

**N7 CASTLETOWN TO NENAGH
ROAD IMPROVEMENT SCHEME
CONTRACT 2 (DERRINSALLAGH TO CASTLEROAN):**

**ADVANCE ARCHAEOLOGICAL WORKS
PHASE 3 ARCHAEOLOGICAL EXCAVATIONS**

**Final report
Newtown, Co. Laois
Excavation Number E3901**

**Archaeological Consultancy: Valerie J Keeley Ltd, Brehon House, Kilkenny Road,
Castlecomer, Co Kilkenny**

**Senior Archaeologist: Eamonn Cotter
Excavation Director: Liam Ó Séaghdha
Final Report Author: Paul Stevens**

Date: April 2011



Pre-excitation view of burnt mound (C3), facing southwest.



Project name: **N7 Castletown to Nenagh (Castleroan to Derrinsallagh)
Road Improvement Scheme
Contract 2 (Derrinsallagh to Castleroan)**



Client: **Laois County Council**



Direction number: **A038**

Site Name: **Newtown**

Excavation Number: **E3901**



Townland: **Newtown or Skirk, Co Laois**

Parish: **Skirk**

OS 6-inch sheet: **LA21**



National Grid Ref: **222272/185469**

Chainage: **32920**

SMR Reference: **None**

Report type: **Final report**

Report Status: **Final Draft**



Archaeological Consultancy: **Valerie J Keeley Ltd,
Brehon House,
Kilkenny Road,
Castlecomer,
Co Kilkenny**

Job No.: **1310-06-300**

Senior Archaeologist: **Eamonn Cotter**

Excavation Director: **Liam Ó Séaghdha**

Report Author: **Paul Stevens**

Date: **April 2011**



SUMMARY

Valerie J Keeley Ltd was commissioned by Laois County Council and the National Roads Authority to undertake archaeological works along 18.1km (Contract 2) of the 35km long N7 Castletown to Nenagh (Derrinsallagh to Ballintotty) Road Improvement Scheme (EIS approved in November 2005). The scheme runs from the eastern junction of the present N7 Nenagh Bypass Co Tipperary and ties in with the M7/M8 Portlaoise-Castletown scheme to the south of Borris-in-Ossory in Co Laois. The DoEHLG Direction Number is A038.

Contract 2 comprises the eastern half of the scheme and runs from Castleroan (Co Offaly), through parts of north Tipperary to Clonagooden (Co Laois).

This report outlines the preliminary results of the archaeological excavation of one site excavated along the route. It was located in the townland of Newtown, Co Laois, 6 inch OS sheet LA21, 222272/185469 at Chainage 32920. The excavation was conducted by Liam Ó Séaghdha under Direction No. A038 and excavation no. 3901, for Valerie J Keeley Ltd, from Thursday the 21st of February to Wednesday the 27th of February, 2008.

Newtown 1 consisted of a Late Bronze Age burnt mound / *fulacht fiadh*, dated 910-800 cal BC (SUERC-31108) with one rectangular trough and one modern plough furrow. No formal structures, artefacts or animal bone was revealed from excavation. The site was interpreted as a single site, with limited use(s). The southeast corner of this trough exhibited disturbance that may indicate the former presence of a number of internal corner stakeholes. The site is one of several such excavated along the route of the scheme and should be analysed as part of a greater prehistoric cultural landscape. These features present a medium level of local significance but are unlikely to present any great regional or national significance.

CONTENTS

SUMMARY	i
LIST OF FIGURES	iii
LIST OF PLATES	iii
LIST OF TABLES	iii
1.0 INTRODUCTION	1
2.0 BACKGROUND	3
3.0 METHODOLOGY	14
4.0 FINAL RESULTS	16
5.0 CONCLUSIONS / SYNTHESIS	19
6.0 IMPACTS & SURVIVAL	30
7.0 ACKNOWLEDGEMENTS	31
8.0 BIBLIOGRAPHY	32
9.0 ARCHIVE INDEX SHEET	38
APPENDIX A: LIST OF CONTEXTS	39
APPENDIX B: LIST OF SAMPLES	40
APPENDIX C: ENVIRONMENTAL PROCESSING RESULTS	40
APPENDIX D: LIST OF DRAWINGS	41
APPENDIX E: LIST OF PHOTOGRAPHS	41
APPENDIX F: SITE MATRIX	43
APPENDIX G: RADIOCARBON DATING	44
FIGURES AND PLATES	

LIST OF FIGURES

- Figure 1 Location of Newtown on the N7 Castletown to Nenagh, Contract 2, shown on the Discovery Series Mapping
- Figure 2 Location of Newtown on the N7 Castletown to Nenagh, Contract 2, shown on OS Mapping
- Figure 3 North facing section of trough (C7)
- Figure 4 Post-excavation Plan of Newtown

LIST OF PLATES

- Plate 1 View of watercourse, trough (C7) and burnt mound in section (C3 & C4). Looking southeast.
- Plate 2 Detail of Trough (C7), showing mound and backfill deposits in section. Looking southeast.
- Plate 3 Half-section view of trough (C7). Looking southwest.
- Plate 4 Detail of southeast corner in trough (C7). Looking southeast.
- Plate 5 View of burnt mound spread (C3). Looking northeast.
- Plate 6 Detail of baulk section view of deposits (C3 & C4). Looking southeast.

LIST OF TABLES

- Table 1 Potential sites noted in the EIS in the Newtown area.
- Table 2 Table of pyrolithic sites within N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.
- Table 3 Sequence of all Burnt Mound / fulacht fiadh dates from N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.
- Table 4 Synopsis of trough shape by period, from dated Burnt Mounds on the N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.

Table 5	Pyrolithic sites containing animal bone from the N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.
Table 6	Pyrolithic sites containing finds from the N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.
Table 7	Table of Radiocarbon dates for Newtown 1 (excavation No. E3901).

1. INTRODUCTION

1.1 Introduction

The N7 Castletown to Nenagh (Derrinsallagh to Ballintotty) Road Improvement Scheme comprised in total the construction of approx 35km of dual carriageway. The scheme commenced from a junction on the present N7 Nenagh Bypass to the east of Nenagh, Co Tipperary, and ran in an east-northeast direction for 35.2km of centreline chainage to tie in to the M7/M8 Portlaoise to Castletown PPP Scheme south of Borris-in-Ossory, Co Laois. The route comprised approximately 191 hectares.

Valerie J Keeley Ltd was appointed by Laois County Council to conduct a programme of archaeological investigations along one portion of the scheme, designated Contract 2. Contract 2 consisted of approx 18km of dual-carriageway, from Ch17.080 – 35.200, between the townlands of Castleroan, Co Offaly and Derrinsallagh, Co Laois. The archaeological works comprised three phases: **Phase 1**-test trenching of the route; **Phase 2**-excavation of sites identified in Phase 1; **Phase 3**-post-excavation archive creation and report writing. Phase 1 of these works, Archaeological Test Trenching, was carried out in the spring of 2007 (Valerie J Keeley Ltd, 2007). Phase 2 was carried out from July 2007 to July 2008. The DoEHLG Direction Number is A038.

This report describes the final results of the archaeological excavation and post-excavation analyses of a site, identified in Phase 1 at Chainage CH 32.920, in the townland of Newtown, Co Laois.

1.2 Description of scheme and contracting situation

The proposed N7 Castletown to Nenagh national road scheme started from a junction on the present N7 Nenagh Bypass to the east of Nenagh, North Tipperary and runs for 35.2km of centreline chainage, plus all link roads and minor roads within the boundaries of the scheme as shown on the contract drawings, to tie in to the M7/M8 Portlaoise-Castletown PPP Scheme to the south of Borris-in-Ossory in Co Laois. The lead County for project management was Co Laois. Archaeological services were supplied under two contracts, performed in three phases.

- CONTRACT 1 ran from Ch00.500 – 17.080.
- CONTRACT 2 ran from Ch17.080 – 35.200

These works were divided into Phase 1 (Investigation), Phase 2 (Excavations and surveys) and Phase 3 (Reporting and Analysis). All phases were undertaken in accordance with Ministerial Directions issued by the DoEHLG.

The archaeological works included, but were not limited to, the following:

- Archaeological investigation and reporting of known sites,
- Archaeological investigation and reporting of the remainder of the route to identify any

previously unknown sites,

- Architectural heritage and water / river surveys and reporting,
- Rescue excavation works including archaeological excavation, post-excavation analyses and reporting to publication standard.

1.3 Summary of previous work on or referring to the Scheme

- Laois County Council, 2001, *N7 Castletown to Nenagh: Constraints Report*
- Laois County Council, 2001, *N7 Castletown to Nenagh: Route Selection Report*
- Laois County Council, 2005, *N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Environmental Impact Statement*
- Laois County Council, 2006, 'N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Advance Archaeological Works Contract 1 and Contract 2' prepared by Kildare County Council and the National Roads Authority
- Valerie J Keeley Ltd, 2007, *N7 Castletown to Nenagh Road Improvement Scheme, Contract 2, Phase 1 Trial trenching and townland boundary surveys*
- Valerie J Keeley Ltd, 2007, *N7 Castletown to Nenagh Road Improvement Scheme, Contract 2, Phase 2 Underwater survey*
- Valerie J Keeley Ltd, 2007, *N7 Castletown to Nenagh Road Improvement Scheme, Contract 2, Phase 2 Preliminary Assessment Report, Newtown*

1.4 Affected site type(s)

One previously recorded site was to be affected by the proposed route, possible ringfort (TN017-031) at Camlin townland. Several areas of archaeological potential were noted along the route in the EIS.

1.5 Statutory protections

No sites with statutory protections are affected by the scheme.

2. BACKGROUND

The N7 Castletown to Nenagh (Derrinsallagh to Ballintotty) Road Improvement Scheme runs for 35.2km of centre line chainage, from the present N7 Nenagh Bypass, east of Nenagh, North Tipperary to the M7/M8 Portlaoise-Castletown PPP Scheme, south of Borris-in-Ossory, Co. Laois.

2.1 Topography & Geology

The underlying bedrock throughout the plain is Carboniferous limestone with occasional erosion resistant blocks, such as the knoll that forms the Devil's Bit. The bedrock is sealed by glacially deposited sediments, which in poorly drained regions tend to support tracts of raised bog. The greater proportion of the plain however supports well-drained farmland, the majority of it dairy farming pasture interspersed with marshy areas around low lying flood plains of minor rivers. Over its length of the route the crosses the Rivers Nore, Ollatrim and Quinn.

The topography of the N7 Castletown to Nenagh road scheme is characterised by contrasting landforms of the Silurian hills known as the Devil's Bit Mountains to the west, the Black Hill and Timoney hills to the east, with tracks of undulating pasture and raised bog in the centre, including the Timoney Bog and Monaincha Bog, which drain both eastward into the River Nore, and form part of the larger midland peatland bog-chain that once ran from Littleton in the south to the Bog of Allen in the north. Roscrea, to the immediate north of the scheme, is overlooked by the southern slopes of the Slieve Bloom mountains.

The 'bite' itself comprised two outliers of encliffed Old Red Sandstone composed mostly entirely of pebble conglomerate with occasional lenses of medium to coarse red or less commonly white sandstone. These hills which rise gradually to elevations over 304m (1000 ft) high, and fall away to the east onto drift covered Old Red Sandstone and Lower Limestone formations which merge with the extensive bogland running between Monaincha in the northeast and Templeouhy in the south. This bogland is interspersed with fluvio-glacial drifts which rise above the surface of the bog.

2.1.1 Natural topography, geology and hydrology of the Clongooden area

The landscape of the area consists of gently rolling land, mainly to the north and east, with occasional hills to the south and west; all at heights between 100m OD and 195m OD. Knock hill is the only prominent landmark to the north of the route at this end with Newtown / Skirk hill rising to the south. The River Nore valley runs northeast / southwest and is quite broad, measuring about 5km wide at this point. Beyond the river to the northeast is Monaincha Bog. The county boundary between Tipperary North and

Laois is the County Stream at Ch33.200, Borris-in-Ossory lies 1.2km away to the northeast and the Limerick – Dublin railway line runs between these points.

The local geology consists of Devonian sandstone till. The site's soil cover is of acidic surface water and / or ground water gleys. The site borders deposits of mineral alluvium along the banks of the Quinn River located to the east and north of the site (Environmental Protection Agency).

This section of the road scheme crosses an area of dry, gently sloping land at about 130m OD, with a general easterly aspect. Ground level rises steeply to the southeast, to an archaeologically rich hilltop c. 1Km south of Ballykelly 1, on which is located a cluster of sites (LA021-021) including a motte-and-bailey, a henge, a standing stone and a megalithic structure, and a church and graveyard (LA021-010). The site is drained by a 'County Stream' a tributary of the Quinn River (Ch34.350). These are tributaries of the River Nore, located 1.5km to the north of the route.

2.2 Historical Background

While the scheme as a whole comprises an essentially artificial geographic unit, defined by townlands traversed by the N7 road corridor, the central section can be readily placed in a historical / geographical context as they lie entirely within the pre-Norman territory of the *Eile Tuiscert* (Ely O'Carroll) and the modern Barony of Ikerrin. Olioll Ollum, King of Munster, founded Ely (Eile) in the third century AD. Ely of south Offaly and north Tipperary was then formally established into baronies by the Anglo-Normans of the 12th century AD. The kings of Ely were known as the O'Carroll (Uí Chearbhair) until wiped out by Williamite forces at the end of the 17th century AD.

The Barony of Ikerrin

The northern and western boundary of Ikerrin barony coincide with the County Offaly border, whilst its eastern extent is formed by the Laois County boundary, and to the south the barony borders that of *Eliogarty* Barony. Ikerrin comprises an area of 28,620 Ha (69,805 acres), and is a roughly triangular shape in plan, with Roscrea to the north, Templeouhy to the southeast and the Devil's Bit in the southwest. Its territory is divided into 168 townlands which are in 12 parishes (Stout 1984).

The Devil's Bit range and Monaincha bog, in the south and the Slieve Bloom in the north created an obstacle to travel which channeled all east / west traffic through the narrow pass between these features. The growth of Roscrea is directly linked to its position at a pass on this important line of communication (*ibid.*).

The Rivers Nore and Suir rise in the northeastern slopes of the Devil's Bit Mountains and take different courses through Ikerrin. The Nore runs on a north / east course through Monaincha bog whilst the river Suir runs on a east / west course and then turns in a southerly direction to form the Barony boundary at the eastern side of Templemore. The third river the Bunnow is a tributary of the Little Brosa and runs on

an east / west course through Roscrea, originally forming a natural defence for the eastern curtain wall of Roscrea Castle.

Much of the agriculturally suitable land in Ikerrin is at present under pasture with limited tillage occurring on land within the environs of Templemore.

2.2.1 Early origins

The historic period in Ireland begins with the arrival of writing in the early medieval period, concurrent with the spread of Christianity. Little can be definitively stated about the internal geographic boundaries and political structures of Ireland prior to this time and indeed until about the eighth century AD, although we can project known early medieval divisions back to the near proto – historic period. The earliest traditional division of the country was into two halves along a boundary that ran roughly from Dublin to Galway (Byrne 2001, 168). The north was Leth Cuinn (Conn's Half) and the south was Leth Moga (Mugs Half). Conn was the progenitor of the Connachta, a tribal grouping from whom the later rulers of Connaught and Ulster claimed descent, while Mug was believed to be the first of the Eoganachta, from whom the kings of Munster and Leinster claimed descent. The two halves of Ireland were more cultural than they were political, but it is from then that the very real polities of the Fifts of Tara (Mide), Ulster, Connaught, Leinster and Munster emerge. Each Fifth was a conglomeration of sub – provincial kingdoms under the suzerainty of a provincial over – king. Munster itself was subdivided into Fifts; *Aurmumu* (Ormond) east Munster, *Taudmumu* (Thomand) north Munster, *Medón Muman* mid Munster, *Desmumu* (Desmond) south Munster and *Iarmumu* west Munster (*ibid.* 165).

The two separate independent kingships of *Eile Deiscert* and *Eile Tuiscert* were separated by a ready made boundary in the Derryville/Littleton Bog Complex. The Eile Ui Chearbhaill or Ely O'Carroll (*Eile/Eile Tuiscert*) centered in the Birr / Roscrea area and Eile Ui Fhogartaigh or Eliogarty (*Eile Deiscert*) in North Tipperary.

The earliest reference to two *Eili* is from 967 AD, when it is recorded that a Munster army lead by Mathgamain mac Cennitig, the King of Munster and of Cashel (originally King of the Dal Cais and *Taudmumu* and elder brother of Brian Ború) was composed of units from the two *Eili*, the *Deisi* and the *Imhar* of Waterford (O'Donovan 1990 vol. II, 692). They took to the field against a Leinster army composed of Dublin Vikings and the *Osraighi*, in Ossory (possibly southwest Offaly or northwest Kilkenny).

Eile claim to be descended from Cian, son of Oiliol Ollum, King of Munster in the third century. The Eile are commemorated in the Gaelic names of places as far apart as Bri Eile (Croghan Hill) in North Offaly and Durlas Eile (Thurles) and Bearnan Eile (Devil's Bit Mountain in North Tipperary). It appears that the people of Eile were pushed southwards in the fifth century, by the expansion of the Southern Ui Neill. In the mid tenth century the southern part of Eile became a separate entity called *Eile Deiscert* (Southern

Ely) under the kingship of the O'Fogarta/Ui Fhogartaigh (O'Fogartys)) (precise boundaries unknown; majority of the modern barony of Eliogarty). The northern part of Eile became *Eile Tuiscert* (Northern Ely) under the kingship of Ui Chearbhaill (O'Carrolls). Eile Ui Chearbhaill or Ely O'Carroll settled in South Offaly and North Tipperary in the Birr, Roscrea area and Eile Ui Fhogartaigh or Eliogarty in North Tipperary.

2.2.2 Early medieval

Slighe Dála

Roscrea lies on the *Slighe Dála*: the major routeway that passed from 'Tara', through Ormond to North Kerry. This was one of the five ancient roadways of Ireland. The route almost certainly passed through Roscrea (as a pinch-point between the Slieve Bloom mountains to the north and the Devil's Bit Mountains to the south). From Roscrea the routeway possibly circled the base of Devil's Bit Mountain in the direction of Toomevara. However, from Toomevara this route may have continued in the direction of Silvermines (avoiding Nenagh) and Limerick. However, it was common for major roads that run along the base of mountain ranges to have a parallel equivalent road running across the hills themselves (high road vs low road).

In the seventh century, two important religious centres were established, one on the island of Lough Cré associated initially with St. Canice of Aghaboe and St. Cronan's monastery in Roscrea which was sited near the Slighe Dála. The Annals of the Four Masters and the Annals of Ulster give a succession of abbots in Roscrea from 800 AD to 1154 AD. This area was in the mainstream of the highly developed craftsmanship in book illumination, metalworking and stone carving which was appearing in many of the monasteries in the country by the late seventh century. The Book of Dimma was written in St. Cronan's monastery in the latter part of the eighth century. It is a copy of the Four Gospels. One of the more important ornament types being produced by the metal workers at this time was the pseudo-pennanular brooches, and in the Roscrea Brooch. The brooch was manufactured by a metalworker with a competency in casting and engraving in silver. Many of the fine patterns found in contemporary metalwork were translated into stone on the cross slabs and the Roscrea Pillar by stone carvers from this area. Roscrea was subjected to a series of Viking raids culminated in the Battle of Roscrea, 942 AD.

2.2.3 Later medieval

By the 12th century, Romanesque ornament is built into churches and stone crosses continued to be erected, incorporating depictions of crucified Christ.

Northeast Tipperary was one of the last major regions to be colonized by the Normans, and there is scant contemporary documentation for the process involved in securing the area. Having received the grant of Ikerrin in AD 1185, Theobald Walter made haste to secure his gains and a band of early Norman fortifications on the western side of the barony demonstrate their probable line of attack. The Normans had advanced as far north as Roscrea by AD 1212, where they erected a castle recorded in the Annals of the Four Masters for that year. This placed them in a strategic position to control movements along the *Slighe Dála*. The early fortification referred to in the Annals of the Four Masters was replaced by a stone castle *c.* AD 1280 and remained in Royal hands until AD 1315 when it was granted to the newly created Earl of Carrick, Edmund Butler.

Small enclaves of Norman settlement represented by the distribution of moated sites within the environs of Templemore and the northwestern slopes of the Devil's Bit Mountains were more likely to be associated with the manors of Thurles and Dunkerrin respectively. The remaining lands of Ikerrin were held by the O'Meaghers, who maintained their independence of the Butler manor and indeed came to the fore in the shadow of the Norman settlement.

2.2.4 Late medieval / post-medieval

Norman power as portrayed by the Butlers dominated the northern part of Ikerrin until the 17th century. During the late medieval period a series of tower houses (including Rathnaveoge Castle) were built across the region, probably in response to Sir Henry Sidney's visit in 1567 where he recorded a state of lawlessness and abuse.

The ongoing nature of low-scale warfare throughout north Munster in the late medieval period created a political and military unstable society for Anglo-Irish and Gaelic areas alike. A physical manifestation of this was the proliferation of tower houses constructed in the 15th and 16th centuries, with multiple strongholds built in each lordship. The scale of the conflict between Ormond and Desmond can be seen in the largest densities of tower houses in the country in counties Limerick (Desmond), Kilkenny and Tipperary (Ormond) (Marnane 2003, 220). The comparatively large number of such strongholds in the area may also be due to the fact that the Ormond and Desmond escaped the Elizabethan plantations of the early 16th century.

The second half of the 16th century saw the most dramatic political change in Ireland since the submission of the Irish Kings to Henry II. In the 1540's Henry VIII instituted wide scale administrative and ecclesiastic reforms in Ireland including the Reformation of the church, and a new Irish policy of Surrender and Regrant; through which the Gaelic lordship of Thomand became the earldom of Thomand (Lennon 2005, 145–166). The definitive symbol of this period of transformation was the change in title of Irish crown territory from the Lordship of Ireland to the Kingdom of Ireland in 1541. The new found English interest in Ireland also meant the projection of direct influence on what for centuries

had been semi-autonomous Anglo-Irish earldoms and a diminution of the independence of Gaelic lords. The interference in feudal Irish society, in addition to forced Anglicisation and opposition to the Reformation caused simmering resentment against the crown that spilled over into the unsuccessful Desmond Rebellions of 1569–73 and 1579–83. The result of the rebellions was the creation of the Presidency of Munster in 1576 and the crown confiscation of Desmond land in Munster in 1586 (Marnane 2003 247–266; Lennon 2005, 210–231).

The defeat of the second Geraldine rebellion in the south of Ireland at the close of the 16th century was followed swiftly by one led from the north of the country – The Nine Years War, during which Ormond lands in Tipperary were attacked by the Earl of Tyrone's forces, as were most pro-crown settlements in Munster. The ultimate failure of the Desmond and O'Neill rebellions and subsequent Flight of the Earls was followed by a period of relative peace and increased English settlement on confiscated lands. Ormond loyalty to the crown was to prove disastrous when it and The Confederacy of Kilkenny allied itself with Charles I in the 1640's English Civil War.

However during the sixteenth century the English policy of "Surrender and Regrant" put the O'Carrolls under considerable strain at a time when they were torn apart by family feuds and sometimes in conflict with neighbouring septs. They lost power steadily in the seventeenth century as Ely O'Carroll was shired in 1605, later attached to Kings County (Offaly) and then their lands were confiscated for the Jacobean and Cromwellian plantations.

Unlike the relatively organized military Desmond rebellions which preceded it, 1641 was more typified by sectarian conflict and the brutal activities of the Roundhead army. The ruthless suppression of this rebellion by Oliver Cromwell led to a massive confiscation of rebel Catholic property and the ethnic cleansing of their former owners (To Hell or Connaught). The unparalleled land seizures, larger in scope than the first Anglo – Norman period of settlement, were facilitated by the commissioning of the Civil and Down Surveys which mapped out lands to be divided up amongst a new wave of English settlers.

The Williamite War of 1689–1691 was the last formal war in Ireland. Its conclusion following the Treaty of Limerick in 1691 was marked by a mass exodus of Irish soldiers and commanders to the continent and with them left the last vestiges of autonomous Irish military strength (Murphy 1994, 23). The following centuries saw the death of Gaelic Ireland and the firm establishment of English law and governance across the country. The process of forced Anglicisation and subjugation of the majority of the Catholic population continued apace throughout the eighteenth century. The popular uprising of 1798 had a minimal effect on Tipperary however the famine of the 1840's led to a wide scale depopulation of the region, more through emigration than starvation.

2.3 Archaeological Background

2.3.1 Known archaeological record

The general region is a landscape rich in archaeological heritage, with archaeological site types ranging from prehistoric to historic periods. These include sites of castles, earthworks, enclosures, ringforts, barrows, *fulachta fiadh*/burnt mounds, a souterrain, a motte, a church & graveyard, a tower house, site of mill and furrows/cultivation ridges.

A review of the topographic files of the National Museum of Ireland revealed 19 artefacts are catalogued in the museum files as recovered from the general vicinity of this scheme (*EIS* Appendix 13.9). These include Bronze objects (spearhead, flat axe and palstave), an iron spearhead and two stone axes all from the River Nore, near Coolrain; two Bronze palstaves, and a sculptured stone from Timoney Park; a wooden bowl from Timoney; a Bronze axe head with stopridge and a number of polished stone axes from Busherstown, a spindlewhorl and upper mill stone from Newtown, a stone spindle whorl and polished axehead from Castletown and a Bronze Axehead from Rockforest; finally bog butter in a wooden container was recorded at Glenahilty (*ibid.*). This collection of stray finds from the area demonstrates the significance of the Bronze Age and early medieval periods to the study area. This is borne out by the character of the upstanding and known archaeological monuments within the same study area.

There is one National Monument along the route of the N7 road scheme (Rathnaveoge Castle, tower house (RMP TN17-033). However, over 20 archaeological sites along the route are listed in the Record of Monuments and Places (RMP), and a further 87 sites of archaeological significance were identified during the course of the Environmental Impact Statement (EIS) undertaken for the entire road scheme (Contracts 1 & 2). A total of 18 assessment areas (eight within Contract 2) were investigated further by archaeological testing and geophysical survey over the course of 2006-7. As a result 28 archaeological sites were identified for resolution; ranging from Bronze Age burial, settlement to early medieval ringforts and settlement /cemetery sites, prehistoric charcoal pits and burnt mounds / *fulachta fiadh*, to post-medieval lime kilns. In addition, 52 townland boundaries recorded and 12 watercourses were identified and fully recorded (*EIS*, 2005).

Prehistoric

Little evidence is known from this period in the region. The earliest evidence of settlement in the midlands is the remains of Mesolithic habitation dating from c. 6500 BC at Lough Boora, County Offaly. This is of particular relevance to our study area, as the setting for Mesolithic habitation at Lough Boora mirrors that of our study area at that time – a landscape of esker ridges on the shores of a Derg-Ree-Allen super-lake.

One of the most significant prehistoric sites in the vicinity of this scheme is the henge, standing stone, urn burial at Newtown or Skirk (RMP LA021-021) on high ground overlooking the eastern end of the scheme. Another major (possible) site in the area is the alignments known as the Timoney Stones. This large spread of standing stones and stone covers an area of over 1.5km² (Timoneyhills, Co. Tipperary; RMP TN018-012), and lies 1km south of middle of the scheme. However, Geraldine Stout (1984), thought these were probably not a result of extensive prehistoric activity but rather the result of 19th century field clearances.

In addition, one potential prehistoric barrow (mounds) at Boola, Co. Tipperary (*EIS* site 32), and three potential Bronze Age burnt mounds/spreads (*fulachta fiadh*) at Rockforest, Rathnaveoge Upper and Moneygall, Co. Tipperary (*EIS* sites 17, 36 & 69) were also identified from field survey for the proposed road. One enclosure at Rockforest (*EIS* site 13; RMP ref. TI018-011) and three potential enclosures at Rockforest, Ballykelly, Timoney & Castleroan, Co. Tipperary (*EIS* sites 11, 14, 18 & 40), were identified by either aerial survey or through cartographic sources.

Medieval

Six early medieval ringforts or potential ringforts are known from the study area in Camlin (3), Boola, Rathnaveoge Lower and Castleroan townlands, Co. Tipperary (*EIS* Sites 21-23, 28, 31 37 & 42; RMP ref.s TN017-031, 030 & 038). In addition, one contemporary souterrain was revealed from field survey and local knowledge at Glanbeha (*EIS* site 26). The site of two recorded later medieval castles are located at Glanbeha and Rathnaveoge Lower, Co. Tipperary (RMP ref. TN017-028, -033; *EIS* sites 24 & 38). The latter representing a late medieval tower house. In addition, Glanbeha, Co. Tipperary also contained the site of an undated mill.

2.3.2 Recent archaeological work

Approximately 20km south of this scheme, an archaeological research project was carried out in between 1996-8, at Derryville bog, located on the Tipperary NR, Laois and Kilkenny county boundaries. Work was undertaken for the Lisheen (Lead/Zinc) mine, and revealed over 200 unrecorded extant, archaeological (mostly wetland) sites. A total of 98 sites were fully excavated, dating to the Bronze Age, Iron Age, early medieval and post-medieval periods, and included timber trackways and platforms, stone causeways, *fulachta fiadh*, cremations cemeteries and settlements sites (Gowen et al 2005). This remains the largest archaeological complex excavated in the context of a raised bog in Ireland.

More recently archaeological work on adjacent road schemes has revealed a wealth of new archaeological discoveries. The N7 Moneygall to Nenagh road scheme (Contract 1) took place between

2007 to 2008. This scheme extends west of Moneygall, south of Roscrea through the wetlands and marginal land between Roscrea and Borris-in-Ossory, to Nenagh. Prehistoric activity excavated on the N7 (Contract 1) included Bronze Age settlements and houses at Drumbaun, Moatquarter and Castleroan, Bronze Age cremation cemetery sites at Derrybane and Park, burnt mounds near Moneygall and a very large, Bronze Age well at Clashnevin. Early medieval settlement included a ploughed-out ringfort with associated driveway and field system at Killeisk, associated with a cluster of early medieval sites around Ballymackey on the River Ollatrim. The site contained several broken, decorated, quern-stone fragments. An early medieval / medieval square enclosure and crop-drying kilns with associated saddle and rotary querns were also excavated at Park (Roycroft 2008). At Busherstown, part of a 13th century AD moated manor was excavated. The main enclosure was c. 50m square, as seen by a crop-mark and had a large annex in which were 14 corn-drying kilns and several buildings. This site was a major crop processing / distribution centre and probably had a mill on the nearby stream. The site appears to have been abandoned in the early 14th century, coinciding with the Gaelic Resurgence of the area (ibid.).

Linking up to the east was the M7 Portlaoise to Castletown/ M8 Portlaoise to Cullahill motorway scheme. Work was undertaken in 2006-2008, where a total of 92 archaeological sites were excavated over the three contracts area (39 sites, Contract 1; 39 sites, Contract 2; 14 sites, Contract 3). This included 47 prehistoric burnt mound / *fulachta fiadh* sites, often with multiple sites or spreads, 13 pit sites (often with burnt mound material present), a barrow and a ringditch site, three circular buildings and two post-hole groups. Early medieval activity included Parknahown 5 ecclesiastic settlement site and burial ground (O'Neill 2007, 133-139), plus two ringforts, five enclosed and two unenclosed settlement sites, medieval activity included three corn-drying kilns, charcoal kilns and seven metal working sites, hearths or furnaces. In addition, two post-medieval buildings were also excavated (Desmond 2007, 125-131).

Whilst, to the southeast of Roscrea and the M7M8 was the adjoining scheme; the M8N8 Cashel to Cullahill Road scheme (Counties Laois, Kilkenny and Tipperary NR/SR). On this scheme, a total of 46 archaeological sites were excavated, including a very large complex of Bronze Age burials and settlement and early-later medieval settlement at Twomileborris, as well as a ringfort annex, prehistoric house and Iron Age activity at Gortmakellis, plus 25 *fulachta fiadh* along the Goul Valley and Blackwater flood plains, in Co.s, Kilkenny and Tipperary (Ó Droma 2008).

2.5 Summary of cultural landscape of the Newtown area

The area through which the proposed scheme passes was subject to assessment in the form of an Environmental Impact Study conducted by Valerie J Keeley Ltd (2005), followed by a programme of archaeological test trenching.

Two existing archaeological sites are located in the vicinity, namely two burnt mounds (LA021-008 and -009) located c. 300m to the southwest along the east bank of a stream, which forms the county boundary between Tipperary and Laois. The Newtown site is located on the east bank of the stream. In addition, a potential site was identified in the vicinity in the EIS: S12, a possible ringfort located between Ch 32700 and 32800 on the mainline. The latter was identified through local tradition, but no surface trace of it survives.

Potential sites noted in the EIS in the Newtown area:

Chainage	EIS Designation	Description
Ch34900	AH2	3 roomed single storey, early C19 th
Ch34700	AH3	Single storey bungalow and outbuildings, C19 th
Ch34500	AH4	3 roomed single storey, early C19 th
Ch33100	AH5	Two storey house, in NIAH, two storey barn C18 th / early C19 th
Ch33100	AH6	Two single storey structures, late C19 th
Ch33000	AH7	Three bay, single storey detached cottage
Ch32900	AH8	Seven bay, two storey house, late C18 th / early C19 th
Ch32600	AH9	Three bay, two storey house, mid – late C19 th
Ch32200	AH10	Three bay, two storey structure, late C19 th / early C20 th
Ch32300	AH11	Three single storey buildings incl. ' Friends Meeting House'
Ch31600	AH12	Farmhouse and farm buildings
Ch31400	AH13	Single storey, 1960/70 bungalow
Ch31300	AH14	Single storey house, late C19 th
Ch31500	AH15	Farmhouse and modern bungalow, C19 th
Ch33100	AH16	Roman Catholic Chapel and graveyard
Ch35000	S5	Linear bank a semi circular slope
Ch34800	S6	Potential mass path
Ch34300	S7	Circular feature (poss. enclosure / silted up ring ditch
Ch33800	S8	Potential linear earthworks
Ch33680	S9	Possible route way (a), furrows (b, c, d)
Ch33200	S10	Possible earthworks
Ch32700	S11	Potential enclosure / ringfort
Ch32800	S12	Potential enclosure

Ch35100	RC1	River crossing of Quinn River
Ch34400	RC2	River crossing of tributary of the Quinn River
Ch33250	RC3	River crossing of 'County Stream', tributary of River Nore

Table 1: Potential sites noted in the EIS in the Newtown area.

3. METHODOLOGY

3.1 Aims of the fieldwork

The N7 Castletown to Nenagh Phase 2 archaeological resolution programme aimed to fully excavate and record the archaeological sites identified during the Phase 1 testing programme.

3.2 Survey & excavation methods

Topsoil was generally stripped by a tracked machine equipped with a 2m wide ditching bucket. All potential features (contexts) were cleaned, recorded and excavated by hand.

Contexts were numbered sequentially from 1 to infinity, i.e. (C12) represents Context 0012, which could be any type of archaeological feature or layer. The composition, stratigraphic position and interpretation of all contexts were written on record sheets. Contexts were sampled where appropriate.

Relevant sections and cut features were photographed and drawn.

The positions of all finds and samples were recorded in three-dimensions (if practicable) in relation to the national grid.

Summary spreadsheets of Contexts, Finds, Graphics, Environmental Samples, Animal Bone and Human Bone were created as required.

The site was recorded using multi-context planning of all features exposed. Upon completion of excavation all cuttings were surveyed using GPS equipment and only areas within the CPO were resolved.

3.3 Finds Strategy

No artefacts were recovered from this site. A panel of specialists, both on contract and on staff, were on hand should any specialist requirements arise during the investigations. On-site conservation facilities conformed to the guidelines issued by the Irish Professional Conservation and Restorers Association.

3.4 Dates, resources, scale (area) and constraints of the fieldwork

Fieldwork was completed on the 27th February 2008 with a team consisting of one director, one supervisor, three site assistants and two general operatives. A single cutting was opened, measuring 112.716 m² respectively in extent.

3.5 Conditions (e.g. weather, vegetation and land use)

Weather conditions were reasonable, being occasionally wet and generally favourable for archaeological excavations.

3.6 Specialist contributions/consultations

On-site conservation facilities conformed to the guidelines issued by the Irish Professional Conservation and Restorers Association. Procedures were in place for the immediate temporary conservation of artefacts, including organic, non-organic, wet and dry remains. Professional conservators were available to visit at short notice. Secure storage was provided at the VJK Ltd site compound at Rosemary Street, Roscrea.

Off-site facilities were available at Valerie J Keeley Ltd post-excavation office, Castlecomer, Co Kilkenny and with the specialists listed below:

Description of Specialists

Valerie J Keeley Ltd in-house specialists:

S Doyle	Senior Surveyor (Valerie J Keeley Ltd)
G Wallace	CAD Technician / Draughtsperson (Valerie J Keeley Ltd)
R Goodbody	Architectural Historian (Valerie J Keeley Ltd)
J Schmidt	Topographical / Aerial Surveyor / Photographer (Valerie J Keeley Ltd)
N Brady	Underwater Archaeologist (ADCO Ltd, sister company)

3.6 Consents

A Method Statement was submitted to the Department of Environment, Heritage and Local Government, National Monuments Section in advance of the works being undertaken. This method statement was accepted. The Excavation Number for the works is E3901.

4. FINAL RESULTS

4.1 Newtown – Features exposed, phased and interpreted

4.1.1 Features exposed

Newtown 1 consisted of a Late Bronze Age burnt mound / *fulacht fiadh*, dated 910-800 cal BC (SUERC-31108) with one rectangular trough and one early modern plough furrow. There were a total of 10 contexts in 3 archaeological features identified on this excavation. These features were separated into two phases – Late Bronze Age and early modern.

4.1.2 Naturally formed deposits: subsoil

This section of the road scheme crosses an area of dry, gently sloping land at about 130m OD, with a general easterly aspect (See Plate 1). Ground level rises steeply to the southeast, to a hilltop c. 1 Km south of Ballykelly 1. Newtown was located at a height of 126m OD.

Subsoil on this site (C2) was a orange brown, moderately compact silty boulder clay deposit (See Plates 1, 2). This measured a minimum of 1m in depth. Its full extent is unknown.

4.1.3 Archaeological features: Phase 1 – Late Bronze Age

Newtown produced a burnt mound / *fulacht fiadh*, some of which (c. 45%) lay outside of lands made available (LMA) (See Figure 3; Plates 1-6). This site was located c. 3m south of a watercourse labelled as a 'County Stream' and adjacent to the southern road take (LMA) at Chainage 32.920. The excavated area was a roughly rectangular area that measured 12.45m in length (west/east), 4.20 in width and 0.47m in depth. This consisted of two deposits: the upper being (C3) and lower (C4). The northern part of the burnt mound was truncated during disturbance relating to the dredging of the stream (See Plate 1).

Trough

Immediately south of the stream and partially extending into the limit of excavation, was a rectangular trough (C7), measuring 2.45m in length (northwest-southeast), 1.47m in width and 0.28m in depth (See Figures 3, 4; Plates 1-4). The trough had a very regular cut and the vertical sides, especially in the undisturbed southeast corner, suggestive of a possible former a wooden trough lining, no longer surviving (See Plates 3, 4). This trough contained three backfills all with frequent fire-cracked sandstone and occasional charcoal flecks. The basal backfill (C10) was a firm, dark grey, clayey silt, 0.15m in

thickness. This was sealed by a dark brown, soft, silty sand (C6), 0.28m in thickness, and an upper fill (C5) of medium grey brown, soft silty sand, 0.07m in thickness (Plate 2). A sample of cherry-type (*prunus*) charcoal from this upper fill returned a radiocarbon determination of 910 – 800 cal BC (SUERC-31108; See Appendix F).

Burnt spread

Sealing the trough and deposited directly onto subsoil was a sub-circular spread of burnt mound material (See Figures 3, 4; Plates 1-6). The lower deposit of this mound (C4) was similar in composition to the upper trough fill, and consisted of a black sandy silt. It measured 4.20m in length (west-east), 4m in width and 0.34m in depth. The upper burnt mound deposit (C3) was a more mixed, grey brown, silty sand, irregular in shape. This measured 12m in length (west-east), 4.20m in width and 0.35m in depth. The burnt spread was located on the flood plain of the stream and was disturbed by roots of trees growing on the stream bank (Plate 1).

4.1.4 Archaeological features: Phase 2 – Early modern

Furrow

To the east of the burnt mound, was a linear, modern plough furrow (C9), filled by (C8) light brown, soft, silty sand, with occasional medium angular lime stones. This furrow measured 1.20m in length (northwest-southeast), 0.40m in width and 0.17m in depth.

Topsoil

The topsoil (C1) measured 0.28m in thickness and covered the whole cutting prior to excavation. It was dark brownish clayey-silt of moderate compaction with occasional stone inclusions.

Phasing

The features on Newtown were contemporary with a number of Late Bronze Age burnt mounds / *fulachta faidh* nearby including; Ballykelly 2 (E3905, Ch 33300; Marshall, *forthcoming*, 1070-890 cal BC [SUERC-31109]), Rockforest 1 (E3584, Ch 30300, Hardy *forthcoming*, 1090-900 cal BC [SUERC-31105]), Clonagooden 1 (E3745, Ch 34,550; Marshall *forthcoming*, 1060-890 cal BC [SUERC-31110]), and possibly the undated site at Curraghmore 1, (E3899, Ch 33480; Marshall *forthcoming*, undated). In addition, there was an earlier burnt mound, dated to the Middle Bronze Age at Ballykelly 1, Area 3 (E3906, Ch 32,500; Ó Séaghdha *forthcoming*, 1270-1030 cal BC [SUERC-31106]). Both sites at

Ballykelly 1 and 2 are adjacent to the same watercourse, which may have served as a focal point and main water source for the monuments. It is suggested by the excavator that the site was in use for a relatively short period of time during the prehistoric period. The north and west of the site suffered considerable disturbance due to drudging and realigning the stream at different times. There is presently no evidence for more than a single phase at Newtown.

Interpretation

The burnt mound and trough described above are believed to be related with similar features in the nearby sites. In Ballykelly 1, five undated pits contained contexts of similar heat-shattered stone with charcoal in Area 2, located c. 40m west and an earlier Middle Bronze Age *fulacht fiadh* was present in Area 3 located c. 400m to the southwest. Ballykelly 2 contained several scattered pits associated with a contemporary burnt spread in Areas 1, 2 and Area 4, located c 150m north-west of Newtown (See Figure 2).

Outside the road take (LMA), the remainder of the burnt mound measured c. 10 m west-east by 5m and will remain preserved as a slight rise in the landscape.

4.2 Artefacts recovered

No artefacts were recovered from the site.

4.3 Environmental evidence

Soil samples retained from the lowest fill of the trough beneath the burnt mound and provide a secure date for the period of the site. The samples contain charcoal, which may be used to identify wood species. The results of these analyses could indicate which types of wood were used to fuel the burnt mounds. It may also assist in discovering whether these were from coppiced / managed woodlands or just gathered wild. Any seeds or pollen found could show the types of crops being grown, the season of use, the wild plants that existed in the immediate surroundings and if these had blown into the troughs/pits or been gathered and brought here. Charcoal fragments may be used for carbon-14 dating. Sample 1 was obtained from the base of a trough (C7).

Total volume of sample sieved was 9 litres.

5. CONCLUSIONS / SYNTHESIS

5.1 Conclusion

Newtown 1 consisted of a Late Bronze Age burnt mound / *fulacht fiadh*, dated 910-800 cal BC (SUERC-31108) with one rectangular trough and one modern plough furrow. The site is one of several such excavated along the route of the scheme and should be analysed as part of a greater prehistoric cultural landscape. These features present a medium level of local significance but are unlikely to present any great regional or national significance.

5.2 Discussion

A total of 15 archaeological excavations along the route of the N7 Nenagh to Castletown (Castleroan to Derrinsallagh) Road Scheme, uncovered 22 discreet burnt mounds or *fulachta fiadh* plus three additional pit features (that contained burnt stone or *pyrolithic* material) (See Table 2). Charcoal samples from 23 of these were selected for scientific dating and returned radiocarbon determinations that ranged from 2500 BC to 750 BC, broadly within the Irish Bronze Age. The distribution of sites was spread over ten townlands located towards the central and eastern sections of the road scheme, there were no sites to the west of scheme. The central cluster of sites consisted of 15 burnt mounds or features in Glenbeha (2), Camlin (10), and Derrymore (3) townlands, Co Tipperary, whilst the eastern cluster consisted of 10 sites in Timoney (1), Tinderry (1), Rockforest (3), Ballykelly (2), Curraghmore (1), Newtown or Skirk (1), Clonagooden (1?), also in Co. Tipperary NR.

Pryolithic Site Type(s)	Townland	Site Name & Excavation No.	No. of Burnt Mounds
Burnt mound / <i>fulacht fiadh</i>	Ballykelly	Ballykelly 1 E3906	1
Pit with burnt mound material	Ballykelly	Ballykelly 2 E3905	?pit only
Burnt mounds / <i>fulachta fiadh</i>	Camlin	Camlin 1 E3579	3
Burnt mounds / <i>fulachta fiadh</i>		Camlin 2 E3662	5
Burnt mounds / <i>fulachta fiadh</i>		Camlin 3 E3580	2+well
Possible burnt mound / <i>fulachta fiadh</i>	Clonagooden	Clonagooden 1 E3745	1
Burnt mound / <i>fulacht fiadh</i>	Curraghmore	Curraghmore 1 E3899	1
Burnt mound / <i>fulacht fiadh</i>	Derrymore	Derrymore 1 E3634	1
Burnt mound / <i>fulacht fiadh</i>		Derrymore 2 E3633	1
Burnt mound / <i>fulacht fiadh</i>		Derrymore 3 E3952	1
Burnt mounds / <i>fulachta fiadh</i>	Glenbeha	Glenbeha 1 E3620	2
Burnt mound / <i>fulacht fiadh</i>	Newtown or Skirk	Newtown or Skirk E3901	1
Burnt mounds / <i>fulachta fiadh</i>	Rockforest	Rockforest 2 E3584	3
Pits containing burnt stone	Timoney	Timoney 1 E3748	?pits only
Burnt mound / <i>fulacht fiadh</i>	Tinderry	Tinderry 1 E3743	1
<i>Total</i>	10	15	22 (25)

Table 2: Table of pyrolithic sites within N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.

5.3 Definition

Burnt mounds, as they are known internationally, are widely known as in Ireland or *fulacht fiadh* (pl. *fulachta fiadh* or *fulachta fia*). These are common to much of northern Europe and have been the subject of much debate over the last 30 years following on from experimental work in the 1950s (O' Kelly 1954; Barfield & Hodder 1987; Ó Drisceoil 1988; Buckley 1990; Ó Néill 2000, 2004; Roycroft 2006; Monk 2007; Tourunen 2007; Eogan 2007; Quinn & Moore 2007). Monuments are visible within the landscape as low, grass-covered mounds, which may be horseshoe, crescent, oval or kidney shaped. However, commonly excavated sites show no surface trace, prior to excavation. Sites are to be found close to streams, lakes, rivers and marshes and sometimes occur in groups, clusters of two to six occasionally located within a small area. The mounds are generally composed of a heap of heat-affected stone and charcoal that gives it a blackened appearance. They often have a depression to one side, which may reveal a *trough* area. This trough or pit would have held water and can be variously lined with timber, wicker or stone or simply excavated into the natural clay. The trough would have been filled with water and heated stones placed into it, in order to raise the temperature. The stones shattered during this process would have been reused up to six times before being removed and piled next to the trough (Buckley 1990, 168-174). This activity repeated would eventually form the mound. The larger of these mounds can contain over 267 m³ of heat-affected stone which, when combined with a known trough size and capacity, could be calculated to be re-used up to 4000 times (O'Neill 2005, 268-9). The usage of these sites may therefore have occurred over a few weeks, months or even years, and owing to the marginal location of many would indicate seasonal or periodic activity.

5.4 Function

The function of Burnt Mounds / *fulachta fiadh* has ranged from the popular traditional view that they represent cooking sites to bathing, curing of animal skins, soap production, garment waterproofing and even ritual practice (O' Kelly 1954; Barfield & Hodder 1987; Ó Drisceoil 1988; Buckley 1990; Ó Néill 2000, 2004; Roycroft 2006; Monk 2007; Tourunen 2007; Eogan 2007; Quinn & Moore 2007, 2009). Other functions have been argued that they may have been covered by light structures and used as saunas or sweatshouses, such as at Rathpatrick, and at Ballykeoghan, both in Co. Kilkenny (Eogan 2007; Laidlaw 2008), or used for bathing, or for some semi-industrial purpose such as washing or

dyeing large quantities of cloth or for dipping hides in hot water as part of the preparation of the leather (Waddell 2000). In recent years brewing has also been suggested as a possible function (Quinn & Moore 2007).

The Irish terminology has recently come under scrutiny with the suggestion that the use of it in connection with pyrolithic technology should no longer be considered appropriate as medieval manuscripts such as the Yellow Book of Lecan and the Book of Leinster refers to *fulacht* as cooking on a spit. The text from the Yellow Book of Lecan states "*a piece of raw meat and another of dressed meat, and a bit of butter on it; and the butter did not melt, and the raw was dressed and the dressed was not burned, even though the three were together on the spit*". An illustration of this spit is also depicted with the text "*fulacht na murrigna insa*" below it (O'Neill 2004). The earliest sites appear to date from the early third millennium BC with the majority of examples dating to the Bronze Age and the latest possibly surviving into the Iron Age and later (O'Neill 2000). Generally the earlier site types were exhibited troughs circular in shape and unlined while the rectangular trough usually lined with planks or wicker became more common from around 2000 BC (O'Neill 2000).

5.5 Dating

Burnt stone activity has been shown to date from the Mesolithic to the 1st Millennium AD with a distinct concentration in the Bronze Age (Brindley *et al* 1990). However, the majority of burnt mounds / *fulachta fiadh* sites have been firmly dated to the second millennium BC and the earlier part of the first millennium BC (1500–500 BC) (Brindley *et al* 1989/90; Brindley & Lanting 1990). As a result of development-led excavations it is becoming increasingly apparent that their use may have a much greater antiquity. The earliest excavated examples providing dates from the early-mid 3rd millennium BC, while the younger sites (fewer in number) can occasionally date into the Early Iron Age and very rare examples date to the early and later Medieval periods (O' Neill 2000; 2004). By the mid-second millennium BC wooden troughs fashioned from dugout boats are known (e.g. as at Killeens site II, O' Kelly 1954, 105-155). In general the earliest sites in Ireland appear to date from the early third millennium BC with the majority of examples dating to the Bronze Age, surviving into the Iron Age and even later (O' Neill 2000) as seen with a medieval cooking trough from Waterford City (Walsh 1990).

There was an extensive period of almost 1750 years in which burnt mound activity was ongoing within those burnt mound sites excavated for this road scheme. The radiocarbon dates from the 23 sites show four separate periods of use the earliest of which can be assigned to the final Neolithic/early Bronze Age, Middle and Late Bronze Age, ranging from 3955–2590 BP or 2500–750 cal BC (See Table 3). The earliest sites recorded on this scheme were from a trough at Camlin 3 *eastern* burnt mound (2500–2340 cal BC), and a large pit from Camlin 2 (2500–2300 cal BC) which indicated a transitional period of the

Late Neolithic to the Early Bronze Age. In addition, five more sites at Timoney, Camlin 2 and Rockforest 2 were radiocarbon dated to this transitional period. During the Early Bronze Age *c.* 2200–1800 BC, one site at Camlin 2 was dated 2210–2030 cal BC. By the Middle Bronze Age there was an intensification of activity, with seven sites dated to within this period, including a trough from Camlin 3, middle burnt mound, which dated to 1910–1740 cal BC. This is followed by an intense period of activity during the Middle Bronze Age between 1640–1400 BC on three adjacent sites at Camlin 1, 2 & Derrymore 3 (See Table 3). The Late Bronze Age was represented on this scheme by eight dated sites, with the most recent site at Glenbeha 1, dating to 820–750 cal BC (See Table 3).

Site	Context	Material	Lab Code	Radiocarbon Age (BP)	Calibrated Date (2 σ)
Camlin 3	Trough, East Burnt Mound	Hazel charcoal	SUERC-31076	3955±30	2500-2340 cal BC
Camlin 2	Large pit, Burnt Mound 3	Hazel charcoal	SUERC-31044	3940±30	2500-2300 cal BC
Timoney 1	Pit, containing burnt stone	Apple-type charcoal	SUERC-31098	3925±30	2490-2290 cal BC
Rockforest 2	Trough, Burnt Mound A (Area 3)	Hazel charcoal	SUERC-31104	3885±30	2470-2280 cal BC
Rockforest 2	Trough, Burnt Mound (Area 2)	Alder charcoal r	SUERC-31100	3870±30	2470-2270 cal BC
Tinderry 1	Burnt mound	Hazel charcoal	SUERC-31099	3860±30	2470-2270 cal BC
Camlin 2	Pit, Burnt Mound 3	Hazel charcoal	SUERC-31039	3845±30	2460-2200 cal BC
Camlin 2	Trough, Burnt Mound 1	Hazel charcoal	SUERC-31038	3740±30	2210-2030 cal BC
Camlin 3	Trough, Mid Burnt Mound	Hazel charcoal	SUERC-31066	3500±30	1910-1740 cal BC
Camlin 2	Trough (?), Burnt Mound 5	Hazel charcoal	SUERC-31040	3290±30	1640-1490 cal BC
Camlin 1	Trough, Area 1	Willow charcoal	SUERC-31035	3200±30	1530-1410 cal BC
Camlin 1	Well, Area 1	Hazel charcoal	SUERC-31036	3175±30	1510-1400 cal BC
Camlin 3	Black peat with burnt stone, West Burnt Mound	Hazel charcoal	SUERC-31067	2995±30	1320-1120 cal BC
Derrymore 3	Pit / Trough	Willow charcoal	SUERC-31095	2950±30	1270-1040 cal BC
Ballykelly 1	Trough	Alder charcoal	SUERC-31106	2935±30	1270-1030 cal BC
Camlin 1	Trough, Burnt Mound 3	Hazel charcoal	SUERC-31037	2845±30	1120-920 cal BC
Derrymore 2	Trough	Hazel charcoal	SUERC-31097	2830±30	1090-900 cal BC
Rockforest 2	Trough, Burnt mound B (Area 3)	Hazel charcoal	SUERC-31105	2830±30	1090-900 cal BC
Ballykelly 2	Pit containing burnt stone	Willow charcoal	SUERC-31109	2820±30	1070-890 cal BC
Clonagooden 1	Trough	Hazel charcoal	SUERC-31110	2815±30	1060-890 cal BC
Derrymore 1	Trough	Hazel charcoal	SUERC-31096	2805±30	1050-890 cal BC
Newtown or	Trough	Cherry-type	SUERC-31108	2705±30	910-800 cal BC

Site	Context	Material	Lab Code	Radiocarbon Age (BP)	Calibrated Date (2 σ)
Skirk		charcoal			
Glenbeha 1	Burnt mound	Willow charcoal	SUERC-31034	2590 \pm 30	820-750 cal BC

Table 3: Sequence of all Burnt Mound / fulacht fiadh dates from N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.

Equivalent earlier transitional period dates were also recovered from Co. Tipperary at Killoran 17 (2585–2195 cal BC), site AR 35, Borris (2486–2299 BC), Co Tipperary NR and site AR 7, Ballytarsna, Co. Tipperary SR (2460–2140 BC), which all were dated to the Early Bronze Age (Stevens 2005a, 298–9; Conboy & Green 2009; Moore et al 2009). However, this was still later than site AR 46 (2870–2490 BC) locate in the adjacent townland of Islands, Co. Kilkenny on the Tipperary border, on the northern end of the M8 Cullahill to Cashel Road (Hardy & Green 2009a).

It has been suggested by O'Neill (2000, 19) that a general pattern was emerging in the archaeological record for unlined oval and circular-shaped troughs to occur on Early Bronze Age sites while rectangular-shaped troughs were more common in the Middle/Late Bronze Age and these tend to be lined with wood (wicker/ planks/ logs) and flagstones (*ibid*). These general trends may help to indicate a tenuous and rough date for some sites (Kenny 2008). However, this does appear to be confirmed by most of the Early and Middle Bronze Age sites excavated and dated from this road scheme, with three notable exceptions at Derrymore 1 (oval trough, dated 1050–890 BC), at Rockforest 2, burnt mound B (circular trough dated 1090–900 BC) and also Ballykelly 1 (oval trough, dated 1270-1030 BC) (See Table 4).

Period	Radiocarbon Age (BP)	Calibrated Date (2 σ)	Trough	Site Name	Site type
LN/EBA	3955 \pm 30	2500-2340 cal BC	Oval	Camlin 3	Burnt mound / fulacht fiadh
LN/EBA	3940 \pm 30	2500-2300 cal BC	Oval	Camlin 2 (BM3)	Burnt mound / fulacht fiadh
LN/EBA	3925 \pm 30	2490-2290 cal BC	Amorphous	Timoney 1	Pit, containing burnt stone
LN/EBA	3885 \pm 30	2470-2280 cal BC	Oval	Rockforest 2 (A)	Burnt mound / fulacht fiadh,
LN/EBA	3870 \pm 30	2470-2270 cal BC	Oval	Rockforest 2 (Ar2)	Burnt mound / fulacht fiadh
LN/EBA	3860 \pm 30	2460-2200 cal BC	Circular	Camlin 2 (BM3)	Burnt mound / fulacht fiadh
LN/EBA	3845 \pm 30	2470-2270 cal BC	Oval	Tinderry 1	Burnt mound / fulacht fiadh
EBA	3740 \pm 30	2210-2030 cal BC	Oval	Camlin 2 (BM1)	Burnt mound / fulacht fiadh
MBA	3500 \pm 30	1910-1740 cal BC	Sub-rectangular	Camlin 3	Burnt mound / fulacht fiadh
MBA	3290 \pm 30	1640-1490 cal BC	Rectangular	Camlin 2 (BM5)	Burnt mound / fulacht fiadh
MBA	3200 \pm 30	1530-1410 cal BC	Sub-rectangular	Camlin 1	Burnt mound / fulacht fiadh
MBA	3175 \pm 30	1510-1400 cal BC	Sub-rectangular	Camlin 1	Well, containing burnt stone
MBA	2950 \pm 30	1270-1040 cal BC	Rectangular (incl. oval & circular)	Derrymore 3	Burnt mound / fulacht fiadh
MBA	2935 \pm 30	1270-1030 cal BC	Oval	Ballykelly 1	Burnt mound / fulacht fiadh
LBA	2845 \pm 30	1120-920 cal BC	Square	Camlin 1 (BM3)	Burnt mound / fulacht fiadh

Period	Radiocarbon Age (BP)	Calibrated Date (2 σ)	Trough	Site Name	Site type
LBA	2830 \pm 30	1090-900 cal BC	Irregular - rectangular	Derrymore 2	Burnt mound / fulacht fiadh
LBA	2830 \pm 30	1090-900 cal BC	Circular	Rockforest 2 (B)	Burnt mound / fulacht fiadh,
LBA	2820 \pm 30	1070-890 cal BC	Circular	Ballykelly 2	Pit, containing burnt stone
LBA	2815 \pm 30	1060-890 cal BC	Rectangular	Clonagooden 1	Possible fulacht fiadh
LBA	2805 \pm 30	1050-890 cal BC	Oval	Derrymore 1	Burnt mound / fulacht fiadh
LBA	2705 \pm 30	910-800 cal BC	Rectangular	Newtown or Skirk	Burnt mound / fulacht fiadh

Table 4: Synopsis of trough shape by period, from dated Burnt Mounds on the N7 Castletown to Nenagh (Castlerohan to Derrinsallagh) Road Scheme.

5.6 Geographic Distribution

Burnt Mounds / *fulachta fiadh* are the most common type of prehistoric site in Ireland (Power *et al* 1997, 75; Waddell 1998, 174) as well as being known from Scandinavia, Wales, Scotland, Orkney, the Shetland Islands and parts of Cumbria (Buckley 1990). There are an estimated 7000 known examples distributed throughout Ireland and over 3000 of these occur in Co. Cork (Power *et al* 2000). It is probable that thousands of more sites exist, unrecorded and undetected, throughout Irish landscape. Currently, there are 2795 sites listed in the R.M.P. nationwide; 2000 listed as 'fulacht fiadh' or 'fulacht fiadh possible', occur mostly in Co.s Cork, Limerick, Tipperary and Kilkenny, while 795 listed as 'burnt mound' occur largely in Co.s Galway, Sligo Waterford and Wexford (www.archaeology.ie/smrmapviewer).

Large numbers of burnt mound sites have also been recorded in England, Scotland and Wales (Hodder 1990; Halliday 1990; Williams 1990). Sites are normally situated close to a water source, such as a stream, streamlet or in wet marshy areas (Power *et al* 1997, 75). They sometimes occur in groups and clusters of two to six often occurring in quite a small area (Waddell 1998, 174). In spite of the obvious biases which previous surveys and fieldwork have on burnt mound / *fulachta fiadh* distribution maps, regional studies show that in Cork particular concentrations occur along streams and sandstone ridges and tend to occur below the 234 m (800 ft) contour (Power 1990). Particular concentrations and clusters of burnt mound / *fulachta fiadh* sites have also been identified in Co. Kilkenny (again despite the biases of previous fieldwork/ surveys in the area) and these occur throughout the county near streams and streamlets in limestone and sandstone rich areas (Condit 1990) as well as Limerick and Tipperary (RMP files, accessed Oct 2010).

In Co. Tipperary, the Record of Monuments and Places shows 211 sites are listed as either Burnt Mound or *fulachta fiadh* (138 in Tipperary NR). Large numbers of sites are now known across the county resulting from large-scale infrastructural and linear developments, such as motorway and road up-grade schemes, such as the N7. Recent excavations along the M8 Cashel to Mitchelstown motorway

scheme revealed 12 *fulachta fia(dh)*, seven in Co. Tipperary (McQuade *et al* 2009, 23, 92-94), 24 from the M8 Cashel bypass (O'Brien 2006) and 29 Burnt Mounds / *fulachta fiadh* from the M8N8 Cullahill to Cashel road improvement scheme, 13 from Tipperary (Stevens 2009). The Lisheen Archaeological Project identified a further 28 *fulachta fiadh* and Burnt Mounds (i.e. mound without trough) were recorded and excavated over a 72 ha area of both wetland bog and dryland marginal lands (Gowen *et al* 2005, 217).

5.7 Animal Bone

Six of the sites within this road scheme produced faunal evidence from pyrolithic contexts, which may be considered significant even though the amounts in question were relatively small (See Table 5). Cattle appeared to be the dominant species across all sites, but other large mammal species, including sheep/goat, pig and deer were represented as well as a small sample of hare. Teeth were most commonly identified, along with pelvic and long bone and lower leg fragments, possibly significant in the interpretation of the function of these sites as boiling places for cooking or hide preparation. Most samples were recovered from trough or well/large pit fill locations and in one case produced evidence for gnawing.

Animal bone was recovered from one burnt mound, dated to the Late Bronze Age (820–750 BC) at Glenbeha 1 (Area 4, C91/C131, E3620; Svensson 2009a). The bone assemblage (277.5 g) was identified as two red deer mandibular molars, with two long bone fragments belonging to a large ruminant, i.e. cattle or red deer (*ibid.*). Derrymore 2 was a Late Bronze Age (1090–900 BC) burnt mound, with two associated troughs, one of which produced a worked bone awl (C18; Find No. E3633:10). The mound itself also contained a small assemblage (160.2 g) of animal bone (Area 1, C3, E3633; Svensson 2009b). The assemblage contained evidence of four species; cattle, horse, sheep/goat and rabbit/hare (hare), and included cattle teeth, a horse tooth and right talus, sheep/goat metatarsal fragments and hare tooth. One unidentified fragment of bone showed gnaw marks (*ibid.*). At Camlin 1, a shallow, Middle Bronze Age (1510-1400 BC) burnt mound, with associated trough and well, also produced animal bone (Area 1, C247, E3579; Svensson 2009c). This bone assemblage (152.5 g) was taken from the fill of the well and included a young (7-10 months), right, cattle pelvis (*ibid.*). At the adjacent site of Camlin 2, which contained five burnt mounds and associated features, one feature produced a small sample of animal bone (57.8 g), adjacent to an Early Bronze Age mound (Burnt Mound 3, 2460–2200 BC). This was identified as fragments of cattle teeth-maxillary molars and was recovered from the lower fill of a large pit (C55, E3662; Svensson 2009d). In the neighbouring townland at Derrymore 3, a Middle Bronze Age (1270–1040 BC) burnt mound contained a small assemblage of animal bone (30.2 g). This was identified as a pelvis fragment from a large (unidentified) mammal,

recovered from the fill of a well (C41, E3952; Svensson 2009e). Finally, a pig or boar tooth was recovered from the trough of an undated burnt mound at Rockforest 2, (Burnt Mound B, C217, trough C218, E3584, Svensson 2009f).

Site Name	Context(s)	Weight (g)	Species / Type
Glenbeha 1 (A 4)	Burnt mound / <i>fulacht fiadh</i> (mound deposits C91/131)	277.5	Red deer (<i>cervus</i>) – teeth; Large mammal (unident.) - long bones
Derrymore 2	Burnt mound / <i>fulacht fiadh</i> (mound C3 & trough C18)	160.2	Cattle (<i>bos</i>) – tooth; Horse (<i>equus</i>) – tooth/talus; Sheep/goat (<i>ovis</i>) – metatarsal; Hare/rabbit (<i>lepus</i>),- tooth; Worked bone awl, (unident.)
Camlin 1 (A1)	Burnt mound / <i>fulacht fiadh</i> (well – C247)	152.5	Cattle (<i>bos</i>) – tooth/pelvis;
Camlin 2 (BM3)	Burnt mound / <i>fulacht fiadh</i> (BM3 pit C55)	57.8	Cattle (<i>bos</i>) – teeth.
Derrymore 3	Burnt mound / <i>fulacht fiadh</i> (Well C37)	30.2	Large mammal (unident.) – pelvis
Rockforest 1	Burnt mound / <i>fulacht fiadh</i> (Mound B - trough C218)	0.5	Pig (<i>sus</i>) – tooth

Table 5: Pyrolithic sites containing animal bone from the N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.

By contrast, the adjacent M8N8 Cullahill to Cashel Road Scheme, produced very little animal bone from equivalent pyrolithic sites, with only three of the nine excavated sites producing faunal evidence. Cattle and unidentified bone was recovered from a Late Bronze Age pit and trough, in site AR 40, Inchirourke, Co. Tipperary SR; where burnt bone was also recorded (Spread A; Conboy *et al* 2009). On the same scheme, unidentified burnt bone was also recorded within the fills of three troughs at site AR 55-57, Glashare, Co. Kilkenny (Site A, Hardy & Green 2009b). At site AR 49, Foulkescourt, Co. Kilkenny, cattle bone was recovered from a well and unidentified bone from a trough (Site C, Hardy & Green 2009c), whilst unidentified bone was recovered from two adjacent burnt spread (Sites G and H, *ibid*). On the recently published M8 Cashel to Mitchellstown Road Scheme, of the nine *fulachta fiadh* excavated none produced animal bone, although conditions for preservations were noted as poor (Geber 2009, 276).

Animal bone was also recorded in small quantities on the Lisheen Archaeological Project at three burnt mound / *fulacht fiadh* sites; Killoran 5, trough fill (*ovis* – tooth), Killoran 22, trough fill (*ovis/cabra* – teeth), and Killoran 27, trough fill (*ovis/cabra* – teeth), all in Co. Tipperary (Stevens 2005b, 326). Animal bone was also recovered from a well at Ballyshaneduff or the Derries, Co. Laois (Breen 2003); at Cuffsborough 1, Cuffsborough 3 and Cloonaddadoran, Co. Laois (Kenny 2008).

Recent study of the faunal remains from burnt mounds on the N9/N10 Carlow Bypass (Tourunen 2007), has suggested sites were used for tanning hides and processing antlers and horns. Tanning is an

activity that often took place far away from settlement site near rivers or lakes because of the need for water but also because of the characteristic odours associated with the activity (Tourunen 2007). However, boiling of joints of meat not suitable for roasting, such as the head, neck, forelocks and hoofs, may also explain the presence of the faunal evidence from the N7 and still does not rule out cooking in this instance(s). Despite the considerable number of excavated sites, a satisfactory explanation for function is still elusive and the probability of a multiple function seems more likely, given the wide range of uses for a large pit of boiling water.

5.8 Finds

Six burnt mounds from this scheme produced artefactual evidence, almost exclusively of struct flint or chert lithics, with one bone object (See Table 6). Traditionally, very few artefacts are recorded from the burnt mound / *fulacht fiadh* sites, so this relatively high number is significant in a wider context.

A polished antler / bone awl was found in one of the lower fills of the large trough at Derrymore 2, Area 2.1 and may have been lost or discarded during the use phase of the feature. This is a significant find in terms of *fulachta fiadh* as it is a fully formed tool which could have been used for leather working etc at the site. An almost identical bone point or awl (E25:01) is known from a cist grave at Poulawack, Co Clare, which is dated to the Early Bronze Age (Clare Library). These artefacts are quite simple in form however and could potentially have been used in any period.

Site Name	Context(s)	Type
Camlin 3 (W)	Burnt mound / <i>fulacht fiadh</i> (trough – C1054)	Flint frag. (1)
Camlin 3 (M)	Burnt mound / <i>fulacht fiadh</i> (Deposit– C456, mound – C737)	Flint (3) incl. thumbnail scraper, knife (frag.)
Camlin 1	Topsoil associated with burnt mound (C201)	Flint arrowhead - Leaf shaped butt-end
Derrymore 2	Burnt mound / <i>fulacht fiadh</i> (mound C3 & trough C18)	Chert incl. poss. scraper (4) Worked bone awl, (unident.)
Derrymore 3	Burnt mound / <i>fulacht fiadh</i> (Well C37)	Flint scraper
Glenbeha 1 (A 4)	Burnt mound / <i>fulacht fiadh</i> (mound deposits C90, C57 [Area 3])	Flints/chert, incl. scraper (x7)

Table 6: Pyrolithic sites containing finds from the N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Scheme.

In total, 17 finds of chert or flint are record from six sites. Lithics are amongst the most commonly recovered objects from burnt mounds, a leaf-shaped arrowhead was recovered from an unstratified context at site AR 44, Island, Co. Kilkenny (Hardy *et al*/2009d). While similar flint arrowheads including a fine leaf shaped arrowhead were uncovered from burnt mound material at Site 1, Athboy Road, Trim

Co. Meath (Hayden 2003). An unstratified barbed and tanged flint arrowhead found close to two burnt spreads at Site 2, Calliaghstown Co. Meath (McLoughlin 2004). At site AR 55–57, Glashare, Co. Kilkenny (Hardy *et al*/2009b) produced a heavily patinated, plano-convex knife was recovered from an unstratified context. Another plano-convex knife was recovered from a similar type of deposit at Site 27, Raheenagurren West, Co. Wexford on the N11 Gorey to Arklow link road scheme (Moore 2006). A series of lithics in the form of worked flint and chert were also recorded from the mound material of Caltragh 1, Co. Sligo while knapping debris from stone tool manufacture in the form of flint and chert cores and debitage was recovered from a series of pits sealed beneath a burnt mound at Magheraboy 1, Co. Sligo on the Sligo Inner Relief Road. The lithic assemblage on Mageraboy 1, Co. Sligo (Danaher 2007). A flint blade was also recovered from the burnt mound material at Clonmeath, Co. Meath (Byrnes 2002) while a convex scraper was recorded from Site 1 Newtown – Monasterboice (Ó Drisceoil 2000).

Other finds recorded from burnt mound sites give a broad range of dates including flint flake from Ballycrenane, Co. Cork (NMI reg. no: 1972:354), a flanged axehead from Ballynatona Co. Cork (NMI reg. no: 1936:1780), a gold ring fragment from Killeens Co. Cork, shale bracelet fragment from Ballycroghan Co. Down, a gold dress fastener from Dooros Co. Mayo (NMI reg. no: 1934:5600 and a stone axehead from Kiltrassy Co. Kilkenny (Cherry 1990). Six graded cylindrical hollow wooden pipes, possibly used as a musical instrument were also found at the base of a wooden trough at Charlesland, Co. Wicklow (Molloy 2004). A plano-convex knife of Antrim flint and two chert cores were also recorded from the southern periphery of a burnt mound at Dukesmeadows, Co. Kilkenny (Stevens 2002).

5.9 Assessment of potential significance of archaeological findings

Newtown 1 consisted of a burnt mound with one rectangular trough and one modern plough furrow. The site is one of several such excavated along the route of the scheme and should be analysed as part of a greater prehistoric cultural landscape. These features present a medium level of local significance but are unlikely to present any great regional or national significance.

Scheme No/Site No.	A038/E3901
Company	Valerie. J. Keeley Ltd
Senior Archaeologist	Eamonn Cotter
Excavation Director	Liam Ó Séaghdha
Townland	Newtown or Skirk
County	Laois
Existing Status	Excavated during phase 2 works
Information on Monument	Burnt mound complex
Relative Importance	Local significance, medium relative importance and possibly regional significance for burnt mound complex
Monument Type	Burnt mound
Significance <ul style="list-style-type: none"> • Historic • Archaeological • Cultural 	Burnt mound of possible regional significance when analyzed in conjunction with others excavated along the length of the proposed scheme
Landscape Setting Visual Prominence	The area consists of gently rolling land, mainly to the north and east, with occasional hills to the south and west. Knock hill is the only prominent landmark to the north of the route at this end with Newtown / Skirk hill rising to the south. The River Nore valley runs northeast-southwest and beyond the river to the northeast are the Moanincha /Timoney Bogs.
Group Value/ Relationship with other monuments	A possible association with burnt mound activity in nearby site Ballykelly 1 E3906 and Ballykelly 2 E3905
Condition	Excavated during phase 2 works
Rarity	Monuments frequently occurring
Known/Informed Archaeological Potential	Discovered during phase 2 excavation
Amenity Value	None
Other Considerations	None
Conclusion	Burnt mound.

6. IMPACTS AND SURVIVAL

All archaeological works are now complete on this site and no further mitigation of this site is recommended. However, as the excavated evidence represented a fraction (c. 55%) of a complete and discrete archaeological monument, there is a very high likelihood the remaining 45% of this site surviving to the south of the excavated area and thus preserved immediately outside the road take Lands Made Available (LMA). Furthermore, the potential that other associated or contemporary archaeological elements exist outside of the excavated area to the immediate south beyond the LMA. As such, any earthworks or land disturbance conducted outside of the LMA, to the immediate southeast of this site (and within 10m) should be subject to prior archaeological mitigation and assessment. Prior notice should be made to the Department of the Environment, Heritage and Local Government if works are to occur within 20m of this site.

7. ACKNOWLEDGEMENTS

The authors wish to acknowledge the contributions of the following individuals:

Martin Reid, DoEHLG

Niall Roycroft, NRA Project Archaeologist

Joseph Kelly, Senior Executive Engineer, Kildare County Council

Pat Dowling, Kildare County Council

Colm Fagan, Kildare County Council

For Valerie J Keeley Ltd, Roscrea:

Eamonn Cotter, Senior Archaeologist

Liam Ó Séaghdha, Site Director

Maurizio Campanelli, Site Supervisor

Agnieszka Miazga, Jacek Frydman, & Robert Grondowski, Site Assistants

Marcin Miazga & Sofia Andersson, General Operatives

Oscar Ryan, Surveyor

For Valerie J Keeley Ltd, Castlecomer:

Colm Flynn, Senior Archaeologist

Paul Stevens, Author & archaeologist

Lucas Konopinski & Ger Wallace, Draughtsman

External consultants and contributors:

George Cunningham, James Moore, John Sunderland, Caitriona Moore and SUERC, Scotland.

8. BIBLIOGRAPHY

- Barfield, L H 1991 "Hot stones: hot food or hot baths?". *Burnt Mounds & Hot Stone Technology*, 59 – 67. Hodder, M A & Barfield, L H (ed.s).
- Barfield, L. & Hodder, M. 1987. 'Burnt Mounds as Saunas and the Prehistory of Bathing.' *Antiquity* **61**: 370-379.
- Breen, T.C. 2003 "Site G, Ballyshaneduff or The Derries" in I. Bennett (ed.), *Excavations 2003: summary accounts of archaeological excavations in Ireland*. Wordwell Ltd, Bray.
- Brindley, A.L, Lanting, J.N and Mook, W.G. 1989-90. Radiocarbon dates from Irish Fulachta Fiadh and other burnt mounds. *Journal of Irish Archaeology* 5. p25-33
- Buckley, V. 1990 *Burnt Offerings: international contributions to burnt mound archaeology*. Bray. Wordwell
- Byrne, F.J. 2001 *Irish Kings and High Kings*. Four Courts Press.
- Byrnes, E. 2002 'Clonmeath' in I. Bennett (ed.), *Excavations 2002: summary accounts of archaeological excavations in Ireland*. Wordwell, Bray.
- Cherry, S. 1990 'The finds from Fulacht Fiadh' in Buckley, V (ed) *Burnt Offerings: International contributions to burnt mound archaeology*. 49–54. Wordwell, Bray.
- Conboy, G., & Green, B. 2009 M8/N8 Cullahill to Cashel Road Improvement Scheme, E2378 Site AR 35, Borris, Co. Tipperary. *Final Report for Kilkenny County Council: Valerie J. Keeley Ltd*.
- Conboy, G., Hardy, C. & Green, B, 2009 M8/N8 Cullahill to Cashel Road Improvement Scheme, E2382 Site AR 40, Inchirourke, Co. Tipperary. *Final Report for Kilkenny County Council: Valerie J. Keeley Ltd*.
- Conboy, G., Hardy, C. & Green, B, 2009 M8/N8 Cullahill to Cashel Road Improvement Scheme, E2382 Site AR 40, Inchirourke, Co. Tipperary. *Final Report for Kilkenny County Council: Valerie J. Keeley Ltd*.
- Condit, T. 1990 'Preliminary observations on the distribution of fulachta fiadh in County Kilkenny', in Buckley, V. (ed.) *Burnt Offerings, international contributions to Burnt Mound Archaeology*, 18-23, Wordwell: Dublin.
- Danaher, E. 2007 *Monumental Beginnings: the archaeology of the N4 Sligo Inner Relief Road*. National Roads Authority, Dublin
- Desmond, S 2007 'Ancient peoples, hidden landscapes-the archaeology of the M7/M8 motorway scheme', in J O'Sullivan & M Stanley, *New Routes to the Past Archaeology and the National Roads Authority*, 125-131. NRA Monograph Series 4. Dublin.
- Eogan, J. 2007 'Cleansing Body and Soul?' in *Seanda. The NRA Archaeology Magazine* Vol 2. 38-39
- Flanagan, L. & Flangan D. (ed) 1994 *Irish Place Names*, Gill and Macmillan.

- Geber, J. 2009 'The Animal Bone' in M. McQuade, B. Molloy, B. & C. Moriarty, *In the Shadow of the Galtees: Archaeological excavations along the N8 Cashel to Mitchelstown Road Scheme*. NRA Scheme Monograph Series, 4276-286; National Roads Authority, Dublin.
- Gowen, M, Ó Néill J., & Phillips, M. (ed.s) 2005. *The Lisheen Mine Archaeological Project 1996-8*. Wordwell, Bray.
- Halliday, S.P. 1990 'Patterns of fieldwork and the distribution of burnt mounds in Scotland', in Buckley, V. (ed.) *Burnt Offerings, international contributions to Burnt Mound Archaeology*, 60-61, Wordwell: Dublin.
- Hardy, C. & Green B. 2009a. M8/N8 Cullahill to Cashel Road Improvement Scheme, E2388 Site AR 46, Islands, Co.
- Hardy, C., & Green, B. 2009b *M8/N8 Cullahill to Cashel Road Improvement Scheme, E2394 Site AR 55/57, Foulscourt, Co. Kilkenny*. Unpublished Final Report for Kilkenny County Council: Valerie J. Keeley Ltd.
- Hardy, C., & Green, B. 2009c *M8/N8 Cullahill to Cashel Road Improvement Scheme, E2391 Site AR 49, Foulscourt, Co. Kilkenny*. Unpublished Final Report for Kilkenny County Council: Valerie J. Keeley Ltd.
- Hardy, C., & Green, B. 2009d *M8/N8 Cullahill to Cashel Road Improvement Scheme, E2386 Site AR 44, Islands, Co. Kilkenny*. Unpublished Final Report for Kilkenny County Council: Valerie J. Keeley Ltd.
- Hennessy, M. 1996 *Manorial Organisation in Early Thirteenth-Century Tipperary* in Irish Geography Vol. 29(2)
- Hodder, M A & Barfield L H, (ed.s) 1991 *Burnt Mounds & Hot Stone Technology*, papers from the second international Burnt Mound Conference, Sandwell, 12th-14th October, 1990.
- Hodder, M.A. 1990 'Burnt mounds in the English West Midlands', in Buckley, V. (ed.) *Burnt Offerings, international contributions to Burnt Mound Archaeology*, 106-111, Wordwell: Dublin.
- Joyce, P.W. 1869, *The Origin and History of Irish Names of Places, 3 Vol.s*
- Kenny, N. 2008 *Research Report on Fulachta Fiadh/ Burnt Mound activity excavated in the townlands of Curragh, Ballyhinode, Boherard, Friarsland and Oldtown* Unpublished research report for ACS Ltd.
- Laidlaw, G. 2008 "The Ballykeoghan burnt mound" in *Old Kilkenny Review* 2008. 7-15.
- Laois County Council 2001 *N7 Castletown to Nenagh: Constraints Report*.
- Laois County Council 2001 *N7 Castletown to Nenagh: Route Selection Report*.
- Laois County Council 2005 *N7 Castletown to Nenagh (Derrinsallagh to Ballintotty) Environmental Impact Statement*.
- Lennon, C. 2005 *Sixteenth Century Ireland*. Gill and MacMillan

- Lewis, S 1837 *A Topographical Dictionary of Ireland*, Vol. 1. Lewis & Co. London.
- Marnane, D. G. 2003 *Land and Settlement: A History of West Tipperary*. The Ara Press
- McLoughlin, C 2001 'Rathmore Burnt Mound Complex' in *Archaeology Ireland* 15, Issue No. 58. Wordwell, Bray.
- McQuade, M, Molloy, B. & Moriarty, C. 2009 *In the Shadow of the Galtees: Archaeological excavations along the N8 Cashel to Mitchelstown Road Scheme*. NRA Scheme Monograph Series 4; National Roads Authority, Dublin.
- Monk, M. 2007. A Greasy Subject. *Archaeology Ireland* 21(1) (summer): 22-24
- Moore, D. G. 2006. *Report on the Lithic Assemblage from A003/019 (Site 27 N11 Gorey – Arklow Road-scheme) in Raheenagurren West townland* (Archived Specialist Report For Valerie J. Keeley Ltd).
- Moore, E., Breen, T., Green, B., & Hardy, C. 2009 Final Report E2360 Site AR 7 Ballytarsna, Co. Tipperary. Valerie J. Keeley Ltd.: *Unpublished Final Report*.
- Murphy, J.H. 1994 *The Wild Geese* in *The Irish Review* No. 16 Autumn/Winter 1994. The Institute of Irish Studies
- Ó Droma, M. 2008 'Archaeological investigations at Twomileborris, Co. Tipperary' in J O'Sullivan & M Stanley, *Roads, Rediscovery and Research*. 45-58. Archaeology and the National Roads Authority Monograph Series 6, NRA. Dublin.
- O' Kelly, M. J. 1954 'Excavations and experiments in ancient Irish cooking-places', *Journal of the Royal Society of Antiquaries Ireland*, 84: 105-155.
- Ó Néill, J. 2000. 'Just another fulachta fiadh story.' *Archaeology Ireland* **14**(2) (summer): 19
- Ó Néill, J. 2004. 'Killoran 260' in M. Gown, J Ó Néill & M. Phillips (ed.s) *The Lisheen Archaeological Project (1996-8)*. 268-9: Wordwell, Bray.
- Ó Néill, J. 2004. 'Lapidibus in igne calefactis coquebatur: The Historical burnt mound "tradition"' in *Journal of Irish Archaeology* Volumes **XII** and **XIII** 2003-2004. pp. 79-87
- O'Byrne, D., 1856 *The History of the Queen's County*, Dublin.
- O'Donovan, John, 1840 *Letters containing information relative to the Antiquities of the County of Tipperary collected during the progress of the Ordnance Survey in 1840*.
- Ó'Drisceoil, D 1988 Burnt mounds: cooking or bathing? *Antiquity* 62, 671 - 80.
- Ó'Drisceoil, D 1990 Fulachta Fiadh: the value of early Irish Literature. *Burnt Offerings: International Contributions to Burnt Mound Archaeology*, 157 - 64. V Buckley (ed.). Wordwell. Dublin.
- Ó'Drisceoil, D 1991 Fulachta Fiadh: a general statement. *North Munster Antiquarian Journal* 33, 3 - 6.
- O'Neill, T 2007 The hidden past of Parknahown, Co. Laois' in J O'Sullivan & M Stanley, *New Routes to the Past* 133-139. Archaeology and the National Roads Authority, Monograph Series 4. NRA, Dublin.

- Office of Public Works 1995 *Record of Monuments and Places*.
- Ordnance Survey 1835 *First Edition*.
- Ordnance Survey 1909 *Third Edition*.
- Power, D. (1990) 'Fulachta fiadh in County Cork', in Buckley, V. (ed.) *Burnt Offerings, international contributions to Burnt Mound Archaeology*, 13-17. Wordwell: Bray.
- Power, D. Byrne, E., Egan, U., Lane, S. & Sleeman, M. 1997. Archaeological inventory of County Cork. Volume 3: Mid Cork. Bray, Wordwell.
- Power, D. *et al.* (1997) *Archaeological Inventory of County Cork* (Vol. III Mid Cork), The Stationery Office: Dublin
- Power, P.C. 1989 *A History of Tipperary*. Wolfhound Press.
- Quinn, B & Moore, D 2007. 'Beer brewing and fulacht fiadh' *Archaeology Ireland*. Vol. 21. No. 3.
- Roycroft, N. 2006 A Theory on Boiled Bull and Burnt Mounds in *Seanda* Issue 1. NRA. 38-39.
- Stevens, P 2005a 'Killoran 17' in M. Gowen, J. Ó Néill & M. Phillips (ed.s) *The Lisheen Archaeological Project 1996-8*. 298-9; Wordwell, Bray.
- Stevens, P 2005b 'Faunal remains' in M. Gowen, J. Ó Néill & M. Phillips (ed.s) *The Lisheen Archaeological Project 1996-8*. 326; Wordwell, Bray.
- Stevens, P 2009 'Project overview, M8/N8 Cullahill to Cashel Road Improvement Scheme, Gortmakellis, Cashel, Co. Tipperary to Glashare, Co. Kilkenny' In I. Bennett (ed) *Excavations 2006; summary accounts of excavations in Ireland*. Wordwell, Bray.
- Stevens, P. 2002 "Dukesmeadows, Co. Kilkenny" in I. Bennett (ed.), *Excavations 2002: summary accounts of archaeological excavations in Ireland*. Bray: Wordwell
- Stout, G. T. 1984 *Archaeological Survey of the Barony of Ikerrin* in Association with The Roscrea Heritage Society.
- Svensson, K 2009a *Report on the Faunal Remains from Glenbeha 1, N7 Castletown to Nenagh Road Scheme (E3620)*. Unpublished report for Valerie J Keeley Ltd.
- Svensson, K 2009b *Report on the faunal remains from Derrymore 2, N7 Castletown to Nenagh Road Scheme (E3633)*. Unpublished report for Valerie J Keeley Ltd.
- Svensson, K 2009c *Report on the Faunal Remains from Camlin 1, N7 Castletown to Nenagh Road Scheme (E3579)*. Unpublished report for Valerie J Keeley Ltd.
- Svensson, K 2009d *Report on the faunal remains from Camlin 2, N7 Castletown to Nenagh Road Scheme (E3662)*. Unpublished report for Valerie J Keeley Ltd.
- Svensson, K 2009e *Report on the faunal remains from Derrymore 3, N7 Castletown to Nenagh Road Scheme (E3952)*. Unpublished report for Valerie J Keeley Ltd.
- Svensson, K 2009f *Report on the faunal remains from Rockforest 2, N7 Castletown to Nenagh Road Scheme (E3584)*. Unpublished report for Valerie J Keeley Ltd.

- Tourunen, A. 2007 'Fauna and Fulachta Fiadh: animal bones from burnt mounds on the N9/N10 Carlow Bypass' in *Roads, Rediscovery and Research: Archaeology and the National Roads Authority Monograph Series No. 5*. 37 – 43.
- Valerie J Keeley Ltd 2007 *'N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Improvement Scheme, Advance Archaeological Works Contract 2', Phase 1 Trial Trenching and Townland Boundary Surveys*.
- Valerie J Keeley Ltd 2007 *'N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Improvement Scheme Advance Archaeological Works Contract 2' Detailed Phase 1 Method Statement, Area 11 (Ch 24.100 – 26.600)*.
- Valerie J Keeley Ltd 2007 *'N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Improvement Scheme, Advance Archaeological Works Contract 2', Detailed Phase 2 Method Statement, Newtown*.
- Valerie J Keeley Ltd 2007 *'N7 Castletown to Nenagh (Castleroan to Derrinsallagh) Road Improvement Scheme, Advance Archaeological Works Contract 2', Phase 2 Preliminary Assessment Report, Newtown*.
- Waddell, J. 1998 *The prehistoric archaeology of Ireland*, Wordwell: Dublin.
- Williams, G. 1990 'Burnt mounds in south-west Wales', in V. Buckley, (ed.) *Burnt Offerings, international contributions to Burnt Mound Archaeology*, 129-141, Wordwell, Bray.

Websites:

ACS Ltd website, http://www.acsltd.ie/cms/publish/article_47.shtml

Environmental Protection Agency mapping, <http://maps.epa.ie/InternetMapView/MapView.aspx>

Extract of Lewis' Topographical dictionary of Ireland, County Tipperary 1837 <http://www.from-ireland.net/tipp/lewis/tippcounty.htm>

Extract from Thom's Directory 1931 <http://www.from-ireland.net/tipp/tipperdescr.htm>

8. ARCHIVE INDEX SHEET

Project	N7 CASTLETOWN TO NENAGH (DERRINSALLAGH TO BALLINTOTTY) ROAD IMPROVEMENT SCHEME			
Licence number / Sub-number	E3901			
Site Name/ Townland Reference	Newtown, Newtown or Skirk			
Archaeological Consultant	VALERIE J KEELEY LTD.			
Field director	Liam Ó Séaghdha			
DATE	5 November 2010			
	Number of items (quantity)	Number of boxes/files (quantity)	Work completed / work to do	Location of Records / Artefacts
Field Records				
Site plan &/or dyelines	No			
Site registers/indexes	1	1		VJK Head Office
Site diary/notes				
Context matrix	1			VJK Head Office
Report	1	1		VJK Head Office
Summary	No			
Survey/levels data (origin information)	S157 used as Base, Calibrated to Stations: S111,S158. Control Data received from Laois Co. Council			
Context sheets	10	1		VJK Head Office
Wood Sheets	No			
Skeleton Sheets	No			
Worked stone sheets	No			
Sample sheets used yes/no	No			
Other sheets (Specify)	No			
Single context & Multi context plans (totals rather than sheets)	8			VJK Head Office
Other plans (sketches, non- context plans etc)	No			
Sections/elevations	2			VJK Head Office
Timber drawings	No			
Stone drawings	No			
Images - monochrome	No			
Images - colour (slide or print)	No			
Images digital	21			VJK Head Office
Image/photo index	1			VJK Head Office
Project design/specification/ Methodology	No			
SECURITY COPY (whole or part) If so what type?	1		Digital copy to be stored on server	VJK Head Office

	Number of items (quantity)	Number of boxes/files (quantity)	Work completed / work to do	Location of Records / Artefacts
Finds and Enviro. Archive				
Accessioned/special (small) finds (specify types, especially wet finds or dry finds)	0			
Chert/flint	0			
Pottery (specify periods)	0			
Ceramic Building Material (specify types e.g. daub, tile)	0			
Worked stone	0			
Metalwork (specify types e.g. bronze, iron)	0			
Glass	0			
Slag (weight)	0			
Human bone (specify type e.g. cremated, skeleton, disarticulated)	0			
Animal bone (count-weight)	0			
Enviro - bulk (specify number of samples and total number of litres sampled)	1	9 Litres	Process sample, special analysis, charcoal dating.	VJK Head Office, Castlecomer
Enviro - monolith (specify number of samples and number of tins per sample)	0			

APPENDIX A: LIST OF CONTEXTS

Summary context index											
C #	Cutting/ Area	Type	Interpretation	Description	Group	Under	Over	Find #	Sample #	Plan #	Photo #
0001		Deposit	Topsoil	Dark brown clayey silt.		ALL	ALL			6.1,6.2.	
0002		Deposit	Natural	Orange/brown clay and silt.		ALL	N/A				
0003		Deposit	Burnt mound	Medium grey brown, soft silty sand with frequent fire cracked sand stones and occasional charcoal flecks. 12m W-E x min.4.20m N-S x 0.35m.		0001	0002		N/A	2.1,3.1,6.1, 6.2	5820, 5821, 5828- 5830, 5835
0004		Deposit	Burnt mound	Black firm silty sand with frequent fire cracked stones.4.20m E-W x min. 4.10m N-S x 0.35m		0001	0002		N/A	6.1,6.2	6123, 6124,6 125, 6126,6 137, 6138,6 139
0005		Fill	Trough	Medium grey brown, soft silty sand with frequent fire cracked sand stones and very occasional charcoal flecks. 1.3 m W-E x min.1.00 m N-S x 0.07m.		0001	0006		N/A	1.1,2.1,5.1.	6123, 6124,6 125, 6126,
0006		Fill	Trough	Dark black brown soft silty sand with frequent fire cracked sand stone and occasional charcoal flecks. 2.45m N-S x 1.47m E-W x 0.28m.		0005	0010		1	1.1,2.1,5.1	6121 ,6127, 6128,
0007		Cut	Trough	Rectangular with rounded corners, steep sides and flat base.2.45m N-S x 1.47m W-E x 0.28m.		0010	0002		1	1.1,2.1,5.1, 6.2,7.1,8.1	6121,6 127, 6128, 6140, 6141, 6142, 6143

Summary context index											
C #	Cutting/ Area	Type	Interpretation	Description	Group	Under	Over	Find #	Sample #	Plan #	Photo #
0008		Fill	Furrow	Light brown soft silty sand with occasional medium angular lime stones. 1.20m NW-SE x 0.40m NE-SW x 0.17m.		0001	0009		N/A	4.1,10.1	6135, 6136
0009		Cut	Furrow	Linear with no corners, slightly sloping sides and rounded base. 1.20m NW-SE x 0.40m NE-SW x 0.17m		0008	0002		N/A	4.1,10.1	6135, 6136
0010		Fill	Trough	Dark grey firm clayey silt with moderate angular fire cracked sandstones. 0.66m E-W x 0.50m N-S x 0.15m		0006	0007		N/A	6.2	6137

APPENDIX B: LIST OF FINDS

Summary finds index						
Find #	Context #	Material	Artefact type	Comments /decoration/ other	Period	

*No artefacts were recovered from this excavation

APPENDIX C: ENVIRONMENTAL PROCESSING RESULTS

Summary Preliminary Sieving Results									
Sample No.	Context No.	Feature	Amount processed in Kg	Comment retent	Comment flot	Bone frags weight gr.	Charred seeds/grains	Nut shell frag.	Flot weight gr
1	6	Trough	9	Nothing noticed	Charcoal				19
			Total: 9kg						19g

KEY FOR CHARRED ITEMS:

+ = 1-10 ++ = 11-50 +++ = 51-100 ++++ = 101-1000 >1000 = OVER 1000

Samples targeted for analysis as a result of highest information potential from Newtown (E3901)

Site name	Sample	Context	Charcoal	Weight (g)	Fragment count
Newtown	1	C6	prunus	0.1	1

APPENDIX D: LIST OF DRAWINGS

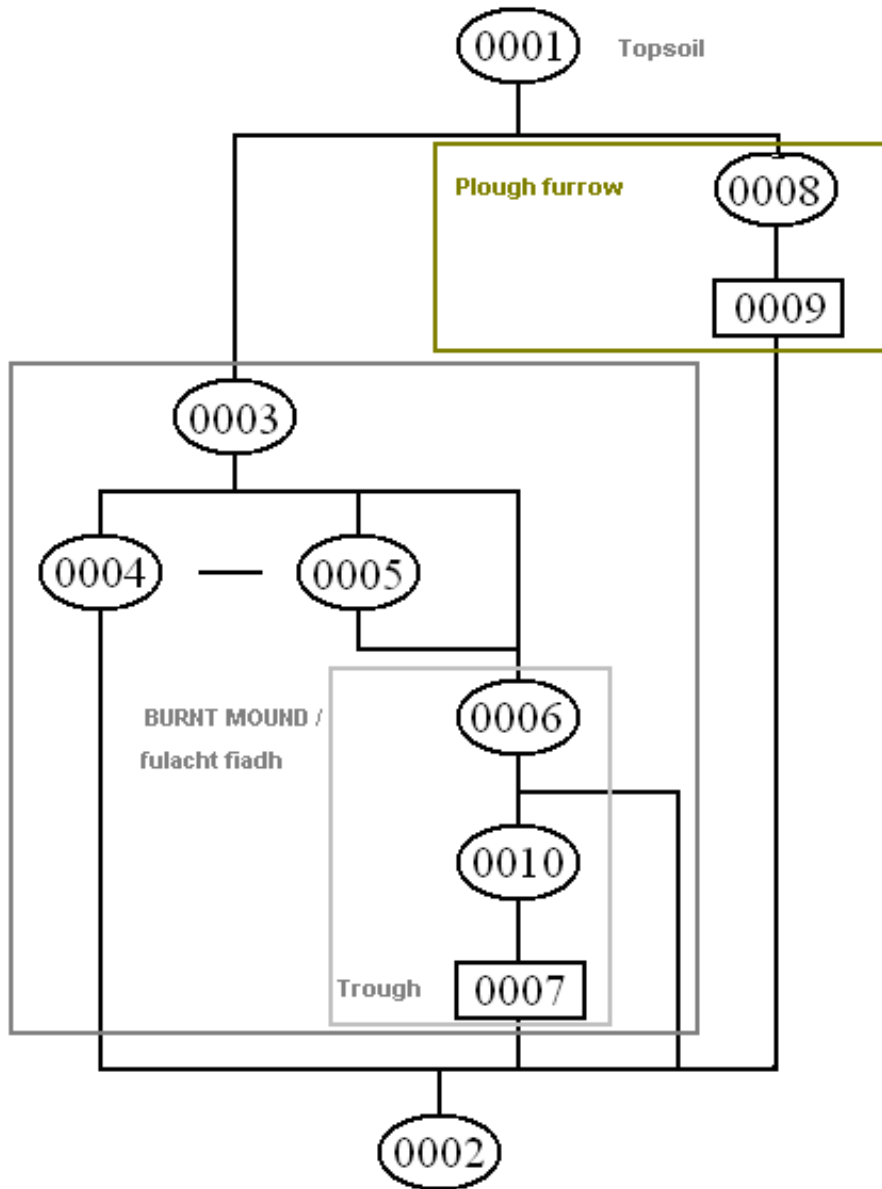
Summary drawing index			
Drawing #	Type(plan, section, profile)	Scale 1:x	Description
1	Plan	20	Pre-excavation plan of grid 400E/500N
2	Plan	20	Pre-excavation plan of grid 405E/500N
3	Plan	20	Pre-excavation plan of grid 410E/500N
4	Plan	20	Pre-excavation plan of grid 415E/500N
5	Section	10	E facing section of 0007
6.1	Section	10	N facing section of 0003, 0004,0007
6.2	Section	10	N facing section of 0003, 0004,0007
7	Plan	20	Post-excavation plan of grid 400E/490N
8	Plan	20	Post-excavation plan of grid 405E/490N
9	Plan	20	Post-excavation plan of grid 410E/500N
10	Plan	20	Post-excavation plan of grid 415E/500N

APPENDIX E: LIST OF PHOTOGRAPHS

Summary photographic index			
Photo #	Type(Pre-excavation/ Section/ post-excavation, section)	Direction photo facing	Description
6088	Pre-excavation	E facing	Pre-ex of site
6089	Pre-excavation	SW facing	Pre-ex of site
6090	Pre-excavation	SSW facing	Pre-ex of site

Ballykelly 1			
6121	Pre-excavation	SE facing	Pre-ex of trough 0007
Ballykelly 1			
6123	Section	S facing	N facing section of 0004
6124	Section	S facing	N facing section of 0004
6125	Section	S facing	N facing section of 0004
6126	Section	S facing	N facing section of 0004
6127	Section	W facing	E facing section of trough 0007
6128	Section	W facing	E facing section of trough 0007
Ballykelly 1			
6135	Section	SE facing	NW facing section of 0009
6136	Post-excavation	SW facing	Post-ex of 0009
6137	Section	S facing	N facing section of 0003, 0004, 0007
6138	Section	S facing	N facing section of 0003, 0007
6139	Section	S facing	N facing section of 0003
6140	Post-excavation	SE facing	Post-ex of 0007
6141	Post-excavation	SW facing	Post-ex of 0007
6142	Post-excavation	S facing	Post-ex of 0007
6143	Post-excavation	SE facing	Post-ex of 0007
6144	Post-excavation	SE facing	Post-ex of 0007
6145	Post-excavation	SE facing	Post-ex of 0007

APPENDIX F: SITE MATRIX



APPENDIX G: RADIOCARBON DATE

Lab Code	Sample description	Radiocarbon Age (BP)	Calibrated Date (68.2% / 1σ)	Calibrated Date (95.4% / 2σ)
SUERC-31108	Charcoal, <i>Prunus</i> (Cherry-type) from burnt mound C6 (Sample 1)	2705 ± 30	895–815 cal BC 895BC-865BC (27.1%) 855BC-815BC (41.1%)	910–800 cal BC 910BC-800BC (95.4%)

Table 7: Table of Radiocarbon dates for Newtown (Excavation No. E3901).



Scottish Universities Environmental Research Centre

Director: Professor A B MacKenzie Director of Research: Professor R M Ellam
Rankine Avenue, Scottish Enterprise Technology Park,
East Kilbride, Glasgow G75 0QF, Scotland, UK
Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

22 September 2010

Laboratory Code SUERC-31108 (GU-22330)

Submitter Anna Dunphy
VJK Ltd. Post Excavation Facility
Ballyhimmin Business Centre
Kilkenny Road, Castlecomer
Co. Kilkenny, Ireland

Site Reference Newtown
Context Reference 6
Sample Reference 1

Material charcoal : Prunus charcoal

$\delta^{13}\text{C}$ relative to VPDB -24.7 ‰

Radiocarbon Age BP 2705 ± 30

- N.B.**
1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.
 2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
 3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

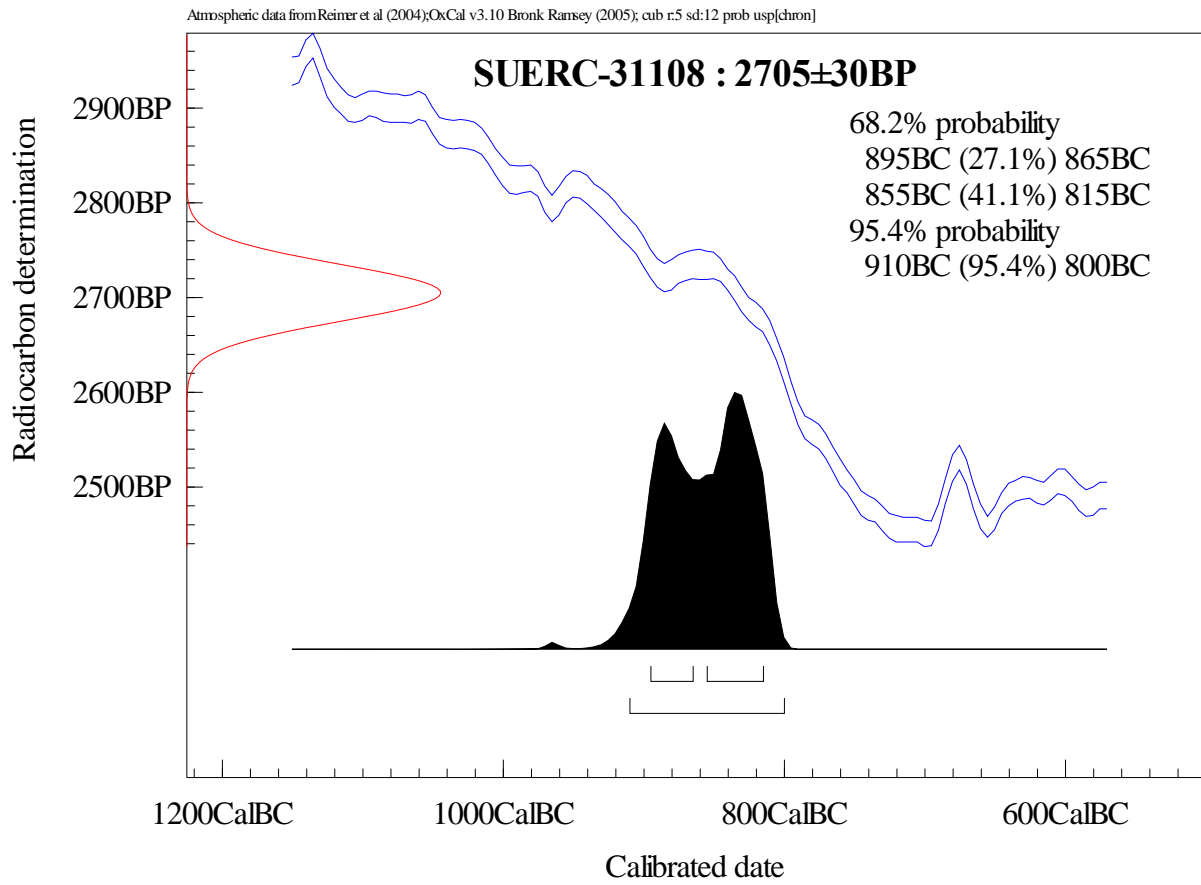


The University of Glasgow, charity number SC004401



The University of Edinburgh is a charitable body,
registered in Scotland, with registration number SC005336

Calibration Plot



PLATES



Plate 1: View of watercourse, trough (C7) and burnt mound in section (C3 & C4). Looking southeast.



Plate 2: Detail of Trough (C7), showing mound and backfill deposits in section. Looking southeast.



Plate 3: Half-section view of trough (C7). Looking southwest.



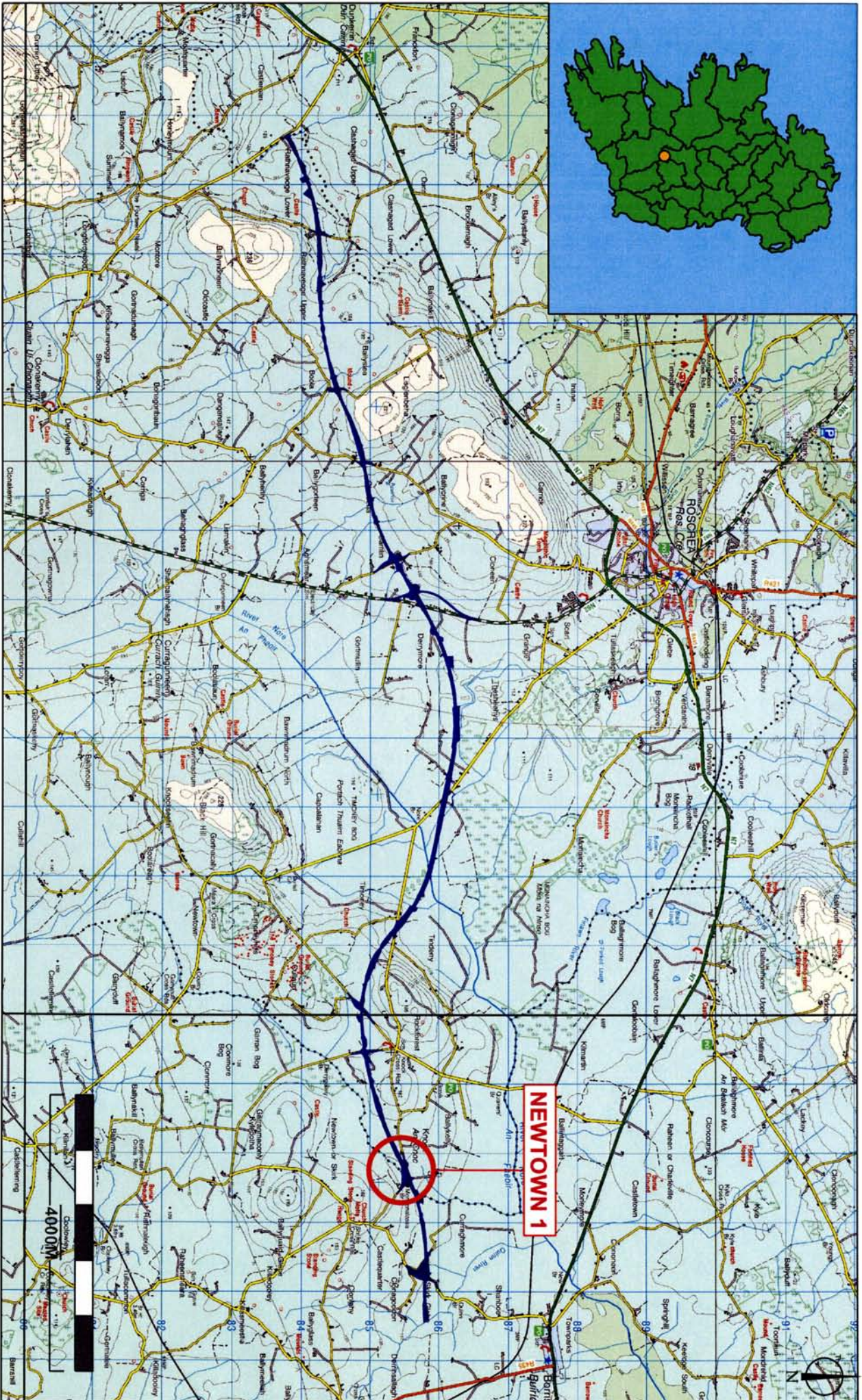
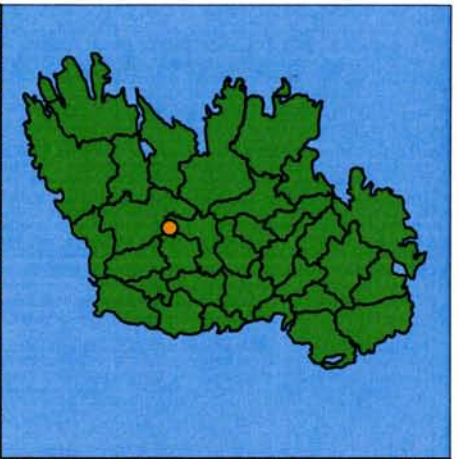
Plate 4: Detail of southeast corner in trough (C7). Looking southeast.



Plate 5: View of burnt mound spread (C3). Looking northeast.



Plate 6: Detail of baulk section view of deposits (C3 & C4). Looking southeast.



Title
 Location of Newtown 1 on the N7
 Castletown to Nenagh, Contract 2,
 shown on the Discovery Series Mapping

Notes
 Checked by: L. Ó Séaghdha
 Approved by: E. Cotter

Job/Exc. No.
 E3901

Date
 November 10

Compiled by
 O. Ryan

Scale
 1:75000

CAD reference
 1310-06-300

Drawing No.
 Figure 1

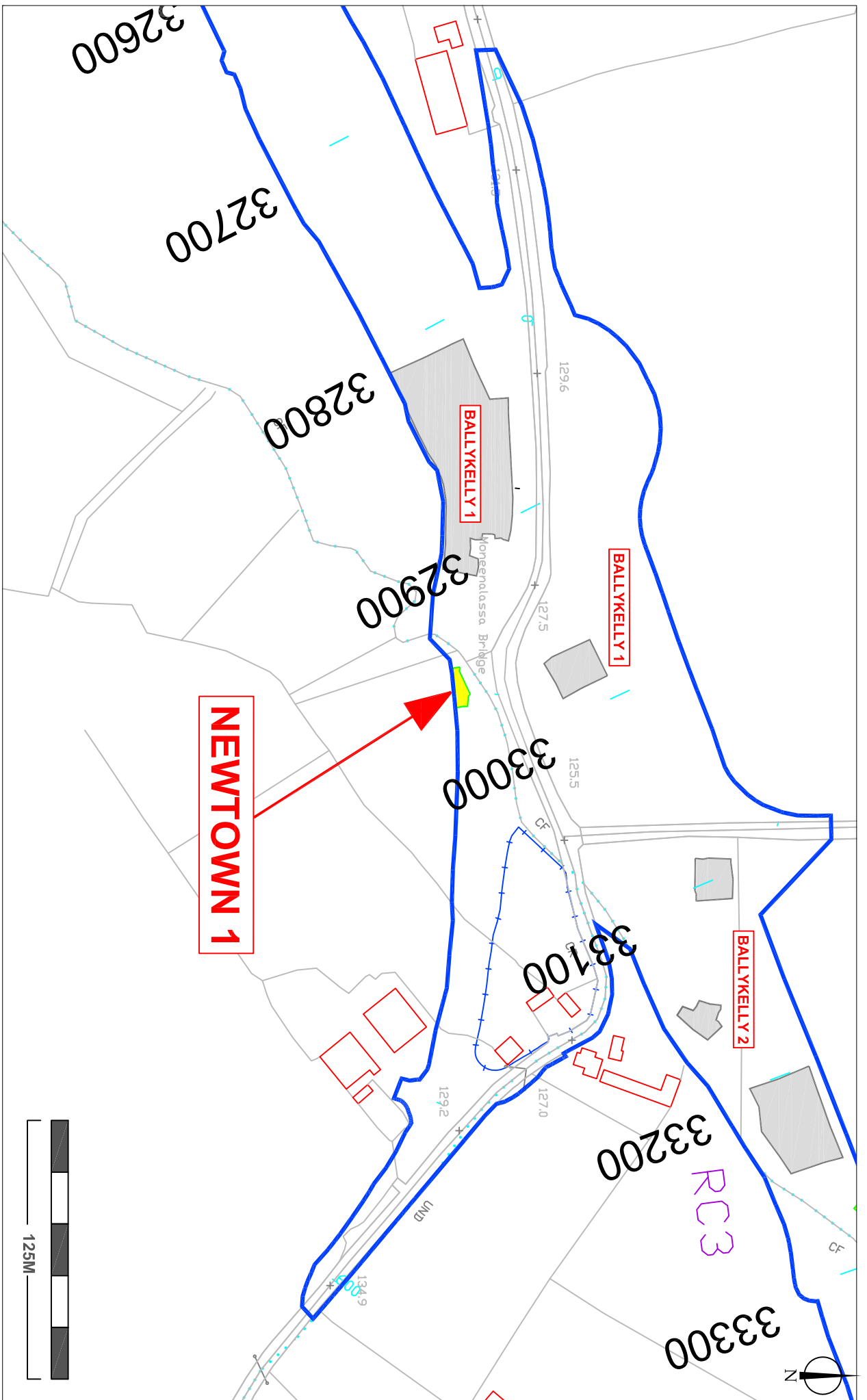
Client
 Laois County Council

Project
 N7 Castletown to Nenagh, Contract 2.





Bahon House
 Kilkenny Road
 Castlecomer
 Co. Kilkenny.

Tel: (+353) 056 4440236
 Fax: (+353) 056 4440237
 Email: vk@vjk.ie
 Website: www.vjk.ie



Title
 Location of Newtown 1 on the N7
 Castletown to Nenagh, Contract 2,
 shown on OS Mapping

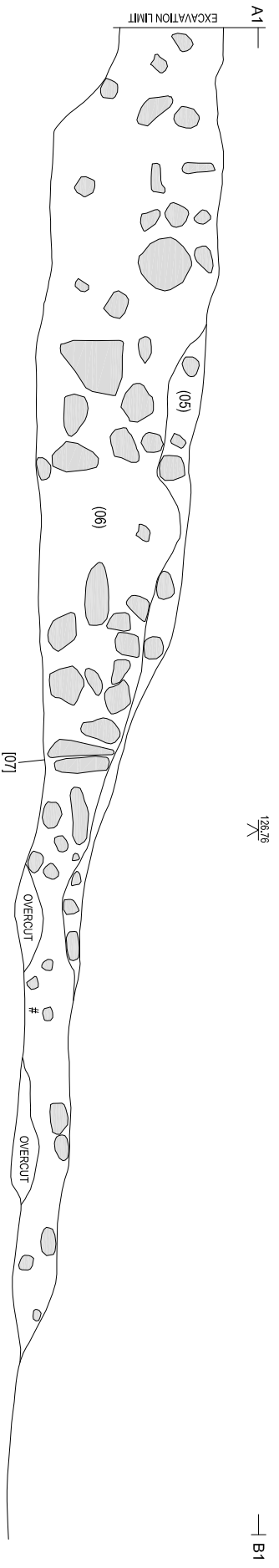
Notes
 Site Extents
 CPO

Job/Exc No.	E3901
Date	November 10
Compiled by	O. Ryan
Scale	1:2500
CAD reference	1310-06-300
Drawing No.	Figure 2

Client	Laois County Council
Project	N7 Castletown to Nenagh, Contract 2.




Barlton House Kilkenny Road Castletown Co. Kilkenny.	Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vk@vk.ie Website: www.vk.ie
--	---

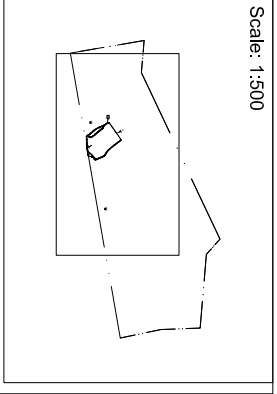


KEY:
 # # # - charcoal
 # # # - stones



Title Section of [07].	Notes Checked by: L. Ó Sághdha Approved by: E. Cotter	Works/Exc No. E3901	Completed by L. Konopinski	CAD reference 1310-06-300	Client Laois County Council	 YK Valerie L. Keely Ltd ARCHAEOLOGICAL CONSULTANTS	Barton House Kilkenny Road Castlesomer Co. Kilkenny.	Tel: (+353) 056 4440236 Fax: (+353) 056 4440237 Email: vk@ykle Website: www.ykle
		Date November 10	Scale 1:10	Drawing No. Figure 3	Project NZ Castlelown to Nenagh, Contract 2			

Scale: 1:500

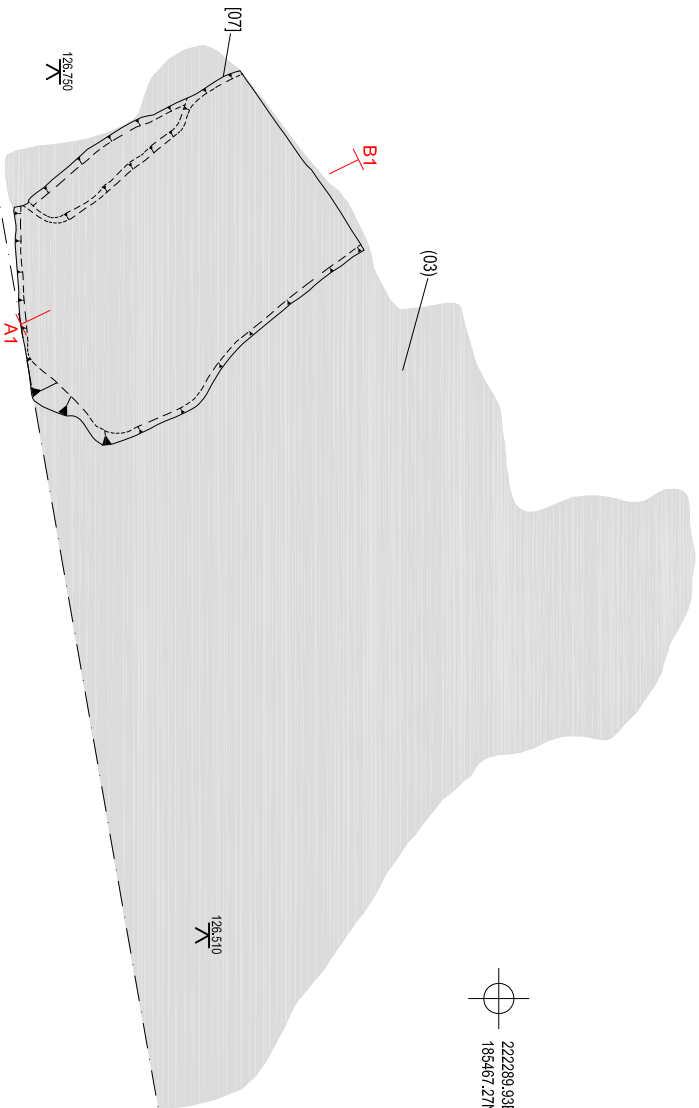


222280.00E
185466.00N

222289.93E
185467.27N

KEY:
- burnt mound

0
2m



Title

Post-ex plan.

Notes

Checked by: L. Ó Séaghdha
Approved by: E. Cotter

Job/Exc No.

E3901

Completed by

LK/OR

CAD reference

1310-06-300

Client

Laois County Council

Project

N7 Castlelawn to Nenagh, Contract 2

Date

November 10

Scale

1:50

Drawing No.

Figure 4



YK
Valerie A. Keeley Ltd.
ARCHAEOLOGICAL CONSULTANCY

Barlton House
Kilkenny Road
Castlesomer
Co. Kilkenny.

Tel: (+353) 056 4440236
Fax: (+353) 056 4440237
Email: vk@ykie
Website: www.ykie

NRA DATABASE CONTENTS SHEET

Database entry	Comment
Excavation number	Ministerial Direction: A038/000 Registration No.: E3901
Townland	Newtown or Skirk
Site name	Newtown
County	Laois
Project reference	N7 Derrinsallagh to Ballintotty (Contract 2)
Year of excavation	2007
Grid reference (Easting)	222272 E
Grid reference (Northing)	185469 N
OD Height (m)	126 m OD
Landscape setting	Flat ground, rises to the southeast, Within the flood plain of small watercourse (country stream)
Project Archaeologist	Niall Roycroft
Site Director	L. Ó Séaghdha
Archaeological consultancy	Valerie J Keeley Ltd
Identification technique	Test Trenching (VJK 2007)
Site type	Burnt Mound / fulacht fiadh
Site activity	Pyrolithic
Dating period	Late Bronze Age
Radiocarbon dates	Mound: 910-800 cal BC (SUERC-31108)
Dendro-chronological dates	N/A
Descriptions	Excavation at Newtown revealed a partially exposed Late Bronze Age burnt mound / <i>fulacht fiadh</i> . The site comprised a single rectangular trough, both trough and mound continued to the limit of excavation and beyond the lands made available for the road-tale. One sample of prunus (cherry-type) charcoal returned a radiocarbon determination of 910-800 cal BC (SUERC-31108). The burnt mound spread was an irregular semi-circular plan. No formal structures, artefacts or animal bone was revealed from excavation.
Artefacts	None
Environmental evidence	Cherry-type charcoal
Additional information	None
Publication	Excavations Bulletin 2007.