M4 KINNEGAD-ENFIELD-KILCOCK
PPP MOTORWAY SCHEME
CONTRACT 3

SITE AE30 (SITE 13): PITCHFORDSTOWN: Chainage 35600
NGR: 287248/239778

ON BEHALF OF
WESTMEATH COUNTY COUNCIL and the
NATIONAL ROADS AUTHORITY

LICENCE NUMBER: 02E0998

TIM COUGHLAN

2ND APRIL 2003

IRISH ARCHAEOLOGICAL CONSULTANCY LTD

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1 INTRODUCTION

1.1 General

This report, prepared on behalf of Westmeath County Council, has been undertaken to describe the results of an excavation carried out in advance of a proposed road development, on a Site 13 at AE30 Pitchfordstown (OS sheet 5) (Fig.3). A 20m by 20m area was fully excavated by Tim Coughlan under licence to Dúchas – the Heritage Service (Licence Ref. 02E0998) for Irish Archaeological Consultancy Ltd. The excavation took place between 10th and 13th September 2002.

A desk-based archaeological assessment was included in the Environmental Impact Statement (EIS) of March 2001. This identified 24 sites of archaeological potential within the area of Contract 3 that would be directly impacted by the proposed development. An aerial photographic survey along the proposed motorway corridor was carried out in May 2001 to look for the presence of previously unidentified archaeological sites or areas of potential (Keeley 2001).

AE30 (RMP not listed) was identified as a series of cultivation ridges in the townland of Pitchfordstown (NGR 287222 239683) and the desktop assessment recommended that testing be carried out in the area. In addition to site specific testing, an overall programme of linear test trenching was undertaken in all areas of road take prior to the commencement of construction works. Two areas of testing were required within AE30 as a result of a roundabout and associated off-roads being proposed for this area.

- **Test excavations**
  Linear testing (Licence Ref. 02E0141) was carried out by Dermot Nelis of Irish Archaeological Consultancy Ltd and began on the 11th February 2002 and was completed on 10th April 2002. Site specific test trenching (Licence Ref. 02E0147) on AE30 was subsequently carried out, also by Dermot Nelis, on 5th and 6th May 2002.

- **Test finds**
  The linear testing programme revealed a horseshoe spread of burnt stone in the north western corner of AE30, c.10 m from the western field boundary and 25 m from the existing motorway fence. It was located c.0.30 m – 0.40 m below present ground level.

  The site was interpreted as a *fulacht fiadh* with a mound of burnt stone which was used for heating the water. A rectangular feature N of this spread (measuring 3.0 m NW/SE x 2.0 m NE/SW) was interpreted as the water trough and a linear feature extending from the trough was interpreted as a man-made funnel-type feature excavated to ensure a satisfactory supply of water to the rectangular pit.

  Site specific test trenching failed to reveal any remains or datable artefacts associated with the cultivation ridges, although in common with other cultivation ridges in the general area it is suggested that these relate to relatively recent farming practices.

- **Excavation**
  It was recommended in the stratigraphic report that the *fulacht fiadh* identified during the linear testing programme be fully excavated in advance of construction works.

1.2 The Development

The overall scheme (Contracts 1, 2 and 3) would involve the excavation of c.35 km of Motorway, commencing to the SW of Kinnegad in County Westmeath and continuing in an easterly direction through Counties Meath and Kildare and terminating at the western end of the existing M4 motorway at Kilcock. Contract 3 covers the route from Kilcock to the E of Enfield (c.11 km) (Fig.2).

2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

2.1 Site Location and Topography

The site is situated at the eastern end of the proposed development, at the location of the existing end of the M4 motorway to the west of KIlcock.

The area of Contract 3 consists of an undulating landscape with fertile loam soil suitable to both tillage and pasture agricultural practice.

The proposed development is situated in NE Kildare in the province of Leinster. The region forms part of the Great Central Plain of Ireland, which incorporates some of the best pastureland in the country. The underlying geology consists mainly of limestone base and low-lying peat land such as the Bog of Allen. The area of Contract 3 consists of an undulating landscape with fertile loam soil suitable to both tillage and pasture agricultural practice.

NE Kildare borders County Dublin to the E and County Meath to the N. The county contains two major rivers: the Liffey and the Barrow. The proposed scheme would not have an impact on any major rivers.

2.2 Prehistoric Period

Kildare enjoys a rich archaeological heritage and there is clear archaeological evidence of prehistoric activity. Artefacts have been discovered dating from the Neolithic period (c.4000-2500 B.C). Neolithic scrapers, stone axeheads and saddlequerns have all been recovered from within the county.

The Bronze Age (c. 2500-500 BC) has produced the earliest datable structures in Kildare. The majority of the 30 recorded Bronze Age burial sites in Kildare are found in the western foothills of the Wicklow Mountains. Stray finds recorded by the National Museum of Ireland also indicate Bronze Age activity within the county.

2.3 Early Medieval Period

The predominant visible archaeological landscape of the proposed development area relates to the medieval period. There are four townlands along the route containing possible archaeological sites with the Gaelic *Cill* incorporated into their name. In place names *cill* (kil) has a range of associated meanings: church, monastic settlement or foundation, churchyard and graveyard. It is a borrowed word from the Latin *Cellae* (cell) associated with monastic retreat. It is the most prevalent ecclesiastical element in townland names. Unfortunately since the 17th century the Anglicised version of *coill* (a wood) has also been *kil*(*l*) making translation difficult.

The ancient territory of Kildare was known as the *Magh Life* in the early medieval period, reputedly after the daughter of the High King of Ireland, Deltbana Mac Druct (Anon 1945, 396). A number of ecclesiastical sites were established during this period in areas such as Cloncurry, Naas, Clane and Kilkea.

Kilcock

Kilcock has Early Christian origins, as the place name *cill* is associated with an early church site. Kilcock takes its name from the 6th century St Coca who founded a church beside the river Rye, and who is traditionally said to have been a sister of St Kevin of Glendalough; again tradition has it that by occupation she was an embroiderer of church vestments, including those for St Colmcille. An early historical reference records that 'The Virgin St Cocha is honoured on the 6th June in the church or monastery of *Killchoca* on the borders of Meath' (O'Donovan 1837, 78). However,

this commemoration is a modern revival as when the Ordnance Survey of the area was being undertaken in 1837 it was recorded that 'there is no old church in ruins in this parish nor is any patron saint or day remembered ... the meaning of the name *Cille Choc* is not remembered', (*ibid*.).

The Annals of the Four Masters recorded that the 'The battle of *Cill-Coiche*' was fought in AD 744 between rival kings near the church of St Coca then in the territory of Carbury and close to the border between Leinster and Meath. During this battle, the son of Faoleu (Lord of the *Fortuatha* of Leinster) was killed by King Donagh (*ibid.* 79). There is a gap of several hundred years until the next reference to Kilcock when, in 1303, it belonged to the Hospital of St John of Jerusalem at Kilmainham.

During the medieval period Kilcock was a manor. The Pale ditch, a 15th century earthen rampart which surrounded the Dublin region, ran through the area S of modern Kilcock. The Pale boundary was a rampart which stretched from Dundalk, to Ardee, to Kells, S to Kilcock, Clane, Naas and the bridge of Kilcullen and E to Ballymore Eustace, Rathmore, Kilteel and Dalkey. These areas were dotted with towers, castles and cultivated manorial estates (Lyons 2000, 17). The surrounding lands would have been intensively farmed due to its proximity to the market of Dublin. This appears to be reflected in the number of cultivation ridges sites recorded in the area. The intensive farming both in medieval and modern times however would have helped to level or obliterate certain monuments from the landscape.

Cloncurry

St Ninian, a Scottish monk, established an Early Christian monastery at Cloncurry in the 5th century but there are now no visible remains of this establishment. This area of Kildare was part of the territory of the *Uí Faeláin* and a number of historical references attest to activity in the vicinity of Cloncurry in the 1st millennium AD. The Annals of the Four Masters record that in 586 AD 'The Battle of *Magh Ochtair*' took place a short distance from Cloncurry, probably on the hill of Cappagh (O'Donovan 1837, 84) and in 778 AD, 'Donnell, the son of Flaithme, chief of *Ophaly* was killed at *Cluain Conaire*' (*ibid.*). Cloncurry was also the site of a royal meeting in 837 AD (*ibid.*).

Following the arrival of the Anglo-Normans the cantred was granted to Adam de Hereford sometime before 1176 and he established his manor at Cloncurry. In 1347, John Roche established a Carmelite friary in Cloncurry (Lewis 1837, 352). The medieval settlement and the Carmelite friary are reputed to have been burnt in 1405 by some of the Irish septs (*ibid*). However, the friary was re-established and in 1543 consisted of a church and belfry, a chapter house, a dormitory, a hall, 2 chambers, a kitchen and an orchard (O'Donovan 1837, 85). The settlement was also re-established as is witnessed by the Down Survey Map of 1654 -1656 which shows a settlement based around two streets and Cloncurry abbey. A castle is also depicted at the N end of Cloncurry near the site of the motte and is likely to be the castle mentioned in the Civil Survey of 1654-6; 'There is upon the aforesaid lands of Cloncurry 1 castle, which is valued to bee worth 40 pounds sterling' (Simmington 1952, 119). A second castle is marked at the NE end of Cloncurry. Cloncurry abbey is also marked. The settlement seems to have continued until some time in the 18th century. The settlement also contained a watermill and a market.

The extant remains at Cloncurry consist of a motte and bailey, a medieval church and graveyard (immediately NW of Cloncurry crossroads) and a deserted medieval village located 3 fields to the S of the crossroads. The location of the Carmelite friary is no longer known but according to Lewis some inconsiderable remains of the ancient friary were there in 1837 (Lewis 1837, 353). Remnants of the medieval village are visible with the presence of a 'hollow way' (a medieval pathway thus

named due to the constant movement upon it resulting in the route being impressed up to 1.5 m lower than the surrounding ground and measuring 7 to 8 m wide) and two tofts (medieval house plots). The site of the market place is marked by the presence of the base of a market cross (not marked on the early editions of the OS map). The cross has a rectangular base with morticed and chamfered upper edges and one of the chamfers bears the inscription “Amen”.

2.4 Medieval Period

Little is known of the early process of Norman settlement in Kildare. It is likely that there was an influx of an immigrant farming population. By the end of the 12th century Norman settlement was effective over the whole county, as marked by the beginning of the rule of the Fitzgerald family as earls of Kildare.

At the time of the Norman invasion in the 12th century the area that we now know as Kildare comprised of four tribal territories; *Offelan* in the N, Offaly to the NW and the centre, *Omurethy* to the S and *Leix* to the SW. These territories were granted to Norman lords.

Tower houses date from the 15th and 16th centuries and were the fortified houses of the gentry. They are most often found in Louth, Meath and Kildare. Their construction was actively encouraged by the Henry VI who, in 1429, offered a grant for their building. A profusion of such defensive settlements is typical of Anglo-Norman settlement in Ireland but it is worth remembering that the study area is close to where the ramparts that marked the edge the Pale once stood and these defensive settlements were part of a broader strategy of defence.

The Earls were at the height of their power during the period of the “Great Earl” Garret *Mór* in the early 16th century. The Fitzgeralds however experienced a reversal of fortune when in 1534 Silken Thomas, the grandson of Garret *Mór*, led a rebellion. The Geraldine rebellion was followed by a time of upheaval and disorder in Kildare. Much of the county was destroyed and it lost its autonomy and was placed under the direct rule of Dublin. The Church and the Fitzgeralds lost land thus changing the political and economic structure of Kildare, the repercussions of which were felt all over the county (Lyons 1992).

Ireland and Kildare endured further upheaval in the following century after the English revolution and accession to power of Cromwell. The pattern and structure of landownership changed in parts of the county with the establishment of plantations. The Earls sided with the Jacobite rebellion and lost further power and prestige after the Battle of the Boyne in 1690 and the consolidation of English power.

2.5 Post-Medieval Period

Most of the famous large houses and demesnes of Kildare date from this period. These houses represent a new confidence and security and significantly landlords abandoned the defensive structures favoured by landowners in earlier periods.

A challenge to the status quo came at the end of the 18th century from the United Irishmen. The United Irishmen aspired to unite “Protestant, Catholic and Dissenter” a social movement that would transform Ireland. The rebels looked to revolutionary France and America as examples and in the spring of 1798 began the largest insurrection in modern Irish history. The rebellion in Leinster began in Kildare and there was fighting in Ballymore Eustace, Clane, Rathangan and Prosperous. The rebellion in Kildare faltered within 2 months and after a defeat at Ovidstown the United Irishmen brokered their surrender at Knockaulin.

Kildare escaped the worst effects of the 1845 famine largely because it had low population density at that time. For that reason E Kildare does not feature any known famine graveyards or other historical sites associated with the Great Famine.

Maynooth College

Maynooth College was founded in 1795 as a seminary and later became a university. The College Board of Trustees acquired the lease for 490 acres of agricultural land from the Topin family in the townland of Killickaweeny (referred to as Killick) in 1904 (Maynooth College Archive). The sites 104, AE23, AE24 and AE25 are located on this land. The estate had a two-storey house with associated outhouses that were built in 1845 on the site of former buildings. From this date until at least 1932 (when the College sought for outright purchase of the land through the Land Commission) major land reclamation and drainage was carried out at Killick farm. According to correspondence between the Commission inspector and Maynooth Board of Trustees improvements included the creation of "six hundred linear perches of open main drainage, reclaiming 300 acres of land and two quagmires" (Maynooth College Archive). The college was successful in its appeal and from 1932 until 1980 they were owners of the farm.

Cultivation Ridges

The date of the introduction of ploughing to Ireland is uncertain. Initially ploughing was carried out using an ard, which was coulterless and was scratched across the sod. It did not penetrate deeply and did not turn the sod and required cross ploughing. This form of ploughing dictated the use of small square fields (Kelly 1998, 469). These early ploughs utilised ploughshares of stone, bone and wood. These gave way to iron ploughshares at an unknown date however they have been recovered from 7th century archaeological contexts.

It is likely that the coulter was introduced to Ireland in the 10th century. This is a blade fitted to the plough beam, which cut the vertically ahead of the share, creating a furrow. This does not require cross ploughing and as a result the fields became longer. The process was further improved with the development of the mould board, which allowed the sod to be turned to the left or right.

In Early Christian Ireland oxen were used to pull ploughs however by the late 13th century the plough-horse was introduced. They were faster and cheaper and easier to control.

Medieval field systems in Ireland were generally large open fields with 3 crop rotation. This involved 3 separate phases of ploughing on a fallow field. First in march when the soil was soft and easy to turn, this involved the use of a heavy plough pulled by animals. The heavy plough had a mould board mounted on the right hand side behind the ploughshare (which turned the sod). Because of the difficulty in manoeuvring the plough team ploughing was carried out in long strips, turning clockwise several times before starting a new strip. This resulted in the sod constantly being thrown into the centre of the strip creating a ridge and furrow. The second phase of ploughing was generally in June; this involved deeper ploughing to expose the roots of weeds. The third and final phase of ploughing was carried out in the autumn/October prior to the sowing of winter crops.

O'Conor suggests that ridge and furrow attributable to the medieval period is not recognisable in Ireland (1998, 69) due to the fact that flat ploughing was apparently the preferred option. This does not allow for the easy identification of medieval fields. Flat ploughing does leave traces where the earth has been mounded at plough

headlands such as those identified in Oughterard and Castlewarden, Co. Kildare (*ibid*. 70).

Peasant holdings were strips of land scattered throughout large common fields. However, almost all open-field land in Ireland had been enclosed and consolidated by the 17th century.

Ridge and furrow resulting from spade cultivation almost certainly reflects the dependence on potato cultivation in the post medieval period but it also represents a more specialised and carefully tended process associated with specialist crops. These 'lazy beds' were used throughout Irish antiquity and were used for a wide range of crops. The width of the bed and the depth of the furrow varied with the nature of the soil and the crops that were grown. According to Mitchell, a plough may have been used in the laying out of the bed (1990, 197) but were finished with the spade. After the bed had been sufficiently used it was then divided down its centre with the centre of the ridge becoming the new furrow.

2.6 Cartographic Analysis

There are no features marked at the site on either the first, second or third edition OS maps. The site is shown as two fields. A dividing field boundary extending NE/SW has been cleared since the third edition.

3 THE EXCAVATION

3.1 Methodology

Site 13 was identified as a series of cultivation ridges in the townland of Pitchfordstown (NGR 287222 239683) and the desktop assessment recommended that testing be carried out in the area.

The linear testing programme revealed a horseshoe spread of burnt stone in the north western corner of AE30, c.10 m from the western field boundary and 25 m from the existing motorway fence. It was located c.0.30 m – 0.40 m below present ground level.

The site was interpreted as a *fulacht fiadh* with a mound of burnt stone which was used for heating the water. A rectangular feature N of this spread (measuring 3.0 m NW/SE x 2.0 m NE/SW) was interpreted as the water trough and a linear feature extending from the trough was interpreted as a man-made funnel-type feature excavated to ensure a satisfactory supply of water to the rectangular pit.

Site specific test trenching failed to reveal any remains or datable artefacts associated with the cultivation ridges, although in common with other cultivation ridges in the general area it is suggested that these relate to relatively recent farming practices.

In each case the topsoil was removed by flat-bucketed machine and then the areas were excavated by hand until archaeological deposits were reached. All archaeological material was fully recorded and then excavated by hand until natural geological layers were reached.

3.2 The Excavation

The excavation took place between 10th and 13th September 2002 (Plate 1). The suspected *fulacht fiadh* on the site was identified as a burnt out tree stump during the excavation of the site (Plate 2). The burning had extended through the stump and roots of the tree, which gave the appearance of a trough and associated burning during testing. The remains of three plough furrows were also evident. An E-W linear feature (1.30m wide and 0.50m deep) identified at the north end of the excavation area was associated with relatively modern drainage and was not of archaeological significance. A section was hand dug through this feature to confirm its significance.

3.3 Conclusions

There was nothing of archaeological significance on the site and it is not anticipated that there will be significant archaeological deposits in the immediate surrounding area.

4 NON-TECHNICAL SUMMARY

This report, prepared on behalf of Westmeath County Council, has been undertaken to describe the results of an excavation carried out in advance of a proposed road development, on the site of a possible fulacht fiadh at Site 13 (AE30) at Pitchfordstown, Co. Kildare (OS sheet 5). A 20m by 20m area was fully excavated by Tim Coughlan under licence to Dúchas – the Heritage Service (Licence Ref. 02E0998) for Irish Archaeological Consultancy Ltd. The excavation took place between 10th and 13th September 2003.

A desk-based archaeological assessment was included in the Environmental Impact Statement (EIS) of March 2001. This identified 24 sites of archaeological potential within the area of Contract 3 that would be directly impacted by the proposed development. An aerial photographic survey along the proposed motorway corridor was carried out in May 2001 to look for the presence of previously unidentified archaeological sites or areas of potential (Keeley 2001).

AE30 (RMP not listed) was identified as a series of cultivation ridges in the townland of Pitchfordstown (NGR 287222 239683). The desktop assessment recommended that site specific testing be carried out in this area. Additionally, an overall programme of linear test trenching was undertaken in all areas of road take prior to the commencement of construction works. Two areas of testing were required within AE30 as a result of a roundabout and associated off-roads being proposed for this area (fig. 3). The area of AE30 comprises a large field which has been used in the recent past for pasture.

Linear testing (Licence Ref. 02E0141) was carried out by Dermot Nelis of Irish Archaeological Consultancy Ltd and began on the 11th February 2002 and was completed on 10th April 2002. Site specific test trenching (Licence Ref. 02E0147) on AE30 was subsequently carried out by Dermot Nelis and took place on 5th and 6th May 2002. The linear testing programme revealed a horseshoe spread of burnt stone in the north western corner of AE30, c.10 m from the western field boundary and 25 m from the existing motorway fence. It was located c.0.30 m – 0.40 m below present ground level. The site was interpreted as a fulacht fiadh with a mound of burnt stone which was used for heating the water. A rectangular feature N of this spread (measuring 3.0 m NW/SE x 2.0 m NE/SW) was interpreted as the water trough and a linear feature extending from the trough was interpreted as a man-made funnel-type feature excavated to ensure a satisfactory supply of water to the rectangular pit. Site specific test trenching failed to reveal any remains or datable artefacts associated with the cultivation ridges, although in common with other cultivation ridges in the general area it is suggested that these relate to relatively recent farming practices.

It was recommended in the stratigraphic report that the *fulacht fiadh* identified during the linear testing programme be fully excavated in advance of construction works.

The excavation of Site 13 (Licence Ref. 02E0998) took place between 10th and 13th September 2003. During the excavation it became apparent that the possible f*ulacht fiadh* actually represented a burnt out tree stump. Nothing of archaeological significance was identified during the excavation.

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APPENDIX 1: LIST OF SMR SITES WITHIN THE IMMEDIATE AREA

Monument No: KE5:019
National Grid Ref: 28650 23980
Townland: Pitchfordstown
County: Kildare
Classification: Rectilinear enclosure
Description: This site is located immediately SW of Site 105.
KE5:019 consists of a large earthen-banked enclosure, roughly square in plan with circular corner turrets, probably late medieval in date. It appears on all editions of the Ordnance Survey six-inch maps of Kildare but is not recorded as an antiquity. All that remains of the site is the bank and ditch and the site is under a heavy canopy of bushes and trees.

APPENDIX 2: STRAY FINDS WITHIN THE SURROUNDING AREA

Information on artefact finds from the study area in Kildare has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area.

No finds were recovered from the tested areas of AE30/Site 13.

APPENDIX 3: LEGISLATIVE FRAMEWORK PROTECTING THE ARCHAEOLOGICAL RESOURCE

The archaeological heritage in Ireland is safeguarded through both national and international policy designed to secure the protection of the archaeological resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht and the Islands 1999a, 35). This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention), ratified by Ireland in 1997, along with any other relevant international conventions to which Ireland is party.

The National Monuments Acts 1930 to 1994 and relevant provisions of the National Cultural Institutions Act 1997 are the primary means of ensuring the satisfactory protection of archaeological remains, which are held to include all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A number of mechanisms under the National Monuments Act can be applied to secure the protection of archaeological monuments. These include the Record of Monuments and Places, the Register of Historic Monuments, and the making of Preservation Orders and Temporary Preservation Orders.

Section 12 (1) of the 1994 Act provides that the Minister for Arts, Heritage, Gaeltacht and the Islands shall establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises of a list of monuments and relevant places and a map or maps showing each monument and relevant place in respect of each county in the State. The sites listed in Appendix 4 are all recorded on the Record of Monuments and Places for Kildare and therefore all receive statutory protection under the National Monuments Act.

Section 12 (3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in the case of urgent necessity and with the consent of the Minister, commence the work until two months after the giving of notice'.

Kildare County Council Development Plan outlines proposals for the protection of the archaeological resource.
It is the policy of the Council to preserve and protect items of artistic, historical, architectural, archaeological and scientific interest in the county. These items are listed in Part 3 of this Plan. The Council will continue to investigate such items.

It is the policy of the Council to make use of its special powers of preservation and conservation as may be necessary to safeguard such items. The Council will not hesitate to invoke its powers if the need for action should arise in particular areas. In order to further awareness of heritage items among the general public, it is Council policy to publish explanatory booklets and maps on heritage items for circulation to schools in the county, as well as for tourism.

It is the policy of the Council to preserve these items, to protect them from unsympathetic development and to encourage their use as recreational and tourist resources.

It is the objective of the Council that to preserve sites of archaeological importance, as defined by the Office of Public Works in its Record of Monuments and Places - County Kildare, and its Urban Archaeological Survey. Any developments within these areas will have to be undertaken subject to the supervision of professional archaeologists.

The Council is aware of the importance, from the amenity viewpoint, of traditional buildings including thatched cottages, the number of which is decreasing year by year. It is the policy of the Council to continue to protect surviving examples of vernacular buildings, particularly on tourist routes, and to encourage their restoration and maintenance.

It is the policy of the Council to protect significant streetscapes, including road furniture, pumps and pavings, old wells, old walls, particularly demesne walls. It is also policy to protect traditional shops and pubs, and dwellings, including chimneys, windows etc., and interiors, where historically or visually important.

It is the policy of the Council to advocate the provision of financial incentives by European, national or regional bodies, in order to assist owners of heritage properties and items in their maintenance and conservation.

APPENDIX 4: IMPACT ASSESSMENT AND THE ARCHAEOLOGICAL RESOURCE

Potential Impacts on Archaeological Remains

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological resources potentially affected. Development can affect the archaeological resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.
- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.
- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.
- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.
- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.
- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.
- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.
- Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.

Predicted Impacts

There is no standard scale against which the severity of impacts on the archaeological and historic landscape may be judged. The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account:

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;
- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;
- Assessment of the levels of noise, visual and hydrological impacts, either in general or site specific terms, as may be provided by other specialists.

Impacts are defined as ‘the degree of change in an environment resulting from a development’ (EPA, 1995, 31]. They are described as profound, significant or slight impacts on archaeological remains. They may be negative, positive or neutral, direct, indirect or cumulative, temporary or permanent.

APPENDIX 5: MITIGATION MEASURES AND THE ARCHAEOLOGICAL RESOURCE

Potential Mitigation Strategies for Archaeological Remains
Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

Definition of Mitigation Strategies
The ideal mitigation for all archaeological sites is preservation *in situ*. This is not always a practical solution, however. Therefore a series of recommendations are offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

Full Archaeological Excavation involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of any given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence of archaeologically significant material or structures and where avoidance of the site is not possible.

Archaeological Test Trenching can be defined as ‘a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality.’ (IFA 1994c, 1)

Archaeological Monitoring can be defined as a ‘formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site on land or underwater, where there is possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.’ (IFA 1994b, 1)

PLATES

Plate 1: General view of site

Plate 2: East facing section of burnt out tree-stump

Project	Title
M4 KEK CONTRACT 3	SITE LOCATION

Date	Scale	Client	Figure
13/06/03	NTS	WESTMEATH CO. COUNCIL	1

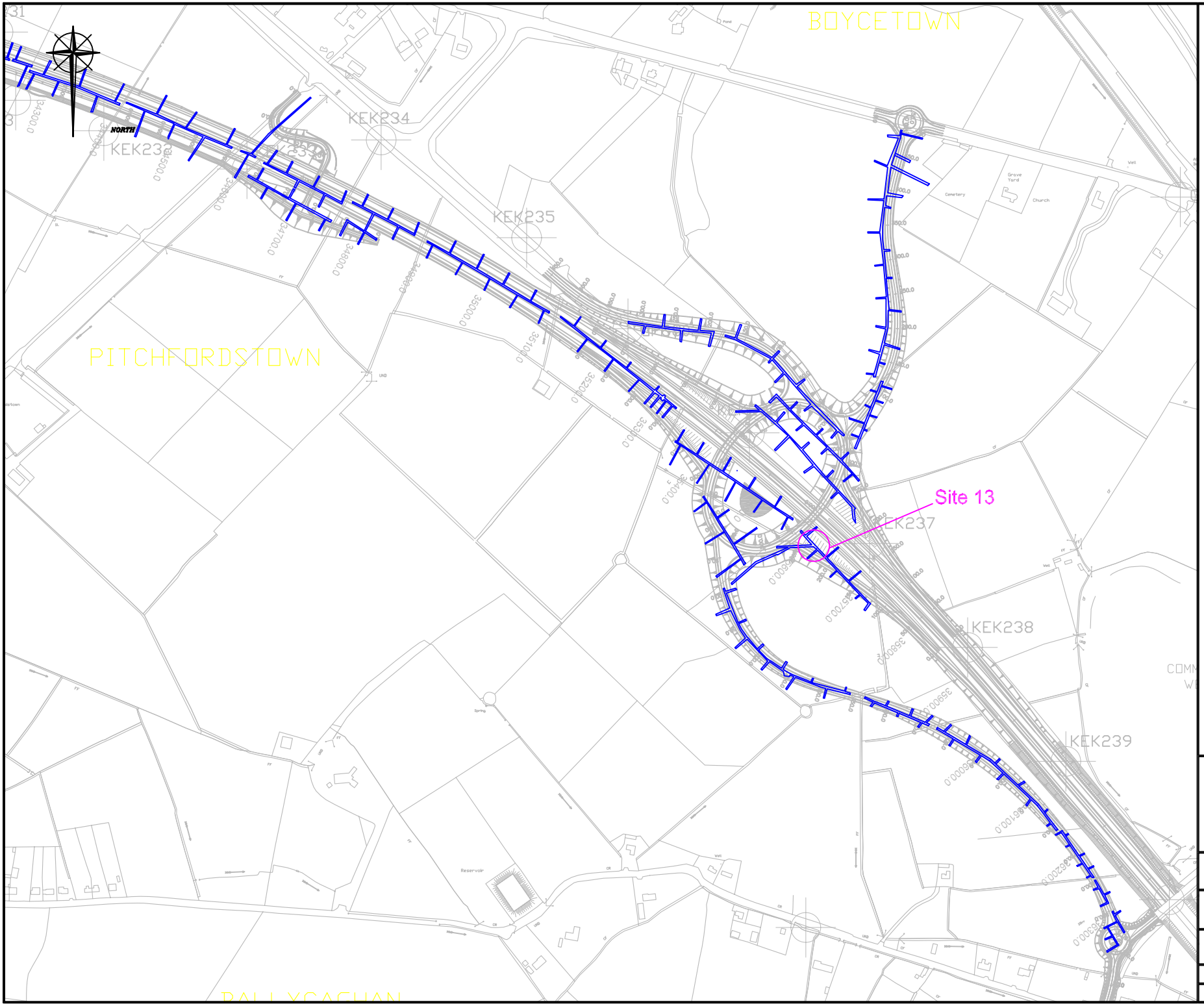
Irish Archaeological Consultancy Limited

Site Location

Irish Archaeological Consultancy Ltd.

Title:	The Proposed Route of the M4 Kinnegad - Enfield - Kilcock Scheme
Project:	M4 KEK CONTRACT 3
Client:	Westmeath County Council

Scale:	1:50000
Date:	13/06/03
Produced by:	A Darcy
Job No:	J2003
Figure No:	2



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Title: Site specific location within proposed development

Project: KEK CONTRACT 3 - Site 13

Client: Westmeath County Council

Date: 12 - 12 - 02

Scale: 1:2500

Figure 3