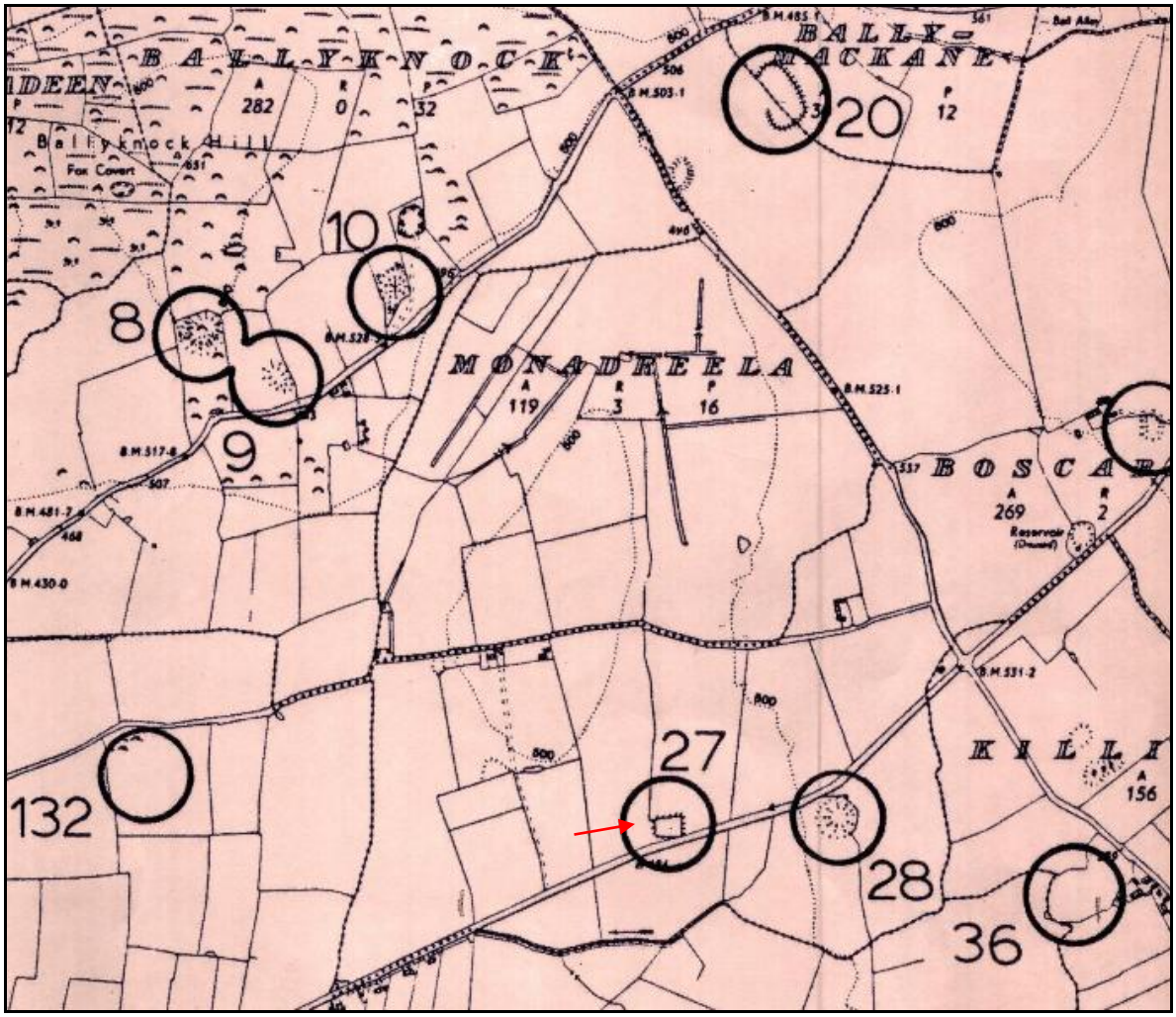

Figure viii: 3rd Edition OS six-inch map location of Site 19 (revised 1952 & 1954). Source: www.osi.ie

Vertical Aerial Information

As can be seen below a significant change occurred within Boscabell since the 1950s (Plates 1 & 2). The north-south aligned field boundary south of the Dualla road and west of the bypass had been removed sometime after 1954 (compare Plates 1–2 & Figure viii above).

Plate 1: Vertical aerial image of Boscabell townland taken in 1994; N to left (source: South Tipperary County Council)

Plate 2: Vertical aerial image of Boscabell townland taken in 2000; N to left (source: Kilkenny County Council)

EXCAVATION (Figures ix, 4–13 & Plates 3–47)

The sequence of investigations in Boscabell was informed by the results of the Phase 1 archaeological test excavations (Lennon 2002). It was decided in consultation with South Tipperary County Council that the areas be sub-divided for either further testing or fixed price resolution works. Testing consisted of sites 16, 18 and 21 while resolution, where definite archaeology had been found during Phase 1 works, were sites 15, 17, 19 and 20 (Figure ix).

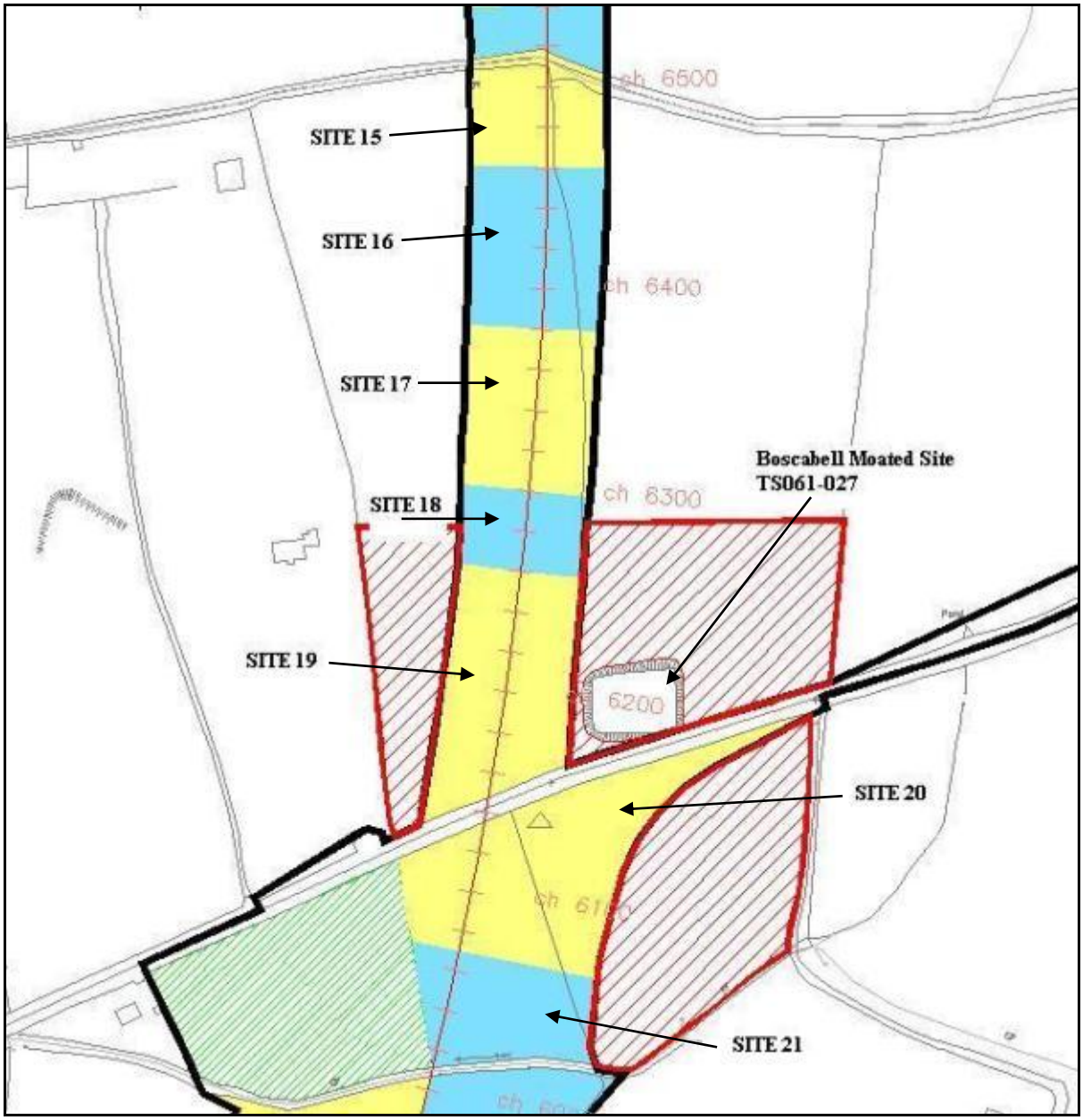

Figure ix: Archaeological investigations in Boscabell in 2003, sites 15–21

The site was located on the northern side of the Dualla road R691 in a pasture field, the ground level sloped slightly from west to east, 144.70 m OD (pre-excavation field level). The south-eastern end of the site, beside moated site TI061-027 was low lying, poorly drained and

where a hollow (former pond?) existed. Approximately 180 m north-south by 80 m east-west was topsoil stripped by a mechanical excavator under constant archaeological supervision, 7,700 m². The monitoring uncovered the remains of a possible structure(s) occupying the high ground to north, a dense cluster of pits, postholes and stakeholes along the edge of the low lying hollow, and a simple keyhole shaped cereal drying kiln in the south-west corner of the site close to the Dualla road (Figure 4). Relict field boundaries, drains and cultivation furrows extended across the site from east to west.

Plate 3: Eastern edge of excavation facing north, scale 2 m

Plate 4: North-west corner of moated site looking north, showing limits of excavation

The full site archive including plans, sections, drawings, context sheets, registers, etc. was not available to the author whilst writing the final report for Site 19. The report therefore lacks certain information such as dimensions and depths for features, as well as stratigraphic information for intercutting features. Where possible dimensions were recorded using photographs and information from the preliminary report has been extensively updated.

Topsoil

Topsoil (01) comprised friable mid brown silty clay with occasional angular and sub-angular limestone and sandstones throughout. It varied between 0.3 m to 0.65 m deep. Two sherds of post-medieval pottery 03E0426:11 and 03E0426:12 were recovered from this deposit, alongwith one undated sherd 03E0426:13 that was possibly prehistoric.

Subsoil

Subsoil (02) varied between friable orange-brown sandy / silty clay with moderate angular and sub-angular stones throughout to compact grey marl-like sandy clay in the lower-lying and wetter part of the site.

Early Neolithic Rectangular House, Structure 1 (Figures 4–5a & 12)

A north-east/south-west orientated structure and associated features was identified on the highest part of the site, within an area measuring 10 m (east-west) by 7 m (north-south). The structure measured 6.35 m long at its northern side and 6.9 m long on its southern side. Overall, the western and eastern sides of the building were 5.5 m long, giving a total floor space of 34.93 m². The outline of the structure was represented by a foundation trench and postholes at its southern side, and postholes on all other sides. Part of the northern side of the structure included three postholes which were found on Site 18 immediately to the north (photographs of these three postholes are found in the Site 18 Final Report, 03E0425).

In general, the postholes were symmetrically spaced. Tentative evidence for internal subdivision was identified in the form of a slot-trench and postholes; the main living space measuring 26.675 m², the smaller space at the western side being 8.25 m². No evidence for an internal hearth was identified, however one of the postholes had positive evidence for intense burning, which may suggest that the building had suffered damage from fire in prehistory. The entrance to the building was postitioned towards the eastern end of the southern wall. The structure had been heavily truncated by later north-east/south-west orientated cultivation furrows. The structure is dated to the Early Neolithic based on the recovery of six sherds of

confirmed Early Neolithic pottery (03E0426:01; 03E0426:10; 03E0426:15; 03E0426:19; 03E0426:20 and 03E0426:21) representing a single vessel from a pit which formed part of the outline of the building. This type of Carinated Bowl has been dated to the period 4000–3500 BC (Grogan 2011, 27).

Plate 5: Post-excavation of Structure 1 postholes [140], [152], [115] & [146] facing north, scale 2 m

Southern side of Structure 1

The southern side of the structure was demarcated by a roughly east-west orientated foundation trench [154], a foundation trench [175] and postholes [115], [171], [110] and [169]. To the south of the building a possible porch is represented by postholes [110], [143], [162] / [238] and [169].

The foundation trench [154] was 5.6 m long, 0.21 m wide at its eastern terminus and widened towards its western terminus where it was 0.5 m wide. On average, this foundation trench was 0.09 m deep, and it was filled with a single deposit (153) of mid brown charcoal flecked sandy silt which was homogenous throughout. It was truncated at its eastern side by foundation trench [175], roughly north-east/south-west orientated and measuring 1.67 m long, 0.25 m wide and 0.1 m deep. It contained deposit (174) of yellowish brown sandy silt with charcoal flecking and limestones throughout. The interpretation of this feature is as a foundation trench at the entrance to the building and between entrance postholes [169] and [175].

A number of postholes were identified in the base of the foundation trench [154] and are associated with foundation trench [175]. These include the postholes [171] and [176] which are suggested to represent the original entrance to the building. These postholes were

located 1.1 m apart, and place the entrance 1.25 m from the eastern-most corner posthole of the building. These postholes were flanked at their southern side by foundation trench [175]. Posthole [171] was noted in the base of the foundation trench [154] and appears to have been sealed by the trench (see Section Z-Z1). This posthole was 0.22 m wide and 0.19 m deep and contained a single deposit (170) of dark brown clayey silt which had charcoal flecking and traces of oxidised clay throughout, but no evidence for burning *in situ*. To the west, posthole [176] was also noted in the base of foundation trench [154], but again the stratigraphic relationship between the two features remains unclear. The dimensions of this posthole were 0.15 m east-west by 0.10 m. It was U-shaped in profile and contained a deposit (177) of friable orange-brown sandy silt which had small stones. As these postholes were only noted when the deposits within [154] and [175] were removed, the suggestion is that they pre-date the foundation and foundation trenches, as suggested by the different fill in each.

Plate 6: Mid-excavation of posthole [171] in Structure 1, scale 0.25 m

Tentative evidence for a porch was suggested by the presence of postholes [110] and [169], and by postholes [238]/[162] and [143] to the south of foundation trench [175]. Together, these features are interpreted as a possible square-shaped porch at the entrance to the building. The postholes in the southern wall were located 1.75 m to the east of the south-eastern corner of the building, and were spaced 1.1 m apart. Circular posthole [169] was the western posthole, it was U-shaped in profile and measured 0.21 m in diameter, and it contained a single deposit (168) of dark brown sandy silt with charcoal and small stones throughout. The stratigraphic relationship between this posthole and foundation trench [154] remains unclear, it may have been cut by the foundation trench at its southern side. Similarly, posthole [110]

was identified between foundation trenches [154] and [175], but the relationship between the three features is unclear. Posthole [110] was oval in plan, stepped in profile and measured 0.27–0.29 m in diameter. It contained a single deposit (109) of dark brown clayey sand. To the south of the building a pair of postholes [238]/[162] and [143] were positioned 1.5 m apart, and 1.5 m south of the postholes in the southern wall of Structure 1. Posthole [238] was partially exposed beneath posthole [162]. The earlier post was circular in plan measuring 0.2 m wide and filled with (239), moderately compact mid brown sandy silt with charcoal flecks. This was cut on its northern side by posthole [162], also circular and 0.2 m in diameter. It was undercut in profile with the inclination of axis of the post being from south to north, facing inward toward the structure. It contained sandy clay which was archaeologically sterile, (163). To one side of these posts was isolated posthole [226] which may have been part of the sturcture. This was sub-circular in plan with sharp break of slope at the top, tapered sides with a pointed base. Measuring 0.15 x 0.18 m in diameter it was filled with (161), moderately compact mid brown sandy silt with charcoal flecking throughout. At the south-east corner posthole [143] was smaller than its western counterpart, being sub-circular at 0.12 m by 0.1 m in diameter, and deposit (144) for which no details survived.

The remaining postholes identified as part of the southern side of the structure include south-eastern corner posthole [115] which was sub-circular in plan, was located 0.75 m to the east of foundation trench [154] and 0.51 m to the south of posthole [140]. It measured 0.25 m in diameter and contained a single deposit of mid-brown clayey silt (114) which contained charcoal flecking but was otherwise archaeologically sterile. Posthole [136] was identified at the northern side of foundation trench [154] and 3.9 m to the west of [115]. It was roughly centrally placed along the southern side of the building. It was circular in plan, and contained a deposit (135) of greyish-brown sandy silt with charcoal flecks throughout. This posthole was identified below the fill of post-medieval cultivation furrow [127], but the stratigraphic relationship between this posthole and the foundation trench [154] was not identified during the excavation. The final posthole forming the southern side of the building was [128], located 3 m to the west of [136] and c. 0.75 m to the west of foundation trench [154]. Posthole [128] was oval in plan, measured 0.22 m long, 0.16 m wide and contained a deposit (125) of moderately comapct mid brown clayey silt with charcoal flecking throughout (Section W-W1).

Western side of Structure 1

A total of four postholes including [128] (see above) as the south-western corner post, [138], [117] and northwestern corner posthole [18010] on Site 18 (identified during Phase 1 archaeological testing and numbered [18010]) represent the western side of Structure 1. Sub-circular posthole [138] was located 1.15 m to the north of posthole [128], was 0.3 m long, 0.2 m wide and had steep sides with a flat base. It contained a single deposit (137) of mid-brown sandy silt with small stones. The sides of the posthole were orange and oxidised suggesting *in situ* burning of the post. Posthole [117] was located 2.1 m to the north of [138], was sub-circular in plan and measured 0.24 m long, 0.23 m wide. It contained a deposit (116) of dark greyish-brown sandy silt which had charcoal flecks and six packing stones within the fill. The northwestern corner posthole [18010] of Structure 1 was located 1 m to the north, and was excavated as part of Site 18 (see 03E0425). It was 0.23 m in diameter and 0.17 m deep, and contained a deposit (18025) of brownish grey silty clay with charcoal flecking throughout. A number of small (up to 0.1 m in diameter) packing stones were noted in this deposit also.

Plate 7: Post-excavation of posthole [117] in Structure 1 facing south, scale 0.25 m

Northern side of Structure 1

Posthole [18011] was located 2.5 m to the east of [18010] (see above) and 3.5 m to the north of posthole [108], but was slightly off the projected line of the northern side of the structure. It was circular in plan, and measured 0.27 m in diameter and 0.21 m deep. It contained a charcoal-rich deposit (18026) of silty clay. It was diametrically opposite posthole [136] in the southern side of the building. The final posthole, [18205] represented the north-eastern corner post of the structure. Measuring 0.2 m long and 0.1 m wide neither the depth nor fill were

recorded on site. As cultivation furrow [148] had truncated this area the upper portion of the posthole had been ploughed away.

Plate 8: Post-excavation of posthole [108] facing south, scale 0.25 m

Eastern side of Structure 1

The eastern side of the structure was formed by posthole [18012] on Site 18, pit [141], and posthole [115] at the south-eastern corner of the building (see southern side of Structure 1 above). Posthole [18012] was diametrically opposite posthole [117] in the western wall, was oval in plan, at 0.3 m long, 0.22 m wide and 0.12 m deep. It was filled with deposit (18027), friable dark reddish-brown sandy clay with charcoal flecks. It is possible that the reddish colour of this deposit was due to oxidisation. The final posthole in this line of features was [115] (described above), which was 0.6 m to the south of [140].

Internal features within Structure 1

Internal features within Structure 1 included a large oval pit [142], pit [141], postholes [152], [108], [112] and slot-trench [160]. Pit [142] was irregularly cut with an uneven base, and measured 1.05 m long, 0.88 m wide and 0.11 m deep (Section Y-Y1). It contained a single deposit (118) of dark brown sandy silt with inclusions of oak charcoal and stones throughout. It was flanked at its south-eastern side by circular posthole [152] which measured 0.22 m in diameter, and contained (151), greyish-brown sandy silt with charcoal flecking and frequent small stones throughout. Two large packing stones were identified within this deposit and almost embedded in the natural at the sides of the cut. It was located 1 m to the north of pit [141], this pit contained the six sherds of early Neolithic pottery on which the dating of the

structure is based. This pit was generally circular in shape and contained a single deposit (122) of sandy silt with charcoal flecking and frequent small stones throughout. Posthole [140] was circular in plan, undercut at its northern sides but otherwise steep sided with a tapered profile and a sharp break of slope to a flat base. It contained a deposit (139) of mid brown clayey silt with small stones. Internal posthole [108] was located 2.8 m to the west of [152], 3.2 m to the east of [138] and 1 m to the north of posthole [136] in the southern side of the building. It was circular in plan 0.24 m in diameter and 0.15 m deep, and contained deposit (107), dark grey sandy silt with charcoal flecks and packing stones in the fill.

Plate 9: Post-excavation of Structure 1 pit [142] & furrow [127] facing south, scales 2 m

The final internal features identified in Structure 1 include north-south orientated slot-trench [160] and associated posthole [112]. The slot-trench measured 1.67 m long, 0.25 m wide and was 0.1 m deep and may have represented an internal divison within the structure (Section X-X1). Approximately half the feature was covered with five small flat stones and the main fill (155) was orange-brown sandy clay with moderate inclusions of small sub-angular limestone stones throughout. The southern end of slot-trench [160] terminated in a circular posthole [112], however, the stratigraphic relationship between the two features was not identified during the excavation. It was U-shaped in profile, up to 0.25 m in diameter and contained a deposit of greyish-brown sandy silt (111) with charcoal flecking and small stones. It was differentiated from the fill of the slot-trench on the basis of colour and the frequency of stones. As the interior of the structure had been heavily truncated by cultivation furrows [18013] and [127] a lot of other features were probably removed.

Plate 10: Mid-excavation of internal features within Structure 1: posthole [112] & slot-trench [160], with [18010] to north-west, facing west, scales 0.25 m & 2 m

External features to Structure 1

Apart from posthole [226] described above two other postholes found outside Structure 1 may have been part of its make-up. Midway along the western wall posthole [225] was located *c.* 0.5 m from the projected wall-line, while at the south-eastern corner posthole [146] was also located *c.* 0.5 m from the projected wall-line at this point. Posthole [225] was sub-circular measuring 0.15 m by 0.2 m with sharp break of slope at the top, steep sides and a gradual break of slope to an uneven base. It was filled with mid brown charcoal flecked clayey silt with traces of burnt clay, (123). Posthole [146] was circular, measuring 0.22 m in diameter. Similar to posthole [146], it was filled with moderately compact mid brown clayey silt with frequent small stones and gravel throughout. The traces of burnt clay in the fill of posthole [146] were significant.

A large irregularly shaped pit [165] which was generally sub-circular in plan but had a rectangular projection at the western and southern side was identified to the south-east of Structure 1. It had an irregular break of slope at the top with gradual sloping sides and uneven base and measured 3 m by 2.4 m and 0.06–0.3 m deep. Within the pit was firm, mid brown-black sandy silt with moderate charcoal flecking and small stones (Section A2-A3). It is interpreted as a possible refuse pit rather than a roasting pit / pot boiler in the absence of burnt stones. An isolated circular stakehole [187] was identified to the south-west of [165]. It contained deposit (186) of friable, light brown sandy silt. The function of an isolated stakehole at this location is unclear.

Late Neolithic pit, Late Neolithic / Early Bronze Age roasting pit & associated features

Pit [179] was located at the south-western limit of the site. It measured 0.62 m long, but the depth and section were not recorded. It contained a deposit (178) of friable, dark greyish-brown sandy silt with frequent charcoal flecking and small stones. A total of 11 indeterminate burnt bones were recovered from this deposit. A radiocarbon date of 2574–2466 cal. BC (UBA-14363) from oak (*Quercus* sp.) charcoal dates this activity to the late Neolithic period, assuming the oak charcoal was reliable.

Plate 11: Pre-excavation of pit [179] facing north, scale 0.25 m

A group of three pits were identified *c.* 30 m west of the moated site, and to the south-east of burnt spreads (104) and (105) (see below). They included a large sub-circular pit [119] which was 2 m long, 1.55 m wide and 0.35 m deep, filled with a thin layer of light grey sand (132), (Section A-A1). Above this was a dark grey-black sandy clay (120) which had frequent heat-shattered stones. Alder (*Alnus glutinous sp.*) / hazel (*Corylus avellana sp.*) charcoal from this deposit was radiocarbon dated to 2465–2210 cal. BC (UBA-14362). The upper fill (23) was similar but contained fewer heat-shattered stones. Two chert fragments were recovered from this deposit: 03E0426:22, a small fragment of chert debitage and 03E0426:23, a possible chert core from which flakes may have been struck (Appendix 8). Birch (*Betula sp.*) charcoal from this deposit was radiocarbon dated to 2458–2155 cal. BC (UBA-14361).

Plate 12: Pre-excavation of pits [113], [119] & stones (21) in foreground, facing north, scales 2 m

Plate 13: Mid-excavation of pit [119] facing north-west, scale 1 m[1]

[1] This unfortunate image was the only available mid excavation photograph showing the fills *in situ*.

Plate 14: Post-excavation of pit [119] facing north, scales 2 m

Plate 15: Post-excavation of pit [119] facing east, scales 2 m

Three small circular stakeholes [231], [232] and [233] were found cut into the base of the pit and were sealed by the primary sand deposit (132). This may suggest they pre-dated the pit. These stakeholes were on average *c.* 0.06 m in diameter, and all were filled with light grey sand deposits (129), (130) and (131) that differentiated from fill (132) of pit [119] on the basis of yellow mottling in the pit fill.

A sub-circular pit [173] was located 1 m to the north of [119], and is included in this phase of activity on the basis of the similarity of the deposits identified in both pits. This pit was filled with (172) a friable, mid greyish-brown sandy silt with charcoal flecking and heat-

shattered stones throughout. It was the smallest of the features in this group at 0.25 m in diameter (depth not recorded). It is intepreted as another possible roasting pit / pot boiler on the basis of the burnt stones in its fill. The third pit identified as part of this group was sub-circular pit [113]. This pit was 0.5–0.52 m in diameter and was relatively shallow at 0.1 m deep. It contained a deposit (20) of orange to grey sandy clay with occasional angular and sub-angular stones throughout.

Plate 16: Pre-excavation of pit [113] facing east, scales 1 m

Plate 17: Post excavation of pit [113] facing north, scales 1 m

Middle Bronze Age heat-shattered stones & hollow [102]

A low-lying hollow [102] which was waterlogged prior to topsoil stripping was noted at the western part of Site 19, and directly south of possible Middle Bronze Age Structures 2–4 and associated features (see Phase 4 below). The topogrpahy at this part of Boscabell townland included low hills which slope towards the moated site, where water would have been a factor influencing the siting of that settlement. The excavation showed that this hollow contained alluvial deposits and material typically associated with *fulachta fia* (burnt sandstone and charcoal). The excavation results also suggest that open water was a feature of this location in prehistory, as a Middle Bronze age date was obtained from a deposit associated with [102].

Plate 18: Pre-excavation of hollow [102] facing east, scales 2 m

The low-lying hollow was located close to the eastern limit of excavation, and roughly 15 m to the west of the Boscabell moated site. It was roughly L-shaped in plan with the longest axis being *c.* 6.5 m south-west-north-east, and a maximum 2 m wide (Section B2-B3). Three test trenches were excavated through the layers of accumulated sands, silts and clays within [102]. The primary fill (101) was a compact yellowish brown sandy clay which resembled the clay marl. This deposit was up to 4.5 m long and varied between 0.04 to 0.34 m deep. A total of six fragments of calcined animal bone, indeterminate to species was recovered from this deposit. Directly above the primary fill was a similar deposit (100) of compact mid grey sand with charcoal flecking and macerated stones throughout. It was up to 2.5 m long and was 0.04 m deep. It was below deposit (97) which was a compact dark grey clay with yellow mottling, charcoal flecking and macerated stones. It was a minimum of 3.2 m long and 0.22 m deep. Above this, a deposit (98) of compact dark grey silty sand with charcoal flecking and

macerated stones was identified. It was at maximum 2.3 m long and 0.08 m deep. The stratigraphic relationship between this fill and deposit (41) is unclear, however it would appear that (98), (99) and (41) comprised the upper deposits in [102]. Deposit (106) was light grey silty sand with yellow patches which overlay (98). Deposit (99) was moderately compact light grey sandy silt with charcoal flecking and small stones. It was up to 3.3 m long and 0.2 m deep at maximum. Feature (41) comprised a large, irregularly-shaped deposit of burnt stones and charcoal with occasional inclusions of burnt clay. It measured *c.* 4.5 m in diameter and was concentrated towards the northern side of [102], closest to the area of Middle Bronze Age activity (see below). A radiocarbon date of 1409–1263 cal. BC (UBA-13744) was retrieved from alder (*Betula sp.*) charcoal from this deposit. The alder comprised the bulk of the wood species with lesser quantities of oak and willow. A fragment of a cattle rib was also recovered from this deposit.

Plate 19: Mid-excavation of hollow [102] facing north, scales 2 m

Plate 20: Mid-excavation of hollow [102] facing northwest, scales 2 m

Plate 21: Mid-excavation of [102] facing east, scales 2 m

Plate 22: Mid-excavation of [102] facing east, scales 1 m & 2 m

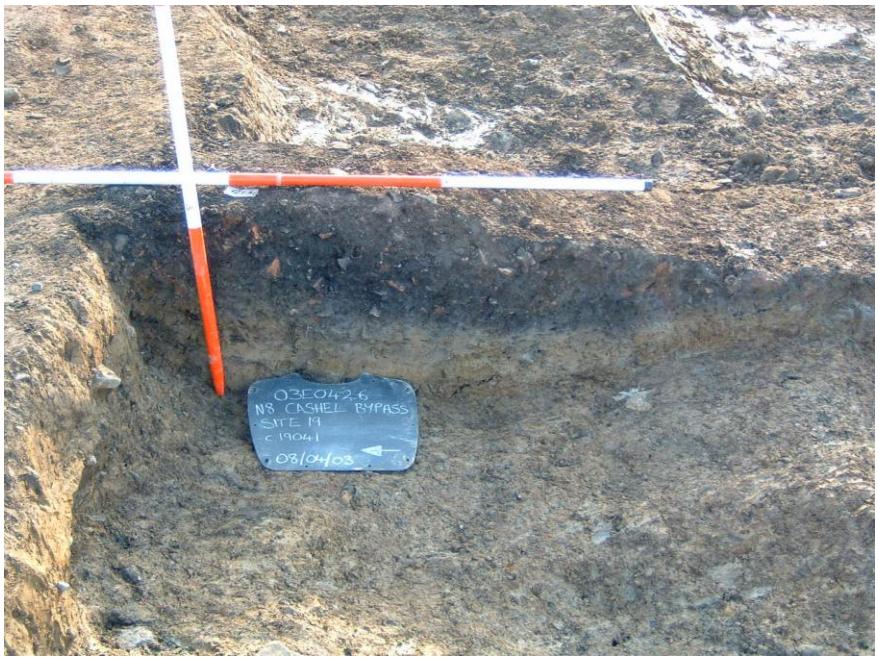

Plate 23: Mid-excavation of northern edge of [102] facing east, scales 1 m & 2 m

Plate 24: Mid-excavation of northern edge of [102] facing north, scales various


Plate 25: Post-excavation of hollow [102] facing northwest, scales various

Possible Middle Bronze Age Structures 2, 3, & 4 & associated features; stakehole cluster & associated features

A dense cluster of features were uncovered 30 m to the south-east of Structure 1 within an area measuring 12 m by 10 m. These features are interpreted as forming a circular post-built structure (Structure 2) and two arcs of features interpreted as possible animal pens or storage buildings (Structures 3 & 4). A stakehole cluster in a right-angled pattern was identified to the south of Structures 2–4. They were located close to the base of the hill along the edge of the

low-lying hollow [102]. The dating of these features is based on a radiocarbon date of cal. BC 1258–1028 (UBA-13742) obtained from a posthole forming the outline of Structure 2, toward the end of the Middle Bronze Age. The remaining pits, postholes and stakeholes at this part of the site are interpreted as being contemporary on the basis of their proximity to the dated example, on the morphological similarity of their cuts, deposits, and in their arrangement. A nearby Middle Bronze Age date from burnt stones found within a hollow is further evidence of contemporary activity. However it is acknowledged that Structures 3 and 4 could date to any era. Two ditches, one north-south orientated and the second east-west orientated, were also excavated in this area (see Undated features below).

Structure 2

The outline of this structure comprised an arc of postholes and stakeholes with internal features. The postholes were on average 0.21 m in diameter and generally circular or oval in plan. Internal features within the structure included a pit and two stakeholes. No evidence for a hearth, and no conclusive evidence for an entrance was identified. The average diameter of the structure was 4 m, giving an internal floor-space of 12.56 m². Ditch [190] truncated the centre of the structure undoubtedly removing internal features such as hearths / internal roof supports.

Plate 26: Mid-excavation of Structure 2 facing east, scales various

At the south-eastern limit of Structure 2, a circular posthole [91] was the southernmost feature associated with the building. It was U-shaped in profile, and 0.22 m in diameter. It contained deposit (92) of dark greyish-black sandy silt with charcoal flecking and occasional burnt

sandstones. Posthole [80] was also circular in plan with a U-shaped profile and measured 0.22 m in diameter and 0.3 m deep (Section H-H1). It contained of silty clay with moderate charcoal flecking (79). Hazel charcoal from this deposit was dated to 1258–1028 cal. BC (UBA-13742), the Middle Bronze Age period. Posthole [84] was located 0.85 m to the north of [80], was stepped in profile on its eastern side, and measured up to 0.24 m in diameter and 0.2 m deep (Section N-N1). It contained burnt stones in a silty clay (83)—along with hazel, willow and ash—this deposit resembled fill (92) in posthole [91] (see above). Posthole [96] was circular in plan with a V-shaped profile and measured 0.22 m in diameter. It contained greyish-brown sandy silt with charcoal flecking throughout (94). This posthole was the northernmost feature associated with Structure 2 and was located 1.72 m north-east of posthole [103]. This posthole was circular in plan, V-shaped in profile, 0.23 m in diameter and filled with charcoal-rich silty clay (43). A pair of smaller, oval-shaped postholes [224] and [223] were located 1 m to the south-west of [103], both were 0.14 m long and on average 0.07 m wide, and they contained deposits (68) and (67) (respectively) of greyish-brown sandy silt with charcoal flecking throughout. An oval-shaped posthole [202] was located 0.54 m to the south of [224] and [223]; it was V-shaped in profile with an inclination of axis to the south-west, suggesting that the post leaned outward from the centre of Structure 2. The fill was greyish-brown sandy silt with charcoal flecking throughout (39). The final feature interpreted as forming part of the outline of Structure 2 was a large pit [75] located 1.02 m to the south-east of [202], and 2.5 m to the west of posthole [91]. This pit had a wide U-shaped profile, measured 0.5 m in diameter and was 0.3 m deep (Section C2-C3). The fill (48) was burnt limestones in a black, charcoal-rich silty clay, which contained carbonised hazel, oak and cherry-type.

Plate 27: Post-excavation of posthole [84] facing west, scale 0.25 m

Plate 28: Pre-excavation of posthole [80] & pit [82] facing north-east, scale 2 m

Internal features within Structure 2 included a large pit [82], a smaller pit [23], and a pair of adjacent stakeholes [201] and [74]. Oval pit [82] was the largest feature associated with Structure 2, it was located immediately adjacent and to the west of posthole [80], and north of posthole [91]. It measured 1.36 m long, 0.82 m wide and was 0.34 m deep. The pit had a

stepped profile, becoming deeper and wider at the southern side, and contained two deposits (78) and (81). The primary fill (78) was friable, blackish-brown peaty silt with charcoal flecking chiefly of hazel, with two fragments each of willow and ash. Secondary deposit (81) was a moderately compact blackish-brown silty clay with charcoal flecking and limestones throughout, and was found toward the centre of the pit only. The pit had the appearance of being kiln-like but apart from this physical similarity, there was no evidence for a kiln function. The fills were noteworthy for being charcoal-rich, as can be seen in the photographs below. The possibility of the pit being a later feature, inadvertently within the circuit of Structure 2 should also be considered.

Pit [234] was located at the north-western corner of the structure orientated on a north-west / south-east axis. Measuring 0.65 m long and a maximum of 0.5 m, neither the depth nor the fill were not recorded on site. A pair of stakeholes [201] and [74] were located 2.5 m to the west of the large pit, were both circular in plan, and had opposing inclination of axis for both features. This suggested these uprights would have formed an A-frame. The deposits (95) and (38) respectively in the stakeholes comprised charcoal flecked sandy silts differenciated by colour only.

Plate 29: Mid-excavation of posthole [80] & pit [82] facing north-east, scales 0.25 m & 2 m

Plate 30: Mid-excavation of posthole [80], scale 0.25 m

Plate 31: Post-excavation of posthole [80] facing west, scale 0.25 m

Plate 32: Post-excavation of posthole [80] & pit [82] facing north-east, scales 1 m & 2 m


Plate 33: Post-excavation of postholes [80], [84] & pit [82] facing north, scales 2 m

Structure 3

Structure 3 comprised an arc of five cut features located immediately west of Structure 2, and east of Structure 4. The arc was 2.1 m in diameter, with the apex of the arc being to the south. No evidence for 'internal' features such as a hearth were identified during the excavation, and

given the diameter of the arc it is suggested that this structure may represent an animal pen or possible wind-break.

Posthole [76] was the western-most feature associated with Structure 3, and was located immediately to the north of posthole [215] and diametrically opposite posthole [219] to the east. It was oval in plan, measured 0.42 m long, 0.32 m wide and contained two deposits. The primary fill (73) was a greyish black clayey silt with white and orange ash inclusions, and the secondary deposit (34) was a brownish grey clayey silt with charcoal flecking and burnt clay throughout (Section L-L1). Stakehole [215] to the south was circular in plan, with a U-shaped profile and measured 0.12 m in diameter. It contained greyish-brown sandy silt with charcoal flecking throughout (59). Stakehole [200] was circular in plan, bowl-shaped in profile and measured 0.14 m in diameter. The deposit (35) was a brownish grey sandy silt with charcoal flecking throughout. A large oval shaped posthole [77] was located *c.* 0.8 m to the east, and was the largest feature associated with Structure 3. It measured 0.4 m long, 0.3 m wide but was very shallow, at 0.02 m deep (Section M-M1). It contained a deposit (36) of friable dark brownish black sandy silt with charcoal flecking and inclusions of burnt clay throughout. The final feature associated with Structure 3 was a small circular stakehole [219] which was 0.11 m in diameter. The fill (63) comprised a friable greyish-brown sandy silt with charcoal flecking throughout.

Structure 4 & associated features

Of the three structures located at this part of Site 19, Structure 4 proved the most difficult to interpret. However, a cluster of seven stakeholes in a roughly circular arrangement within a 2 m diameter may represent its outline and three additional stakeholes are interpreted as internal features within the structure. The overall diameter of this structure is considered too small to represent a dwelling, it is therefore interpreted as a possible animal pen or storage structure. External features to this arrangement of stakeholes include two large pits, one of which was flanked by two stakeholes. It is also possible that the circular arrangement of stakeholes represent internal features within a larger structure, and that the two large pits and stakeholes form part of the outline of this larger structure.

Plate 34: Post-excavation of stakeholes south of Structure 4, [217], [218], [220], [221] & [222], facing north, scales 0.25 m

The seven stakeholes forming the postulated ouline of Structure 4 include [214], [213], [212], [211], [46], [206] and [207]. All of these stakeholes were circular in plan, the largest was [211] at 0.1 m; two examples [206] and [207] were the smallest at 0.06 m in diameter, and the average diameter was 0.07 m. The deposits within these stakeholes include (58), (57), (56), (55), (46), (50) and (51) respectively; all of these deposits comprised either greyish-brown or dark brown sandy silt, all of them had charcoal flecks throughout. One of the deposits (45) in stakehole [46] contained pebbles in the fill.

Two of the three internal stakeholes [208] and [210] were located towards the north-eastern side of the structure, on a roughly east-west orientation with stakehole [211]. Both of these stakeholes were 0.06 m in diameter, were 0.46 m apart and together with [211] formed a 0.7 m linear pattern. The deposits within these stakeholes were (54) and (52) respectively, and as noted with the other stakeholes here they were filled with friable greyish-brown sandy silt deposits with charcoal flecks throughout. The third internal stakehole [209] was more centrally located within the postulated structure: it was 0.06 m in diameter and contained greyish-brown sandy silt with charcoal flecking throughout (53).

The external features to Structure 4 include pit [89], located 2.04 m to the south-west of stakehole [207]. This pit was rectangular in plan, however it was truncated at its western side by post-medieval ditch [86] and its original shape in plan was unclear. The pit was relatively shallow at 0.31 m, was 0.62 m in diameter on its undisturbed north-south axis, and

was filled with yellowish-brown sandy silt with moderate charcoal flecking and small angular stones throughout (88).

Pit [72] to the east was located 1 m to the south of stakehole [214], it was circular in plan, was 0.57 m in diameter and 0.13 m deep. It contained deposit (37) of mid brown clayey silt with charcoal flecking and occasional particles of burnt clay (Section K-K1). This pit was flanked by a pair of stakeholes, [216] 0.22 m from its western side and [204] 0.4 m from its eastern side. Both of these stakeholes were circular in plan, were 0.06 m and 0.08 m in diameter respectively and were 1.14 m apart. The deposits (60) and (44) in the stakeholes were both friable greyish-brown sandy silts with charcoal flecking throughout.

Stakehole cluster south of Structure 4

A group of five stakeholes located 2.3 m to the south of Structure 4 formed a right angled arrangement which measured 0.8 m long and 0.3 m wide. Directly south of this group of stakeholes a post-medieval ditch [70] may have truncated other associated features. No hearths, rubbish pits or roasting pits were assocaited with this group of stakeholes, and their function remains unclear. They may have formed part of a larger structure, or possibly a wind-break for activity taking place in association with nearby Structures 2–4.

The longest axis of the stakehole cluster measured 0.8 m north-east/south-west, and consisted of stakeholes [218], [217] and [221]. These were all circular in plan, and measured *c.* 0.07 m in diameter. They contained deposits (62), (61) and (65) respectively, these were greyish-brown sandy silt deposits with charcoal flecking throughout. Stakeholes [221] (see above) [220] and [222] were clustered together east of stakehole [217]. They measured *c.* 0.09 m in diameter, and contained charcoal-flecked greyish-brown sandy silts (65), (64) and (66).

Early Medieval cereal drying kiln & associated features

An elongated cereal-drying kiln [183] was identified 50 m west of the Boscabell moated site TI06-027. This was a shallow feature which measured 4.8 m long, 1.34 m and 0.3m deep at maximum (see Sections O-O1, U-U1 & V-V1 for profiles). It was orientated east-west, with the drying chamber at the east end of the kiln and the fire-spot at the west end of the flue (182). The chamber of the kiln was lined with limestones, the flue was unlined. No evidence of baffle stones or other features commonly associated with kilns of this type were identified. The cereal drying kiln contained three deposits: dark brown charcoal-rich sandy silt (08) containing predominantly oak, with lesser quantities of hazel and cherry-type; moderately compact orange-brown silty clay (33); and a particularly dense deposit of charcoal at the base

of the chamber (184), containing oak only. This deposit measured up to 1.5 m in diameter and 0.1 m deep, and may represent the uncleaned remnants of the last firing within the kiln. A carbonised oat (*Avena* sp.) grain from this deposit was dated to cal. AD 1030–1172 (UBA-13743). The environmental analysis identified 1.3g of carbonised cereals dominated by oats and cultivated oats, with lesser quantities of indeterminate cereals, barley and wheat (Appendix 6, Table 1).

Plate 35: Pre-excavation of kiln [183] & pits, Moated site to rear, facing east, scales 2 m

Two shallow pits were found immediately adjacent to the north-eastern (chamber) end and western (flue) end of the kiln. The first pit [181] was sub-circular in shape measuring 0.62 m by 0.59 m. The pit was filled with a 0.15 m deep brown charcoal flecked sandy silt (09), (Section T-T1). The second pit [180] was located at the flue end of the kiln, measured 0.53 m by 0.51 m and 0.27 m deep, with a gradual sloping sides and uneven base (Section Q-Q1). It was filled with charcoal flecked sandy silt (26). A sherd of locally-made Cashel-type pottery (03E0426:18) was found within the fill, but close to the surface of the deposit.

Plate 36: Mid-excavation of kiln [183] & pits, Moated site to rear, facing east, scales 1 m & 2 m

Plate 37: Mid-excavation of kiln [183] & pits facing west, scales 1 m & 2 m

Plate 38: Mid-excavation of kiln [183] facing north, scale 1 m


Plate 39: Post-excavation of kiln [183] & pits, Moated site to rear, facing east, scale 1 m

A group of four features were identified immediately east of kiln [183]. They included a roughly kidney-shaped pit [30] which measured up to 1.37 m in diameter and 0.06 m deep (Section R-R1). The fill (06) was dark brown charcoal flecked silty sand with flecks of burnt clay throughout. The second pit [31] measured 1.37 m long, 0.59 m wide and 0.07 m deep, and was filled with an intense fire-reddenned clay with charcoal and small stones (05), possibly a hearth (Section P-P1). The third pit [185] to the east was irregular in plan, with gradual sloping sides and flat base. It measured up to 0.35 m in diameter and 0.26 m deep, and

contained moderately compact mid greyish-brown silty clay with occasional small stones and burnt clay particles throughout (24). The final pit [32] measured 0.73 m long, 0.77 m wide and 0.04 m deep, containing a moderately compact silty clay with frequent charcoal flecking, occasional small stones and particles of burnt clay throughout (07).

Plate 40: Post-excavation of kiln [183] & pits facing west, scale 1 m

Plate 41: Post-excavation of pit [181] facing east, scale 0.25 m

Plate 42: Post-excavation of pit [180] facing west, scales 0.25 m

Two features including a pit [18] and a posthole [191] were uncovered immediately to the north of the kiln. The area in between was truncated by a later ditch [04]. It is not clear whether these features are assocaited with the kiln but their close proximity might suggest a relationship. Posthole [191] was circular in plan, with an irregular break of slope at the top, steeply sloping sides and an irregular base. It measured up to 0.32 m long, 0.21 m wide, but the depth was not recorded. The fill (19) was a moderately compact mid greyish-brown sandy silt with charcoal flecking throughout. Pit [18] located to the west of [191] was a larger feature which contained numerous small angular limestones (25). The interpretation of this feature is unclear as other than a pre-excavation photograph showing its extent, no other information for [18] was recorded.

Plate 43: Pre-excavation of pit [18] facing north, scales 1 m & 2 m

Undated Features

A number of undated features which did not form part of any recognisable pattern during the excavation were noted across the site. Many of these features are not morphologically similar to other examples located in close proximity, and they cannot be assigned accurately to any phase of activity on that basis.

Possible Prehistoric features

A roughly 5 m long northwest–south-east orientated line of four features were noted approximately 15 m to the south-west of Late Neolithic / Early Bronze Age roasting pit [119]. Posthole [27] was sub-circular in plan, *c* 0.22 m in diameter and 0.1 m deep. It contained a single deposit (12) of moderately compact mid brown silty clay with charcoal flecking and small stones; an adult sheep tooth was recovered from this deposit. The posthole was located immediately to the north of pit [11], which was *c.* 0.6 m long and 0.4 m wide. Further to the south a circular posthole with a U-shaped profile [29] was identified; it measured 0.22 m in diamter and 0.1 m deep. It contained (13), moderately compact mid brown sandy clay with small stones. Posthole [159] was circular and morphologically similar to [27] and [29]; its fill (10) was not recorded on site. Lastly, feature (21) was an extensive (*c.* 4 m long and 2.5 m wide) deposit resembling a compacted metalled floor surface laid over subsoil. Their possible prehistoric date assigned to them is on the basis of their proximity to the Late Neolithic activity to the north-east, however, they could equally be associated with the kiln to the south.

Possible Medieval features

The second group of undated features includes a large area of intense *in situ* burning and oxidisation (104) that measured 1.52 m by 3.3 m, its depth was not recorded. This feature was located to the northwest of the Late Neolithic roasting pit [119], and immediately adjacent to deposit (105). This deposit was irregular in plan and comprised mid brown sandy silt with charcoal flecking and ash. No dimensions for this deposit were recorded and no artefacts were recovered from these features. There was no conclusive interpretation provided in the preliminary report for these features. However, the photographic archive for the site suggests that they may have been part of a structure represented by compacted floor surfaces, which were burnt by an intense fire at some time. Similarly, deposit (105) resembles deposits associated with medieval buildings on Sites 8 and 9 (03E0345 and 03E0379) in Monadreela townland to the north. As it is suggested that these buildings were constructed of clay walls and organic materials they are difficult to identify and differentiate from the surrounding subsoil during excavation. Feature (22) was an extensive (*c.* 4 m long and 2.5 m wide) deposit identified to the south of spreads (104) and (105). It comprised of charcoal-rich sandy silt with frequent fragments of burnt stones.

Plate 44: Burnt deposit (104) facing west, scale 2 m

High medieval / post-medieval field systems

A pattern of roughly east-west orientated features representing the remnants of high medieval / post-medieval field systems was observed across Site 19; this pattern was replicated on all of the sites in Boscabell, and in Monadreela to the north. The pattern included a substantial

intermittently stone-faced bank (121) at the easternmost limit of the site, this bank was upstanding from this site in the south to Site 15 in the north. This feature lay beyond the CPO of the road project and remains *in situ*.

The field divisions which represent the post-medieval agricultural system include east-west orientated ditches [04], [70] and [190]. An east-west orientated ditch [70] was located *c.* 50 m to the north of ditch [04]. It is represented on the 1st Edition OS map six inch map extending eastwards into the adjoining field and running in an north-south direction into Monadreela; to the west the ditch terminated in the same field as Site 19 (see Figure iv). The ditch contained two deposits (42) and (69). The primary fill (69) comprised a moderately compact light to mid brown silty clay with charcoal flecking and small stones. The upper fill (42) was a mid brown charcoal flecked sandy silt with moderate inclusions of small stones and macerated limestone. Finds 03E0426:04 (post-medieval ceramic, similar to willow pattern); 03E0426:02 (green glass shard); 03E0426:03 (clear glass sherd); 03E0426:7 (green glass shard); 03E0426:8 (blue glass shard); 03E0426:9 (brownware sherd) were recovered from this deposit. The ditch had also truncated the northern edge of low-lying hollow [102] and caused some disturbance to the *in situ* deposits of burnt stones (41).

Ditch [04] was the southernmost field boundary, and was not represented on the 1st Edition OS map. It was a wide U-shape in profile, it extended beyond the limits of the site to the east and west, and was 1.55 m wide and 0.32 m deep (Sections B-B1 & C-C1). The primary and main fill within the ditch was brown sandy silt (03) which contained post-medieval finds 03E0426:5 (a corroded iron fragment); 03E0426:16 (a round-headed screw); 03E0426:17 (a square-headed iron nail). Deposit (194) was recorded as an upper fill in the ditch, comprising moderately compact dark grey-black silty clay with charcoal flecking—identified chiefly as oak with one fragment of hazel and ash—varying to a mid brown-black sandy silt with charcoal flecking and frequent burnt stones throughout (Sections E-E1 & F-F1). The stones are difficult to interpret but it is likely the ditch cut through an earlier deposit in this location. A small pit [196] was cut into the upper fill of the ditch at the east end. The oblong-shaped pit measured 0.9 m in length, 0.15 m deep and was filled with charcoal-rich sandy silt, many small stones, and clear signs of *in situ* burning (195), (Section D2-D3).

Numerous roughly east-west orientated cultivation furrows (including [227], [228], [229], [230], [127], [134], [148], [150], [193] and [197]) extended intermittently across the site (Section E2-E3). Generally they were quite regularly spaced apart and had an average width of between 0.4 m and 0.6 m. The majority were shallow with depths of between 0.06 m and 0.1 m. The respective deposits ((14), (15), (16), (17), (126), (133), (147), (149), (192) and

(198)) comprised brownish grey sandy silt deposits which were usually homogenous throughout. The furrows respected ditch [70], and in just one instance ditch [04] was cut by furrow [197]. It is suggested that the furrows and the ditches are broadly contemporary and represent part of the same field system and pattern of agriculture.

In addition to the east-west orientated ditches a number of north-south orientated features were also identified on Site 19. The most substantial of these was ditch [86], which was located to the west of prehistoric Structures 2, 3, and 4. This ditch had a wide U-shaped profile, was 1.32 m wide and up to 0.28 m deep (Section J-J1). It was filled with a deposit (85) of moderately compact mid brown sandy silt with charcoal flecking and occasional stones throughout. A similarly orientated stone-filled drain [90] was noted *c.* 10 m to the south of [86], and at the western side of low-lying hollow [102]. This feature had a V-shaped profile and contained friable yellowish brown sandy clay with frequent stones throughout (71). It is clear that both of these features were intended to drain the low-lying hollow, feature [102]. At the south-eastern limit of the site a large post-medieval stone dump [188] was excavated. The full extent of this feature was not determined as it extended southwards beyond the limit of excavation and under the old Dualla road (Plates 45 & 46). The dump comprised large limestone rocks (158) in a sandy silt clay matrix, and several fragments of clay pipe were found near the base of the pit. The function of this pit is unclear however, it may have been a deposition for building materials associated with the construction of the Dualla road at the end of the 19th century.

Plate 45: Mid-excavation of stone dump (158) facing west, scales 1 m & 2 m

Plate 46: Mid-excavation of stone dump (158) facing south, scales 1 m & 2 m

Plate 47: Upstanding field boundary bank beside Moated site facing east, scale 2 m

DISCUSSION

The excavation at Site 19 provided an ideal opportunity to investigate an area of high archaeological potential immediately adjacent to the remains of an impressive, undated medieval moated site TI061-027. In addition to the moated site, excavation results from adjacent Site 20 (03E0470) identified several pits dating to the Early Bronze Age and Iron Age, and a substantial Early Medieval enclosure. It was initially thought that many of the features and finds identified during the excavation of Site 19 were related either to activities associated with the moated site or with the enclosure. However, the results of the pottery analysis from the structures at the north end of the site revealed a more complex pattern of settlement that extended further back to the Early Neolithic. Postholes, stakeholes, pits, slot and foundation trenches at the north-western side of the site were interpreted as the remains of a rectangular Early Neolithic house, Structure 1, dating to *c.* 4000–3500 BC. The dating of this structure is based on the inclusions of six sherds of confirmed Early Neolithic pottery from an internal pit within the building, but no radiocarbon dates were obtained for features interpreted as purely structural components.

The main concentration of archaeological activity on the site occurred close to and around a low-lying hollow and wetland at the base of a slight topographic incline close to the moated site. The archaeological remains suggested that at least two structures were constructed close to the edge of the wetland area. The associated pits and stakeholes to the west of one of the two structures might suggest a limited range of domestic activity. There were traces of any enclosing elements around these structures. Several of the larger pits are interpreted as roasting pits / pot-boilers which contained significant quantities of heat-shattered stones similar in composition to material found in association with *fulachta fia*. The dumping of burnt stones along the northern edge of the wetter area, hollow [102] suggested further associations with *fulachta fia*. The archaeology had been heavily truncated by later north-east/south-west orientated cultivation furrows, perhaps associated with the nearby early medieval and medieval sites (see Figure 7). The likelihood of further archaeological features occurring beyond the limits of excavation to the east of the site is very high.

EARLY NEOLITHIC DISCUSSION

Structure 1

Structure 1 straddled the arbitary division between Sites 18 and 19 at this part of the Road Scheme, and for that reason some of the features which formed the outline of the structure were recorded as part of the Site 18 excavations (03E0425 Final Report). Although the

preliminary report for Site 19 (Kavanagh, 2007a) suggested the presence of a structure at this location, its exact morphology was not identified until a later stage in post-excavation work. A north-east/south-west orientated structure and associated features was identified on the highest part of the site, within an area measuring 10 m (east-west) by 7 m (north-south). The structure measured 6.35 m long at its northern side and 6.9 m long on its southern side. Overall, the western and eastern sides of the building were 5.5 m long, giving a total floor space of 34.93 m². The outline of the structure was represented by a foundation trench and postholes at its southern side, and postholes on all other sides. Part of the northern side of the structure included three postholes which were found on Site 18, immediately to the north.

In general, the postholes were symmetrically spaced. The southern side of the structure was demarcated by a roughly east-west orientated foundation trench [154], a foundation trench [175] and postholes [115], [171], [110] and [169]. Foundation trench [154] was only 0.09 m deep and no trace of packing-stones was evident. The evidence of cultivation furrows truncating the site clearly showed that the upper portions of most features would have been removed in the past (see Figure 5). It was truncated at its eastern side by foundation trench [175], a partial trench of similar depth. Postholes [171] and [176] were only noted when the deposits within the foundation trenches were removed. It is interpreted that they pre-dated the foundation trenches, perhaps representing the original entrance to the building. If this interpretation was valid, this would make the entrance 1.1 m wide, with a south-east aspect. The fill noted within posthole [171] contained traces of oxidised clay, perhaps scrapings from an internal hearth? The remaining postholes identified as part of the southern side of the structure included posthole [115] at the south-east corner, [128] at the south-west corner and posthole [136] centrally placed along the southern side of the building. The stratigraphic relationship between these postholes and foundation trench [154] was not identified during the excavation.

The western side was formed by four postholes including [128] (see above), [138], [117] and the northwestern corner posthole [18010]. The sides of posthole [138] were oxidised suggesting *in situ* burning of the post had occurred. Posthole [117] midway along the wall contained sandy silt and six packing stones within the fill. The northwestern corner posthole [18010] also contained a number of small packing stones. The northern side was formed by three postholes including [18010] (see above), [18011] and the northeastern corner posthole [18205]. Posthole [18011] was diametrically opposite posthole [136] in the southern side of the building. Posthole, [18205] represented the north-eastern corner post of the structure but later ploughing led to a lot of disturbance in this area. The eastern side of the

structure was formed by postholes [18012] and [18205] on Site 18, and postholes [140] and [115] at the south-eastern corner of the building (see southern side of Structure 1 above). Posthole [18012] was diametrically opposite posthole [117] noted in the western wall; the dark reddish-brown fill may have been due to oxidisation but as no *in situ* burning was evident this may have been the result of hearth clearance to the sides of the structure.

It has been suggested that Early Neolithic houses of this period were constructed to a set design or template, with many of the earlier post-and plank built examples showing considerable similarities (Smyth 2006; Doody 2007; Cleary *et al* 2011 & Smyth 2013. Many of these structures are defined by a foundation trench with substantial postholes and packing-stones within the trenches. The only evidence for a foundation trench at Boscabell was in the form of a shallow linear feature [154], and [175]. Four postholes were identified within foundation trench [154] along the suggested southern wall of the building. Apart from the partial slot-trench [175] and no further evidence for foundation trenches or drip gullies was identified at this structure. It is suggested that the remainder of the building's exterior walls were constructed of upright structural posts with an unidentified form of walling between, perhaps horizontally-laid planks which a combination of unsuitable ground conditions and later intensive ploughing obliterated all traces of.

Internal features within Structure 1

Internal features within Structure 1 were pits [142], [141], postholes [140], [152], [108], [112] and slot-trench [160]. Pit [142] was the most substantial feature with inclusions of oak charcoal and stones throughout. It was flanked at its south-eastern side by posthole [152]—interpreted as being a major structural element of this building—perhaps providing internal roof support? This interpretation is based on its' size, oak being preferable in house construction and, the discovery of two large packing stones embedded in the cut. Nearby pit [141] contained the six sherds of early Neolithic pottery on which the dating of the structure hinges (see below). The pit fill was very similar to that noted in the larger pit. Of the other internal postholes [108] also had packing stones in the fill. At the north-western interior was a possible slot-trench [160]—on a north-south axis—and associated posthole [112]. The stratigraphic relationship between the two features was not identified during the excavation. The slot-trench, which had a distinctive stoney content, may have represented an internal divison within the structure but as with other features here, the area had been heavily truncated by cultivation furrows. No evidence for an internal hearth was identified.

The internal floor space within Structure 1 measured 34.93 m², this compares favourably with the dimensions for other Early Neolithic rectangular houses (42 m² for Structure 1 and 36 m² for Structure 2 at Granny, County Kilkenny; 34.3 m² for Tankardstown 1, County Limerick). Grogan (1996) suggests that approximately nine occupants may have been accomodated in a structure of this proportion. Evidence for internal sub-division of the floor-space was tentative, perhaps identified in the slot-trench [160], postholes [108], [112], and the paired postholes [140] and [152] at the south-eastern corner. The postholes probably fulfilled a dual function of sub-dividing the internal living space, and of holding load-bearing timbers to support the roof. Pit [142], also at the south-eastern corner provided oak charcoal which may have derived from a load-bearing post within this pit. It is tentatively suggested that there may have been two rooms within the structure, the larger of which was 26.675 m², the smaller 'room' at the western side of the building was 8.25 m².

Porch/entrance of Structure 1

The entrance to the building was postitioned towards the eastern end of the southern wall. Tentative evidence for a porch is suggested by the presence of postholes [110] and [169], and by postholes [238]/[162] and [143] south of foundation trench [175]. Together, these features are interpreted as a possible square-shaped porch at the entrance to the building. The stratigraphic relationship between posthole [169] and foundation trench [154] was unclear; it may have been cut by the foundation trench at its southern side. Similarly, posthole [110] was identified between foundation trenches [154] and [175], but the relationship between the three features was unclear. South of the building posthole pair [238]/[162] and [143] were positioned 1.5 m apart. There was clear evidence of post-replacement, with posthole [238] being cut when posthole [162] was erected; the later post inclination of axis of the post being from south to north, facing inward toward the structure. At the opposing corner posthole [143] was substantially smaller than its western counterpart. The interpretation of these posts as a proch is tentative as such morphology is extremely rare in Irish Neolithic houses.

External features

Of the external features near the structure both postholes [146] and [225] contained traces of burnt clay. A large irregularly shaped pit [165] south-east of structure 1 was interpreted as a possible refuse pit rather than a roasting pit / pot boiler, in the absence of burnt stones.

Siting

The siting of Neolithic houses generally follows a pattern with proximity to water, aspect and access to raw materials being the most significant factors determining their location. Excavations in adjacent Monadreela and George's-Land have conclusively shown that there was extensive wetland to the south of the site and a seasonal wetland in Monadreela to the north. In addition to this, the low-lying hollow [102] has produced a Middle Bronze Age date for a deposit (41) close to the surface, and there may have been open water at this location further into prehistory. The aspect of the house was on the south-west facing slope of a low hill, overlooking the wetter ground to the south, probably one of the reasons for site location.

Dating Structure 1

The structure is dated to the Early Neolithic period based on the recovery of six sherds of Early Neolithic Carinated Bowl pottery within internal pit [141], found inside the south-eastern corner of the structure. These sherds (03E0426:01; 03E0426:10; 03E0426:15; 03E0426:19; 03E0426:20 and 03E0426:21) represented a single vessel and this type of pottery is well represented in Munster, dating between 4000–3500 BC (Grogan 2011, 27–9, & Appendix 9 below). The veracity of dating a structure solely on the findings from an associated pit—with no direct stratigraphic relationship—is questionable. For instance, on Curraghatoor, County Tipperary the dating of Structure 8 to the Neolithic—the only such date on that site—was similarly based on oak charcoal from a pit not linked stratigraphically to the structure (Doody 2007, 56). The likelihood that the oak charcoal was considerably older when burnt was also not considered during the Neolithic discussion (*ibid*, 84) and, Structure 8 could well be Early Bronze Age in date. However, unlike on Curraghatoor the Boscabell Neolithic evidence is not an isolated discovery.

Contemporary pottery sherds have been identified from two sites in Monadreela to the immediate north of Site 19; Site 7 (03E0300) and Site 9 (03E0345). On Site 7 nine sherds representing a single vessel were identified; on Site 9 two vessels represented by nine sherds were identified. These sites would have been inter-visible with the interpreted structure identified on Site 18. Further to the north in Ballyknock eight sherds, representing at least four vessels, were found from features associated with a small circular structure on Site 1i (03E0697); willow charcoal from one of these postholes was dated to 3953–3774 cal. BC (UBA-13892).

The analysis of the Cashel lithic assemblage from nearby sites has also identified Early Neolithic material: on Site 7 (a flint flake which may represent an unfinished impliment) and

from Site 9 (a small assemblage which has platform technology, characteristics typical of the Neolithic period). To the south-west in Owen's and Bigg's-Lot three Neolithic hollow scrapers were found on Site 30iii (03E1086), and in Farranamanagh a leaf-shaped arrowhead and a hollow scraper were found on Site 41 (03E0647), (see Appendix 8 below).

In addition, radiocarbon dates from this period, and correlating with the date range for the Carinated Bowl pottery, have been obtained from features on Site 1i in Ballyknock: oak charcoal from the fill of a pit was dated to 3976–3803 cal. BC (UBA-13893). In Monadreela contemporary dates were recovered from Site 7: oak charcoal from the fill of a posthole dated to 3954–3773 cal. BC (UBA-13711), and on Site 11 oak charcoal from the fill of a pit was dated to 3945–3789 cal. BC (UBA-13730). A slightly later date in the Early Neolithic has been obtained from nearby Site 9, also in Monadreela: holly charcoal from a posthole of a small circular structure was dated to 3691–3524 cal. BC (UBA-13720). This same feature produced sherds of Carinated Bowl pottery (see above), so it is possible the same community is represented here, utilising the Monadreela/Boscabell wetland resources. On Site 35 (03E0675) in Windmill oak charcoal from the fill of a pit was dated to 3763–3638 cal. BC (UBA-13798): no contemporary structure was identified in this townland. In general, the dates from the N8 Cashel Bypass show that Early Neolithic activity was relatively widespread in Cashel's environs.

On the N8 road scheme south of Cashel at Caherabbey Upper oak charcoal from a posthole adjacent to a possible structure was dated to 3986–3798 cal. BC (UB-7236), (McQuade 2009, 369). In addition, Carinated Bowl pottery and flint tools were recovered both at this site, and at Caherabbey Lower, while at a site in Ballylegan, to the east, consisting of postholes and pits, further Early Neolithic pottery was found (*ibid*, 15). These locations straddle both sides of the River Suir and, in tandem with the Cashel bypass information give us a much better picture of Early Neolithic settlement in this part of Tipperary. The same species (oak) were growing, the same pottery was being used and the distance between both the River Suir sites and even the furthest north of the Cashel sites—Ballyknock—would have been a short journey to make. The role played by the River Suir as a conduit between these communities is obvious, and fording points on the river must have existed.

The most significant recent discovery of Neolithic material in Co. Tipperary was made at the gravel mound at Tullahedy, south-west of Nenagh. Here, activity on the mound centred on an enclosure, houses, *c.* 200 pits and numerous ceramic and stone artefacts. The main phase of activity began in the Early Neolithic period between 3670–3645 cal. BC and continued until 3510–3460 cal. BC (Cleary & Kelleher 2011, 408). The Neolithic *foci* at

Cashel, along with Tullahedy and Lough Gur, Co. Limerick has increased our knowledge of the Neolithic, in terms of new sites and material culture in North Munster. In addition to Tullahedy further discoveries on the M7 Nenagh to Limerick Motorway revealed many new settlement sites—predominantly features found isolated or in clusters—from all periods within the Neolithic, discoveries in the form of artefacts and/or radiocarbon dates (*ibid*, 131–5 & Fig. 4.2).

LATE NEOLITHIC DISCUSSION

Late Neolithic cremation pit

Pit [179] was located at the south-western limit of the site and excavation revealed 11 indeterminate burnt bones, along with oak charcoal within the fill. The bone from this feature was not identifiable to species or element level, it remains unclear therefore if this feature represents a cremation pit with human bone, or a refuse pit with burnt animal bones. This pit also occurred in isolation, with no indication as to associated structures or features. A date of 2574–2466 cal. BC (UBA-14363) from the oak dated this activity to the late Neolithic period. It is possible that other features may be preserved *in situ* beyond the limits of the excavation to the west, or possibly destroyed by the contstruction of the Dualla road to the south in the 19th century. The Late Neolithic date suggests that contemporary activity is represented in the adjacent townland of Monadreela to the north, on Site 25ii (03E0730) to the south and on Site 30iii (03E1086) in Owen's and Bigg's Lot to the south-west (see Final Reports). Late Neolithic activity was found to the north-east of Cashel at Gortmakellis (Moore *et al*, 2010).

COPPER AGE DISCUSSION

Copper Age Roasting Pits

Excavation of pit [119] revealed three small circular stakeholes cut into the base of the pit and sealed by the basal pit deposit. A deposit sealing this contained frequent heat-shattered stones and alder / hazel charcoal was dated to 2465–2210 cal. BC (UBA-14362). In turn, this was sealed by a similar deposit with fewer heat-shattered stones and birch charcoal was dated to 2458–2155 cal. BC (UBA-14361). Also found from this upper fill was a small fragment of chert debitage 03E0426:22 and a possible chert core 03E0426:23, from which flakes may have been struck. Both artefacts are evidence of Copper Age tool production on site. The function of the stakeholes in the base of the pit remains unclear, however, they may have formed a tripod structure related to pre-roasting or boiling activity, such as a support for skinning of pelts, or for suspending material above the pit?

Sub-circular pit [173] 1 m north of this pit was filled with charcoal flecking and heat-shattered stones throughout, and was another possible roasting pit / pot boiler. As the pits were identified south-east of burnt spreads (104) and (105), these spreads may be contemporary? On Site 18 pits [101] and [192], found only 11 m apart, both contained sherds of fine Beaker pottery, representing two vessels (see 03E0425 Final Report). On adjacent Sites 16 and 15—also to the north and in the same field—potential roasting pits were dated to 2341–2192 cal. BC (UBA-13904) and 2351–2220 cal. BC (UBA-13905) respectively (O'Brien 2013f & O'Brien 2013g), while contemporary evidence was also found in the pit-pair on Site 13 Monadreela in the adjoining field (see 03E0378 Final Report). Cumulatively, there is a spread of Copper Age features along the eastern slope of the Monadreela/Boscabell hillside, overlooking water sources, and a settlement is undoubtedly located further upslope, outside the road-take of the Bypass. For an analysis of Beaker material in the wider area see Dr. Eoin Grogan's contribution in McQuade (2009, 290–2).

MIDDLE BRONZE AGE DISCUSSION

Middle Bronze Age heat-shattered stones & hollow [102]

Based solely on the radiocarbon dates there is an apparent gap from the Copper Age dated-pits (see above) and the next dated phase of activity on Site 19. However, adjacent sites in the same field verified that there was no interruption in settlement activity throughout the Middle Bronze Age. On adjacent Site 17 a roasting pit dated to 1743–1605 cal. BC (UBA- 13739); south of Site 19 a charcoal-rich pit in George's-Land Site 23 dated to 1744–1634 cal. BC (UBA-13757) and, was located in an area where multiple *fulachta fia* were identified (see 03E0508 Final Report). On Site 19 the low-lying hollow [102], which was waterlogged prior to topsoil stripping was south of the possible Middle Bronze Age Structures 2–4 (see below). The topogrpahy at this part of Boscabell townland includes low hills which slope eastward. The excavation showed that this hollow contained alluvial deposits and material typically associated with *fulachta fia* (burnt sandstone and charcoal). However, there was no clear evidence that the hollow functioned as a trough so the burnt stones may have derived from other domestic activities on site, or from activities outside the excavated site.

The hollow measured 6.5 m long and 2 m wide and contained layers of accumulated sands, silts and clays. The primary fill (101) which resembled clay marl produced six fragments of calcined animal bone, indeterminate to species was recovered from this deposit. Feature (41) comprised a large, irregularly-shaped deposit of burnt stones and charcoal with occasional inclusions of burnt clay, dumped into the silted-up hollow. Alder charcoal from

(41) dated to 1409–1263 cal. BC (UBA-13744). The date is directly contemporary with activity on adjacent Site 20 (03E0470) in the same townland to the south, where a radiocarbon date of 1403–1219 cal. BC (UBA-13750) was obtained from the fill of a pit again, from alder charcoal (see 03E0470 Final Report). Environmental analysis of the fill showed that the alder comprised the bulk of the wood species, with lesser quantities of oak and willow also represented. The faunal analysis identified a fragment of a cattle rib from this deposit. A similar hollow on Site 24 in George's-Land to the south, also contained layers of peat, burnt stones and animal bones (see 03E0507 Final Report). It is likely the hollows were utilised for water and then, for some reason were allowed to silt-up and used for sporadic domestic dumping.

Middle Bronze Age Structures 2, 3, & 4 & associated features; Stakehole cluster & associated features

A dense cluster of features uncovered within an area measuring 12 m by 10 m were interpreted as forming three possible structures. A circular Middle Bronze Age structure, probably a domestic dwelling (Structure 2), and two smaller structures (Structures 3 & 4) were identified at the eastern side of Site 19. Structure 2 was the largest of the identified structures with an internal floor-space of 12.56 m². It was defined by an arc of five substantial postholes on its eastern and northern sides, and otherwise by stakeholes and pits. Internally, a pit and two stakeholes were identified. Structures 3 and 4 were not as substantial as Structure 2, and they are interpreted as representing possible anciallary structures rather than domestic buildings. The dating of these features toward the end of the Middle Bronze Age period was based on a single radiocarbon date from Structure 2. The remaining pits, postholes and stakeholes at this part of the site are interpreted as being contemporary on the basis of their proximity to the dated example, on the morphological similarity of their cuts, deposits, and in their arrangement. A nearby Middle Bronze Age date from burnt stones found within the low-lying hollow [102] is further evidence of contemporary activity (see above). Surprisingly for domestic structures, no Bronze Age pottery was recovered although this is not unique: the Bronze Age structures excavated at Curraghatoor, County Tipperary only produced a few pottery sherds (Doody 2007, 79–80). It is also recognised that dating all the Boscabell structures to the Middle Bronze Age—based on only one radiocarbon determination—is a tentative assumption.

Structure 2

The outline of this structure, average diameter of 4 m—giving an internal floor-space of 12.56 m²—comprised an arc of postholes and stakeholes with internal features of a pit and two stakeholes. No evidence for a hearth, and no conclusive evidence for an entrance was identified. At the south-eastern corner of the structure charcoal flecking—of hazel—and occasional burnt sandstones were noted within posthole [91]. Nearby posthole [80] contained charcoal flecking from which hazel was dated to 1258–1028 cal. BC (UBA-13742), the end of the Middle Bronze Age period. Posthole [84] also contained burnt stones—along with hazel, willow and ash—resembling the fill in posthole [91]. The remaining structural postholes [96], [103], [202], [223] and [224] all contained charcoal flecking in their fill: posthole [202] was V-shaped in profile with an inclination of axis to the south-west, suggesting that a pointed post may have leaned outward from the centre of the structure. A large pit [75], interpreted as forming part of the structure contained burnt limestones along with hazel, oak and cherry-type charcoal. Internal features included a large pit [82], and a pair of adjacent stakeholes [201] and [74]. Within the pit the primary fill (78) was friable, blackish-brown peaty silt with charcoal flecking chiefly of hazel, with two fragments each of willow and ash. The stakehole pair [201] and [74] each had an opposing inclination of axis suggesting these uprights would have formed an A-frame, perhaps for a rack? The similarity of the wood species used in the posts and pits was further evidence of contemporaneity across the structure.

Structure 3

Structure 3 comprised an arc, 2.1 m in diameter, of five cut features. As no evidence for internal features was identified this structure, it is suggested that this structure may represent an animal pen or possible wind-break. Both postholes contained particles of burnt clay and/or ashes, which may have derived from domestic activities such as cleanings from a nearby hearth (unidentified). As the features were very shallow it is likely they were heavily truncated by later ploughing, as evidenced by the nearby cultivation furrows recorded.

Structure 4 & nearby features

Structure 4 may have been formed by seven stakeholes in a roughly circular arrangement 2 m diameter, with three stakeholes interpreted as internal features. The overall diameter of this structure is considered too small to represent a dwelling, so it is interpreted as a possible animal pen. External features include two large pits, one of which was flanked by two stakeholes. It is also possible that the circular arrangement of stakeholes represent internal features within a larger structure, and that the two large pits and stakeholes form part of the

outline of this larger structure. A group of five stakeholes located south of Structure 4 formed a right angled arrangement, possibly part of a larger structure, or a wind-break for activity taking place in association with nearby Structures 2–4.

Middle Bronze Age Housing

The closest parallel to the Boscabell Middle Bronze Age structures is the cluster of structures excavated at Curraghatoor, County Tipperary. Here a number of buildings formed either by slot-trnches and/or posts were dated over a number of phases, with four structures securely dated to the Middle Bronze Age (Doody, 2007, 55, Table 4.1). On the N8 Cashel Bypass and N74 Link Road Scheme five other circular/sub-circular Bronze Age structures have been identified. These include a possible circular house on Site 23 (03E0308) in George's-Land; a circular structure and a second possible circular structure on Site 30iii (03E1086) in Owen's and Bigg's-Lot to the south-west; a circular house in Windmill on Site 36i (03E0676); and a circular house on Site 38i (03E0760). The majority of these structures have direct parallels with the buildings on Site 19, although dates from the Early, Middle and Late Bronze age have been returned. This evidence shows that Middle Bronze Age settlement and activity was both prolonged and widespread in the Cashel area. South of Cashel near the River Suir of 21 locations that produced Bronze Age settlement evidence, Middle Bronze Age structures were identified at Ballydrehid, Knockgraffon, Cloghabreedy, Caherabbey Upper, Killemly, Ballyegan and Suttonrath, while closer to Cashel postholes at Dogstown and a D-shaped structure at Loughfeedora were also contemporary with Boscabell Site 19 (McQuade *et al* 2009, 28–9).

MEDIEVAL DISCUSSION

Medieval cereal drying kiln & associated features

Based solely on the radiocarbon dates there is an apparent lacuna of *c.* 2,000 years following the Middle Bronze Age activity on site. However, as dates from the Iron Age and Early Medieval periods confirm activity in these fields—see Site 18 Final Report—some of the undated features identified on site could well date to these intervening periods. To the north in Gortmakellis the multi-phased enclosure found beside ringfort TI061-003 dated between the 7th to 10th centuries AD (Moore *et al* 2010, 101). Definitive evidence of medieval activity derived from cereal-drying kiln [183], discovered 50 m west of Boscabell moated site TI06-027. The kiln was in the form of the keyhole-shape, orientated with the drying chamber at the east end and the fire-spot at the west end of the flue. The chamber of the kiln was lined with

rough, uncoursed limestones: the flue was unlined but may originally have been so. The kiln contained three deposits: dark brown charcoal-rich sandy silt (08) containing predominantly oak, with lesser quantities of hazel and cherry-type; moderately compact orange-brown silty clay (33); and a particularly dense deposit of charcoal at the base of the chamber (184) itself, again containing oak. As this deposit measured *c.* 1.5 m in diameter and 0.1 m deep, it most likely represented the uncleaned remnants of the last firing within the chamber. A carbonised oat grain from this deposit was dated to cal. AD 1030–1172 (UBA-13743) while the environmental analysis identified 1.3 g of carbonised cereals, dominated by oats and cultivated oats, with lesser quantities of indeterminate cereals, barley and wheat.

The kiln or áith was required by all prosperous farmers in the early medieval period (Kelly 1997, 369). In comparison to the environmental assemblage from the early medieval kiln [172] on nearby Site 20 and dated cal. AD 612–673 (UBA-13751), which was very diverse, the carbonised cereals in kiln [183] represented a standard kiln assemblage (see Appendix 6 03E0470 Final Report). Whilst recognising the analysis was based on only the excavated material, and not perhaps the original quantities, kiln [183] had also incorporated an almost exclusive use of oak charcoal, not found in the earlier kiln. Such differences may be accounted by different selection processes occurring over time, with the oak being favoured perhaps because it was used in the kiln structure?

Two shallow pits [181] and [180] found at either end of the kiln may be associated features, although there was no stratigraphic link. A medieval sherd of locally-made Cashel-type pottery (03E0426:18) was found within the fill of pit [180]. As the sherd came from close to the surface of the deposit it could have derived from the base of ploughsoil, and should not be used to date the pit activity to the 13th - 14th centuries AD.

The kiln was located 55 m north-east from a possible *airlise* excavated on Site 20, a site interpreted as being associated with the Boscabell ringfort (TI061-028) to the east (see 03E0470 Final Report). Kiln [183] was a significant discovery as it confirmed continuous Gaelic activity in Boscabell right up to the first Anglo-Norman incursion in the area, in the final decades of the 12th century (Barry 1977, 1996; Bradley 1985). The dating and environmental evidence suggest the kiln went out of use by this time, perhaps a reflection of the new regime in Cashel. There was no clear indication that the kiln was re-used by the inhabitants of the nearby moated site, as was the case with the nearby *airlise* as its' abandonment phase can be dated to the later medieval period (see 03E0470 Final Report). For further information on similar-type kilns in Co. Tipperary see MacLeod *et al* (2010); see Long (2009, 19–28) for the wider picture in north Munster.

Possible Medieval features

A group of four features were identified immediately east of kiln [183]. They included a roughly kidney-shaped pit [30] with flecks of burnt clay throughout. The second pit [31] was filled with an intense fire-reddenned clay with charcoal and small stones (05), possibly a hearth. The third pit [185] to the east contained occasional small stones and burnt clay particles. The final pit [32] also frequent charcoal flecking, occasional small stones and particles of burnt clay throughout. Two features including a pit [18] and a posthole [191] were uncovered immediately to the north of the kiln. The area in between was truncated by a later ditch [04]. It is not clear whether these features are assocaited with the kiln but their close proximity might suggest a relationship.

The second group of undated features included a large area of intense *in situ* burning and oxidisation (104). This feature was located to the northwest of the Late Neolithic roasting pit [119], and immediately adjacent to deposit (105). The photographic archive for the site suggests that they may have been part of a structure represented by compacted floor surfaces, which were burnt by an intense fire at some time. Similarly, deposit (105) resembled deposits associated with medieval buildings on Sites 8 and 9 (03E0345 & 03E0379) in Monadreela townland to the north. As it is suggested that these buildings were constructed of clay walls and organic materials they are difficult to identify and differentiate from the surrounding subsoil during excavation. On Site 20 to the south one sherd of Cashel type ware medieval pottery (03E0470:15) was identified from a later ditch feature (see 03E0470 Final Report, Appendix 8)

A number of features were identified across Site 19, they occurred in small clusters or groups. The first group included three postholes [27], [29] and [159] which may have formed part of a structure, the ground plan of which did not survive. These features were located to the north of the cereal drying kiln however, in the absence radiocarbon dating they cannot confidently be ascribed to any particular phase of activity. The second group of features were deposits (104), (105), (21) and (22). The photographic archive for these features suggests that they may be floor deposits or associated with structures, the ground plan for which was not recognised during the excavation. Although it is tempting to suggest that they may be related to activity associated with the adjacent moated site to the west this cannot be proven from the excavation results.

HIGH MEDIEVAL / POST MEDIEVAL DISCUSSION

Field systems

A pattern of roughly east-west orientated features representing the remnants of high medieval / post-medieval field systems was observed across Site 19; this pattern was replicated on all of the sites in Boscabell, and in Monadreela to the north. The pattern included a substantial intermittently stone-faced bank (121) at the easternmost limit of the site, this bank was upstanding from this site in the south to Site 15 in the north. This feature lay beyond the CPO of the road project and remains *in situ*.

The field divisions which represent the post-medieval agricultural system include east-west orientated ditches [04], [70] and [190]. Ditch [70] was located *c.* 50 m to the north of ditch [04] and is represented on the 1st Edition OS map six inch map extending eastwards into the adjoining field and running in an north-south direction into Monadreela; to the west the ditch terminated in the same field as Site 19 (see Figure iv). Finds 03E0426:04 (post-medieval ceramic, similar to willow pattern); 03E0426:02 (green glass shard); 03E0426:03 (clear glass sherd); 03E0426:7 (green glass shard); 03E0426:8 (blue glass shard); 03E0426:9 (brownware sherd) were recovered from the ditch. Ditch [04] was the southernmost field boundary, and was not represented on the 1st Edition OS map. As with ditch [70], post-medieval finds 03E0426:5 (a corroded iron fragment); 03E0426:16 (a round-headed screw); 03E0426:17 (a square-headed iron nail) were found.

Numerous roughly east-west orientated cultivation furrows (including [227], [228], [229], [230], [127], [134], [148], [150], [193] and [197]) extended intermittently across the site. Generally they were quite regularly spaced apart and had an average width of between 0.4 m and 0.6 m. The majority were shallow with depths of between 0.06 m and 0.1 m. The respective deposits ((14), (15), (16), (17), (126), (133), (147), (149), (192) and (198)) comprised brownish grey sandy silt deposits which were usually homogenous throughout. The furrows respected ditch [70], and in just one instance ditch [04] was cut by furrow [197]. It is suggested that the furrows and the ditches are broadly contemporary and represent part of the same field system and pattern of agriculture.

In addition to the east-west orientated ditches a number of north-south orientated features were also identified on Site 19. The most substantial of these was ditch [86], located to the west of prehistoric Structures 2, 3, and 4. A similarly orientated stone-filled drain [90], with V-shaped profile, was noted *c.* 10 m to the south of [86], and at the western side of low-lying hollow [102]. At the south-eastern limit of the site a large post-medieval stone dump [188] was excavated. The full extent of this feature was not determined as it extended southwards beyond the limit of excavation and under the old Dualla road (Plates 45 & 46). The dump comprised large limestone rocks, and several fragments of clay pipe were found

near the base of the pit. The function of this pit may have been a deposition for building materials associated with the construction of the Dualla road at the end of the 19th century.

Field boundaries and cultivation furrows

The last phase of activity on Site 19 relates to the remnants of field systems. The north-south orientated stone-faced bank and east-west orientated ditches appear to have demarcated a rectilinear pattern of small fields. The heavily overgrown north-south orientated stone-faced bank / field boundary (121) along the eastern edge of the site is suggested to be post-medieval in date, however this does not preclude the possiblity that it follows an older medieval or prehistoric routeway through the countryside. The intermittent nature of the stone-faced bank rendered it an ineffective field division in the modern landscape at the time of the excavation. The 1st Edition OS six-inch mapping shows that the stone-faced bank / boundary was originally a continuous north-south orientated unit which extended from the (east-west orientated) townland boundary of Moandreela / Boscabell in the north to the (east-west orientated) townland boundary of Boscabell / George's-Land in the south (see Figure iv). The boundary respected the southern boundary of Croke's Lane to the north, and skirted the western side of the moated site (TI061-027) to the south. The layout of boundary (121) is replicated in the boundary to the west (beyond the limits of excavation). On Site 19 this boundary is preserved *in situ* as it was located beyond the requirements for the road take, further investigation of this feature may be possible in the future.

The two east-west aligned ditches [70] and [04] were perpendicular to boundary (121), the finds recovered from both indicate a post-medieval date for their creation. It is likely that these features are contemoprary with or slightly post-date the construction of (121), but the relationship between the field systems and the medieval sites remains unclear. The 1st Edition OS map shows the site within a relatively large field in relation to the pattern of the surrounding fields. It is plausible that by the early 19th century some boundaries had been removed and fields were enlarged as part of estate management and changes in agricultural practices. Such examples were the roughly east-west orientated ditched pair [70] / [190] which appear to equate with the field boudary represented on the 1st Edition OS six-inch map. However, ditch [04] at the southern part of the site was not represented on this map so it could well be a medieval field boundary, particularly as it was located beside the moated site (see Figures iv & 4). The cultivation furrows were also aligned east-west and were quite shallow and were irregularly spaced. The furrows terminated several metres to the west of the stone-faced boundary and generally respected the field boundary ditches.

The pattern of land sub-division at this part of the road scheme is worthy of note. The layout of the townland boundaries is clearly influenced by natural topographic features. For example, the division between Monadreela / Boscabell occurs at the southern terminus of the Monadreela ridge and limit of its wetland. The George's-Land / Boscabell townland boundary occurs at the line of an east-west orientated stream, which was probably a physical and possibly a territorial boundary in the landscape since prehistoric times. Excavations on Site 23 to the south proved the George's-Land / Hughes'-Lot East townland boundary post-dated the Iron Age, as the boundary ditch had cut earlier ditch [342], itself dated to 485–259 cal. BC (UBA-13756), (see 03E0508 Final Report). The alignment of the townland boundaries is often irregular reflecting the contours or courses of these topogrpahic features. Within Boscabell townland the major 'blocks' of land division are north-south orientated, and they are regular in their layout and they are composed of banks, sometimes with associated ditches on the same orientation. Field boundary (121) and its western counterpart (lying beyond the limits of the excavation) represent one such block of land. These 'block' divisions may have been influenced by pre-existing landscape features such as routeways and paths. Is is possible that boundary (121) is located on one such north-south orientated routeway.

Within the north-south orientated blocks of land the pattern of field division and cultivation is east-west orientated. The fields are demarcated by wide and shallow ditches (with no evidence for banks) spaced at roughly 25 m intervals, these ditches appear to respect the north-south orientated boundaries. The orientation and width of these fields is the same as a medieval pattern of land sub-division noted on Sites 8 and 9 in Monadreela townland to the north. Within the east-west orientated field boundaries in Boscabell the pattern of cultivation is on the same alignment as the field boundaries, there are no recorded instances where field ditches are cut or truncated by cultivation furrows.

The evidence from the Boscabell sites suggests that the layout of the townland boundaries may be based on ancient divisions, and the layout and organisation of 'blocks' of land within the townlands may be to some degree based on similar pre-existing features. The fact that elements of this system are shown on the 1st Edition OS six-inch map clearly indicates that this pattern is pre-nineteenth century in date (see Figure iv). However, given the medieval pattern of land organisation identified in Monadreela townland to the north it can also be suggested that this system of land division may have its origins in the medieval period, directly associated with the nearby Boscabell moated site.

CONCLUSION

All excavation works have finished in association with the N8 Cashel Bypass & N74 Link Road. The excavation revealed a multi-period site, with activity in the Early Neolithic, Later Neolithic, Copper Age, Middle Bronze Age, Medieval, Later Medieval and Post Medieval periods. The defining discovery was the heavily ploughed-out remains of a small rectangular-shaped house, dated to the Early Neolithic period on ceramic evidence. A cluster of nearby structures may date to the Middle Bronze Age period. Medieval evidence in the form of a cereal-drying kiln pre-dated the nearby Boscabell moated site and instead, may be associated with the Site 20 enclosure, constructed in the 6th century AD and possibly functioning as an *airlise* of nearby ringfort TI061-028. The lack of medieval finds/features contemporary with the excavation would suggest the fields west of the moated site were agrarian in the 13th and 14th centuries, an agriculutral pattern which largely remained unchanged.

RECOMENDATIONS

It is recognised that dating Structures 2, 3 and 4 to the Middle Bronze Age—based on only one radiocarbon determination—is a tentative assumption. Therefore it is recommended that the hazel and/or ash charcoal samples analysed from the Structure 2 postholes be submitted for radiocarbon dating. These fields should also be field-walked for research purposes should the land use ever revert to tillage.

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Appendix 1 Context Register

Context No.	Type	Description
(01)	Topsoil	Friable mid brown silty clay with occasional angular & sub-angular limestone & sandstones throughout. Varies between 0.3–0.4 m deep containing a number of post medieval finds. Three sherds of post-medieval pottery 03E0426:09, 03E0426:11 & 03E0426:12 were recovered from this deposit, alongwith one undated sherd 03E0426:13 that was possibly prehistoric
(02)	Subsoil	Varies between friable orange/brown sandy / silty clay with moderate angular & sub-angular stones throughout to compact grey marl-like sandy clay in the lower-lying & wetter part of the site
(03)	Fill	Fill of ditch [04]. Mid brown silty sand with charcoal flecking & small stones. Two iron fragments 03E0426:16 (round-headed screw) & 03E0426:17 (square-headed nail) were recovered from this deposit. Below (194)
[04]	Cut	E-W orientated ditch filled with (03) & (194). Extended *c.* 70 m through the site & beyond, slightly curving along its length, measuring 1.55 m in diameter & 0.32 m deep. Southernmost of the post-medieval ditches on site, cut by pit [196] & cultivation furrow [197]
(05)	Fill	Fill of pit [31]. Fire reddened clay with overlying patches of charcoal; small stones
(06)	Fill	Fill of pit [30]. Dark brown charcoal flecked silty sand with flecks of burnt clay. Contained a clay pipe stem 03E0426:14
(07)	Fill	Fill of pit [32]. Moderately compact silty clay with frequent charcoal flecking, occasional small stones & particles of burnt clay throughout
(08)	Fill of kiln	Fill of kiln [183]. Friable dark brown to grey sandy silt with charcoal flecking & occasional sub-angular limestone fragments. One fragment of burnt bone was recorded from this deposit during excavation; it was subsequently lost
(09)	Fill	Fill of pit [181]. Moderately compact mid brown charcoal flecked sandy silt, homogenous throughout
(10)	Fill	Fill of posthole [159], no description survives
[18010]	Structure 1 posthole	Circular posthole, filled with (18025). Sharp break of slope at the top, vertical sides with a very gradual break of slope to a gently rounded base. Measured 0.23 m in diameter & 0.19 m deep. Located 1 m N of [117], & 2.5 m W of [18011]. This feature was identified on Site 18 during Phase 1 archaeological testing
[18011]	Structure 1 posthole	Circular posthole, filled with (18026). Sharp break of slope at the top, steep sides with a gradual break of slope to a flat base. Measured 0.27 m in diameter & 0.21 m deep. Located 2.5 m E of [18010] & 3.5 m N of posthole [108]
[18012]	Structure 1 posthole	Circular posthole, filled with (18027). Sharp break of slope at the top, gently rounded sides with no discernible break of slope to a rounded base. Measured 0.22 m in diameter & 0.12 m deep. Located 1 m N of pit [141] & 4.5 m E of posthole [112].
[11]	Cut	Oval pit, fill not recorded. Measured 0.8 m long, 0.4 m wide, depth not recorded
(12)	Fill	Fill of posthole [27]. Moderately compact mid brown silty clay with charcoal flecking & small stones. Measured 0.22 m in diameter & 0.1 m deep. An adult sheep tooth was recovered from this deposit.
(13)	Fill	Fill of posthole [29]. Moderately compact mid brown sandy clay with small stones
(14)	Fill	Fill of [227]. Mid brown sandy silt, homogenous throughout
(15)	Fill	Fill of [228]. Mid brown sandy silt, homogenous throughout
(16)	Fill	Fill of [229]. Mid brown charcoal flecked sandy silt with inclusions of burnt clay throughout
(17)	Fill	Fill of [230]. Mid brown charcoal flecked sandy silt with inclusions of burnt clay throughout
[18]	Cut	Sub-circular pit, filled with (25)
(19)	Fill	Fill of posthole [191]. Moderately compact mid greyish-brown sandy silt with charcoal flecking & otherwise homogenous throughout
(20)	Fill	Fill of pit [113]. Moderately compact orange to grey sandy clay with stones

		throughout
(21)	Deposit	Deposit of yellow-brown clay, moderate stones.
(22)	Deposit	Deposit of charcoal-rich sandy silt, frequent fragments of heat cracked stone
(23)	Fill	Upper fill of pit [119]. Friable, mid grey to green charcoal flecked sandy silt with frequent limestone & possible burnt stones throughout. Above (120), (132) & stakeholes [231], [232] & [233]. A small fragment of chert debitage 03E0426:22 & a possible chert core were recovered from this deposit 03E0426:23. Birch charcoal dated to 2458–2155 cal. BC
(24)	Fill	Fill of pit [185]. Moderately compact mid greyish-brown silty clay with occasional small stones & burnt clay particles throughout. Measured 0.35 m in diameter & 0.26 m deep
(25)	Fill	Fill of sub-circular pit [18]. Measured 0.63 m long, 0.46 m wide, depth not recorded
(18025)	Fill	Fill of posthole [18010]. Moderately compact to friable dark brownish/grey silty clay with charcoal flecking throughout. A number of small (0.1 m diameter) packing stones were noted also
(18026)	Fill	Fill of posthole [18011]. Moderately compact dark greyish-brown-black silty clay with frequent charcoal flecking throughout
(18027)	Fill	Fill of posthole [18012]. Friable dark reddish-brown sandy clay with occasional charcoal flecks throughout
(26)	Fill	Fill of pit [180]. Moderately compact mid black/brown sandy silt with charcoal flecking throughout. Frequent large limestone stones were noted throughout this deposit, they lined the outsides of the chamber, but not the flue. Sherd of Cashel-type ware 03E0426:18 recovered from this deposit
[27]	Cut	Sub-circular posthole, filled with (12). Sharp break of slope at the top with a U-shaped profile. Measured 0.22 m in diamter & 0.1 m deep
[28]	Cut	E-W orientated cultivation furrow, unexcavated
[29]	Cut	Circular posthole, filled with (13). Sharp break of slope at the top with a U-shaped profile. Measured 0.22 m in diamter & 0.1 m deep
[30]	Cut	Kidney-shaped shallow pit, filled with (06). Irregular break of slope at the top with shallow gradual sloping sides & a flat base. Measured 1.37 m in diameter & 0.06 m deep
[31]	Cut	Irregular shaped shallow pit with gradual sloping sides & uneven base. Measured 1.25 m in diameter & 0.07 m deep. Filled with (05)
[32]	Cut	Circular pit, filled with (07). Irregular break of slope at the top with gradual sloping sides & a flat base. Measured 0.84 m in diameter & 0.04 m deep
(33)	Fill	Fill of cereal drying kiln [183]. Moderately compact orange/brown silty clay. Measured 4.8 m long, 1.34 m wide & 0.15 m deep
(34)	Fill	Primary fill of posthole [76]. Moderately compact mid brown/ grey clayey silt with charcoal flecking with occasional particles of burnt clay throughout. Measured 0.31 m in diameter & 0.04 m deep. Seals (73)
(35)	Fill	Fill of stakehole [200]. Moderately compact brownish-grey sandy silt with charcoal flecking throughout
(36)	Fill	Fill of posthole [77]. Friable dark brown-black sandy silt with mdoerate charcoal flecking & occasional particles of burnt clay throughout
(37)	Fill	Fill of pit [72]. Moderately compact mid brown clayey silt with charcoal flecking & occasional particles of burnt clay throughout
(38)	Fill	Fill of stakehole [74]. Moderaetly compact mid yellow-brown charcoal-rich sandy silt with occasional inclusions of small pebbles
(39)	Fill	Fill of posthole [202]. Moderately compact greyish-brown sandy silt with charcoal flecking throughout
40		Not used
(41)	Fill	Fill of [102]. Large irregularly shaped deposit of burnt stones & charcoal with occasional inclusions of burnt clay throughout. Contained a fragment of cattle rib. Alder charcoal dated to 1409–1263 cal. BC. Above deposit (97)
(42)	Fill	Upper fill of ditch [70]. Mid brown charcoal flecked sandy silt; moderate inclusions of small stones & decayed limestone. Contained post medieval finds 03E0426:02 (green glass), 03E0426:03 (clear glass), 03E0426:04 transfer printed ware, 03E0426:05 (iron fragment), 03E0426:07 (green glass) & 03E0426:08 (blue glass). Above (69)

(43)	Fill	Fill of posthole [103]. Moderately compact mid grey/ brown sandy silt with charcoal flecking throughout
(44)	Fill	Fill of stakehole [204]. Friable, dark greyish-brown sandy silt with charcoal flecking throughout
(45)	Fill	Fill of stakehole [46]. Friable dark brown-grey sandy silt with charcoal flecking & small stones
[46]	Structure 4 stakehole	Circular stakehole, filled with (45). Sharp break of slope at the top, V-shaped profile. Measured 0.08 m in diameter
47		Not used
(48)	Fill	Fill of posthole [75]. Deposit of burnt limestone in a black charcoal-rich silty clay
(49)	Deposit	Roughly circular deposit of charcoal & burnt clay, occasional small stones
(50)	Fill	Fill of stakehole [206]. Friable greyish-brown sandy silt with charcoal flecking throughout
(51)	Fill	Fill of stakehole [207]. Friable greyish-brown sandy silt with charcoal flecking throughout
(52)	Fill	Fill of stakehole [208]. Friable greyish-brown sandy silt with small stones
(53)	Fill	Fill of stakehole [209]. Friable greyish-brown sandy silt with charcoal flecking throughout
(54)	Fill	Fill of [210]. Friable greyish-brown sandy silt with charcoal flecking throughout
(55)	Fill	Fill of stakehole [211]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.1 m in diameter
(56)	Fill	Fill of stakehole [212]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.09 m in diameter
(57)	Fill	Fill of stakehole [213]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.07 m in diameter
(58)	Fill	Fill of [214]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.08 m in diameter
(59)	Fill	Fill of stakehole [215]. Moderately compact greyish-brown sandy silt with charcoal flecking throughout. Measured 0.12 m in diameter
(60)	Fill	Fill of stakehole [216]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.08 m in diameter
(61)	Fill	Fill of stakehole [217]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.09 m in diameter.
(62)	Fill	Fill of stakehole [218]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.06 m in diameter
(63)	Fill	Fill of stakehole [219]. Friable greyish-brown sandy silt with moderate charcoal flecking throughout. Measured 0.11 m in diameter
(64)	Fill	Fill of stakehole [220]. Friable greyish-brown sandy silt with charcoal flecking throughout. Measured 0.06 m in diameter.
(65)	Fill	Fill of stakehole [221]. Friable greyish-brown silty sand with charcoal flecking throughout. Measured 0.09 m in diameter
(66)	Fill	Fill of stakehole [222]. Friable, greyish-brown sandy silt with charcoal flecking throughout. Measured 0.08 m in diameter
(67)	Fill	Fill of posthole [223]. Moderately compact grey-brown sandy silt with charcoal flecking throughout. Measured 0.14 m long & 0.08 m wide
(68)	Fill	Fill of [224]. Moderately compact grey-brown sandy silt with charcoal flecking throughout. Measured 0.14 m long & 0.06 m wide
(69)	Fill	Basal fill of ditch [70]. Moderately compact light to mid brown silty clay with charcoal flecking & small stones. Measured 2.11 m in diameter & 0.7 m deep. Below (42)
[70]	Cut	E-W orientated ditch, filled with (42) & (69). Sharp break of slope at the top with steep sides & an even base. Found to curve gently from NE/E as it extended *c.* 65 m in length, 2–2.65 m wide & 0.24–0.38 m deep. Cuts hollow [102]
(71)	Fill	Fill of drain [90]. Friable yellowish-brown sandy clay with frequent stones throughout
[72]	Cut	Circular pit, filled with (37). Sharp break of slope at the top, with steeply sloping sides & a gradual break of slope to a gently rounded base. Measured

		0.57 m in diameter & 0.13 m deep
(73)	Fill	Basal fill of posthole [76]. Moderately compact greyish-black clayey silt with charcoal flecking & occasional white/orange ash. Below (34)
[74]	Cut	Circular stakehole, filled with (38). Sharp break of slope at the top with a V-shaped profile. Measured 0.06 m in diamter. Located immediately W of stakehole [201] & E of stakehole [223]
[75]	Structure 2 posthole	Oval posthole, filled with (48). Sharp break of slope at the top with almost vertical sides, irregular break of slope to an uneven base. Measured 0.58 m in diameter & 0.25 m deep. Possibly forms the W side of the entrance to Structure 2. Located 1 m S of posthole [202] & 2.52 m W of posthole [91]
[76]	Structure 3 posthole	Oval posthole, filled with (34) & (73). Sharp break of slope at the top with gradual sloping sides, gradual break of slope to a gently rounded base. Measured 0.31 m in diameter & 0.08 m deep. Located 0.3 m N of stakehole [213] & 2.1 m W of [219]
[77]	Structure 3 posthole	Oval posthole, filled with (36). Sharp break of slope at the top with gradual sloping sides & a flat base. Measured 0.4 m long, 0.3 m wide & 0.02 m deep. Located 0.78 m E of [200] & 0.54 m S of [219]
(78)	Fill	Primary fill of pit [82]. Friable blackish-brown peaty silt with charcoal flecking throughout. Measured 0.17 m deep. Below (81)
(79)	Fill	Fill of posthole [80]. Moderately compact grey-black sandy silt with charcoal flecking throughout. Hazel charcoal dated to 1258–1028 cal. BC
[80]	Structure 2 posthole	Circular posthole, filled with (79). Sharp break of slope at the top, steeply sloping sides with a gradual break of slope to a rounded base. Measured 0.22 m in diameter & 0.2 m deep. Located 1.65 m N of [91], 0.06 m N of pit [82] & 0.85 m S of posthole [84], cuts deposit (87)
(81)	Fill	Secondary fill of pit [82]. Moderately compact blackish-brown silty clay with charcoal flecking & limestones throughout. Measured 0.17 m deep. Above (78)
[82]	Structure 2 pit	Oval pit, filled with (78) & (81). Sharp break of slope at the top with a stepped profile & a gently rounded base. Measured 1.36 m long, 0.82 m wide & 0.34 m deep; cuts deposit (87)
(83)	Fill	Fill of posthole [84]. Moderately compact mid grey sandy silt with charcoal flecking & occasional burnt limestones & sandstones
[84]	Structure 2 posthole	Circular posthole, filled with (83). Sharp break of slope at the top, steeply sloping sides on all but the eastern side, with a sharp break of slope to an even base. Stepped profile on eastern side. Measured 0.24 m in diameter & 0.2 m deep
(85)	Fill	Fill of N-S orientated ditch [86]. Moderately compact mid brown sandy silt with charcoal flecking & occasional stones throughout
[86]	Cut	N-S orientated ditch, filled with (85). Sharp break of slope at the top, gently sloping sides & a generally wide U-shaped base. Measured 1.22 m in diameter & 0.31 m deep, extending *c.* 33 m through the E side of the site
(87)	Deposit	Deposit of grey charcoal flecked sandy silt with inclusions of re-deposited yellow natural clay, cut by posthole [80] & pit [82]
(88)	Fill	Fill of pit [89]. Moderately compact yellowish-brown sandy silt with moderate charcoal flecking & small angular stones throughout
[89]	Structure 4 pit	Rectangular shaped pit, filled with (88). Sharp break of slope at the top with steep sides & a gradual break of slope to a flat base. Measured 0.62 m in diameter & 0.16 m deep. Truncated by post-medieval ditch [86] at its W side
[90]	Cut	N-S orientated drain filled with (71). Sharp break of slope at the top with a V-shaped profile & pointed base. Measured 10 m long, 0.45 m wide & varies between 0.3–0.4 m deep. This feature is probably a continuation of drain [86] immediately to the N
[91]	Structure 2 posthole	Circular posthole, filled with (92). Sharp break of slope at the top, steeply sloping sides & a sloping base. Measured 0.22 m in diameter
(92)	Fill	Fill of posthole [91]. Moderately compact dark grey-black sandy silt with charcoal flecking & occasional burnt sandstones throughout
[93]	Cut	E-W orientated cultivation furrow, unexcavated
(94)	Fill	Fill of posthole [96]. Moderately compact mid grey-brown sandy silt with charcoal flecking throughout

(95)	Fill	Fill of stakehole [201]. Moderately compact sandy silt with frequent charcoal flecking throughout
[96]	Structure 2 posthole	Circular posthole, filled with (94). Sharp break of slope at the top with steeply tapered sides & an overall V-shaped profile. Measured 0.22 m in diameter
(97)	Fill	Fill of hollow [102]. Compact dark grey clay with yellow mottling (overall like marl) with moderate charcoal flecking & fragments of macerated stones throughout. Below (98)& (41), above (100). Measured 3.2 m long & 0.22 m deep.
(98)	Fill	Fill in [102]. Compact dark grey silty sand with charcoal flecking & macerated stones throughout. Measured 2.3 m long & 0.08 m deep. Above (97), below (99). The stratigraphic relationship between this fill & deposit (41) is unclear.
(99)	Fill	Upper fill in [102]. Moderately compact light grey sandy silt with charcoal flecking & small stones. Measured 3.3 m long & 0.2 m deep at maximum. Above (98); the stratigraphic relationship between this deposit & upper fill (41) was unclear
(100)	Fill	Secondary fill in [102]. Compact mid grey sand with charcoal flecking & occasional macerated stones fragments throughout. Measured 2.5 m long & 0.04 m deep. Above (101) & below (97)
(101)	Fill	Primary fill in [102]. Compact yellowish-brown sandy clay. Below (100). Measured 4.5 m long & varies between 0.04–0.34 m deep. Contained six calcined indeterminate fragments of animal bone
[102]	Cut	Low-lying hollow, Measured 4.5 m in diameter, depth is uncertain. Filled with (41), (97), (98), (99), (100), (101) & (106). Photographs indicate the break of slope at the top of this feature was sharp with steep shallow sides & an irregular but generally flat base. Irregular (but roughly triangular with rounded corners) in plan. Cut by ditch [70]
[103]	Structure 2 posthole	Circular posthole, filled with (43). Sharp break of slope at the top, steeply sloping / tapered sides with & overall V-shaped profile. Measured 0.23 m in diameter
(104)	Deposit	Irregular, Oval shaped deposit of intense *in situ* burning containing charcoal patches. Measured 4 m long & 1.8 m wide at maximum
(105)	Deposit	Irregular circular shaped deposit of mid brown charcoal & ash flecked sandy silt. No dimensions recorded
(106)	Fill	Fill of [102]. Light grey silty sand with yellow patches. Above (98)
(107)	Fill	Fill of posthole [108]. Moderately compact dark grey sandy silt with charcoal flecking & two packing stones
[108]	Structure 1 posthole	Circular posthole, filled with (107). Sharp break of slope at the top with steeply sloping sides & gradual break of slope to a rounded base. Measured 0.24 m in diameter & 0.15 m deep
(109)	Fill	Fill of posthole [110]. Moderately compact mid brown clayey sand with charcoal flecking & small stones throughout
[110]	Structure 1 posthole	Oval posthole, filled with (109). Sharp break of slope at the top with steep sides, stepped on south side. Gradual break of slope to a flat base, 0.27–0.29 m in diameter. Interpreted as forming the eastern side of a possible re-modelled entrance to the building
(111)	Fill	Fill of posthole [112]. Moderately compact to friable dark grey sandy silt with charcoal flecking & small stones
[112]	Structure 1 posthole	Oval posthole, filled with (111). Break of slope at the top was not identified, but the sides were very steep (almost vertical) with a gradual break of slope to a U-shaped base. Measured 0.25 m in diameter, cuts slot-trench [160]
[113]	Cut	Oval pit, shallow filled with (20). Gradual break of slope at the top with gently sloping sides & a flat base. 0.5–0.52 m in diameter & 0.1 m deep
(114)	Fill	Fill of posthole [115]. Moderately compact mid brown clayey silt with charcoal flecking throughout
[115]	Structure 1 posthole	Circular posthole, filled with (114). Sharp break of slope at the top steeply sloping sides & a gradual break of slope to a U-shaped base. Measured 0.25 m in diameter. This posthole forms the SE corner post of the building. Located 0.75 m E of foundation trench [154], & 0.52 m N of posthole [140]
(116)	Fill	Fill of posthole [117]. Moderately compact dark grey sandy silt with moderate

		charcoal flecking throughout. Measured 0.25 m long, 0.23 m wide. Six packing stones were positioned towards the sides of the cut
[117]	Structure 1 posthole	Sub-circular posthole, filled with (116). Sharp break of slope at the top with almost vertical sides & a gradual break of slope to a gently rounded base. Measured 0.25 m long & 0.23 m wide
(118)	Fill	Fill of pit [142]. Moderately compact dark brown sandy silt with charcoal flecking & frequent small stones throughout
[119]	Cut	Sub-circular pit, filled with (120), (23) & (132). Measured 2 m long, 1.55 m wide & 0.16 m deep. Sharp break of slope at the top, with steep sides & flat base. Stakeholes [231], [232] & [233] were identified in the base of this pit, however the stratigraphic relationships between these & the pit is unclear
(120)	Fill	Secondary fill of pit [119]. Friable, dark blue/black charcoal flecked sandy clay with frequent limestone & sandstones throughout. Measured 2 m long, 1.55 m wide & 0.16 m deep. Above (132) & stakeholes [231], [232] & [233]; below (23). Alder/hazel charcoal dated to 2465–2210 cal. BC
(121)	Earthen bank	N-S orientated bank located at the E limit of site. This is the same feature that was identified & investigated on Sites 15-18 to the north. It was preserved *in situ* here
(122)	Fill	Fill of Early Neolithic pit [141]. Moderately compact mid brown sandy silt with charcoal flecking & inclusions of oxidized clay particles throughout. A total of six sherds of Early Neolithic ceramic representing a single vessel were recovered from this deposit 03E0426:01; 03E0426:10; 03E0426:15; 03E0426:19; 03E0426:20 & 03E0426:21
(123)	Fill	Fill of [225]. Mid brown charcoal flecked clayey silt; traces of burnt clay
(124)	Deposit	Fill of hollow [102]. Deposit of dark brown charcoal flecked clayey silt; occasional small stones. Part of deposit overlay (101). No dimensions recorded
(125)	Fill	Fill of posthole [128]. Moderately comapct mid brown clayey silt with charcoal flecking throughout
(126)	Fill	Fill of cultivation furrow [127]. Mid brown sandy silt with charcoal flecking & small stones
[127]	Cut	E-W orientated cultivation furrow, filled with (126)
[128]	Structure 1 posthole	Circular posthole, filled with (125). Sharp break of slope at the top, steep & almost vertical sides with a gradual break of slope to a gently rounded base. Measured 0.22 m long, 0.16 m wide. This posthole forms the SW corner of Structure 1
(129)	Fill	Fill of stakehole [231]. Friable, light grey sandy clay, homogenous throughout
(130)	Fill	Fill of stakehole [232]. Friable, light grey sandy clay, homogenous throughout
(131)	Fill	Fill of stakehole [233]. Friable, light grey sandy clay, homogenous throughout
(132)	Fill	Basal fill of [119]. Light grey sand with yellow mottling; occasional pieces of limestone. Measured 2 m long, 1.55 m wide & 0.15 m deep. Above stakeholes [231], [232] & [233]; differentiated from the light grey sand deposits in the stakeholes on the basis of yellow clay mottling. Not shown on section A-A1
(133)	Fill	Fill of [134]. Mid brown charcoal flecked sandy silt with occasional stones throughout
[134]	Cut	E-W orientated cultivation furrow, filled with (133). Exposed for *c.* 4 m, truncated southern side of Structure 1
(135)	Fill	Fill of [136]. Moderately compact dark grey-brown sandy silt with charcoal flecking & small stones throughout
[136]	Structure 1 posthole	Circular posthole filled with (135). Sharp break of slope at the top, steeply sloping sides & a gently rounded base (U-shaped profile). Truncated at its N side by cultivation furrow [127]
(137)	Fill	Fill of posthole [138]. Moderately compact mid brown sandy silt with charcoal flecking & small stones. Traces of orange oxidised clay representing *in situ* burning were noted around the sides of the posthole
[138]	Structure 1 posthole	Oval posthole, filled with (137). Sharp break of slope at the top with steep sides & flat base. Measured 0.3 m long, 0.2 m wide. Cut by cultivation furrow [18013]
(139)	Fill	Fill of posthole [140]. Moderately compact mid brown clayey silt with small stones

[140]	Structure 1 posthole?	Circular posthole filled with (139). Sharp break of slope at the top with a tapered profile & sharp break of slope to a flat base
[141]	Cut	Circular pit filled with (122). Gradual break of slope with gently sloping sides & gradual break of slope to a rounded base. Measured 0.4 m in diameter & 0.2 m deep. Contained Early Neolithic pottery
[142]	Cut	Irregular shaped shallow pit, filled with (118). Gradual but irregualr break of slope at the top, irregular & gently sloping sides to an uneven base. Measured 1.05 m long, 0.88 m wide & 0.11 m deep
[143]	Structure 1 posthole	Sub-circular posthole, filled with (144). Interpreted as forming part of a porch at the entrance to Structure 1. Measured 0.12 m by 0.1 m in diameter
(144)	Fill	Fill of posthole [143], no description survives
(145)	Fill	Fill of posthole [146]. Moderately compact mid brown clayey silt with frequent small stones & gravel throughout
[146]	Structure 1 posthole?	Circular posthole 0.22 m in diameter. Sharp break of slope at the top with steep sides & gradual break of slope to an uneven base. Filled with (145)
(147)	Fill	Fill of [148]. Grey/brown sandy silt with charcoal flecking & small stones
[148]	Cut	E-W orientated cultivation furrow, filled with (147)
(149)	Fill	Fill of [150]. Mid brown charcoal flecked sandy silt
[150]	Cut	E-W orientated cultivation furrow, filled with (149)
(151)	Fill	Fill of posthole [152]. Moderately compact dark grey-brown sandy silt with charcoal flecking & frequent small stones throughout. Two large packing stones were identified within this deposit lining the sides of the cut
[152]	Structure 1 posthole?	Circular posthole, filled with (151). Sharp break of slope at the top, steep & almost vertical sides with a gradual break of slope to a gently rounded base. Measured 0.22 m in diameter. Located immediately SE of pit [142], & W of posthole [140]. Interpreted as an internal roof-supporting posthole within Structure 1
(153)	Fill	Fill of foundation trench [154]. Mid brown charcoal flecked sandy silt, homogenous throughout. No evidence for packing stones was noted
[154]	Structure 1 foundation trench	E-W orientated foundation trench at the southern side of Structure 1. Filled with (153). Gradual breaks of slope at the top, gently sloping sides with no perceptible break of slope to a flat base. Measured 5.6 m long, varies between 0.21 m wide at its E side & 0.5 m wide at its W side & *c.* 0.09 m deep. Posthole [176] was noted in the base of this trench, postholes [169] & [171] were at its S side
(155)	Fill of foundation trench	Fill of foundation trench [160]. Moderately compact to friable orange brown sandy clay with moderate small limestone stones throughout
(156)	Fill	Fill of [157]. Mid brown charcoal flecked sandy silt; occasional pieces of burnt clay & limestone
[157]	Cut	E-W orientated cultivation furrow, filled with (156)
(158)	Fill	Fill of [188]. Friable mid brown silty clay with charcoal flecking & frequent large limestone stones & rocks concentrated towards the base
[159]	Cut	Circular posthole, filled with (10). Sharp break of slope at the top with a U-shaped profile. Measured 0.22 m in diamter & 0.1 m deep
[160]	Structure 1 foundation trench	N-S orientated foundation trench within Structure 1, filled with (155). Irregular but well-defined break of slope at the top with steep sides & an irregular break of slope to an uneven base. Measured 1.67 m long, 0.25 m wide & 0.10 m deep. Cut by posthole [112] at its S terminus
(161)	Fill	Fill of posthole [226]. Moderately compact mid brown sandy silt with charcoal flecking throughout
[162]	Structure 1 posthole	Posthole, filled with (163). Measured 0.25 m by 0.18 m, depth unknown. Interpreted as forming part of a possible porch or entrance to Structure 1. Cuts posthole [238]
(163)	Fill	Fill of posthole [162], moderately compact mid brown sandy silt with charcoal flecks
(164)	Fill	Fill of pit [165]. Moderately compact mid brown-black sandy silt with moderate charcoal flecking & small stones
[165]	Cut	Irregular pit filled with (164). Irregular break of slope at the top with gradual sloping sides & uneven base; uneven sides at S side. Measured 3 m x 2.4 m & 0.06–0.3 m deep

[166]	Cut	E-W orientated cultivation furrow, unexcavated
[167]	Cut	E-W orientated cultivation furrow, unexcavated
(168)	Fill	Fill of [169]. Moderately compact dark brown sandy silt with charcoal flecking & frequent small stones throughout
[169]	Structure 1 posthole	Circular posthole filled with (168). Diameter 0.21 m. Sharp break of slope at the top, steeply sloping sides with no discernible break of slope to a gently rounded base & interpreted as forming part of a possible porch or entrance to Structure 1
(170)	Fill	Fill of posthole [171]. Moderately compact dark brown clayey silt with charcoal flecking & traces of oxidized clay throughout
[171]	Structure 1 posthole	Oval posthole filled with (170). Sharp break of slope at the top with steeply sloping sides & a gradual break of slope to a gently rounded base. Measured 0.22 m in diameter & 0.19 m deep. Interpreted as forming the E side of the original entrance to the building
(172)	Fill	Fill of pit [173]. Friable, mid greyish-brown sandy silt with charcoal flecking & heat-shattered stones throughout
[173]	Cut	Circular pit, filled with (172). Gentle break of slope at the top with gradual sloping sides, & an uneven base. Measured 0.25 m in diameter
(174)	Fill	Fill of foundation trench [175]. Moderately compact mid yellow-brown sandy silt with moderate charcoal flecking & frequent limestones throughout
[175]	Structure 1 foundation trench	NE/SW orientated foundation trench Structure 1, filled with (174). Sharp break of slope at the top, gradually sloping sides & a gradual break of slope to a generally flat but uneven base. Measured 1.67 m long, 0.25 m wide & 0.1 m deep. Associated with posthole [171], although the stratigraphic relationship was unclear
[176]	Structure 1 posthole	Circular posthole, filled with (177). Measured 0.15 m E-W by 0.10 m. Sharp break of slope at the top with steep sides & a gradual break of slope to a gently rounded base. Interpreted as the western side of the original entrance to the structure
(177)	Fill	Fill of posthole [176]. Friable mid orange/brown sandy silt with small stones
(178)	Fill	Fill of pit [179]. Friable, dark greyish-brown sandy silt with frequent charcoal flecking & small stones. Contained 11 indeterminate burnt bones. Oak charcoal dated to 2574–2466 cal. BC
[179]	Cut	Sub-circular pit, filled with (178). Measured 0.75–1 m in diameter, depth not recorded. Located at SW corner of site, may relate to Site 20 activity as well
[180]	Cut	Irregular shaped pit, filled with (26). Gently break of slope at the top with gradual sloping sides & uneven base. Measured 0.53 m by 0.51 m & 0.15 m deep. May have been associated with flue of kiln [183]
[181]	Cut	Sub-circular pit, filled with (09). Sharp break of slope at the top with almost vertical sides & an uneven base. Measured 0.62 m long, 0.59 m wide & 0.15 m deep. May have been associated with chamber of kiln [183]
(182)	Fill	Deposit of *in situ* burning noted at the end of the flue of kiln [183]. Measured 3.1 m long, & varies between 0.5 to 0.8 m wide & 0.1 m deep. Comprised a bright red & oxidised clay with frequent charcoal flecks at the end of the chamber
[183]	Cut	Cereal drying kiln with circular shaped chamber & flue, both with steep sides & flat base. Measured 4.8 m long, 1.34 m wide & 0.3 m deep. Filled with (08), (184) &(182)
(184)	Fill	Lower fill of [183]. Grey/brown charcoal-rich sandy silt at base of chamber of kiln. Measured 1.5 m in diameter & 0.1 m deep. This deposit may represent the uncleaned remnants of a firing within the kiln. Carbonised oat dated to cal. AD 1030–1172
[185]	Cut	Circular pit, filled with (24). Gentle break of slope at the top with gradual sloping sides & flat base. Measured 0.35 m in diameter & 0.26 m deep
(186)	Fill	Fill of stakehole [187]. Friable, light brown sandy silt, homogenous throughout. The preliminary report stated that a sherd of possible Bronze age pottery was recovered from this deposit. No trace of this sherd was found during post-excavation works
[187]	Cut	Circular stakehole, filled with (186). Sharp break of slope at the top with a V-shaped profile

[188]	Cut	Circular pit filled with (158). Very sharp break of slope at the top with concave sides & no discernible break of slope to a rounded base. Measured 10 m in diameter, depth not recorded
(189)	Fill	Fill of ditch [190]. Moderately compact mid brown sandy silt with charcoal flecking & moderate inclusions of small stones & macerated limestones throughout. Contained iron screw bolt 03E0426:06
[190]	Cut	E-W orientated ditch, filled with (189). Extends across the entire site, & beyond the limits of excavation. Located between 2–3 m N of ditch [70]. Measured *c.* 65 m in length, 1.6 m wide & 0.6–0.12 m deep, curving from NE-W along its length like ditch [70]
[191]	Cut	Circular posthole, filled with (19). Irregular break of slope at the top, steeply sloping sides & an irregular base. Measured 0.32 m long, 0.21 m wide, depth not recorded
(192)	Fill	Fill of furrow [193]. Mid brown charcoal flecked clayey silt; occasional small stones
[193]	Cut	E-W orientated cultivation furrow, filled with (192). Measured 0.94 m in diameter & 0.15 m deep
(194)	Fill	Fill of [04]. Moderately compact dark grey-black silty clay with charcoal flecking throughout, varying to mid brown-black sandy silt with frequent burnt stones. Varied in width between 0.7–0.85 m & 0.1–0.16 m deep, found only at the W end of the ditch. Above (03)
(195)	Fill	Fill of pit [196]. Friable, dark brownish grey sandy silt with charcoal flecking & moderate small/medium sized stones throughout.
[196]	Cut	Oval pit, filled with (195). Sharp break of slope at the top with gradual sloping sides & an irregular base. Measured 0.9 m in diameter & 0.16 m deep. Cut into ditch [04]
[197]	Cut	E-W orientated cultivation furrow filled with (198). Exposed S of ditch [04] for *c.* 15 m, 0.7 m wide & 0.13 m deep, partially cuts ditch [04]
(198)	Fill	Fill of cultivation furrow [197]. Moderately compact mid brown sandy silt, homogenous throughout
199		Not used
[200]	Structure 3 stakehole	Circular stakehole, filled with (35). Sharp break of slope at the top, steeply sloping sides with a gradual break of slope to a rounded base. Measured 0.14 m in diameter.
[201]	Structure 2 stakehole	Circular stakehole, filled with (95). Sharp break of slope at the top, steeply sloping sides with a gradual break of slope to a rounded base. Inclination of axis was towards the SW. Measured 0.06 m in diameter
[202]	Structure 2 posthole	Circular posthole, filled with (39). Sharp break of slope at the top, with an overal V-shaped profile. Inclination of axis was to the south-west. Measured 0.16 m long, 0.08 m wide
(203) = (18203)	Fill	Fill of posthole [205]. No further information recorded
[204]	Structure 4 stakehole	Circular stakehole, filled with (44). Sharp break of slope at the top, shallow gradually sloping sides with a gradual break of slope to a rounded base. Measured 0.06 m in diameter
[205] = [18205]	Structure 1 posthole	Sub-circular posthole measuring 0.2 m long, 0.1 m wide. Filled with (203)
[206]	Structure 4 stakehole	Circular stakehole, filled with (50). Sharp break of slope at the top, steeply sloping sides with a gently rounded base. Measured 0.06 m in diameter
[207]	Structure 4 stakehole	Circular stakehole, filled with (51). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.07 m in diameter
[208]	Structure 4 stakehole	Circular stakehole, filled with (52). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.06 m in diameter
[209]	Structure 4 stakehole	Circular stakehole, filled with (53). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.06 m in diameter Internal stakehole within Structure 4
[210]	Structure 4 stakehole	Circular stakehole, filled with (54). Sharp break of slope at the top, steeply sloping sides& a rounded base. Measured 0.06 m in diameter. Internal stakehole within Structure 4
[211]	Structure 4	Circular stakehole, filled with (55). Sharp break of slope at the top, steeply

	stakehole	sloping sides & a rounded base. Measured 0.1 m in diameter
[212]	Structure 4 stakehole	Circular stakehole, filled with (56). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.09 m in diameter
[213]	Structure 4 stakehole	Circular stakehole, filled with (57). Sharp break of slope with steeply sloping sides & a rounded base. Measured 0.07 m in diameter
[214]	Structure 4 stakehole	Circular stakehole, filled with (58). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.08 m in diameter
[215]	Structure 3 stakehole	Circular stakehole, filled with (59). Sharp break of slope with steeply sloping sides & a rounded base. Measured 0.12 m in diameter
[216]	Structure 4 stakehole	Circular stakehole, filled with (60). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.08 m in diameter
[217]	Cut	Circular stakehole, filled with (61). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.09 m in diameter.
[218]	Cut	Circular stakehole, filled with (62). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.09 m in diameter
[219]	Structure 3 stakehole	Circular stakehole, filled with (63). Sharp break of slope at the top, steeply sloping sides with a rounded base. Inclination of axis is to the south-east. Measured 0.11 m in diameter
[220]	Cut	Circular stakehole, filled with (64). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.06 m in diameter
[221]	Cut	Circular stakehole, filled with (65). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.09 m in diameter
[222]	Cut	Circular stakehole, filled with (66). Sharp break of slope at the top, steeply sloping sides & a rounded base. Measured 0.08 m in diameter.
[223]	Structure 2 posthole	Oval posthole, filled with (67). Sharp break of slope at the top, steeply sloping sides & a gradual break of slope to a rounded base. Measured 0.14 m long, 0.08 m wide
[224]	Structure 2 posthole	Oval posthole, filled with (68). Measured 0.14 m long, 0.06 m wide. Sharp break of slope at the top, steeply sloping sides with a gradual break of slope to a rounded base
[225]	Structure 1 posthole?	Sub-circular posthole with vertical sides & a flat base. Measured 0.15 m by 0.2 m. Filled with (123)
[226]	Structure 1 posthole?	Sub-circular posthole with sharp break of slope at the top, tapered sides with a pointed base. Measured 0.15 x 0.18 m in diameter, depth unknown. Filled with (161)
[227]	Cut	E-W orientated cultivation furrow filled with (14)
[228]	Cut	E-W orientated cultivation furrow filled with (15)
[229]	Cut	E-W orientated cultivation furrow filled with (16)
[230]	Cut	E-W orientated cultivation furrow filled with (17)
[231]	Cut	Circular stakehole, filled with (129). Sharp break of slope at the top, steeply sloping sides & a rounded base. Below deposit (132) in pit [119]
[232]	Cut	Circular stakehole, filled with (130). Sharp break of slope at the top, steeply sloping sides & a rounded base. Below deposit (132) in pit [119]
[233]	Cut	Circular stakehole, filled with (131). Sharp break of slope at the top, steeply sloping sides & a rounded base. Below deposit (132) in pit [119]
[234]	Cut	Oval pit, filled with (235). Orientated NW-SE. Measured 0.65 m x 0.5 m max., depth unknown
(235)	Fill	Fill of pit [234]. No further detail was recorded for this feature
[236]	Cut	E-W orientated cultivation furrow, unexcavated
[237]	Cut	E-W orientated cultivation furrow, unexcavated
[238]	Structure 1 posthole?	Circular posthole filled with (239), measured 0.2 m wide, depth unknown, cut by posthole [162] at its N side
(239)	Fill	Fill of posthole [238], moderately compact mid brown sandy silt with charcoal flecks

Appendix 2 Finds Register

Find No.	Context No.	Description
03E0426:01	[141], (122)	Prehistoric. Specialist no: 122.1 Vessel 1 Early Neolithic pottery. Neck/shouldersherds from a vessel with a gently curved neck, simple angle shoulder and deep rounded body.
03E0426:02	[70], (42)	Post medieval. Green glass from bottle/vessel
03E0426:03	[70], (42)	Post medieval. Clear glass from bottle/vessel
03E0426:04	[70], (42)	Post-medieval ceramic. Transfer printed ware. White fabric, white glaze-similar to willow pattern. 19th century date
03E0426:05	[70], (42)	Iron fragment. Badly splintered and corroded.
03E0426:06	[190], (189)	Iron. Screw bolt. Round head, splayed or burred, square straight upper shaft, rounded lower shaft with regular incised horizontal lines near end. Relatively modern.
03E0426:07	[70], (42)	Green glass from bottle/vessel
03E0426:08	[70], (42)	Blue glass from bottle/vessel
03E0426:09	(01)	Post-medieval ceramic. Mottled ware. Base sherd from a tankard, 18th century date
03E0426:10	[141], (122)	Prehistoric ceramic. Specialist no: 122. 3; Vessel 1 Early Neolithic pottery. Neck/shouldersherds from a vessel with a gently curved neck, simple angle shoulder and deep rounded body.
03E0426:11	(01)	Post-medieval ceramic. North Devon gravel tempered ware. Red fabric, internal green glaze, body sherd. 17th century date
03E0426:12	(01)	Post-medieval ceramic. Mochaware. White fabric, white glaze with green decoration-base sherd. 19th century date
03E0426:13	(01)	Red fabric, burnt accretions on the inner surface possibly prehistoric?
03E0426:14	[30], (06)	Clay pipe stem, undecorated with no makers mark.
03E0426:15	[141], (122)	122.2 Vessel 1 Early Neolithic pottery. Vessel 1. Neck/shouldersherds from a vessel with a gently curved neck, simple angle shoulder and deep rounded body.
03E0426:16	[04], (03)	Post-medieval. Iron. Screw. Robust, round head, thick shaft with horizontal parallel incised lines.
03E0426:17	[04], (03)	Iron nail. Square head, square sectioned shaft.
03E0426:18	[180], (26)	Medieval ceramic. Cashel type ware. Buff to light red fabric, poorly fired. Unglazed. Rim/Handle from a jug, 13th century date
03E0426:19	[141], (122)	122.4 Early Neolithic pottery. Vessel 1. Neck/shouldersherds from a vessel with a gently curved neck, simple angle shoulder and deep rounded body.
03E0426:20	[141], (122)	122.5 Early Neolithic pottery. Vessel 1. Neck/shouldersherds from a vessel with a gently curved neck, simple angle shoulder and deep rounded body.
03E0426:21	[141], (122)	122.6 Early Neolithic pottery. Vessel 1. Very fragmented. Neck/shouldersherds from a vessel with a gently curved neck, simple angle shoulder and deep rounded body.
03E0426:22	[119], (23)	Chert. Small piece of debitage
03E0426:23	[119], (23)	Chert. One quite weathered small piece from which flakes may have been struck

Appendix 3 Drawing Register

Sheet No.	Scale	Description
1	1:20	South facing section of [31]
1	1:10	South facing section of [30]
1	1:10	South facing section of [32]
1	1:10	West facing section of [75]
1	1:10	South-east facing section of [72]
1	1:10	South facing section of [76]
1	1:10	East facing section of [70]
1	1:10	West facing section of [77]
1	1:10	South-east facing section of [80] & [82]
1	1:10	South facing section of [84]
1	1:10	South facing section of [86]
1	1:10	South facing section of [102]
2	1:10	South facing section of [142]
2	1:10	East facing section of [171]
2	1:10	West facing section of [196]
2	1:10	West-south-west facing section of [193]
2	1:10	North-west facing section of [128]
2	1:10	North facing section of [181]
2	1:10	South facing section of [160]
2	1:10	North facing section of [165]
2	1:10	West facing section of [04] & [197]
2	1:10	East facing section of [04] & [197]
2	1:10	South facing section of [180]
2	1:10	Section of [04]
2	1:10	East facing section of [04]
2	1:10	West facing section of [70] & [190]
3	1:20	Pre-excavation plan of northern part of site
4	1:20	Pre-excavation plan of northern part of site
5	1:50	Pre-excavation plan of [04]
5	1:50	Mid-excavation plan of [04]
6	1:20	Post-excavation plan of [179]
7	1:20	Post-excavation plan of [142]
8	1:20	Partial post-excavation plan of western part of site
9	1:20	Partial mid-excavation plan of kiln [183]
10	1:20	Partial post-excavation plan of eastern part of site
11	1:20	Mid-excavation plan of kiln [183]
12	1:20	Post-excavation plan of southern part of site
13	1:20	Post-excavation plan of kiln [183]
13	1:20	South-facing profile of kiln [183]
13	1:20	West-facing profile of kiln x 2
13	1:20	West-facing profile of kiln bowl
14	1:20	Post-excavation plan of site
15	1:20	Post-excavation plan of site
16	1:10	South-east facing section of [119]
17	NTS	Post-excavation plan of kiln [183], inked-up
18	NTS	Post-excavation plan of northern part of site, inked-up
19	NTS	Partial pre-excavation plan of site, inked-up
20	1:20	Partial post-excavation plan of northern part of site, inked-up
21	1:20	Partial post-excavation plan of northern part of site, inked-up
22	1:20	Partial post-excavation plan of site, inked-up

Appendix 4 Sample Register

Sample No.	Context No.	Description
1	(06)	Charcoal & burnt clay
2	(05)	Burnt clay
3	(07)	Charcoal & burnt clay
4	(33)	Soil
5	(45)	Soil/charcoal
6	[46]	Charcoal
7	(78)	Charcoal
8	(79)	Charcoal
9	(48)	Burnt stones
10	(83)	Charcoal
11	(92)	Charcoal
12	(97)	Charcoal
13	(97)	Charcoal
14	(97)	Charcoal
15	(11)	Charcoal
16	(116)	Charcoal
17	(120)	Charcoal
18	(120)	Soil, stones & charcoal
19	(23)	Organic
20	(23)	Charcoal
21	(135)	Charcoal
22	(137)	Fill
23	(118)	Charcoal
24	(118)	Stones
25	(170)	Charcoal, burned clay.
26	(178)	Cremation charcoal
27	(178)	Burnt Bone fragments
28	(08)	Charcoal
29	(184)	Charcoal
30	(41)	Burnt stones
31	[193]	Charcoal
32	(195)	Soil & charcoal
33	(194)	Charcoal
34	(194)	Soil
35	(03)	Charcoal

Appendix 5 Photography Register

There are 112 digital photographs which have been retained in the archives.

Appendix 6 Environmental Report[2]

Scheme – N8 Cashel Bypass & N74 Link Road

Site Name- Site 19 Boscabell

Excavation number – 03E0426

County – Tipperary

Job code – ENV/083

Author- Susan Lyons

Date – 26/07/10

Plant Macrofossil Remains & Charcoal Report

[2] This specialist report was written in 2010. It was subsequently updated by the NRA Project Archaeologist in 2013 to incorporate data from C14 dates on the Project. A copy of the original report has been retained in the N8 Cashel Bypass site archives.

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1 INTRODUCTION

This report discusses the plant macrofossil remains and charcoal remains recorded from the soil samples associated with the archaeological excavations at Site 19 Boscabell (03E0426). 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.

For the purpose of this report, Part A will focus on the plant remains analysis while Part B will discuss the wood and charcoal identifications. They will later form part of an overall interpretation of environmental remains for the site in the concluding remarks. 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

Twelve flot samples were analysed from excavations associated with prehistoric and medieval activity recorded at Site 19, Boscabell, Co. Tipperary. Site 19 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 03E0426.

Site 19 was located close to the remains of a medieval moated site at Site 20. The excavation revealed the remains of a prehistoric structure and associated pits and stakeholes. Several of the larger pits contained significant quantities of heat-shattered stones similar in composition to material found in association with *fulachta fiadh*. A

disturbed possible cremation pit was also identified, along with a simple corn drying kiln, which returned a medieval date. Six radiocarbon dates were obtained for the site:

Context No.	Sample No.	Material type	C14 date (2 sigma Cal)
(178), [179]	19	Oak charcoal	2574–2466 cal. BC (UBA-14363)
(120), [119]	18	Alder / hazel charcoal	2465–2210 cal. BC (UBA-14362)
(23), [119]	26	Birch charcoal	2458–2155 cal. BC (UBA-14361)
(41)	30	Alder charcoal	1409–1263 cal. BC (UBA-13744)
(79), [80]	8	Hazel charcoal	1258–1028 cal. BC (UBA-13742)
(184), [183]	29	Carbonized oat grain	Cal. AD 1030–1172 (UBA-13743)

3 PART A: PLANT REMAINS IDENTIFICATION AND ANALYSIS

3.1 Methodology

All samples were [3]processed 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 Friablen any charred remains from the soil particles which allows for this material to be separated and float to the surface. This floating material (flot) is poured off and trapped in a sieve (mesh size 250 µm) and, once dried, scanned for plant remains using a binocular microscope. The larger residual material left behind (retent) is washed through a 1mm, 2mm and 5mm mesh or sieve and air-dried. Once dry, each retent is sorted by eye and any material of archaeological significance removed.

3.1.2 Quantification and identification of plant remains

The flot samples are viewed under a low powered binocular microscope (magnification x0.8 to x5). Where preservation allowed, all charred remains recovered were identified to species level where applicable and the constituents quantified numerically. Those

[3] 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)

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 Results

The plant remains recorded from Site 19 are presented in **Table 1**.

Carbonized cereal remains – Carbonized cereal grains were recorded from just one feature, kiln **183 (184)**. The assemblage was dominated by oat (*Avena* sp.), with much lesser barley (*Hordeum* sp.) and wheat (*Triticum* sp.) grains. All grains were in a relatively poor state of preservation and this hindered further species identification in most cases. Many of the oat grains however were tentatively identified as the cultivated/common oat type (*Avena sativa)* due to the absence of a basal scar (suckermouth) (Stanton, 1955, 103) and the larger size of the caryopsis (grain).

Carbonized cereal grains which were badly abraded appear in the table as indeterminate cereal grain (cereal indet.). These grains are difficult to identify to species level and can become vesicular and eroded as a result of charring at high temperatures, the burning of damp grain or that this material had degraded due to re-deposition and/or exposure.

Charcoal – Fragmented charcoal was recovered in high to low concentrations from the majority of the samples. The results of the charcoal identifications are presented in Part B of this report.

3.3 Discussion

3.3.1 Carbonization of plant remains

Charred plant remains are those which have been heated to more than about 200° C, but where there is not enough oxygen to complete the burning process. Instead, the organic

components are converted to a more carbon-rich resilient material or to carbon itself rather than to ash (Broadman & Jones, 1990).

Carbonized cereal remains recorded from archaeological sites are interpreted as the residual remains or charred debris from crop drying events. Some remains are found in the same place that they were charred (hearths, fires, kilns, ovens, burnt stores). More are found thinly spread and scattered across a wider area entering deposits such as occupational layers, pits and potholes for example. Over time, this material can move and be re-distributed due to disturbances such as soil movement, extreme climatic conditions, root penetration or worm/animal action.

The carbonization process obviously affects different species and plant components in different ways, where finer, lighter material can be destroyed more easily than larger elements. It most therefore be noted that the charred plant remains recovered from archaeological features can as much reflect the results of the carbonization process as how and what plant remains were used on a site.

3.3.2 The carbonized plant remains from Site 19, Boscabell

The prehistoric features at the site contained no evidence for arable farming, in the form of crop processing. Charred cereal grains are recorded in very low numbers from prehistoric cemetery sites (Johnson, 2007, 74) and so this would not be an unusual occurrence at Site 19.

The only feature to contain carbonized cereal grains was kiln **183 (184)**. The carbonized cereal assemblage was made up of oat, barley and wheat, all crops commonly cultivated during the medieval period in Ireland (Monk, 1986). These crops would have been consumed by all social classes during the medieval period, with oat also being used for animal fodder (Langdon, 1982, 32).

Crop drying would have required the regular use of fire as part of the kilning process and this would have inevitably increased the risks of crops becoming burnt during the process (Fenton, 1978; Evans, 1957, 123). The presence of a mixed cereal assemblage from the lower fill **(184)** of the kiln is likely to represent the remains of residual kiln debris that had accumulated in the kiln during several kilnings. Since the barley and wheat grains recorded were more abraded this could represent earlier kiln debris which became more eroded as a result of reoccurring heat.

If the kiln had burnt down or experienced a conflagration event, one would expect a much higher cereal assemblage. It is also possible that the feature was cleaned out and the charred material dumped elsewhere, which would account for the low number of

grains recorded. This assemblage represents just a snapshot of the grain destroyed during kilning activities and does not reflect earlier and later crop drying events at the site, so all interpretations are based only on the plants that have survived.

4 PART B: CHARCOAL IDENTIFICATION AND ANALYSIS

4.1 Methodology

4.1.1 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.

4.1.2 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 flot 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).

4.2 Results

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

Six species totalling 334 identifications were recorded from the charcoal samples associated with Site 19, Windmill. The assemblage was dominated by oak (*Quercus* sp.), followed by hazel (*Corylus avellana*) and alder (*Alnus glutinous)*. Much lesser occurrences of willow (*Salix* sp.), cherry-type (*Prunus* sp.) and ash (*Fraxinus excelsior*) were also recorded **Fig 1**.

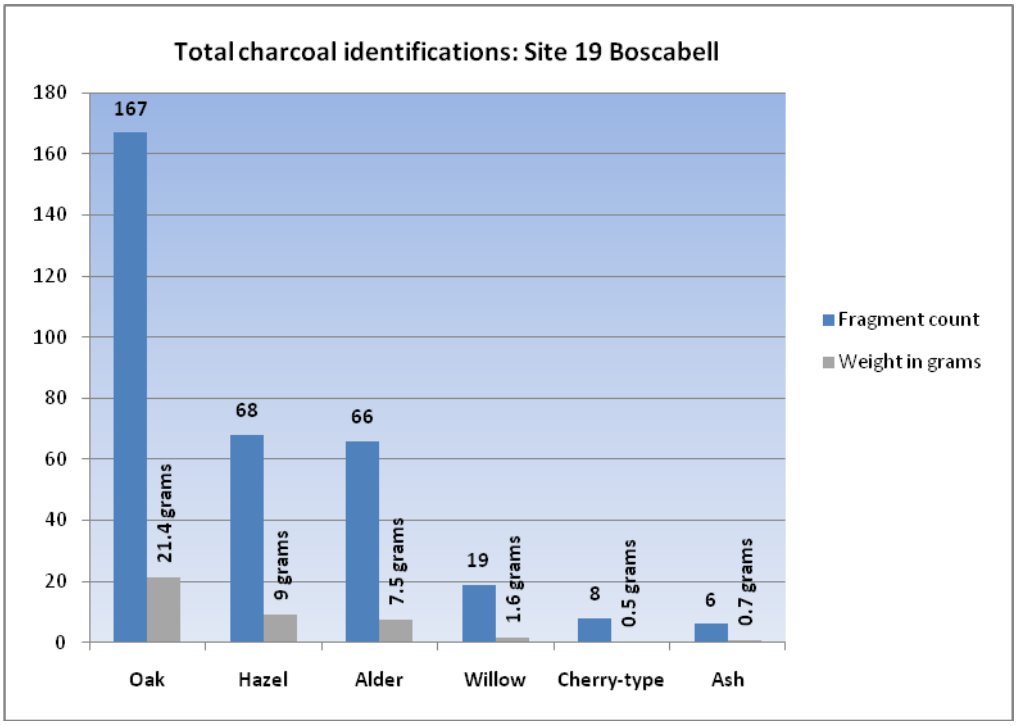

Fig. 1

4.3 Discussion

4.3.1 Background and origin of wood species

Quercus sp. (oak)

Oak is a tall deciduous woodland tree, often growing in association with hazel and ash. Most species prefer damp, non-calcareous soils on lowland or montane sites. Of the 27 European species, pedunculate oak (*Quercus robur)* and sessile oak (*Quercus petraea)* are native to Ireland. Pedunculate oak is common on heavy clay lowland soils whereas sessile oak thrives on the lighter loams characteristic of higher ground (Culter and Gale, 2000). The wood is easy to cleave both radially and tangentially and has provided one of the most important building materials since the prehistoric period (Culter and Gale, 2000). The heartwood timber is renowned for its durability but the paler sapwood is

susceptible to beetle and fungal attack. The strength of the timber depends on the species and is influenced by climatic and edaphic factors (Edlin, 1951). When burnt, oak charcoal, particularly the dense heartwood, has higher calorific values than most European woods and this can make for good long-lasting fuel (Culter and Gale, 2000).

***Corylus avellana* (hazel)**

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

***Alnus glutinous* L. Gärtner (alder or black alder)**

Alder is usually found growing close to running water, rivers or in damp woodland, in the latter often with oak (Orme and Coles, 1985; Rackham, 1995). In marshland alder grows as a shrub frequently mixed with willow and alder buckthorn to form alder carr (Cutler and Gale, 2000). It can also grow well in and on fen peat. Germination and early growth of alders requires a constant supply of water, however once the tree reaches maturity its root system makes the tree less dependent on high water levels (Stuijts, 2005). Alders commonly produce root nodules which contain nitrogen-fixing bacteria, known as *Schinzia alni* which enables alder to enrich soils through its fallen leaves hence allowing the tree to survive in poorer soil conditions (Milner, 1992; Stuijts, 2005). In suitable conditions alder growth is fast, usually reaching a height of 25m with a maximum girth of 1m and can grow to an age of sixty to one hundred years (Stuijts, 2005). While alder makes for poor fuel, it produces good quality charcoal (Edlin, 1951). The wood can quickly turn a reddish colour after cutting and once dry it is water resistant and does not split easily. Once in a waterlogged state, alder is very durable and is often used in the construction of underwater bridge piles, houses and scaffolding (Culter and Gale, 2000). Alder is traditionally used in the making of smaller objects such as bowls, handles and broomsticks and its bark can be used in the tanning of leather (Rackham, 1980).

Salix sp. (willow)

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*).

***Fraxinus excelsior* (ash)**

Ash thrives well on nutrient-rich soils but is also a common woodland species and grows in mixed woodland with oak on damp, slightly acidic soils (Culter and Gale, 2000). Pollen analysis indicates that ash became more common in the pollen record from the Neolithic period onwards (Mitchell, 1953/4). This could be as a result of more clearance due to agricultural practices at the time, where ash was able to germinate and grow more vigorously as secondary woodland and in marginal areas and hedges (Kelly, 1976).

***Prunus sp.* (cherry-type)**

The cherry species can be difficult to distinguish in the absence of bark, buds and leaves. Wild cherry (*P. avium)* is a medium to tall tree, common to woodlands and hedges on light, well-drained soils. It produces inferior firewood. The timber is a red colour and although tough and hard is unsuitable for outdoor use as it decayed easily (Culter and Gale, 2000). Bird cherry (*P. padus)* is a smaller tree and less common than wild cherry. It grows in marginal woodland as a solitary tree and can live for up to eighty years (Rackham, 1980). The wood has no real economical value, although has been used in barrel production (Culter and Gale, 2000). Both species are used in the production of ornamental or culinary objects (Culter and Gale, 2000). Blackthorn (*Prunus spinosa* L.) is a spiny shrub often found in woodlands where the canopy has been opened up and is quick to colonise clearings and rapidly forms dense thickets, particularly in coastal regions. It is also found near streams, growing close to alder (Orme and Coles, 1985). This species does not usually live beyond forty years and produces new shoots from their roots. When fully matured, its sharp thorns act as a barrier shielding younger trees from grazing animals (Hickie, 2004).

4.3.2 Distribution of charcoal remains from Site 19, Boscabell

The number of identifiable charcoal fragments recovered from the samples at Site 19 was confined to prehistoric features (pits, cremation pit, postholes, ditch deposits and a *fulacht fiadh*-type feature) and a medieval kiln. This material represents the wood

species selected to use as fuel at the site and this can help to understand what species potentially grew in the area.

(178), [179]	19	Oak charcoal	2574–2466 cal. BC (UBA-14363)
(120), [119]	18	Alder / hazel charcoal	2465–2210 cal. BC (UBA-14362)
(23), [119]	26	Birch charcoal	2458–2155 cal. BC (UBA-14361)
(41)	30	Alder charcoal	1409–1263 cal. BC (UBA-13744)
(79), [80]	8	Hazel charcoal	1258–1028 cal. BC (UBA-13742)

The prehistoric activity recorded at Site 19 was characterised by *fulacht fiadh*-type feature (**41**), pits (**75**, **78**, **118** and **119**), cremation pit (**179**), postholes (**80**, **84** and **91**), and ditch (**04**).

Charcoal is a common occurrence from burnt mound/*fulachta fiadh* sites and is related to the burning activities associated with these site types. Oak, alder and willow were recorded from the *fulacht fiadh*-type feature at Site 19. A mixed wood assemblage is not an unusual occurrence from *fulacht fiadh/*burnt mound sites and has also been recorded from a number of similar sites excavated along the routeway of the Gas Pipeline (O'Donnell, 2007) and from sites along the N8 Cashel to Mitchelstown (O'Donnell, 2009, 248). The study of charcoal undertaken from the majority of these sites also contained species such as oak, alder, and willow (*ibid*, 2007, 38/39). Alder, willow and oak were also identified from fulacht deposits at Site 22, George's Land as part of the N8 Scheme (Lyons, 2010). It is expected that species such as willow and alder grew close to *fulacht fiadh* sites as these site types were usually constructed close to wet or marshy ground (Waddell, 1998, 174).

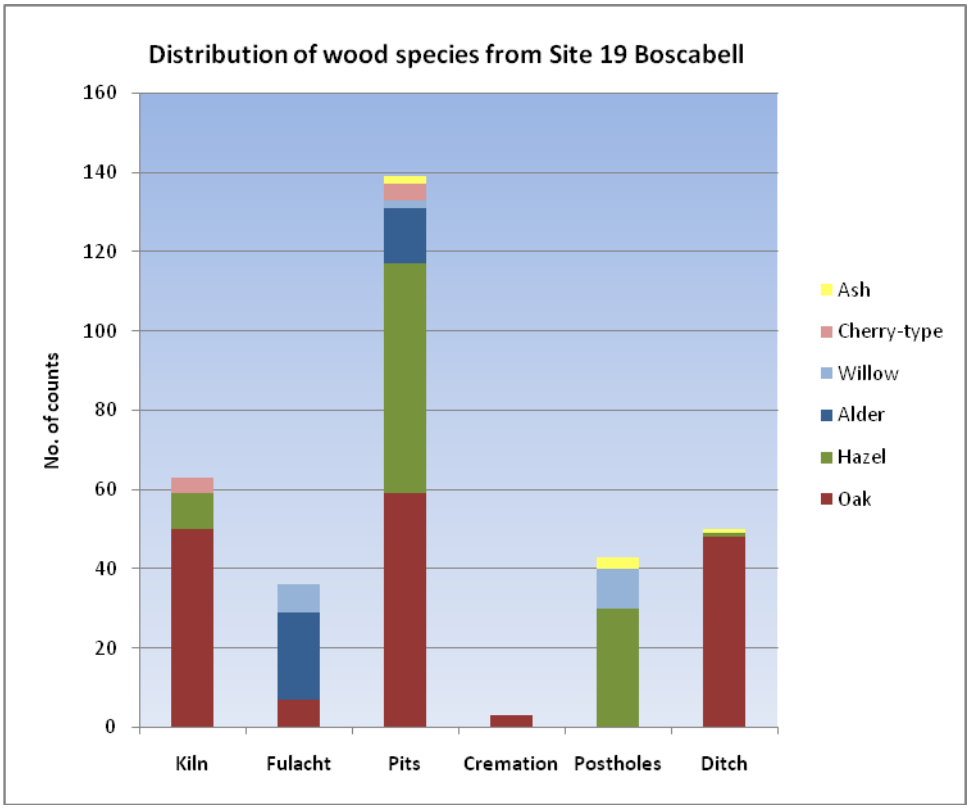

Fig. 2

The pits recorded at the site contained a varying composition of wood species. Oak was exclusively identified from **142**, while alder was the only species recorded from **119**. Hazel was the dominant species identified from **75** and **82**, with lesser oak, cherry-type, ash and willow also noted from the latter features. The interpretation of this distribution, would suggest that some of these pits were not contemporary or that perhaps certain species were being burnt for specific activities. This is just a localised assumption and more samples would need to be analysed for any definitive interpretations to take place.

Oak, which was recorded from cremation pit **179,** is a popular wood used in prehistoric funerary practices (O'Donnell, 2007, 48), however the low concentrations recorded here makes it difficult to fully interpret this species in the context of the site.

The wood species identified from the number of postholes at the site were dominated by hazel, followed by willow and lesser ash. All three species would have been popular woods for construction material, with hazel and willow suitable for wattling and making smaller structures (Culter and Gale, 2000). Charcoal recorded from structural deposits can be interpreted as the remains of a burnt structure or part of. This material may also be the result of construction methods, such as a) the charring of post bases to prevent the timbers from rotting b) a way of re-sizing posts of c) the method by which the

timbers were felled. An interesting observation is the absence of oak from these deposits. Oak was clearly in use at the site and may highlight a selection process, where oak was used for other purposes other than construction.

Open ditch features were generally used a dumping ground for domestic and industrial rubbish. As a result, the charcoal recorded from such features usually contains a mixed wood assemblage. In the case of ditch **04 (194),** the high oak content suggests that this material may be a single dumping episode perhaps from a specialised activity or single firing event being carried out nearby.

Kiln **183**, which was of medieval date (Cal AD 1030–1172), contained mostly oak charcoal, with lesser hazel and cherry-type. This suggests that oak is most likely the favoured wood species being burnt within this feature. Crop drying is a specialized activity which generates high temperatures, and therefore oak would prove to be a very suitable fuel. A high incidence of oak was also recorded from kilns at Borris and Blackcastle, Co. Tipperary (Lyons, 2009a) and at Oakpark, Co. Carlow (Lyons, 2009b).

Based on the wood species recorded the site is likely to have been located in a clearance, on marginal woodland (hazel, cherry-type,), close to dry woodland (oak, ash and hazel), with access to a river or stream and damper soils (willow, alder and elm).

5 Conclusions

The analysis of the plant remains and wood charcoal from Site 19, Boscabell provided the opportunity to highlight and interpret the archaeobotanical material recorded at the site.

No evidence for arable farming in the form of crop processing was recorded from the prehistoric features at the site, which is not an unusual occurrence from funerary deposits. A medieval crop assemblage of oat, barley and wheat was recorded from kiln **183**, which denotes some level of crop drying at the site during the medieval period.

The charcoal analysis revealed a selection process being carried out at the site, where oak was used for specialised activities (possible cremation and kiln) and hazel, willow and ash used in construction works. The use of oak and hazel from the Bronze Age through to the medieval period suggests that these species was still prevalent in the local woodland

during this time. All six species recorded would have been commonly used as fuel and probably collected from the nearby woodland.

6 Recommendations

1. There is no further identification work required on these samples from Site 19, Boscabell. 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 19, Boscabell 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 19, Boscabell (03E0426)

	Feature	Kiln		Fulacht	Pits				Cremation	Postholes			Ditch
	Context number	**183**			**75**	**82**	**142**	**119**	**179**	**80**	**84**	**91**	**04**
	Fill number	**08**	**184**	**41**	**48**	**78**	**118**	**120**	**178**	**79**	**83**	**92**	**194**
	Sample number	**28**	**29**	**30**	**9**	**7**	**23**	**17**	**26**	**8**	**10**	**11**	**33**
	Volume of sample	9.2 g	1.3 g	2.7 g	3.1 g	68.3 g	13.9 g	5.1 g	0.7 g	1 g	8.3 g	0.6 g	14.7 g
Latin name	***Common name***												
CEREALS: CARBONIZED													
Triticum sp.	wheat		4										
Hordeum sp.	barley		12										
Avena sativa	cultivated oat		16										
Avena sp.	oat		28										
Cereal indet	indeterminate		++										
OTHER PLANT REMAINS: CARBONIZED													
Charcoal		++++	++++	+++	+++	++++	++++	++	++++		+++	+	++++

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

Table 2. Charcoal Identifications from Site 19, Boscabell (03E0426)

Feature	Context number	Sample number	Flot volume (grams)	Context description	Wood Species Identifications	No. of fragments	Charcoal weights (grams)	Size of fragments (mm)	No. of growth rings	Comments
Kiln	08	28	9.2 grams	Fill of corn drying kiln chamber 183	Quercus sp. (oak)	37	3.4 grams			
					Corylus avellana (hazel)	9	0.7 grams			
					Prunus sp. (cherry-type)	4	0.3 grams			
	184	29	1.3 grams	Lower fill of corn drying kiln chamber 183	Quercus sp. (oak)	13	0.7 grams			
Fulacht	41	30	2.7 grams	Burnt stone and charcoal deposit. Possible *fulachta fiadh*	Alnus glutinous (alder)	22	0.9 grams			
					Quercus sp. (oak)	7	0.4 grams			
					Salix sp. (willow)	7	0.3 grams			
Pits	48	9	3.1 grams	Fill of pit 75	Corylus avellana (hazel)	19	1.2 grams			
					Quercus sp. (oak)	9	0.4 grams			
					Prunus sp. (cherry-type)	4	0.2 grams			
	120	17	5.1 grams	Middle fill of triangular shaped pit 119	Alnus glutinous (alder)	14	4 grams			
	78	7	68.3 grams	Fill of large pit 82	Corylus avellana (hazel)	39	6.9 grams			
					Salix sp. (willow)	2	0.2 grams			
					Fraxinus excelsior (ash)	2	0.3 grams			
	118	23	13.9 grams	Fill of irregular shallow pit 142	Quercus sp. (oak)	50	3.9 grams			
Cremation pit	178	26	0.7 grams	Fill of cremation pit 179	Quercus sp. (oak)	3	0.2 grams			
Postholes	79	8	1 gram	Fill of posthole 80	Corylus avellana (hazel)	9	0.5 grams			
	83	10	8.3 grams	Fill of posthole 84	Corylus avellana (hazel)	17	1.7 grams			
					Salix sp. (willow)	10	1.1 grams			
					Fraxinus excelsior (ash)	3	0. 2 grams			
	92	11	0.6 grams	Fill of posthole 91	Corylus avellana (hazel)	4	0.4 grams			
Ditch	194	33	14.7 grams	Fill of boundary ditch 04	Quercus sp. (oak)	48	12.4 grams			
					Corylus avellana (hazel)	1	0.2 grams			
					Fraxinus excelsior (ash)	1	0.2 grams			

APPENDIX 7 Faunal Report

Report on the Analysis of Faunal Remains N8 Cashel Bypass & N74 Link Road
Margaret McCarthy, July 2010

INTRODUCTION

Faunal material was found at over twenty different sites during excavations along the route of the N8 Cashel Bypass and the N74 Link Road dating variously from the prehistoric to the post-medieval periods. The volume of recovered animal bones varied considerably between the sites with relatively large quantities of bones being recovered from a ringfort in Hughes' Lot East (Site 25ii), from a multiperiod site (Site 25iv) also in Hughes' Lot East, from a large settlement site in Owens' & Biggs' Lot and from a site in Farranmanagh (Site 41). Animal bones were found in relatively small amounts from sites excavated in the townlands of Ballyknock, Monadreela, Boscabell, Georgesland, Cooper's Lot and Windmill. The excavations revealed evidence of a series of structures and deposits dating principally to the Early Medieval and Late Medieval periods. Relatively large samples of prehistoric animal bone were also recovered from five fulachta fiadh in Owens' & Biggs' Lot. The animal remains were hand collected and consist almost entirely of mammal bone. A few bird bones were recovered in the samples but not in sufficient quantities to comment on the fowling activities of the occupants of the various sites involved. The total absence of fish bones is not surprising given the inland location of the excavated sites. Many of the recovered bone assemblages are extremely small and the data do little more than indicate the exploitation of certain species. While these samples are too small to reach secure conclusions on diet and economy, the results have nevertheless provided additional information on animal exploitation in this area of South Tipperary during the various periods represented.

METHODS

All fragments were identified to species, or as nearly as possible, using the modern comparative collections of mammals, birds and fish in the Department of Archaeology, University College Cork. Data were recorded onto the Archaeological Services Unit's faunal sheets, which include categories for butchery, ageing and sexing as well as species and element identification. Identifications were taken to species where possible while those fragments for which specific

identification could not be made were classed in terms of size and morphological character. The material recorded as 'large mammal (LM)' in the tables for instance is likely to belong to cattle but was too small to eliminate the possibility of horse and red deer. Similarly, specimens that in all probability were sheep but which may have also originated from goat, pig or large dog were recorded as 'medium mammal (MM)'. The separation of ovicaprid material relied on comparison with reference material and to the discussion in Boessneck (1969). Very few definite elements of goat were recognised and those postcranial bones which allow for discrimination between the two species were all identified to sheep. Ageing data were determined using procedures outlined by Silver (1971) for long bones and Grant (1975) for mandibles. The relative proportion of the different species was assessed using the fragments total only as the samples were considered too small to estimate the minimum number of individuals present.

CONDITION

Bone preservation at those sites which produced reasonably large collections of bone was generally recorded as good with very little evidence for pre and post-depositional alteration. The bones from surface features at all sites were noticeably weathered which suggests that a certain degree of mixing had taken place and eroded brittle fragments, perhaps from earlier phases of occupation, were found together with well-preserved bone. Fragmentation rates throughout were noticeably high resulting in large numbers of bones that could only be classified as large and medium mammal remains. High fragmentation levels at some sites are attributed to butchering and food preparation techniques while the poor conditions of preservation at other sites appear to have led to increased fragmentation. Despite the low counts for dog in all of the samples, gnawing was observed on 7% of the specimens indicating that a certain amount of food waste was scavenged prior to deposition into the various features. The proportion of burnt bone was low indicating that the preferred cooking method at all sites seems to have been by boiling as very few of the bones exhibited signs of charring associated with roasting. A few specimens from the deposits were charred and blackened and this type of damage may have occurred while certain joints of meat were spit roasted over a large open fireplace. The extremely calcined nature of other fragments suggests that bones were occasionally cast into the fire as a means of waste disposal and remained there for a sufficient time to take on the white cracked appearance of heat-shattered bone.

ANALYSIS

Animal bones were recovered from 22 excavated archaeological sites along the route of the road network and the results of the faunal analysis are described below for the Site 19 excavation.

Site 19: 03E0426 Boscabell

The few animal bones recovered during excavations at Site 19 came from features associated with prehistoric activity on high ground at the northern end of the site. In all, 19 bones were presented for examination and of these just two are diagnostic to species. An adult sheep tooth was recovered from the fill (C12) of a posthole (C27) and a fragment of a cattle rib was found in burnt mound deposit (C41) within hollow (C102). Deposit (C101) also within hollow (C102) produced six calcined indeterminate fragments. Eleven indeterminate burnt bones were recovered from the fill of a prehistoric cremation pit (C179).

Table 1: Distribution of species by individual context

	Cow	S/G*	Indet*	Total
C12		1		1
C41	1			1
C101			6	6
C178			11	11
TOTAL	1	1	17	19

S/G* Sheep/Goat Indet* Indeterminate

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Appendix 8 Lithics Report

ANALYSIS OF LITHIC ASSEMBLAGES FROM THE CASHEL BYPASS[4]

By Professor Peter Woodman

A selection of 73 lithic artefacts (including two stone axes) and additional lithics in the form of debitage, was recovered from the excavations on the Cashel Bypass. These came from 20 of the excavations carried out during 2003. The assemblage was examined in 2006 and updated, where appropriate to include debitage identified during sieving of soil retents in 2010.

The Cashel Bypass has been strategically located within the Suir valley and in a gap between mountain ranges. The underlying bedrock geology consists of a series of Tournasian and Visean deposits from the carboniferous. Many of these are shales and mudstones rather than limestone. The area also lies within what was traditionally called the Midlandian end Moraine although now, numerous authors would claim that the limits of the Ice sheets of the Last Glacial Maximum extended off the south coast of Ireland. The route of the bypass does not follow the flood plain of the Suir itself, but rather crosses a series of glacial deposits, first to the east and then to the north. Not surprisingly the area, having been heavily cultivated retains few traces of lowland bogs but until recently the Cashel area was dotted with a number of small ponds, many of which have dried out or disappeared. The line of the bypass takes it through areas of primarily relatively low lying land that is often just above 100 m OD.

Condition and raw material

In general, the assemblage from each site was quite small with only one site producing more than 10 pieces while 10 sites each produced less than five artefacts (these figures exclude debitage identified during sieving of retents). The material was overwhelmingly flint with only six struck pieces of chert identified. The one piece of quartz submitted is likely to be from a naturally fractured pebble. Many of the pieces were in a very weathered and/or patinated condition as some were found in secondary contexts and/or in the topsoil.

Table I
TYPES OF RAW MATERIAL

Chert	6
Flint	49
Quartz	1
Natural pieces	17

The flint would seem to have a range of different sources (see below for fuller discussion) while the chert pieces were so rare that it is only possible to note that they ranged from a very fine grained glossy material through to a coarser grained matt form. The natural un-worked pieces of stone took the two forms usual in assemblages from this area. These were damaged, often tabular

[4] This specialist report was written in 2006. It was subsequently updated by the author in 2010 following examination of lithics from sample retents. The report has been edited by the NRA Project Archaeologist in 2014 to incorporate data from C14 dates on the Project. A copy of the original report has been retained in the N8 Cashel Bypass site archives.

or nodular pieces of chert and limestone while the other raw material is a metamorphosed fine grained rock that can resemble flint but which is not worked. This latter type of stone is often referred to colloquially as "fool's flint".

Some groups of material would appear to have been found in their original context. The most notable is the struck flint flake (03E0345:07) found along with 11 sherds of Early Neolithic Carinated Bowl pottery from the foundation trench of a circular house, securely dated to the Neolithic period from Site 9 Monadreela; a burnt convex end scraper (03E0418:04) and sherds of Beaker pottery from a pit on Site 34 Windmill dated to 2013–1828 cal. BC (UBA-13786); and flint flakes and a stone axe (03E0378:20) found in association with Beaker pottery and securely dated to the Copper Age, 2457–2204 cal. BC (UBA-13903), from Site 13 Monadreela. It is noticeable that with the exception of one large backed knife from Site 41 and a rather anomalous retouch piece made from a larger flake from Site 7, most of the pieces were either quite small flakes, usually less than 30 mm in maximum length even when intact, while no large blades had survived complete.

From the southern part of the island in general there are few diagnostic implements and it is not uncommon for these artefacts to be found in secondary contexts. Unfortunately with few "Type Fossils" and assemblages of a limited size, where few technological attributes can be identified, it can be difficult to ascribe a particular age to individual pieces or on many occasions, to specific sites.

A significant number of samples were retained for sieving. Besides the expected range of ecofacts that were recovered, a large number of stone items were also retained. In the main these were small pieces of cherty materials, however it was difficult to assess whether these were portions of struck artefacts and only a few showed any signs of attributes that would lead one to believe that they were portions of humanly produced tools. Only those that have clear evidence of being produced through knapping have been included. However the remainder have been retained for future re-examination. Besides the chert items, a number of flint flakes were recovered. Not surprisingly, these were often tiny pieces of debitage that were usually less than 5 mm across. Sieved material has an added advantage in that it provides an opportunity to check whether small microliths have been missed. In situations where there is no strong expectation that they might occur they can be missed, therefore access to sieved residue provides a very useful final check for their presence. In this case no microliths were recovered from the residues. As the sieved material is a product of a different process of collection from that used on the excavations information about this material will normally be appended to the end of the list of artefacts for each site.

Small assemblages would seem to be typical of a large stretch of the southern midlands of Ireland and similar paucities of artefacts have been noted on many new NRA developments. It is tempting to explain away this scarcity as an unfortunate by product of the manner in which excavation has to be carried out, especially, the frequent rapid removal of topsoil. However, the fact that an extensive excavation at Curraghatoor, Co. Tipperary (Doody 2007) only produced four struck flint flakes is a clear indication that for the Bronze Age in particular there are very low densities of stone tools.

Description of the artefacts[5]

Individual pieces are described and maximum length and width recorded irrespective of whether the piece is complete or not. Where possible the maximum length is taken at right angles to the point of percussion

Site 5 Monadreela 03E0299

03E0299:01

Small fractured portion of a fine grained glossy black chert flake or blade maximum
Length 8 mm maximum, width 6 mm

03E0299:02

This is a broken portion of a large chert blade. The distal tip and a larger portion of proximal end are missing. Two shallow notches have been created in the right lateral edge.
Length 35 mm maximum, width 17 mm

03E0299:03

This is a proximal half of a small black chert blade with signs of platform preparation.
Length 20 mm maximum, width 10 mm

03E0299:04

This tabular, fractured piece of limestone shows some signs of damage rather than retouch. It is probably entirely natural
Comment: This is the only site to produce a majority of pieces in chert. Although it cannot be stated with certainty the two blades would be most at home in a Mesolithic context

Site 7 Monadreela 03E0300

03E0300:01

This is a surface find of a portion of a large creamy beige flint flake. Its' final shape has been determined by irregular, flat though not necessarily invasive retouch. The third edge is created by a flat edge on which there are two long facets. It has obviously been reduced from a much larger flake and may be a failed and therefore abandoned attempt to create a specific but unknown implement.
Length 46 mm maximum, width 28 mm max

Comment: The presence of early Neolithic pottery would suggest that this piece is likely to be Neolithic in date. It does not appear to be Mesolithic nor would it be typical on a Bronze Age site. It would seem as if a large flake tool that had been broken was reworked.

Site 8 Monadreela 03E0379

03E0379:03

This is a cortical flake that has probably been struck from a remaniée pebble of flint. It is in a fresh unpatinated condition. It retains the remnants of some flake steep peripheral scars which have created a straight functional scraping edge.
Length 30 mm maximum, width 21mm

[5] The Monadreela lithics are included here because of the Bronze Age & Neolithic data.

Comment: Cortical flakes are, in terms of periods, undiagnostic though in this case it seems to have been from a remaniée pebble. As there is a greater tendency to use these pebbles in the Bronze Age it seems likely that this site contains at least some traces of Bronze Age occupation.

App. 8.1: Cortical flint flake 03E0379:03

App. 8.2: Cortical flint flake 03E0379:03, showing scraping edge

Site 9 Monadreela 03E0345

03E0345:07

This is the fractured distal end of a large blue grey blade or flake of flint that would have originally been substantially larger.

Length 2.9 mm maximum, width 27 mm

03E0345:09

This is a small weathered nodular piece of black chert. It retains some small flake scars that might have a human origin but is more likely to have been a product of nature.

Length 226mm; width 17.1 mm

03E0345:21

This small piece of glossy black chert may have been a portion of a flake.

Length 6 mm maximum, width 4.5 mm

03E0345:46

A patinated light brown but relatively fresh flint flake whose distal end and part of the lateral edges are missing. The striking platform is cortex covered. The remaining right lateral edge retains evidence of slight peripheral retouch.

Length 36 mm maximum, width 35 mm

03E0345:04

Natural chunk of chert retrieved from sieved material.

Comment: The presence of two larger flakes would suggest a platform technology that was present to a greater extent in the Neolithic.

Site 11 Monadreela 03E0346

03E0346:03

This possible piece of coarse granular flint may have been struck.

Sieved Material

While large quantities of tiny fragments of predominantly chert were recovered from sieved material, none could be stated with certainty to be struck

Site 13 Monadreela 03E0378

03E0378:12

This is a small fresh laminar blade of flint.

Length 21 mm maximum, width 13 mm

03E0378:13

A heavily burnt mid portion of a flint blade was recovered as a surface find. It retains some steep retouch on its left lateral edge.

Length 27 mm maximum, width 17 mm maximum

03E0378:18

This unretouched flint flake shows signs of burning.

Length 26 mm maximum, width 26 mm maximum

03E0378:19

This is a heavily burnt portion of a secondary cortical flake whose cortex shows signs of heavy damage.

Length 21 mm maximum, width 22 mm

03E0378:20

This is a small almost perfect polished stone axe. Its present almost squat outline may be slightly exacerbated by the fact that a small portion of its butt is missing. The broken surface has either been heavily used or suffered from an attempted reworking. The cutting edge is in such good condition that it is almost certain that the axe was not, as commonly happened, used as a wedge at a later date. Aside from the damaged butt end the axe has been polished overall, with the lateral edges being created by flat facets. Both upper and lower surfaces are relatively flat.

Length 62 mm maximum, width 42 mm

03E0378:23

This is a small, very fresh flint blade of slightly irregular shape. The distal tip is missing.

Length 33 mm maximum, width 15 mm maximum

03E0378:24

This is a small fresh flake fragment that may have been struck from a small bi-polar core.

Length 25 mm maximum, width 14 mm

03E0378:26

This is a very small flake that may have been produced during secondary retouch.
Length 9 mm maximum, width 7 mm maximum

03E0378:28
This is a small flake of flint.
Length 11 mm maximum, width 12 mm maximum

03E0378:208
Small flake of flint that could be described as debitage (less than 20 mm in maximum length).
Length 20 mm; width 15 mm; thickness 6.9 mm

03E0378:209
Small flake of flint that could be described as debitage (less than 20mm in maximum length).
Length 20 mm; width 15 mm; thickness 0.7 mm

03E0378:210
Small flake of flint that could be described as debitage (less than 20 mm in maximum length).
Length 33.9 mm; width 37.8 mm; thickness 6.9 mm

Sieved material
From context (83) pit [85], four small flakes of flint (03E0378:208, 03E0378:209, 03E0378:210 & 03E0378:227) that could also be described as debitage (less than 20 mm in maximum length). All are in fresh condition with one slightly burnt and one retaining a small area of beach chattered cortex 03E0378:227. In addition, 53 small pieces of debitage many of which were burnt.

C*omment: The lithic assemblage from this site is in general quite undiagnostic. Most pieces have come from pits or as in one case, a post hole. It is of interest that there is a Polished stone axe associated with Beaker pottery and while small square axes can be found in the Mesolithic and the Neolithic period, in this case the resemblance of the shape of the axe to early copper axes may not be coincidental 03E0378:13 (surface find) could either be Mesolithic or Neolithic in date.*

Site 19 Boscabell 03E0426
Sieved material
03E0426:22
This is a small piece of chert debitage.
Length 10.5 mm; width 52 mm

03E0426:23
This is a quite weathered small piece from which flakes may have been struck
Length 12.1 mm; width 9.4 mm

Site 20 Boscabell 03E0470
03E0470:05
This is a portion of a reddish flint flake.

Length 30 mm maximum, width 21 mm maximum

03E0470:11
This is a burnt portion of a natural pebble.
Length 25 mm; width 20 mm

Sieved material
Seven tiny pieces of debitage, three of which may be flint, were identified from examining retents from wet-sieved sample flots.

03E0470:17
Possible flint debitage L 1.08cm; W 0.48cm; T 0.31cm, W <0.001kg

03E0470:18
Possible flint debitage L 0.63cm; W 0.5cm; T 0.2cm, W <0.001kg
03E0470:19
Possible flint debitage L 0.42cm; W 0.39cm; T 0.2cm, W <0.001kg

03E0470:20
Four pieces of stone debitage L 0.6cm; W 0.5cm; T 0.25cm, W <0.001kg

Comment: The one struck flake is an undiagnostic surface find

The Significance of the assemblages

Raw materials
In general within what could be described as the eastern part of North Munster and adjacent parts of Leinster, many of the assemblages are dominated by flint rather than chert or other raw materials. Only one site on the Cashel bypass, i.e. Site 5 Monadreela contained a majority of chert artefacts and this case it was three pieces out of four. Therefore it is quite usual to find, within the assemblages from this region, that flint is the dominant raw material. In general this would seem to be the case irrespective of period and is apparent at Ballybrado which lies further south, on the River Suir (Finlay and Woodman 2001, 189) and which seems to contain an early Mesolithic element. This is also the case at Kilcummer Lower, overlooking the River Blackwater, Co. Cork (Anderson 1993) and Killuragh Cave Co. Limerick (Woodman 2003). The same pattern can be seen in many Neolithic and later assemblages e.g. Curraghatoor and Chancellorsland (Doody 2007 & 2008). Often closer to the Shannon a higher percentage of chert can occur; e.g. at Hermitage, Co. Limerick chert was more common and it could be the dominant material on many sites from across the Shannon river in County Clare (Collins & Coyne 2003, 27).

The flint material found on sites in the Cashel bypass is likely to be either erratics or the small remaniée pebbles that are so prevalent in the area. Some material may have been brought from the coast about 60 km to the south but there is little evidence that flint was imported from the north of Ireland. The two pieces that may have been imported from are the large backed knife from Site 30iii (**03E1086:47**) and the large irregularly retouch fragment Site 7 (**03E0300:01**). The hollow scrapers would have required well chosen nodules or largish pieces of flint that may not have been immediately available in the area. This may have also been the case with the two

large blade fragments from Site 41 (**03E0674:08** & **03E0674:61**). Most of the chert appears to be rather small almost opportunistic flakes with only the blade fragments Site 5 (**03E0299:02** & **03E0299:03**) and obviously the chert arrowhead Site 41 (**03E0674:23**) is likely to have been imported. As noted by Woodman and Scannell (1993) a high proportion of the arrowheads found in Munster are made from chert.

Therefore the limited lithics assemblage is made up of the use of some local quite impoverished sources combined with a limited use of good quality flint brought in from outside the immediate area.

The chronological sequence

The Mesolithic: Mesolithic artefacts within this part of North Munster are quite rare indeed Co. Tipperary would be one of the counties with the least number of recorded find spots noted in the Mesolithic Data Base. It fits easily within the bottom quartile of the Data Base. As much Mesolithic material tends to come from the centre of river valleys, lakes and coastline it is not surprising that few Mesolithic artefacts were recovered. While Site 41 Farranamanagh lies adjacent to the headwaters of several streams flowing into the River Suir, the bypass route does not cross any rivers. Finds of Mesolithic artefacts in this type of landscape occur but usually they are stray finds which are often Later Mesolithic.

As noted above, local raw materials would not have been of a sufficient quality or quantity to allow extensive local production therefore some pieces were probably brought in from coastal areas outside the Cashel region. In the Mesolithic it is possible that many pieces brought into the area would have been curated and not easily abandoned, thus finds especially diagnostic tool types will be rare. Perhaps the most interesting yet enigmatic pieces are (**03E0674:08 & 03E0674:61**) which were removed from the same linear feature of later date at Site 41 Farranamanagh. These are two blade fragments of which one (**03E0674:08**) is slightly retouched. They have all the appearance of being portions of large blades that would be unusual in both the later and earlier Mesolithic. While they could belong within the Early Mesolithic, one possible explanation is that they come from a phase at the very beginning of the later Mesolithic, certainly before 6000 cal BC. The transversely retouched blade is particularly difficult to parallel in except that it gives the impression of being very early. *{*On Site 39 Farranamanagh, to the southeast oak charcoal from fill (217) of pit [216] was radiocarbon dated to 6372–6098 BC (UBA-14360)}.

There would also appear to have been traces of early Mesolithic settlement at Site 36i. This is an area where most of the lithics were recovered from topsoil or the soil dumps from the original clearing of the road line. The fact that three reasonably high quality blade cores (**03E0675:05**, **03E0675:49** & **03E0675:52**) were recovered in circumstances that would not suit the recovery of lithics suggests that an early Mesolithic site might have existed at one time in the past. It is likely that blade fragments would not be noted while it is improbable that microliths would have been noted.

The one probable later Mesolithic artefact is the flint knife (**03E1086:47**) from Site 30iii (Area 2). As noted earlier this is a particularly fine and unusually well retouched piece. This piece could probably date to the latter part of the Later Mesolithic. *{*Approximately 100 m from this find spot elm charcoal from fill (8017) of gully [8018] was radiocarbon dated to 6206–5999 BC (UBA-13940)}.

Only three other potential Mesolithic items were recovered. These were the proximal portion of a small chert blade, Site 5 Monadreela (**03E0299:03**) that might belong to the Mesolithic while (**03E0299:02**) is apportion of a larger blade that is also struck from a chert nodule. A surface find from Site 13 Monadreela (**03E0378:13**) was an extremely heavily weathered burnt blade fragment. Its steep peripheral retouch was more reminiscent of what might be expected to be found in a Mesolithic context but this latter piece could also date to the Neolithic.

In summary, the Mesolithic is represented by a scatter of stray finds usually occurring out of context. There seems to be a slight concentration to the south and southwest of Cashel. It is of interest that two of the sites that have produced potential Mesolithic artefacts over looked ponds or small lakes that would have existed in the earlier half of the Holocene. These are Site 41 Farranamanagh which overlooks Lough Nahinch and Site 5 Monadreela which lay adjacent to a marshy area associated with a pond.

The Neolithic: There was one Neolithic rectangular house excavated on the Cashel bypass scheme, Site 19 Boscabell (03E0426). There are few sites with early Neolithic stone tool assemblages. In fact, the one large bifacial form / leaf shaped arrowhead from Site 41 Farranamanagh (**03E0674:23**) is one of the few artefacts which might belong to the earliest phases of the Neolithic. In general, it is the presence of hollow scrapers and their blanks that are the most obvious Neolithic presence. The hollow scraper would appear to develop some time after the beginning of the Neolithic though probably by 3500 cal. BC. The most obvious presence is at Site 30iii (Area 1) where three hollow scrapers was found in close proximity. These (**03E1086:48**, **03E1086:49** & **03E1086:60**) were in the vicinity of a small structure. They may be part of a small cache of hollow scrapers that had been brought there for a particular purpose (Woodman et al 2006). One other hollow scraper blank was found as a stray. This was a topsoil find at Site 41 (**03E0674:01**). Hollow scrapers were traditionally regarded as a northern phenomenon but thanks to numerous recent excavations in Munster they are beginning to occur with a greater frequency. Examples have been found at Killuragh Cave Co. Limerick (Woodman 2003). It would seem that their absence was due to the lack of excavations of the appropriate sites.

No other diagnostic Neolithic artefacts such plano-convex knives, invasively retouched pieces etc were recovered from the Cashel bypass. However the platform technology from a small assemblage from Site 9 Monadreela would be more typical of the Neolithic period.

Other implements that were recovered are less diagnostic and difficult to attribute to a particular period. Therefore of the four scrapers only two can be clearly associated with a particular period and in both cases this could be confirmed by associations. These were the small domed scraper from Site 39 Farranamanagh (**03E0757:22**) is typical of those often found on sites with beaker assemblages as happened in this case. Other more fragmentary and irregular examples such as Site 36i Windmill (**03E0675:48**) are more likely to be Bronze Age.

This area is noted for the presence of bi-polar cores made on remaniée pebbles though in this case few good examples exist. One particular good example was recovered from Site 36ii Windmill this is (**03E0676:66**) while (**03E0676:40**) from the same site is a flake also struck from a remaniée. The other good example of a flake from one of these pebbles is Site 8 Monadreela (**03E0379:03**) while lithic (**03E0746:35**) from Site 25iii Hughes'-Lot East is from a site with Later Bronze Age pottery. The bi-polar technology is known to continue into the later part of the Bronze Age e.g. at Fota Island in Co. Cork (Woodman 1994). It is possible that these remaniée pebbles were recovered more frequently when more agricultural land was opened. In fact, they

were first noted by O Kelly (1963) when searching a ploughed field adjacent to Garryduff ringfort.

Although they are not always that common, the lack of diagnostic tools such as barbed and tanged and hollow based arrowheads, as well as slug knives, etc is quite striking. Woodman and Scannell (1993) noted that stray finds of arrowheads in many parts of Munster were quite rare. This scarcity of the more diagnostic tool types would seem to be being replicated in the various NRA projects. Obviously, with the smaller quantities of stone tools that are recovered from Bronze age settlement sites, the Bronze age presence is not always very obvious, but it is evident from the pottery that there is a significant Bronze age presence in the area.

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Summary Table of potentially diagnostic elements

Mesolithic

Site 5 Monadreela - Possible Early Mesolithic?
Site 30iii Owen's And Bigg's-Lot - Probable Later Mesolithic backed knife
Site 36i (Area 2) Windmill - Probable Early Mesolithic blade cores
Site 41 Farranamanagh - Probable Earlier Mesolithic blade and retouched blade fragment

Earlier Neolithic

Site 7 Monadreela - Large reworked and retouched flake fragment
Site 9 Monadreela - Typical platform core technology associated with the Neolithic
Site 30iii (Area 1) Owen's And Bigg's-Lot - Three hollow scrapers
Site 41 Farranamanagh - Unfinished leaf shaped arrowhead and hollow scraper blank

Beaker and Bronze Age

Site 34 Windmill - Invasively retouched convex end scraper with burial
Site 39 Farranamanagh - Typical small beaker period domed scraper
Site 8 Monadreela - Cortical flake from remaniée pebble
Site 13 Monadreela - Possible bi-polar technology
Site 25iii Hughes'-Lot East - Possible bi-polar technology
Site 36ii Windmill - Bi-polar core present
Site 38ii Deerpark/ Farranamanagh - Cortical flake from remaniée pebble

Appendix 9 Prehistoric Pottery Report

The prehistoric pottery assemblages from the N8 Cashel Bypass, County Tipperary

Eoin Grogan and Helen Roche

Summary

The N8 Cashel Bypass produced a substantial assemblage of 638 sherds (plus 156 fragments and 260 crumbs) from at least 73 vessels. This material came from 15 sites and weighed a total of 5,150g. There were small quantities of early Neolithic Carinated Bowl (four sites and at least nine vessels), early Bronze Age food vessel (two sites, two vessels) and late Bronze Age domestic ware (one site, three vessels) but the assemblage was dominated by final Neolithic/early Bronze Age Beaker (nine sites, 59 vessels). Collectively the sites indicate intensive prehistoric settlement in the Cashel area.

The early Neolithic

Four sites, Gortmakellis (Site 1i), Monadreela (7 and 9) and Boscabell (19) produced small assemblages of Carinated Bowls representing at least nine vessels (Tables 1 and 3). The quantities of pottery were small with a total of 34 sherds (150g); in general the material came from pits and postholes without any clear structural pattern. The pottery from Monadreela 9, however, was in a posthole that may have been associated with a small circular structure. All of the contexts appear to be domestic and this is reflected in the fragmentary and worn condition of the pottery.

The vessels are all well made and fine-walled with a thickness of generally less than 7.5mm. They all appear to have everted rims and simple rounded or small step shoulders. Both gently rounded shallow bodies and more deeply rounded profiles are present. The red-brown to dark grey fabric contains mainly crushed quartzite inclusions (≤ 2mm long) but some mica also occurs at Gortmakellis Site 1i (Vessels 2 and 3) and the Boscabell 19, Vessel 1, contains shale. Two pots, Gortmakellis 1, No. 3 and Monadreela 7, No. 1, retained evidence for burnishing but it is probable that wear has obscured this feature on other vessels.

Discussion

The N8 Cashel Bypass vessels have a wide variety of parallels on other Neolithic domestic sites, including those with characteristic early Neolithic rectangular houses, and early court tombs. The vessels are plain carinated bowls and this form consists of a hemispherical bowl above which there is a distinct shoulder or carination and a generally curved neck and a simple, often slightly out-turned, rounded rim. Vessels of this type in Ireland usually have deep bowls and neutral or open profiles, *i.e*. where the shoulder diameter is equal to or less than that of the rim. These forms represent the earliest type of Neolithic pottery (Case 1961: 'Dunmurry-Ballymarlagh styles'; Sheridan 1995: 'classic' carinated bowls) in Ireland.

This type of pottery has not previously been reported from the Cashel area. At a regional scale, however, early carinated bowls with everted rounded rims, curved necks and simple angle or small step shoulders feature at Lough Gur Circles J, K, L and Site 10 (Grogan and Eogan 1987, figs 15, 20, 27, 40-41, 67), and Site C (Ó Ríordáin 1954, fig. 11), County Limerick. This pottery also came from a pair of rectangular houses at Tankardstown South, County Limerick (Gowen 1988; Gowen and Tarbett 1988), and more recently from houses at Granny and Newrath, County Kilkenny (Hughes 2005; Wren 2005). Recent discoveries in the south-east at, for example, Kerlogue, County Wexford, Ahanaglogh, Cooltubrid East and Knockhouse Lower, County Waterford (Elder 2004; Tierney *et al*. 2002; McQuade forthcoming) are indicating a much more extensive settlement pattern during this period. Similar results have also occurred in Cork with early Neolithic pottery from sites such as Ballinaspig More and Curraheen (Danaher 2004a; 2004b). Carinated Bowls are well dated from a variety of sites to the period 4000-3700 BC

Townland (Site No.)	Weight	Sherds	Rim	B/Ba	Neck	Body	Frags.	Crumb	Minimum Vessels	Pottery type
Gortmakellis (Site 1i)	60	8	0	3	2	3	0	0	5	ENCB
Monadreela (Site 7)	25	9	1	2	3	3	0	0	1	ENCB
Monadreela (Site 9)	25	9	0	2	7	0	0	0	2	ENCB
Boscabell (Site 19)	40	6	0	2	4	0	0	0	1	ENCB
Owen's and Bigg's Lot (Site 30)	10	3	1	0	0	2	2	12	1	Bowl FV
Windmill (Site 34)	10	1	1	0	0	0	0	0	1	Vase FV
Hughes' Lot East (Site 25iii)	300	19	3	2	2	12	10	15	3	LBA
Total	**470**	**55**	**6**	**11**	**18**	**20**	**12**	**27**	**14**	

Table 1. Early Neolithic Carinated Bowls and early Bronze Age food vessels from the N8 Cashel Bypass.

Conclusions

The sites on the N8 Cashel Bypass demonstrate intensive and prolonged prehistoric activity in a concentrated area; the early Neolithic, Beaker and late Bronze Age material are the first discoveries of these ceramic types in the vicinity and provide evidence for long term settlement development leading to the emergence of Cashel as a significant regional focus in the late Bronze Age.

App. 9.1: Sherd of ENCB pottery *in situ*

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CATALOGUE

Where the pottery is listed in the catalogue the context numbers are in bold: *e.g.* bodysherds: **92**.5-6.

Numbers in square brackets (*e.g.* **92**.[16-7]) indicate that the sherds are conjoined.

R = Rimsherd N = Necksherd B = Bodysherd S = shouldersherd f = fragment

The thickness refers to an average dimension; where relevant a thickness range is indicated.

Vessel numbers have been allocated to pottery where some estimation of the form of the pot is possible, or where the detailed evidence of featured sherds (*e.g.* rims, shoulders), fabric or decorative treatment indicates separate vessels.

BOSCABELL (03E0426), SITE 19

The excavation number 03E0426 is omitted throughout; only the context number, abbreviated to the final one to three digits (*e.g.* **122** for [19122]), followed by the find number is included.

The fill [**122**] of a pit [**141**] produced 6 sherds of early Neolithic carinated bowl representing a single vessel; weight: 40g.

Vessel 1. This is represented by 6 neck-/shouldersherds (**122**.[1-6]) from a vessel with a gently curved neck, simple angle shoulder and deep rounded body. The smooth dark grey-brown fabric has medium content of crushed quartzite (≤ 1.5mm) and occasional shale inclusions (up to 3 x 2mm). Neck thickness: 5.3mm; body: 5.2mm. Total weight of sherds: 40g.

Maximum external shoulder diameter: *c*. 16cm.

Appendix 10 Medieval & Post Medieval Pottery Report

The pottery from Site 19: Boscabell, Cashel, Co. Tipperary (03E0426)

Clare McCutcheon MA MIAI

Introduction:

A total of five sherds of pottery were presented for study. One sherd is medieval dating to the 13th century with the balance dating from the later 17th to the later 19th century.

Methodology:

The material has been identified visually and the information has been entered on an Access database as per the requirements of the National Museum of Ireland. The pottery identification is presented in Table 1 showing the quantity of sherds in each fabric type and the minimum number of vessels (MNV), an objective number based on the presence of rim/handle sherds in the assemblage. The more subjective minimum number of vessels represented (MVR) is also listed and is based on the numbers of diagnostic pieces such as differently shaped rims, quantity of handle etc. The most likely form of the vessels represented by the sherds and the known date of distribution of the fabric type are included in the table.

Fabric	Sherds	MNV	MVR	Form	Date
Cashel-type ware	1	1	1	Jug	13th
Total medieval	**1**	**1**	**1**		
North Devon gravel tempered	1	-	1	Jar?	17th
Mottled ware	1	-	1	Tankard	18th
Transfer printed ware	1	-	1	Plate	19th
Mochaware	1	-	1	Tankard	19th
Total post-medieval	**4**	**-**	**4**		

Table 1: Pottery identification, Site 19: Boscabell (03E0426)

Registration No	Context No	Item	Simple Name	Full Name	Material	Dimensions
03E0426:04	42	4	Pottery	Transfer printed ware	Ceramic	Rim
03E0426:09	01	9	Pottery	Mottled ware	Ceramic	Base
03E0426:11	01	11	Pottery	North Devon gravel tempered	Ceramic	Body
03E0426:12	01	12	Pottery	Mochaware	Ceramic	Base
03E0426:18	26	18	Pottery	Cashel-type ware	Ceramic	Rim/Handle

Table 2: Pottery identification, Site 19: Boscabell (03E0426)

Cashel-type ware:

The context containing the medieval sherd is described as the surface of pit (180).
The sherd is identified as a rim and handle fragment of a medieval jug, locally-made and styled Cashel-type, wheel-thrown, glazed and typical of the mid-13th to early 14th centuries. The sherd is very worn and but is clearly recognisable as a strap handle, typically placed just below the rim. A single slashed mark is present on the handle, indicating that there was further decoration on the handle. While handles of this type can have stabbed or slashed marks at the top of the handle, these are not integral to the decoration and seem to be a personal preference of the potter. A lack of a mark at this point could indicate either a decorated or undecorated handle. All undecorated handles, however, are completely undecorated, thereby confirming this handle as decorated. A typical decoration of the period consisted of two parallel scored lines on either side of the handle with a series of diagonal slashes between them.

The use of the suffix *-type* indicates that the ware is most probably locally made although no kiln has yet been recorded (Blake & Davey 1983, 39-40). A possible area of pottery production is at Crokerath, mentioned in 1308-9 as part of the manor of Knockgraffon, some three miles to the south-east of Cashel (White 1932, 147). Nearly thirty miles further east, at Callan Co. Kilkenny, the place name Pottlerath or *Ráth an Photaire* may also indicate the presence of a potter. Both suggestions, however, are based on the name of the rath rather than any specific reference to the making of pottery. At the manor of Thurles, Philip, David,

William and Agnes Crocker were listed as tenants in 1303 (*ibid* 79-80) and the name Crocker is a sure indication of pottery production, coming from the English term for earthenware potter (Le Patourel 1968, 102). It is very possible that there was a lively pottery production in the south Tipperary/Kilkenny area during the 13th and early 14th centuries.

Assemblages containing locally-made medieval glazed pottery were recovered at Bank Place, Chapel Street, the County Hospital (McCutcheon forthcoming (a-d)) and at Friar Street (Johnston & McCutcheon 2004). Excavations in Golden, Kilfeakle and Tipperary town have also produced some very similar glazed medieval pottery but the quantities are still too small to say for certain that these originated specifically in Cashel itself (McCutcheon forthcoming (e-g)).

North Devon gravel tempered:

These wares were produced in the North Devon towns of Bideford and Barnstaple with a large scale export trade throughout the 17th century (Grant 1983, 109). The fabric fired to a pink and grey in section and the vessels were glazed with a clear lead glaze. The extra gravel added to the larger vessels assisted in strengthening them for use in the kitchen and dairy.

Mottled/Treacle ware:

The fabric of the mottled wares varied from fine buff to orange/red with the vessels covered in a rich dark brown slip (Meenan 1997, 351). The tankard or mug was the most typical vessel form recovered in excavations in Ireland.

Transfer printed ware:

Transfer printing is commonly associated with the so-called 'Willow pattern', but the variety of patterns is wide with landscapes, particularly English and Italianate very popular as well as many varieties of Chinese style or Chinoiserie. While the principal colour used is a deep blue, decoration also comes in red, grey, brown, purple, green and black. The decoration consists of the application of a coloured tissue paper design.

Mochaware:

This was decorated with moss-like designs by dabbing the body with a brush of liquid pigment which spread out in branching tree-like traceries (Savage & Newman 2000, 194). Some pieces were also painted with bands of various colours (*ibid*.).

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Appendix 11 Metal Finds Report

Catalogue of metal finds from N8 Cashel Bypass.
Jacqueline Mac Dermott.

The finds are catalogued by site number, excavation number and artefact number. Objects recommended for illustration or photography are listed within each site.

Site 19, Boscabell, Cashel, Co. Tipperary.
The four objects from site 19 are all remnants of nails or screws. 03E0426:06 is a particularly large example, and maybe a relatively modern screwbolt from a cart or vehicle. None of the other finds are datable.

03E0426:05
Fragment. Iron. Badly splintered and corroded. L 46mm; Diam 7mm. Context 42.

03E0426:06
Screwbolt. Iron. Round head, splayed or burred, square straight upper shaft, rounded lower shaft with regular incised horizontal lines near end. Relatively modern. L 156mm; Diam 16mm. Context 189.

03E0426:16
Screw. Iron. Robust, round head, thick shaft with horizontal parallel incised lines. L 52mm; Diam 14mm. Context 03.

03E0426:17
Nail. Iron. Square head, square sectioned shaft. L 39mm; Diam 12mm. Context 03.

Appendix 12 Small Finds Report

N8 Cashel Bypass & N74 Link Road
03E0426, Site 19, Boscabell, Cashel, Co. Tipperary
By Edel Ruttle, TVAS Ireland Ltd

Small Finds Report

Five finds were recovered during the excavation at Site 19 at Boscabell: one ceramic i.e. clay pipe and four shards of glass. All finds came from topsoil (01).

Ceramic

Clay pipe

Stem fragment (03E0426:14) was recovered from fill (06) of pit [30]. The find is 59mm long and has a diameter of 8mm. It is undecorated and bears no maker's mark. Given that Harrington's stem bore technique has been proven unreliable, it is difficult to identify this find in any more detail.

Glass

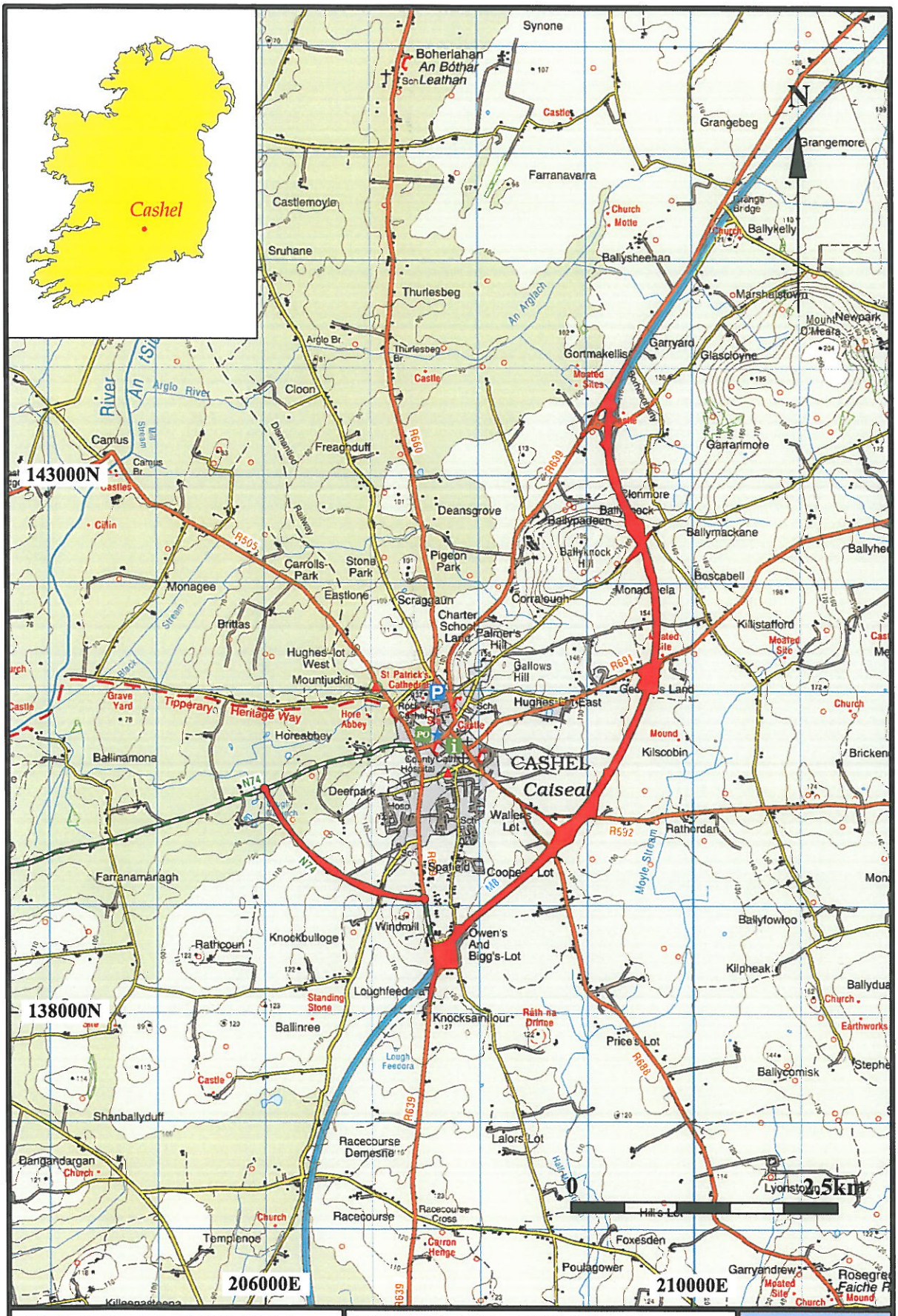
Glass assemblage is represented by four bottle glass fragments from upper fill (42) of ditch [70]: clear body fragment (03E0426:03) and two green base and body (03E0426:02) and body fragment (03E0426:07). In addition to these, a blue-coloured glass fragment that most likely belonged to an apothecary bottle (03E0426:08) was retrieved. All the glass finds are post-medieval to modern in date.

Table 1 gives more detailed description and dimensions of the finds.

Site No.	Find No.	Context	Category	Type	Identifiation	Description
19	03E0426:02	(42), [70]	Glass	Bottle	Body and base fragment	Dark green glass body and base fragment. Some bubbles present in fabric. Poss. 19th C. L: 44mm; W: 38mm; T: 17mm. Weight: 29g.
19	03E0426:03	(42), [70]	Glass	Bottle	Body fragment	Clear glass bottle body fragment. Modern. L: 27mm; W: 22mm; T: 4mm. Weight: 4g.
19	03E0426:07	(42), [70]	Glass	Bottle	Body fragment	Green glass bottle body fragment. Modern. L: 27mm; W: 22mm; T: 3mm. Weight: 3g.
19	03E0426:08	(42), [70]	Glass	Apothecary bottle?	Body fragment	Blue glass body fragment poss. of an apothecary bottle. L: 29mm; W: 20mm; T: 3mm. Weight: 4g.
19	03E0426:14	(06), [30]	Ceramic	Clay pipe	Stem fragment	Clay pipe stem fragment. L: 59mm; D: 8mm. Weight: 6g.

Table 1: Site 19 Finds Overview

Appendix 13 Radiocarbon Dates

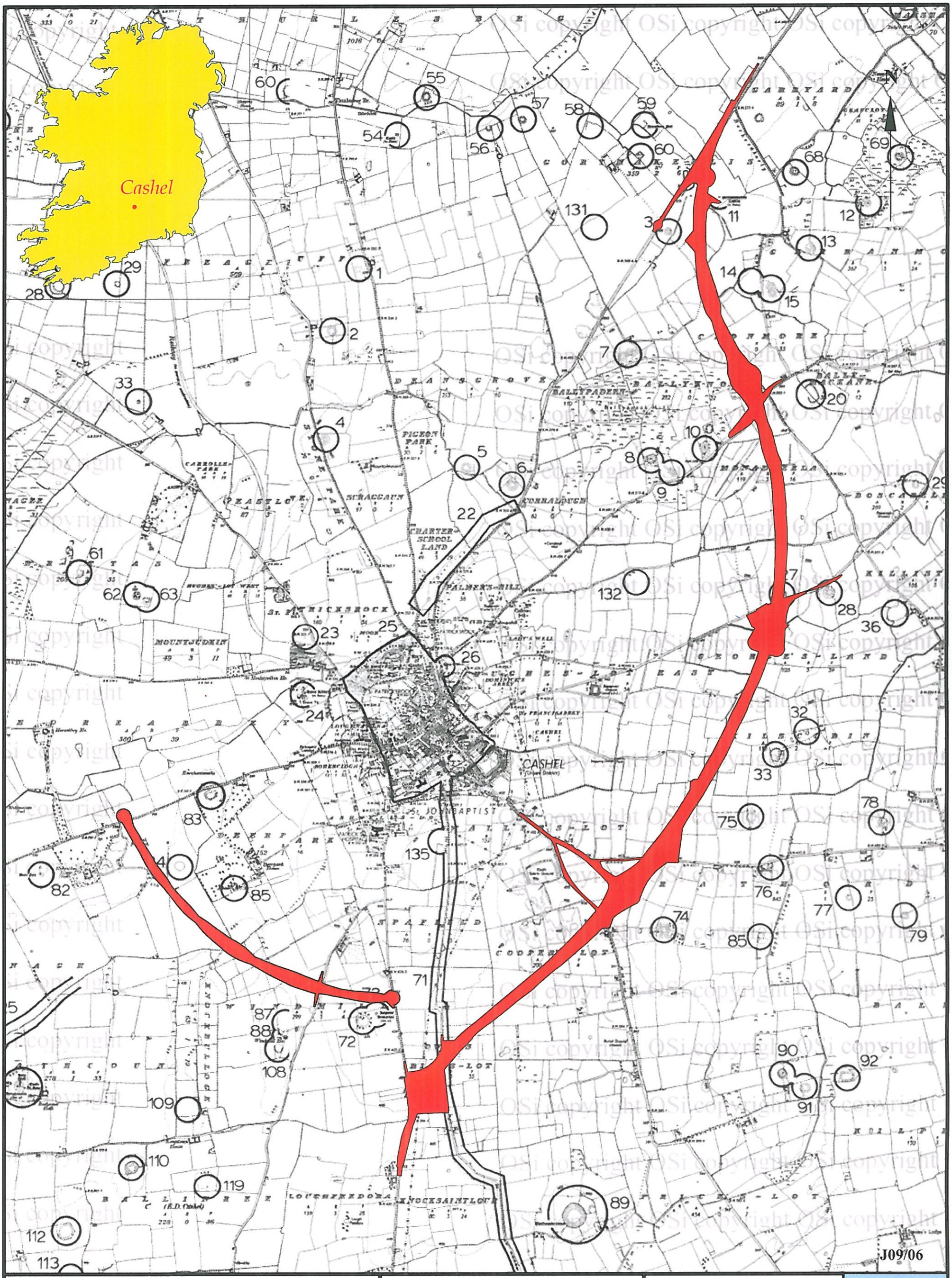


N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Figure 1: Location of N8 Scheme

Scale 1:50 000

TVAS IRELAND LTD



N8 Cashel Bypass & N74 Link Road,Co. Tipperary

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

Figure 2: Scheme Location & RMP Details

Scale 1:20 000

0 1km

TVAS IRELAND LTD

209400E

209600E

209800E

N

141300N

Site 19

Site 20

Site 21

Site 22

141100N

CPO Line

GEORGE'S–LAND

Site 24

Site 23

140900N

Site 25i

Key:

- Water course

N8 Cashel Bypass & N74 Link Road, Co. Tipperary	Figure 3: Post-Excavation plan of Sites 19-25i Scale 1:2000	0 100m	TVAS IRELAND LTD

209665E
209675E
N
209685E
141365N
Field Boundary
Structure 4
Structure 3
Structure 2
[46]
[206]
[210]
[208]
[207]
[211]
[209]
[212]
[214]
[213]
[76]
L1
L
[215]
[200]
M
M1
[77]
[219]
[233]
[103]
[234]
[224]
[74]
[201]
[202]
[96]
N
[84]
N1
H1
[80]
H
[82]
(87)
[91]
[227]
[228]
[89]
K1
K
[60]
[72]
[44]
C2
C3
[75]
J
J1
[86]
I
Stakehole cluster
141355N
[190]
[217]
[221]
[220]
[218]
[222]
G1
(41)
[102]
G2
I1
[70]
B2
B3
1409-1263 cal. BC
1217-1038 cal. BC
Limit of Excavation
[86]
[229]
CPO Line
141345N
E2
E3
[193]
Key:
- cultivation furrow
- fulacht-type deposit

N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 7: Middle Bronze Age fulacht deposits, possible Late Bronze Age Structures 2, 3, 4 and nearby features

Scale 1:100

0 5m

TVAS TRELAND LTD

209600E

209680E

N

Site 18

Fig. 5

Limit of Excavation

141380N

[187]

Site 19

CPO Line

[237]

[28]

[236]

Fig. 7

[227]

CPO Line

[228]

Field Boundary

[70]

Fig. 6

Moated site TS061-027

C1

B

141300N

C

[197]

B1

D2

D3

[196]

E

F

E1

[04]

F1

Fig. 8

[188]

2574-2466 cal. BC

[179]

Road

Site 20

Field Boundary

Key:

- cultivation furrow

- Fulacht Fia

N8 Cashel Bypass & N74 Link Road

Boscabell, Site 19 03E0426

Figure 4: Post-excavation plan of Site 19

Scale 1:500

0 25m

TVAS IRELAND LTD

N

209635E

209640E

209645E

Site 18

Structure 1

[18205]

[18010]

[18011]

[18012]

Limit of Excavation

[148]

Site 19

141390N

X

X1

[18022]

[160]

[112]

[117]

[225]

[141]

Y1

[142]

[134]

[140]

[146]

[108]

Y

[152]

[115]

[18013]

[138]

Z1

[110]

[171]

[176]

[136]

[175]

[128]

W1

W

Z

[169]

[154]

Possible Porch

[230]

[127]

[162]

[143]

141385N

[226]

[238]

[150]

[157]

[165]

A2

A3

Key:

- cultivation furrow
- feature from survey, not excavated
- stone

N8 Cashel Bypass & N74 Link Road, Co Tipperary

Boscabell, Site 19 03E0426

Figure 5: Early Neolithic Rectangular Structure 1 and associated features

Scale 1:50

0 2.5m

TVAS IRELAND LTD

209635E

209640E

209645E

N

Site 18

Structure 1

[18205]

[18010]

[18011]

[18012]

Limit of Excavation

Site 19

141390N

X

X1

[18022]

[160]

[112]

[117]

[225]

[108]

[141]

Y1

[142]

[140]

[146]

Y

[152]

[115]

[138]

Z1

[110]

[176]

[171]

[136]

[175]

[128]

W1

W

Z

[169]

[154]

Possible Porch

[143]

[162]

[226]

[238]

141385N

[165]

A2

A3

Key:

- pit with Early Neolithic pottery
- gully Structure 1
- feature from survey, not excavated
- postholes Structure 1

N8 Cashel Bypass & N74 Link Road, Co Tipperary

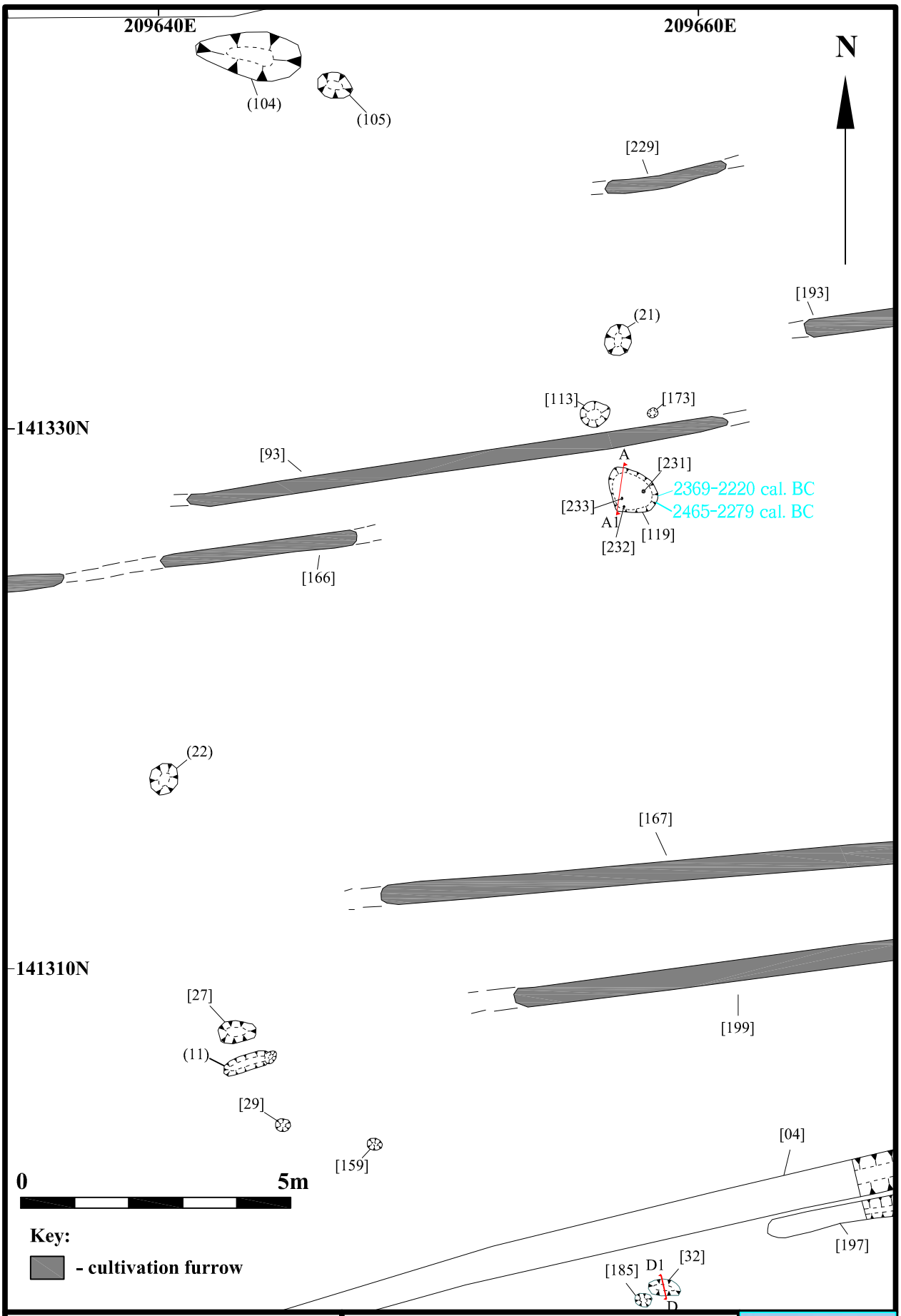
Boscabell, Site 19 03E0426

Figure 5a: Early Neolithic Rectangular Structure 1 and associated features (without cultivation furrows)

Scale 1:50

0 2.5m

TVAS TRENCH LTD



N8 Cashel Bypass & N74 Link Road, Co. Tipperary **Boscabell, Site 19 03E0426**	**Figure 6: Late Neolithic pits and associated features** Scale 1:200	TVAS TRELAND LTD

209665E
209675E
N
209685E
141365N
Field Boundary
Structure 4
Structure 3
Structure 2
[46]
[206]
[210]
[208]
[207]
[211]
[209]
[212]
[214]
[213]
[76]
L1
L
[215]
[200]
M
M1
[77]
[219]
[233]
[103]
[234]
[224]
[74]
[201]
[202]
[96]
N
[84]
N1
H1
[80]
H
[82]
(87)
[91]
[227]
[228]
[89]
K1
K
[60]
[72]
[44]
C2
C3
[75]
J
J1
[86]
I
Stakehole cluster
141355N
[190]
[217]
[221]
[220]
[218]
[222]
G1
(41)
[102]
G2
I1
[70]
B2
B3
1409-1263 cal. BC
1217-1038 cal. BC
Limit of Excavation
[86]
[229]
CPO Line
141345N
E2
E3
[193]
Key:
- cultivation furrow
- fulacht-type deposit

N8 Cashel Bypass & N74 Link Road, Co. Tipperary

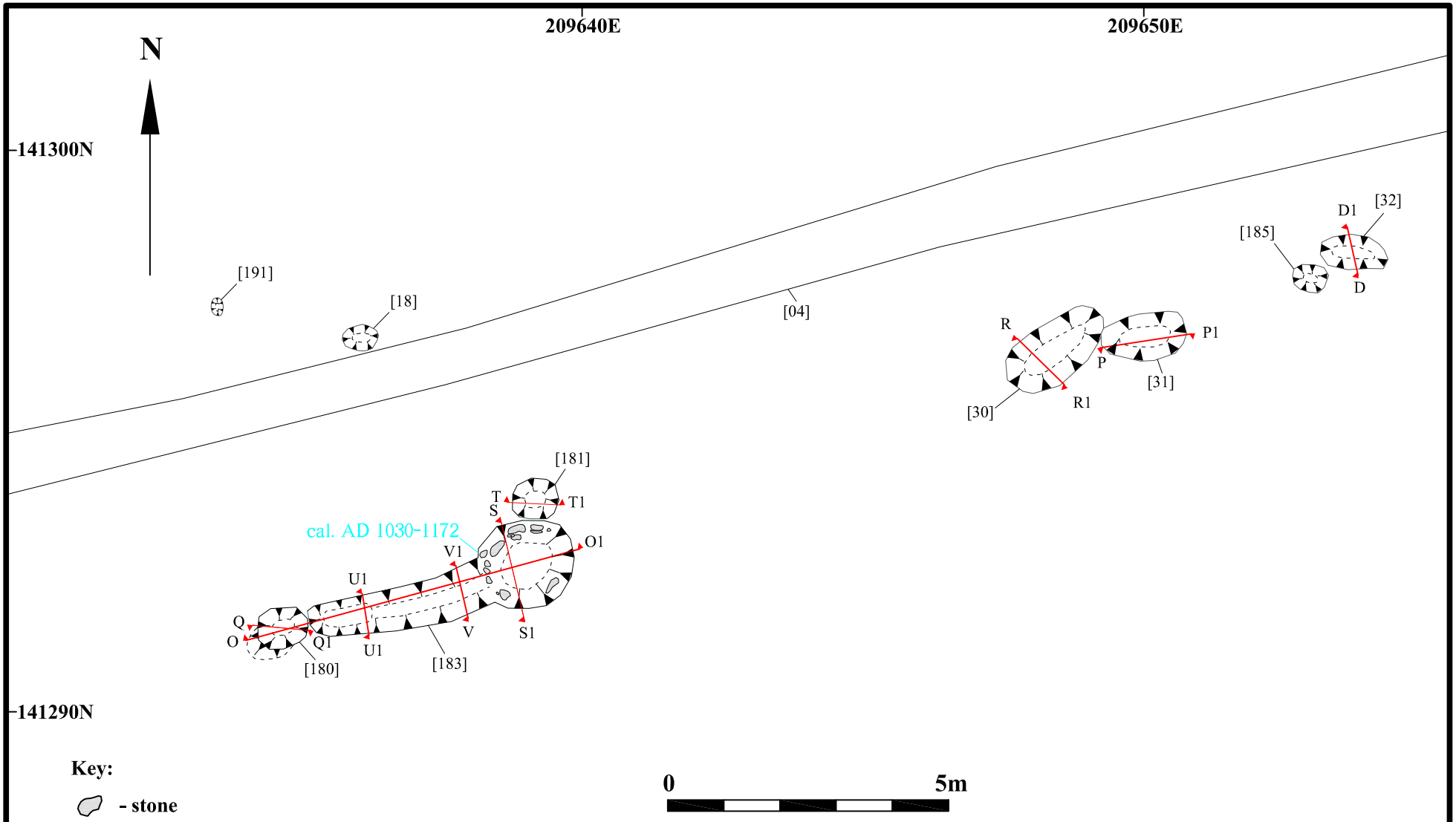
Boscabell, Site 19 03E0426

Figure 7: Middle Bronze Age fulacht deposits, possible Middle Bronze Age Structures 2, 3, 4 and nearby features

Scale 1:100

0 5m

TVAS IRELAND LTD



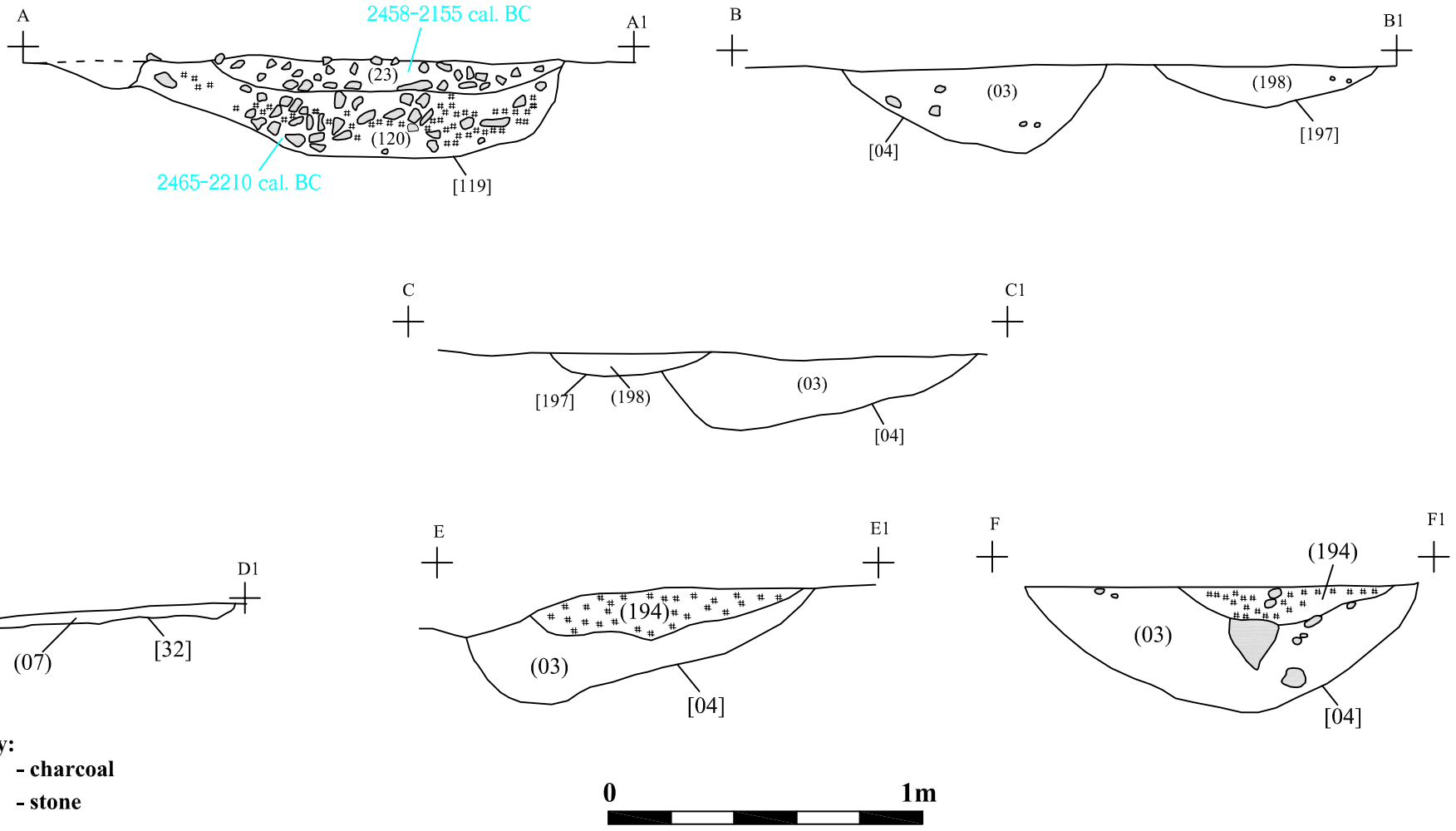
N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 8: Medieval Kiln & nearby features

Scale 1:100

TVAS IRELAND LTD



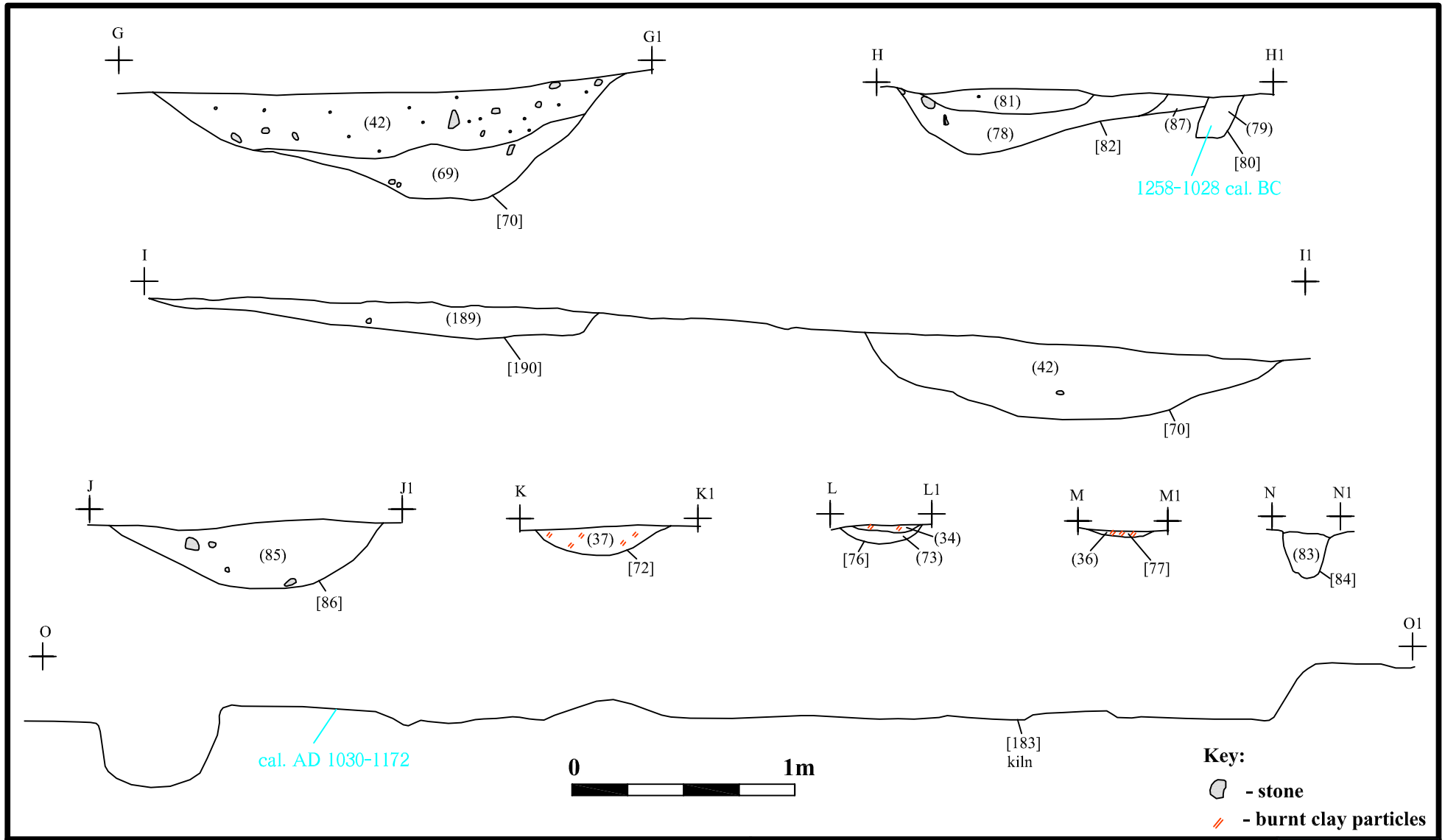
N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 9: Sections from Site 19

Scale 1:20

TVAS IRELAND LTD



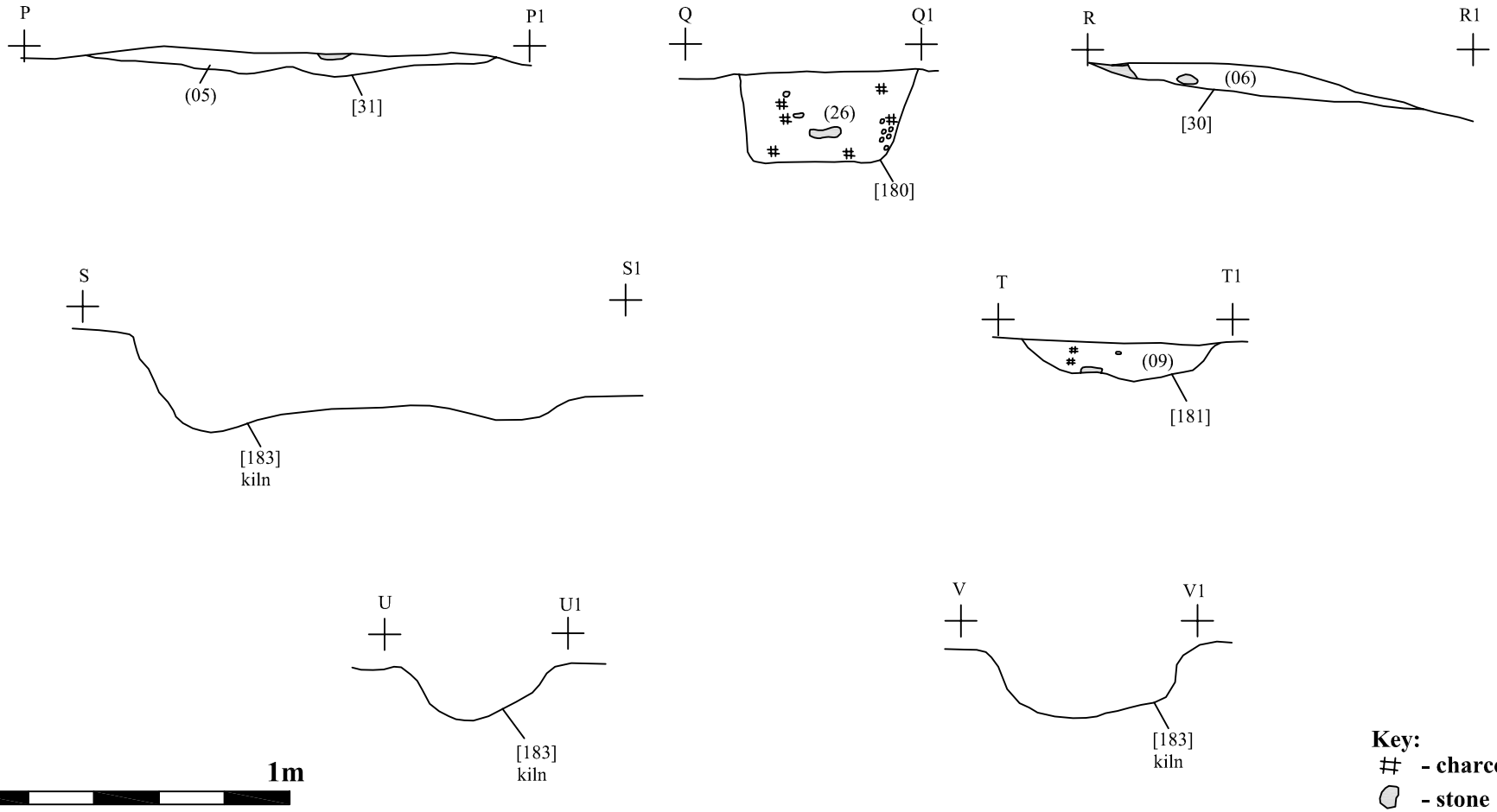
N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 10: Sections and profile of Kiln [183] from Site 19

Scale 1:20

TVAS IRELAND LTD



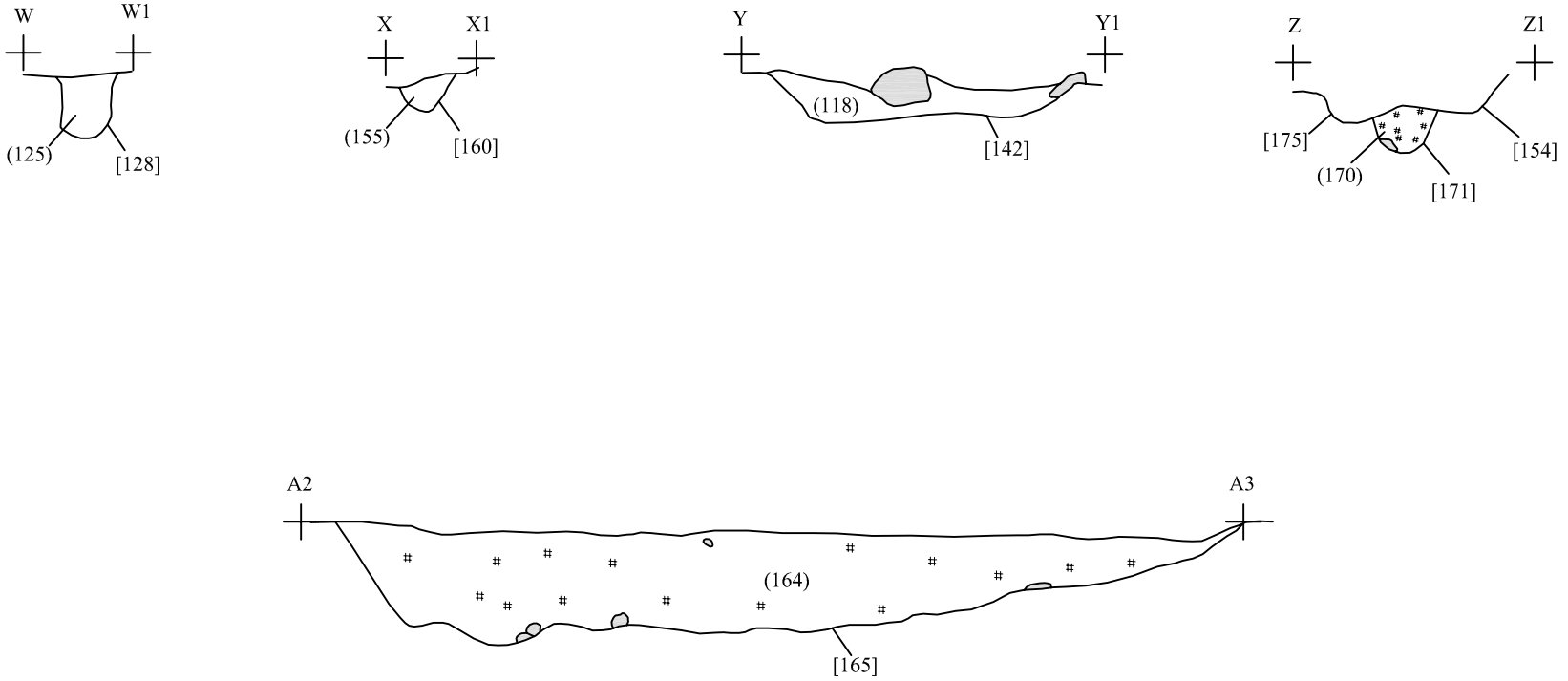
N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 11: Sections and profiles from kiln & nearby features

Scale 1:20

TVAS IRELAND LTD



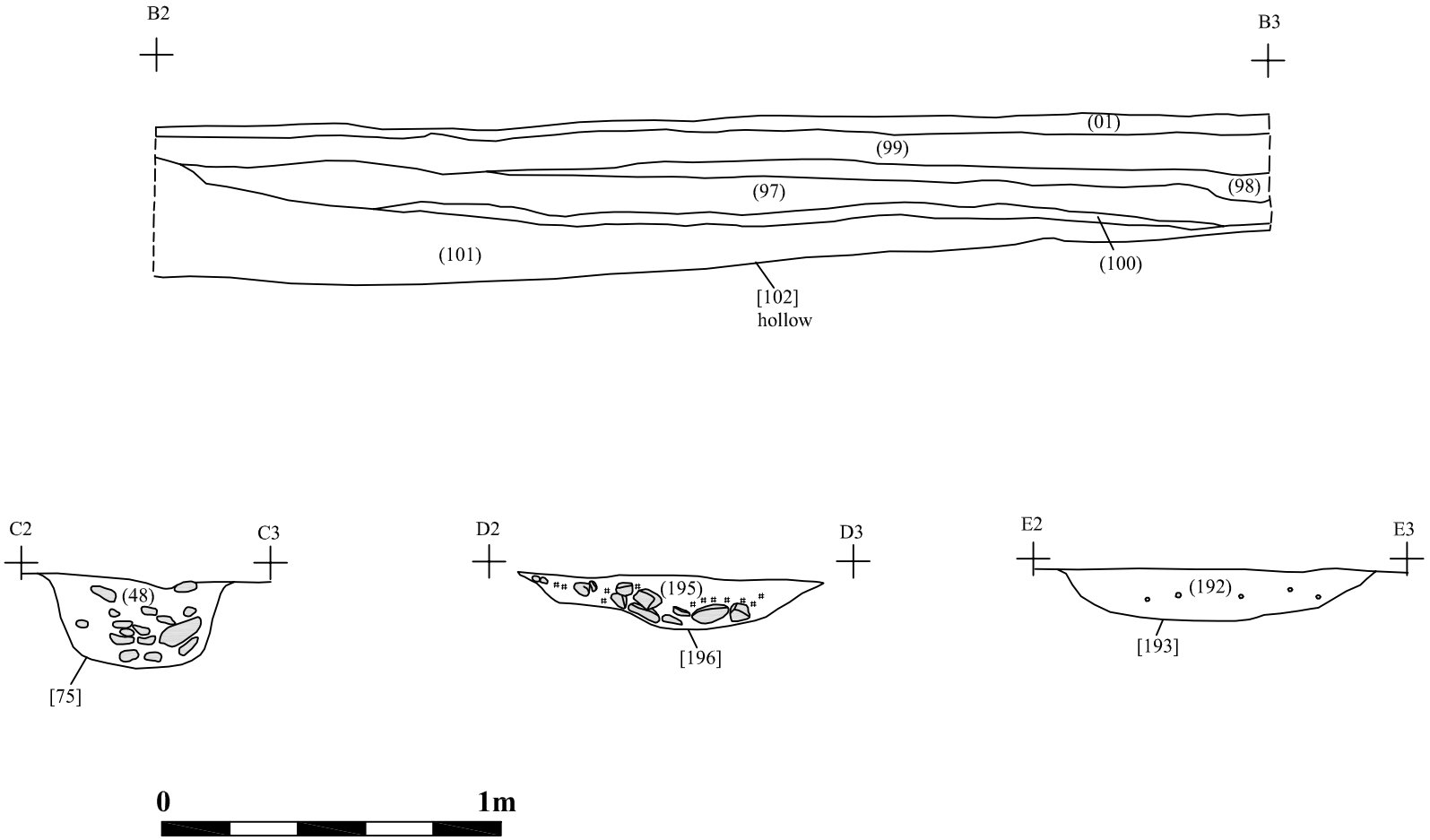
N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 12: Sections from Site 19

Scale 1:20

TVAS IRELAND LTD



N8 Cashel Bypass & N74 Link Road, Co. Tipperary

Boscabell, Site 19 03E0426

Figure 13: The rest of the sections from Site 19

Scale 1:20

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