

**N7 Heath-Mayfield Motorway Scheme:  
Archaeological Resolution**

**FINAL REPORT**

**Excavation No.: 03E0571**

**Site M, Ballyfarsoon Townland**

**Co. Kildare**

**NGR 264321E, 208451N**

|                              |                        |
|------------------------------|------------------------|
| <b>Site Director:</b>        | E. Cotter              |
| <b>Senior Archaeologist:</b> | C. Duffy               |
| <b>Job No.:</b>              | 1047-03-400            |
| <b>Client:</b>               | Kildare County Council |
| <b>Date:</b>                 | February 2010          |

**Valerie J. Keeley Ltd**



## SUMMARY

These two areas, Area 1 and Area 2 of Site M were excavated as part of the resolution of archaeological sites on the route of the N7 Heath-Mayfield Motorway scheme. Site M was identified during centreline test trenching as a spread of burnt, blackened stone similar to a Fulacht Fiadh. It was located on the edge of a wet, marshy area, the type of terrain where Fulachta Fiadh are commonly located. Topsoil was removed by mechanical digger, revealing the extent of the burnt mound, c. 10m N-S x 7m E-W at Area 1. The maximum depth of the mound, near the centre, was 0.3m, and it thinned out towards the edges. Below the mound, on its east side was a rectangular trough measuring 2m long (E-W) and 0.6m deep. It was 1m wide at the centre and 0.6m wide at each end. A date of 3505+/-40 BP (1940 – 1730 cal BC) (SUERC 9032) was returned from a sample of elm from this trough. It had two fills, an upper layer, 0.23m deep of brown peat, and a lower layer of dense silt with a small amount of broken stone. Several groups of stakeholes around the west end of the trough indicate the presence of a light structure in this area. The stakeholes were on average 0.05m in diameter and ranged in depth from 0.06m to 0.18m.

Another group of similar stakeholes was found immediately east of the trough and to the east of these stakeholes a second trough was uncovered. The second trough was sub-circular in plan and measured 2.8m E-W x 1.8m N-S and 0.6m deep. Its fill was deep layer of black peat with some burnt stone.

Area 2 was located in the field to the south of Area 1 and was also identified during test trenching. It comprised a shallow rectangular pit measuring 2m NW-SE x 1m and 0.15m deep. Its fill was a mixture of burnt clay, charcoal and soil. Its function is unknown and no other related features were noted.

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## **1.0 INTRODUCTION**

This report details the results of archaeological excavation carried out prior to the construction of the N7 Heath-Mayfield Motorway at Ballyfarsoon townland, on behalf of Kildare County Council and the National Roads Authority. This site was excavated as part of the resolution of archaeological sites on the route of the N7 Heath-Mayfield motorway scheme extended from Mayfield townland at the western end of the N7 Kildare Town By-pass westwards to Greatheath townland at the eastern end of the N7 Portlaoise By-pass. It had not been previously recorded and was discovered during archaeological test trenching along the road corridor. Site N west was identified under the same contract during advanced centreline testing by Brendain O’Riordáin under licence 03E0127.

The site was situated in Ballyfarsoon townland, Monasterevin parish and Offaly West Barony at National Grid Ref. 264321, 208451 and at an elevation of 76m OD (see Fig. 1).

Excavations were carried out from 14<sup>th</sup> – 29<sup>th</sup> April 2003, under licence number 03E0571, by Eamonn Cotter of Valerie J Keeley Ltd on behalf of Kildare County Council..

## **2.0 GEOGRAPHIC SETTING**

The site was located in low-lying ground, in an area characterized by flat land interspersed with low hills. It lay at the foot of a slope rising westwards to a height of 122m OD, on a line where dry ground meets the flat marshy land to the east.

## **3.0 METHODOLOGY**

Topsoil was removed by machine under archaeological supervision and further excavation was carried out by hand. Upon location all archaeological materials were cleaned and excavated by hand using methods appropriate to their composition, nature and date. All archaeological contexts were photographed and planned (in relation to the site grid) prior to excavation. Sections were excavated through all features to obtain profiles and to expose the stratigraphic sequences and then fully excavated. All sections and cut features were photographed and drawn. The position of all finds and samples were recorded in three-dimensions (where appropriate) in relation to the site-grid. The composition, stratigraphic position and interpretation of all contexts were recorded on a context sheet prior to excavation. Contexts have been sampled for palaeobotanical material, radiocarbon dating, micromorphology, petrology and wood identification, where appropriate. Features that proved to be of modern origin were fully investigated and characterised.

Over the course of the excavation the team size averaged six people.

## **4.0 THE EXCAVATION**

### **4.1 PROCEDURE**

Excavation commenced on Site M, the Fulacht Fiadh, on April 14<sup>th</sup> 2003. Much of the site had already been exposed during archaeological testing along the route of the motorway and the full extent of the site was now exposed by stripping back the topsoil using a mechanical digger.

After topsoil had been removed by machine an area approximately 22m N-S x 20m E-W was trowelled back. Archaeological features were confined to an area measuring 13m N-S x 12m E-W. All features were excavated by hand and were individually recorded. Plans were generally multi-feature. Weather conditions were generally dry and favourable at the commencement of the excavation, but became very wet in the final week.

### **4.2 THE FEATURES**

#### **4.2.1 Area 1**

Removal of the topsoil revealed the principal feature of the site, which was a low mound of blackened, fire-cracked stone, measuring 10m N-S by 7m E-W, with a depression along its east side (Fig. 3, Plate 1). Field drains to the northwest and north east of the mound indicated agricultural activity in the area, activity which had presumably contributed to its levelling out. A second, smaller, spread of similar material lay c. 1m to the east of the burnt mound.

The southern half of the mound was excavated first, giving an east-west cross-section across the site (Fig 5). The maximum depth of the mound was 0.25m, fading out gradually at the edges. On its east side, where the depression was noted on the surface, a rectangular trough was uncovered. The trough measured 0.6m deep and 2m long (E-W) (F3) (Plate 5). At its east and west ends it measured 0.6m wide, widening to 1m in the centre. The upper fill of the trough was (F28), a 0.23m deep layer of brown peat. Below it was (F29), a 0.2m deep layer of black peat with some burnt stone inclusions. A thin layer of the burnt mound material, (F2), lay below (F29), and below this the lowest layer in the trough was a layer of grey/black silt (F30). A number of large rounded stones were recovered from the base of the trough. Also found on the base were two pieces of waterlogged timber measuring approximately 0.10m x 0.05m and 0.3m in length (Plate 5).

Approximately 1m to the east of the trough a second trough or pit was uncovered (F4). This was sub-

circular in plan and measured 2.8m E-W x 1.8m N-S and 0.6m deep (Fig. 4, Plate 2). The peat layer (F29), which partially filled the first trough, also extended over the second. Below it was a layer of sandy silt with some inclusions of burnt stone.

A large number of stakeholes was found in the vicinity of the first trough, (F3). Four groups in particular were noted, two (F14 and F15) to the northwest of the trough, and two (F16 and F17) to its south west, which may represent a light structure or screen sheltering the trough (Fig 4, Plate 4). A random scatter of stakeholes was found to the south of the trough, and another group of four stakeholes and two postholes was located immediately north of the second trough, (F4).

#### **4.2.2 Area 2**

A separate feature, unrelated to the Fulacht Fiadh, was excavated in the field immediately to the south west, c. 50m away (Area 2 in Fig. 2). This was identified in the testing phase as a possible hearth. It consisted of a shallow rectangular pit measuring 2m NW-SE x 1m and 0.15m deep (Fig. 6, Plate 6). Its fill was a mixture of burnt clay, charcoal and soil.

### **5.0 ARTEFACTS**

Only two artefacts were recovered from the site. They were a piece of worked flint (debitage flake) and a fragment of human bone. The flake is likely to be later prehistoric in date particularly given its association with burnt mound material. The human bone was found within the burnt mound (F2) and was a fragment of a pelvis. It is a part of the left ilium, including the articular surface and parts of the acetabulum. The acetabulum is fused, which means that the individual was over 12 years of age at death. The sex of the individual could not be estimated.

### **6.0 DISCUSSION AND INTERPRETATION**

#### **6.1 Fulacht Fiadh Definition**

Burnt mounds or *fulacht fiadh* are visible within the landscape usually in the form of low, grass – covered mounds, which may be horseshoe, crescent, oval or kidney shaped. The mounds are generally composed of a heap of fire shattered stones and charcoal that gives it a blackened appearance. They often have a depression to one side, which upon excavation reveals itself to be a trough area. This trough would have held water and can be lined with timber 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 removed and piled next to the

trough. This activity repeated would eventually form the mound. The larger of the Fulachta Fiadh/burnt mounds can contain over 20 tonnes of burnt stone which points to them being re-used more than 100 times (Roycroft 2006).

## 6.2 Interpretation

The function of Burnt Mounds, or *fulachta fiadh* as they are sometimes called, has ranged from the popular traditional view that they represent cooking sites to bathing, curing of animal skins, soap production, garment waterproofing and ritual practice (Monk 2000). Other functions have been argued that they may have been covered by light structures and used as saunas or sweathouses such as at Rathpatrick Co. Kilkenny, excavated as part of the Waterford city bypass (Eogan 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 term Fulacht 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 morrigna inso*” 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 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).

## 6.3 Distribution

Fulacht fiadh/burnt mounds are the most common type of prehistoric site in Ireland (Power et al 1997, 75; Waddell 1998, 174) and are also known from Scandinavia, Wales, Orkney, the Shetland Islands and parts of Cumbria (Buckley 1990). There are over 7000 known examples distributed throughout Ireland and over 3000 of these occur in Co. Cork (Power et al 2000) with that thousands of more fulacht sites existing, unrecorded and undetected, throughout Irish landscape. Large numbers of burnt mound sites have also been recorded in England, Scotland and Wales (Hodder 1990; Halliday 1990; Williams 1990). Fulacht fiadh and burnt mound 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). Regional studies show that in Cork

particular concentrations occur along streams and sandstone ridges and tend to occur below the 800ft contour (Power 1990). Particular concentrations and clusters of fulachta fiadh sites have also been identified in Co. Kilkenny and these occur throughout the county near streams and streamlets in limestone and sandstone rich areas (Condit 1990).

#### **6.4 Artefactual Evidence**

Artefacts from burnt mound sites are very scarce. On the N8M8 Cullahill to Cashel scheme at site E2386 / AR 44 (Hardy et al 2009a) an exceptionally fine white patinated leaf shaped arrowhead was recovered from an unstratified context. While this piece can be regarded as a stray find, it does indicate at least an Early – Middle Neolithic presence in the vicinity of the site. Similar flint arrowheads including a fine leaf shaped arrowhead was uncovered from burnt mound material lying on subsoil at Site 1, Athboy Road, Trim Co. Meath (Hayden 2003) while an unstratified barbed and tanged flint arrowhead found close to two burnt spreads at Site 2, Calliaghstown Co. Meath was an indication of Early Bronze Age activity in that area (McLoughlin 2004). Site E2394 / AR 55 – 57 (Hardy et al 2009b) on the N8M8 Cullahill to Cashel scheme produced a heavily patinated plano-convex knife also recovered from an unstratified context. Another example of a plano-convex or slug knife was recovered from a similar type of deposit at Site 27, Raheenagurren West on the N11 road – scheme (Moore 2006). Although plano – convex knives have longevity within the early prehistoric record particularly the Early Neolithic – Early Bronze Age (Woodman 1994), they can be associated with either period (Moore 2008b). A series of lithics in the form of worked flint and chert were also recorded from the mound material of Caltragh 1 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 on the Sligo Inner Relief Road. The lithic assemblage on Mageraboy 1 suggested a final Neolithic/early Bronze Age date which was substantiated by the radiocarbon dates, 2630 – 2450 BC (Danaher 2007). A flint blade was also recovered from the burnt mound material at Clonymeth, Co. Meath (Byrnes 2002) while a convex scraper was recorded from Site 1 Newtown – Monasterboice (Ó Drisceoil 2000).

Also from site E2394 / AR 55 – 57 (Hardy et al 2009) and in the vicinity of the burnt mounds of Area 2 were 17 sherds representing a single domestic Beaker vessel dating to the Final Neolithic/Early Bronze Age that came from the subsoil (Roche & Grogan 2008). At Site A, E2382 / AR 40, Fennor, Co. Tipperary on the N8M8 Cullahill to Cashel scheme produced a fragment of a quernstone from the trough dating from anywhere between the Neolithic and the Iron Age. Three quernstones were recorded from burnt mound sites at Adrivale near Millstreet Co. Cork (Cherry 1990) 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).

## **6.5 Animal Bone**

Animal bone and burnt bone is possibly an indicator of some form of cooking activity taking place on site. Similar large pits/wells under burnt mounds with animal bone have also been recorded at Site 5, Cherryville Co. Kildare (Breen 2001) and at Site G Ballyshaneduff or The Derries Co. Laois (Breen 2003). The former produced two deep pits c. 2m in diameter and 1.3m deep while at Ballyshaneduff the pit/well was 4.5m in diameter and 1m deep. Other sites that included large pits/wells/waterholes were Finniterstown, Co. Limerick (Hull & McKinstry 2002) with similar groupings of rectangular troughs and large oval pits/waterholes being excavated at Clonmeath, Co. Meath (Byrnes 2002) which produced two large, oval, pit-like troughs, two sub-rectangular troughs, two small pits and a large oval 'sump' or pit (Byrnes, 2002) and Rathbane South Co. Limerick (McLoughlin 1999). These pits/waterholes may have been wells or used as a cistern to store the water to access necessary for the cooking process in the adjacent trough.

Animal bone was recorded at numerous sites including a large oval pit possibly acting as a well at Killoran 5, Killoran 22 and Killoran 27, Co. Tipperary (Gowen et al 2005), Cuffsborough 1, Cuffsborough 3 and Cloonaddadoran, Co. Laois (Kenny 2008) and from burnt mounds on the N9/N10 Carlow Bypass (Tourunen 2007). Burnt bone, including one with an apparent butchery mark was recorded from Rossan 1 while a cattle molar was discovered in the spread of fired stone debris at Towlaght 1 both excavated as part of the M4 Kilcock–Enfield–Kinnegad Motorway (Carlin et al 2008). Butchered bone recorded from the mounds of Caltragh 1 and 2 excavated as part of the Sligo Inner Relief Road (Danaher 2007). An animal rib was also recovered from a large oval pit beneath a burnt mound at Clonmeath, Co. Meath (Byrnes 2002) while animal bone was also recovered from a similar feature at Finniterstown (Hull & McKinstry 2002) and Rathbane South Co. Limerick (McLoughlin 1999). The presence of animal bone even in such minute amounts is a possible indicator that on site cooking activities was occurring at these sites. Ultimately, however there still remains the general absence of animal bones from many burnt mound sites and high acidic levels and bad preservation cannot always explain their wide-scale absence. It is suggested from the evidence on the N9/N10 Carlow Bypass that where bones occur it seems likely the 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).

## 6.6 Chronology & 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). 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). The dating of the trough (F3), (sample 4: elm) from Site M falls comfortably within the Middle Bronze Age for the use of burnt mounds 3505 $\pm$ 40 BP (1940 – 1730 cal BC) (SUERC 9032).

## 7.0 CONCLUSION

The site was a Middle Bronze Age Fulacht Fiadh, located in marshy ground, the type of landscape where Fulachta Fiadh are typically located. A single rectangular trough was located below the burnt mound. A layer of small rounded stones at the base of the trough probably represents the final use of the trough, which was then abandoned and allowed to silt up gradually. The presence of fragments of timber at the base of the trough might suggest that it was originally timber lined, but this is not certain. The clusters of stakeholes around the west end of the trough suggest that a light structure, possibly a screen, was located here, to shelter the activities taking place at the trough. A second trough or pit was located a short distance to the east of the rectangular trough. This pit was almost circular in plan and its fill consisted mostly of a black peat layer with some burnt stone. The function of this pit is uncertain, but similar pits have been found on Fulacht Fiadh excavations, including one by the author on a Fulacht Fiadh site at Mitchellsfort, Co. Cork<sup>1</sup>. The function of the pit at Site G, to the south west of the Fulacht Fiadh, is uncertain, but it may simply represent an isolated episode of scrub clearance and burning.

It is possible that the pits may have been natural or somehow associated with the operation of a cooking place. The majority of them were filled with similar material forming the individual mound with no intervening layers of silt. It is also possible that these depressions were formed by the removal of a particularly large stone. This was the case at Site 1 and 2 at Catstown, Co. Kilkenny (Ryan 1990). It is possible that this type of burnt mound with simple shallow pits rather than wooden troughs may have been used only a half dozen times and maybe even possibly lined with leather. At Killeens III in Co. Cork a small mound measuring 5m in diameter with a height of 0.51m produced a shallow unlined pit dug through a thin layer of peat into the gravel below. At Ballycroghan Co. Down one of four burnt mounds covered two shallow circular depressions in the underlying clay measuring 0.53m and 0.68m in

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<sup>1</sup> Cotter E, (2000) in Bennett, I (ed) 'Excavations 1999', 33



diameter and 0.23m deep. As these pits were too shallow to have been cooking pits it was suggested that they might have taken the bases of cauldrons, and vessels of either wood or bronze, their contents being heated with hot stones in the usual manner (Waddell 2000).

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## **APPENDIX 1**

### **LIST OF FEATURES**

## LIST OF FEATURES

- F1 Natural subsoil.
- F2 The burnt mound. A spread of heat-shattered burnt stone in a black silty matrix.
- F3 A rectangular trough measuring 0.6m wide at each end and c. 1m wide in the centre. It was 0.6m deep.
- F4 A trough or pit to the south of F3. It was approximately oval in plan and measured 3.86m x 2.78 and 0.58m deep.
- F7 A field drain cutting through the western edge of the site
- F9 A shallow rectangular pit in the field to the south west of the Fulacht Fiadh.
- F14 A cluster of twelve stakeholes north west of the trough F3.
- F15 A cluster of seven stakeholes immediately north west of the trough F3.
- F16 A cluster of stakeholes to the south west of the trough F3.
- F17 A cluster of stakeholes at the south west corner of F3.
- F18 A posthole on the southern edge of F3.
- F19 A group of stakeholes south of the east end of F3.
- F20 A possible posthole at the north eastern corner of F3.
- F21 A posthole to the north east of F3.
- F22 A cluster of four stakeholes immediately west of F4.
- F23 A large posthole to the north of F4.
- F24 A cluster of four stakeholes immediately north east of F4.
- F25 A posthole to the north east of F4, between F 23 and F24.
- F26 A posthole to the northwest of F3.
- F27 A posthole to the northeast of F3.
- F28 Brown peat layer on the surface of F3.
- F29 The black peat layer in F3, below F28, and also forming the upper layer of F4.
- F30 The grey/black silty layer at the base of F3.
- F31 The grey sandy silt layer at the base of F4.

## **APPENDIX 2**

### **CHARCOAL IDENTIFICATION REPORT BY ELLEN O' CARROLL**

## **SPECIES IDENTIFICATION OF CHARCOAL SAMPLES**

**Site M, 03E0571 Ballyfarsoon Townland,  
Co. Kildare, N7 Heath-Mayfield Motorway Scheme**

**ELLEN OCARROLL**

**October 2005**

### **1.0 Introduction**

Three wood samples from the excavation of a fulacht fiadh, Site M, Ballyfarsoon, were sent for analysis. The wood was sampled from the lowest layer of the trough fill.

The wood was sent for species identification prior to 14C dating; 3505 $\pm$ 40 BP (1940 – 1730 cal BC) (SUERC 9032), and also to obtain an indication of the range of tree species which grew in the area, as well as the utilization of these species for various functions. Wood used for fuel at prehistoric sites would generally have been sourced at locations close to the site. Therefore charcoal and wood identifications may, but do not necessarily, reflect the composition of the local woodlands. Larger pieces of charcoal and wooden timbers can also provide information regarding the use of a species.

### **2.0 Methods**

The process for identifying wood, whether it is charred, dried or waterlogged is carried out by comparing the anatomical structure of wood samples with known comparative material or keys (Schweingruber 1990). The identification of charcoal material involves breaking the charcoal piece so as a clean section of the wood can be obtained. This charcoal is then identified to species under an Olympus SZ3060 x 80-zoom stereomicroscope. By close examination of the microanatomical features of the samples the species were determined. The diagnostic features used for the identification of charcoal are micro-structural characteristics such as the vessels and their arrangement, the size and arrangement of rays, vessel pit arrangement and also the type of perforation plates.

Where appropriate, the wood samples were measured and described in terms of their function and wood technology



### 3.0 Results

Table 1: Results from wood identifications

| Context no | Context type          | Sample no. | Species                                   | Weight and comment                 |
|------------|-----------------------|------------|---|------------------------------------|
| C30        | Lowest fill of trough | 4          | Ulmus sp. (Elm)                           | Split. 4 annual tree rings present |
| C30        | Lowest fill of trough | 5          | Very disintegrated. Poss. Ulmus sp. (Elm) |                                    |
| C30        | Lowest fill of trough | 6          | Unidentifiable-no microstructure          |                                    |

Table 2: Species represented in the identified samples

| Botanical name | Species |
|----------------|---------|
| Ulmus sp.      | Elm     |

### 4.0 Discussion

There was one species (elm-Ulmus sp.) type present in the wood remains. The elm may have been selected and used as lining for the trough. Elm wood is close-grained, free from knots, hard and tough, and not subject to splitting, but it does not take a high polish. It does not crack when seasoned and is remarkably durable under water, being specially adapted for any purpose which requires exposure to wet. Therefore it would have been very suitable for use as a wood lining for a Fulacht Fiadh trough. English elm (*Ulmus procera*) and wych elm (*Ulmus glabra*) cannot be separated by their wood structure. Elm was thought to have declined or died out with the advent of farming or from the dutch elm disease around 3700BC. It is clear from other analysis carried out by the author that elm appears to have survived into the Bronze Age particularly in areas along the east coast of Ireland. It has been identified from other assemblages including trackways, artefacts and charcoal from Lambay in Co. Dublin and Bettystown, Co. Meath (99E072).

## **5.0 Conclusions**

The identification of elm points to the presence of woodlands and indicates that open conditions did not prevail throughout the Ballyfarsoon area. Elm generally prefers damp woods particularly on limestone. Elm trees can reach a height of c. 40 metres and would have been suitable for the production of planks. The selection of elm may be based on the need for large timbers in the construction of a trough which would have been largely under water.

## **6.0 References**

- Beckett, J.K., 1979, Planting Native Trees and Shrubs. Jarrold & Sons Ltd, Norwich.
- Gowen, M, O'Neill, J and Phillips, M. (2005), The Lisheen Mine Archaeological Project 1996-8. Wordwell, Co. Wicklow.
- Nelson E.C., 1993, Trees of Ireland. The Lilliput Press, Dublin.
- Schweingruber, F.H. 1990, Microscopic Wood Anatomy. 3rd edition. Birmensdorf: Swiss Federal Institute for Forest, Snow and Landscape Research
- Warner, R.B., 1987, "A proposed adjustment for the « Old-Wood Effect »", in Mook, W. & Waterbolk, H. (eds) Proc. 2nd Symp of 14C & Archaeology, Groningen 1987, 29, 159-172.
- Webb, D.A., 1977, An Irish Flora. Dundalgan Press Ltd, Dundalk.

## **APPENDIX 3**

### **LITHICS REPORT**

## **Lithic Report**

**Site M, 03E0571 Ballyfarsoon Townland,**

**Co. Kildare, N7 Heath-Mayfield Motorway Scheme**

**Dr Nyree Finlay, Department of Archaeology, University of Glasgow**

**5 October 2005**

### **1.0 Analysis**

A single piece was submitted for analysis from fieldwork at Site M, Ballyfarsoon, Co. Kildare. This is a tertiary debitage flake from bipolar or anvil support platform reduction. The character of the raw material suggests a secondary flint source, although no cortex is present. While chronological inferences are limited on the basis of a single piece, bipolar knapping strategies are common in sites from the Neolithic onwards in Ireland and this piece is likely to be later prehistoric in date particularly given its association with burnt mound material.

### **2.0 Catalogue Description**

Flint flake; mottled brown in colour; tertiary; irregular; crushed platform; bipolar opposed scars on ventral. L 23 mm; W 14 mm; Th 4mm.

## **APPENDIX 4**

### **RADIOCARBON DATING BY SUERC**



Director: *Professor A E Fallick*

**Scottish Universities Environmental Research Centre**

Rankine Avenue  
Scottish Enterprise Technology Park  
East Kilbride Scotland UK G75 0QF

**Email:** [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk)  
**Telephone:** 01355 223332  
**Direct Dial:** 01355 270136  
**Fax:** 01355 229898

**RADIOCARBON DATING CERTIFICATE**

28 February 2006

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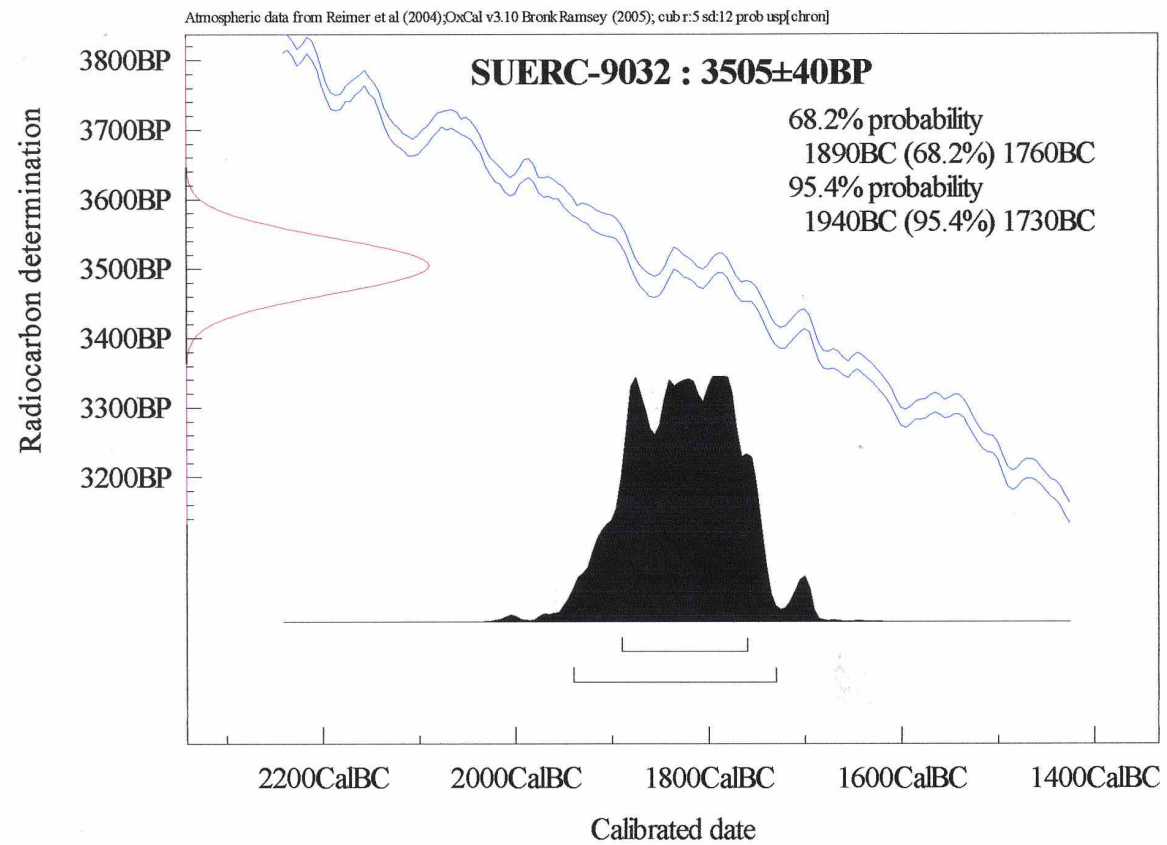
|  |   |
|--|---|
| <b>Laboratory Code</b>                                   | SUERC-9032 (GU-13742)   |
| <b>Submitter</b>   | Eamonn Cotter<br>Valerie J. Keeley Ltd.<br>Brehon House<br>Castlecomer<br>Co. Kilkenny, Republic of Ireland |
| <b>Site Reference</b>                                    | Ballyfarsoon  |
| <b>Sample Reference</b>                                  | 03E0571 Feature 3 Sample 4  |
| <b>Material</b>  | Wood: Elm   |
| <b><math>\delta^{13}\text{C}</math> relative to VPDB</b> | -25.2 ‰   |
| <b>Radiocarbon Age BP</b>                                | 3505 $\pm$ 40   |

- N.B.**
1. The above  $^{14}\text{C}$  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.

Conventional age and calibration age ranges calculated by :- Elaine Dunbar Date :- 03/03/06.

Checked and signed off by :- P. Naysmith Date :- 3-3-06

### Calibration Plot





**APPENDIX 5**  
**HUMAN BONE REPORT BY KARIN SVENSSON**

## **Report on the disarticulated human skeletal remains**

**Site M, 03E0571 Ballyfarsoon Townland,  
Co. Kildare, N7 Heath-Mayfield Motorway Scheme**

**Karin Svensson**

### **1.0 INTRODUCTION**

The excavations at Ballyfarsoon uncovered a Fulacht Fiadh, located in marshy ground. A single rectangular trough was located below the burnt mound. One bone was found within the burnt mound (F2).

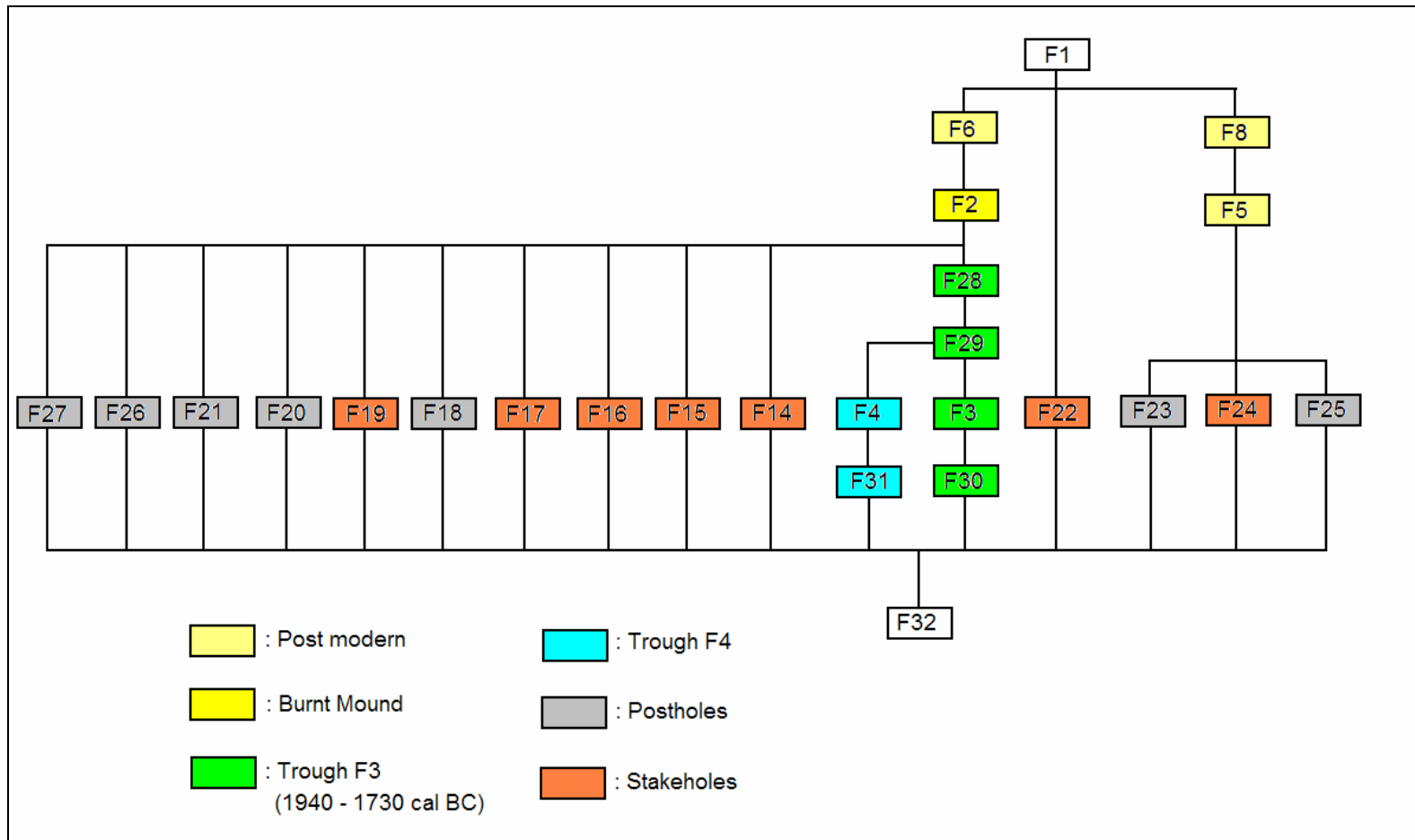
### **2.0 ANALYSIS**

The bone is a human pelvis. It is a part of the left ilium, including the articular surface and parts of the acetabulum. The acetabulum is fused, which means that the individual was over 12 years of age at death (Bass 1995). The sex of the individual cannot be estimated.

### **3.0 References**

Bass, WM (1995). *Human Osteology. A Laboratory and Field Manual*. Missouri Archaeological Society, Columbia.

## **Appendix 6: Site Matrix**



## PLATES



**PLATE 1** Pre-excavation view of Fulacht Fiadh, from the south





**PLATE 2** Post-excavation view of Fulacht Fiadh, from the east.





**PLATE 3** Post-excavation view of Fulacht Fiadh, from the west.



**PLATE 4** View of clusters of stakeholes (F14, F15, F16, F17), from the north.





**PLATE 5** The trough, F3, post excavation, from the east. Note timber at base in foreground.



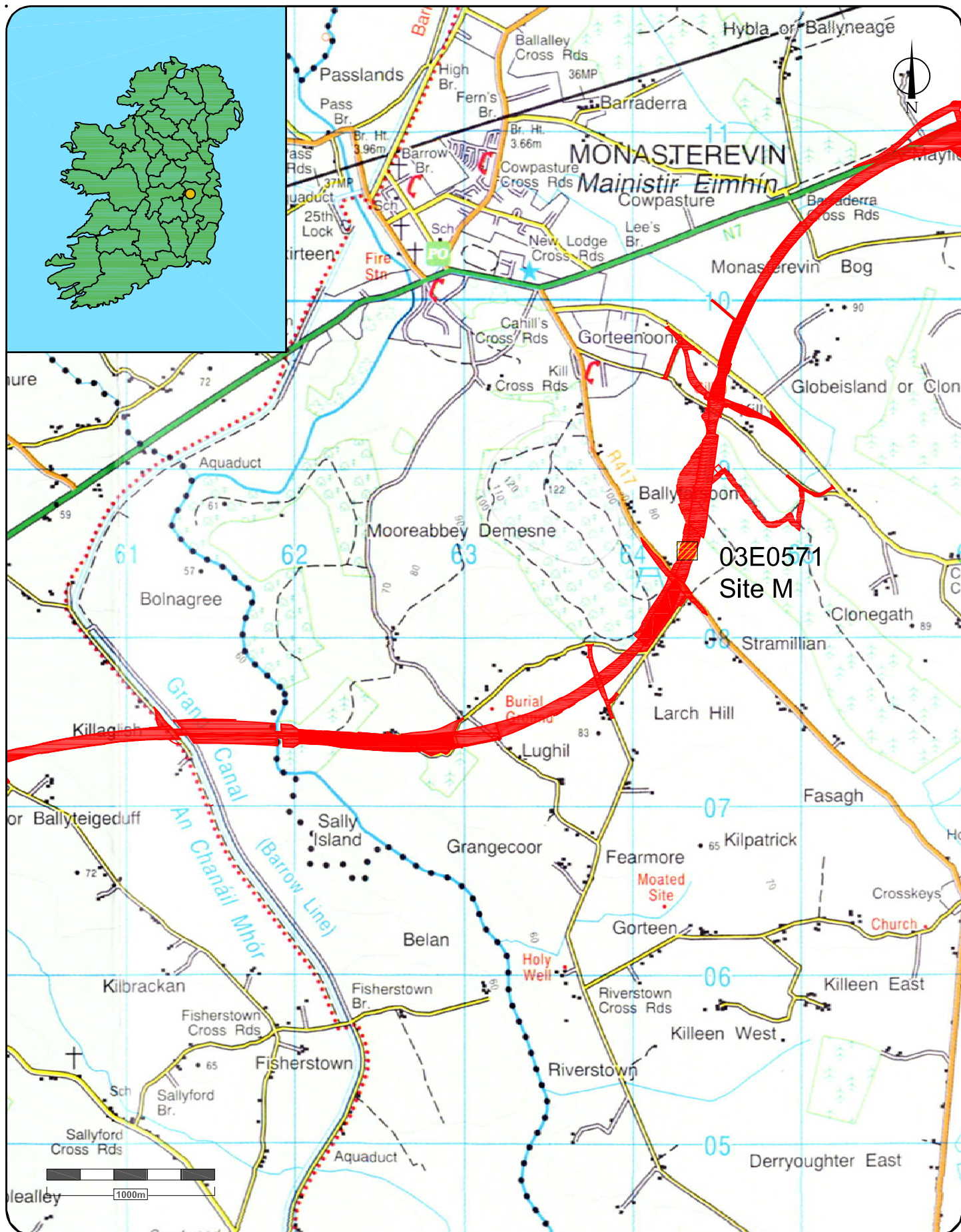



**PLATE 6** Area 2 during excavation, from the south.

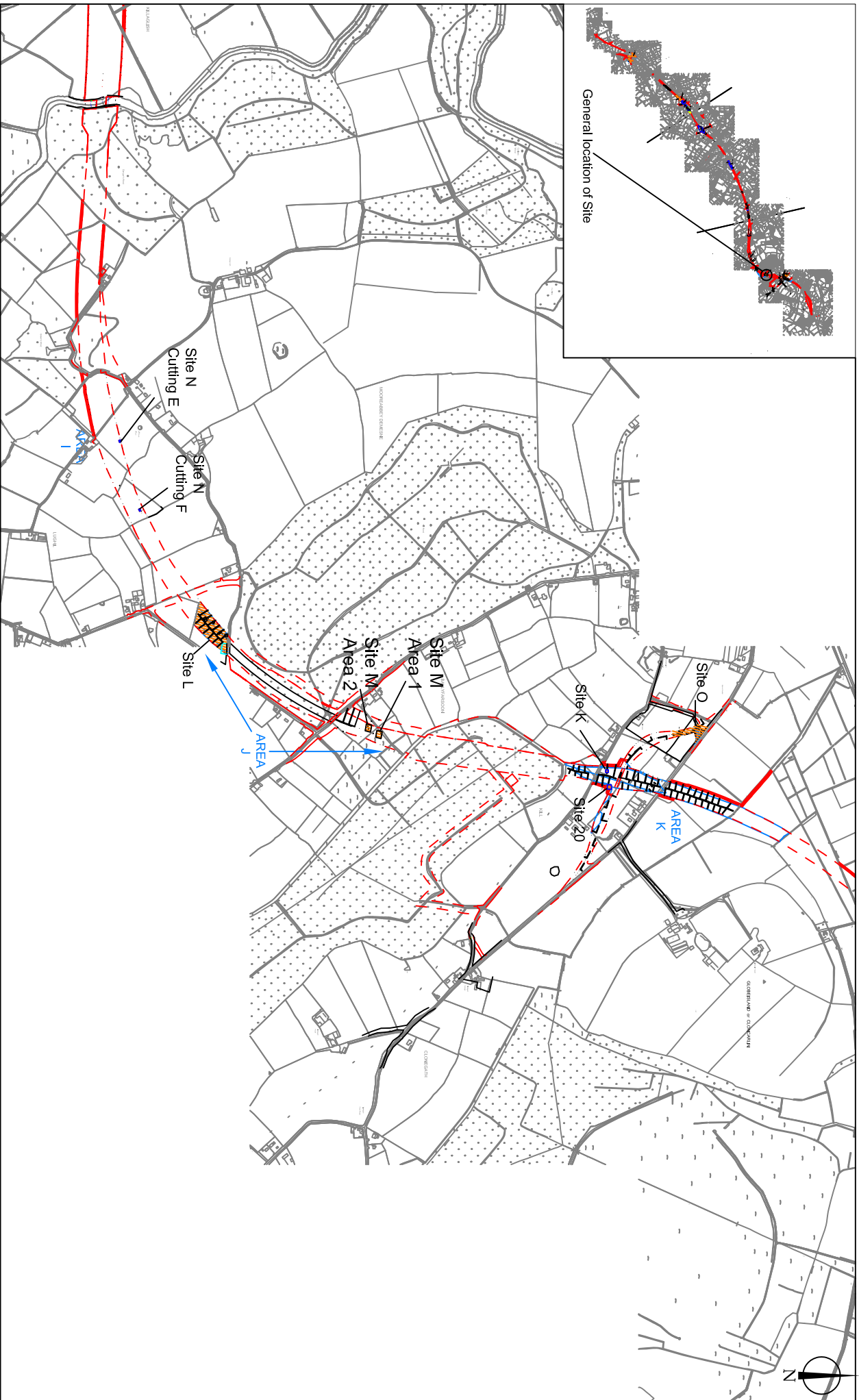
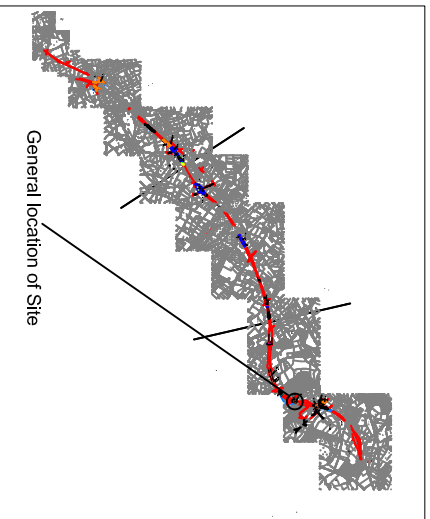
## FIGURES







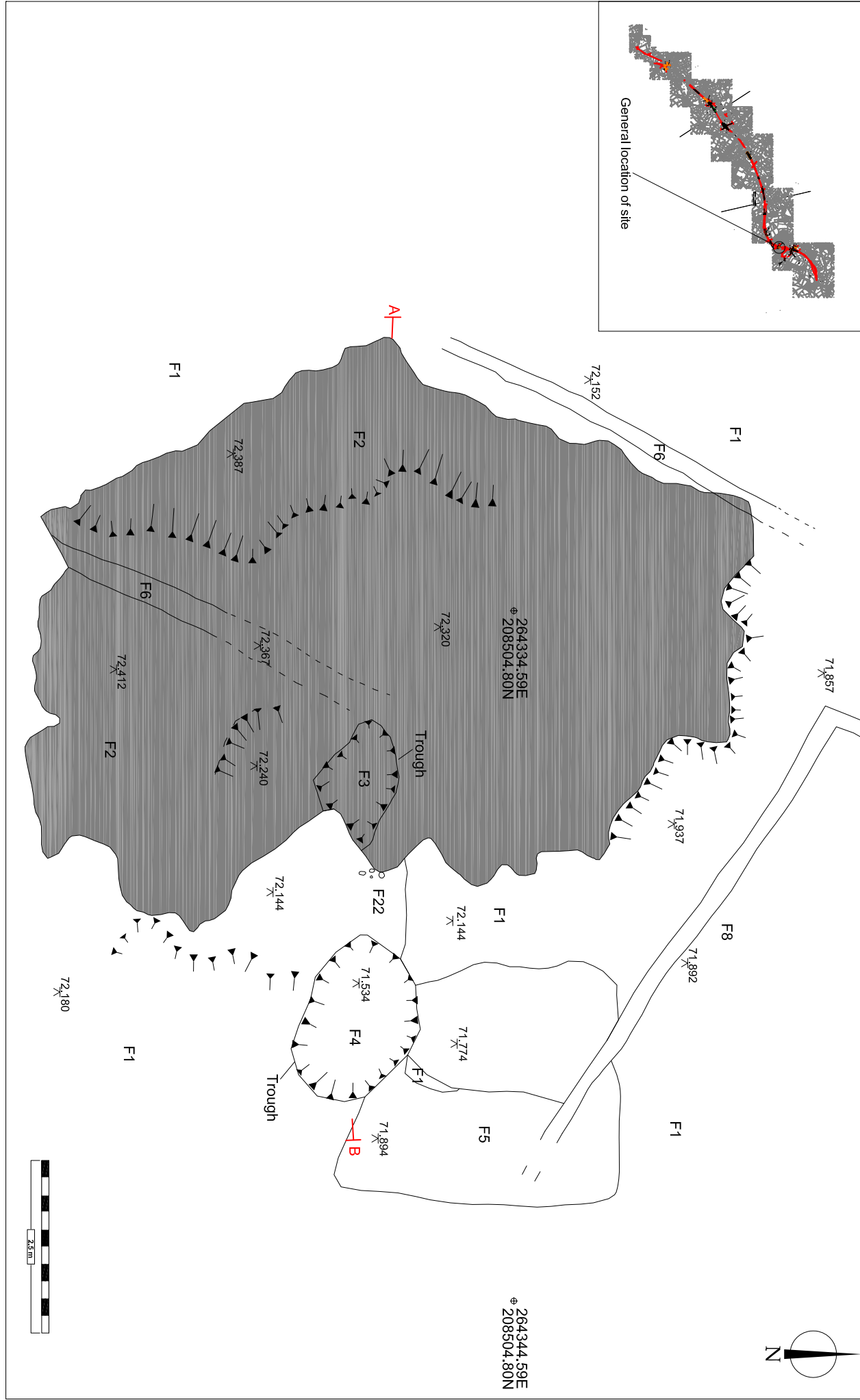
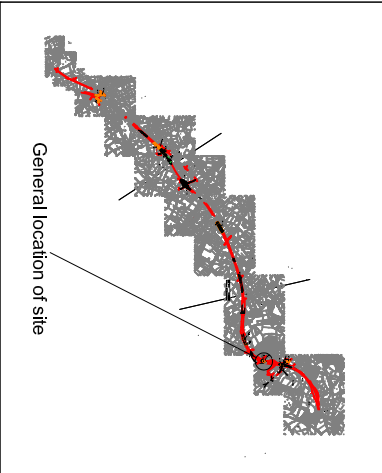


|  |                       |                                     |                            |                         |                                |  |
|--|-----------------------|-------------------------------------|----------------------------|-------------------------|--------------------------------|--|
| <b>Title</b><br>Location of 03E0571 on the Discovery Series Map, sheet 55 extract. |                       |                                     | <b>Notes</b>               |                         |                                | <br><b>Client</b><br>Kildare County Council.  |
| <b>Job No.</b><br>03E0571  | <b>Drawn by</b><br>GW | <b>CAD reference</b><br>1047-03-400 | <b>Date</b><br>February 10 | <b>Scale</b><br>1:30000 | <b>Drawing No.</b><br>Figure 1 |  |
| <b>Project</b><br>N7 Heath-Mayfield Motorway Scheme                                |                       |                                     |                            |                         |                                | <b>Brehon House</b><br>Kilkenny Road<br>Castletomer<br>Co. Kilkenny.<br><b>Tel:</b> (+353) 056 4440236<br><b>Fax:</b> (+353) 056 4440237<br><b>Email:</b> vjk@vjk.ie<br><b>Website:</b> www.vjk.ie |

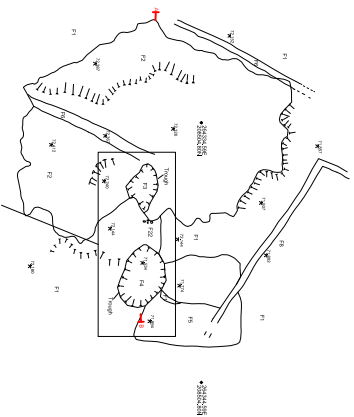


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| N7 Heath-Mayfield Motorway Scheme   |             |  |               |
| Job/Exc No.   | 03E0571     | Compiled by  | CAD reference |
| Date  | February 10 | Scale  | Drawing No.   |
|   |             | 1:20000  | Figure 2      |
| Client  |             | Project  |               |
| Kildare County Council  |             | N7 Heath Mayfield Motorway Scheme  |               |
| <br>Valerie A. Kealey Ltd. |             | <br>Brethon House |               |
| Kilkenney Road  |             | Kilkenney Road   |               |
| Co. Kilkenny.   |             | Co. Kilkenny.  |               |
| Tel: (+353) 056 4440236   |             | Fax: (+353) 056 4440237  |               |
| Email: vk@vk.ie   |             | Website: www.vk.ie   |               |



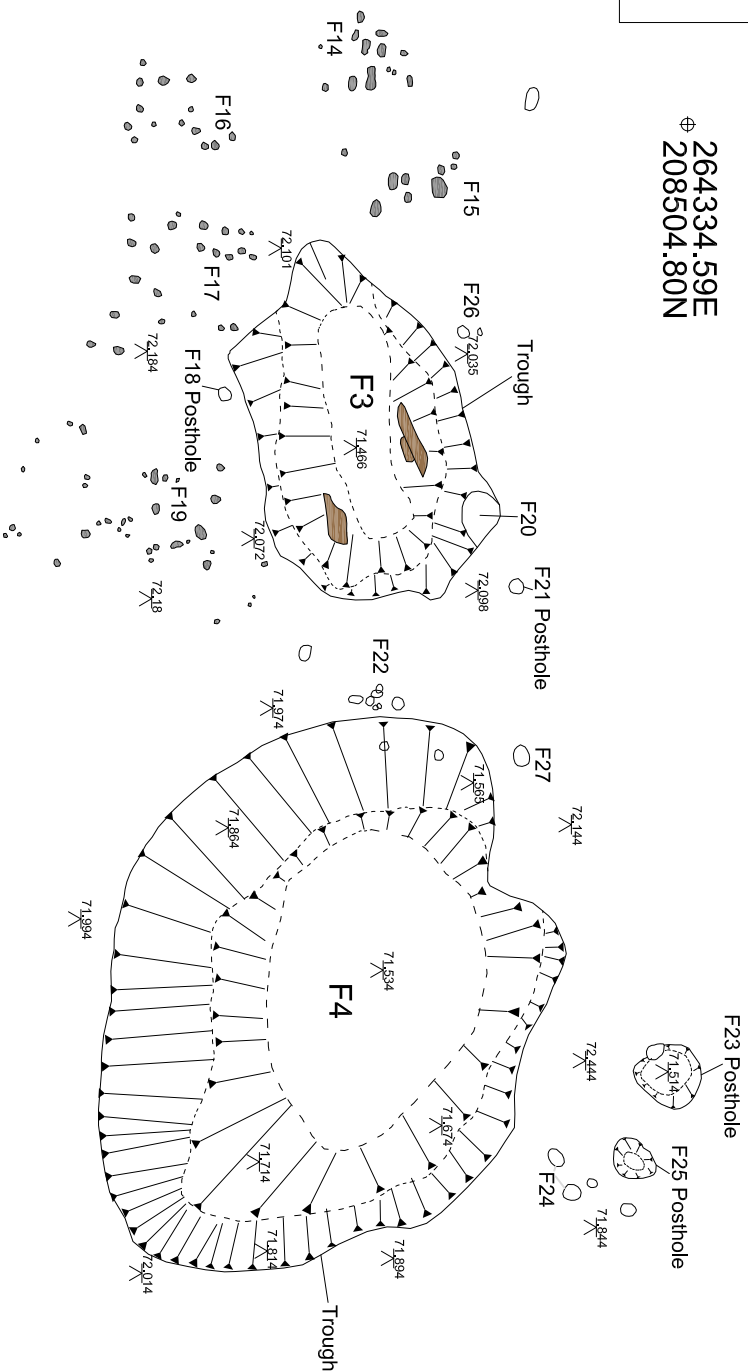


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|---|--|---|--|---------------------|--|---------------|--|-------------------------|--|------------------------|--|-----------------------------------|--|---|--|
| Pre-Excavation Plan of Fulacht Fiadh,<br>Site M 03E0571, Ballyfarsoon |  | See Figure 5 for Cross Section<br> Burnt Mound |  | 03E0571             |  | SD/IDE/EC     |  | 1047-03-400/Tera3       |  | Kildare County Council |  | N7 Heath Mayfield Motorway Scheme |  | <br>Valerie J. Keelley Ltd.<br>ARCHAEOLOGICAL CONSULTANCY          |  |
|   |  |   |  | Date<br>February 10 |  | Scale<br>1:75 |  | Drawing No.<br>Figure 3 |  |                        |  |                                   |  | <br>Brehon House<br>Kilkenny Road<br>Castlecramer<br>Co. Kilkenny. |  |
|   |  |   |  |                     |  |               |  |                         |  |                        |  |                                   |  | Tel: (+353) 056 4440236<br>Fax: (+353) 056 4440237<br>Email: vjk@vjk.ie<br>Website: www.vjk.ie  |  |

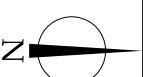



Location of troughs F3 & F4. Not to Scale

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208504.80N



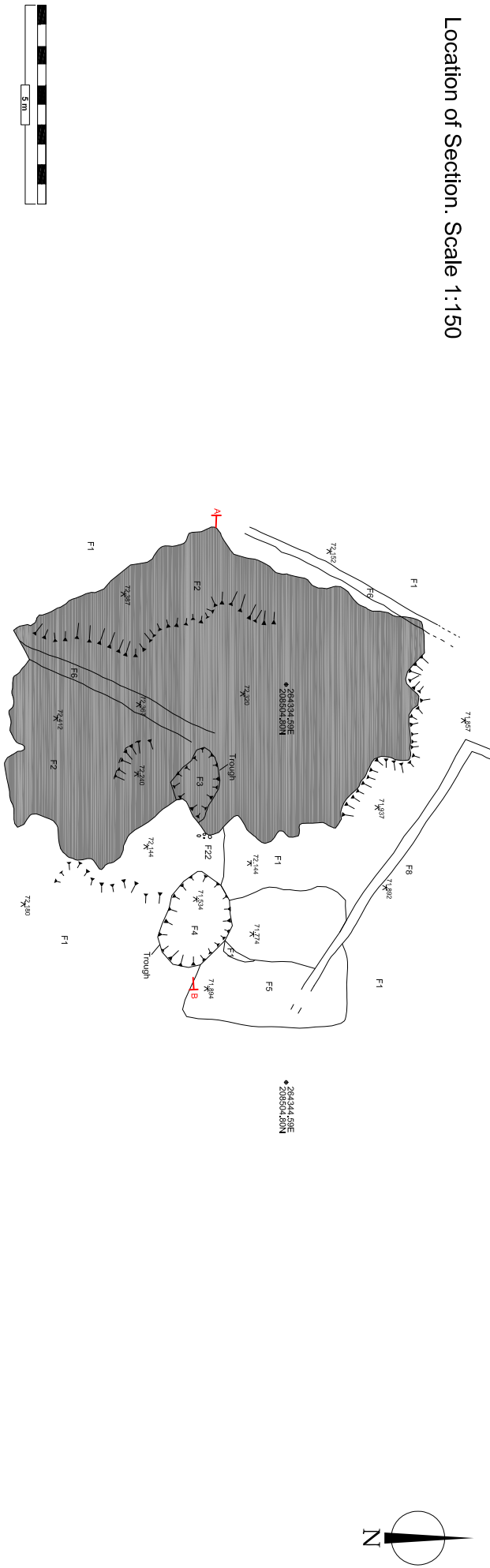
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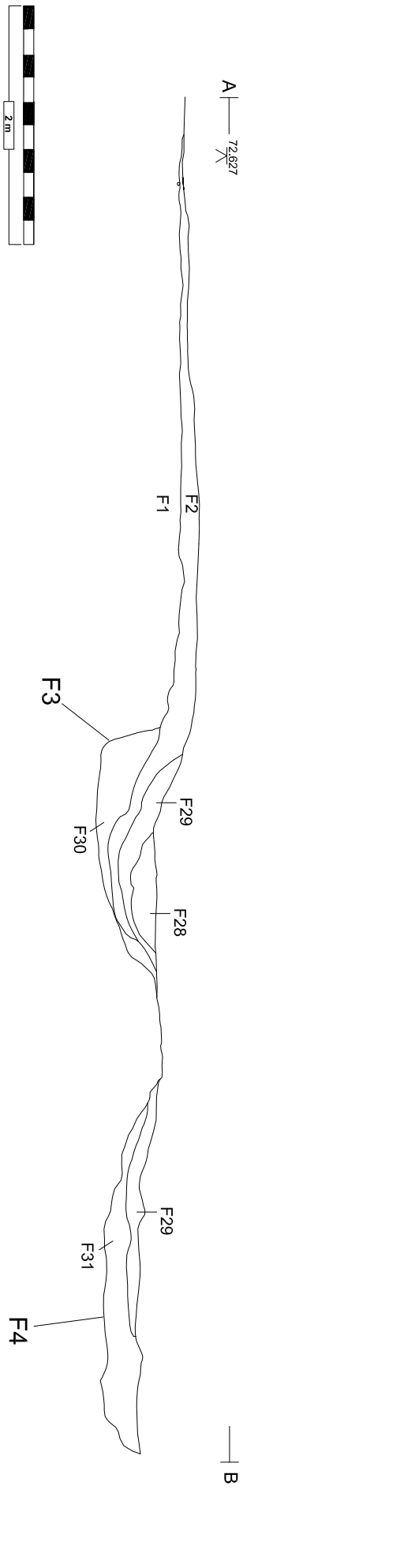
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|--|--------------------|---------------|----------|-------------|-------|---------------|----------|------------------------|-----------------------------------|---|--|---|
|  |                    | Date          | Scale    | Date        | Scale | Drawing No.   | Figure 4 |                        |                                   |   |  |   |
| Post Excavation Plan of Fulacht Fiadh,<br>Site M 03E0571, Ballyfarsoon | Wood<br>Stakeholes | 03E0571       | DE/SD/EC | February 10 | 1:50  | 1047-03-400   | Figure 4 | Kildare County Council | N7 Heath Mayfield Motorway Scheme |  |  |   |





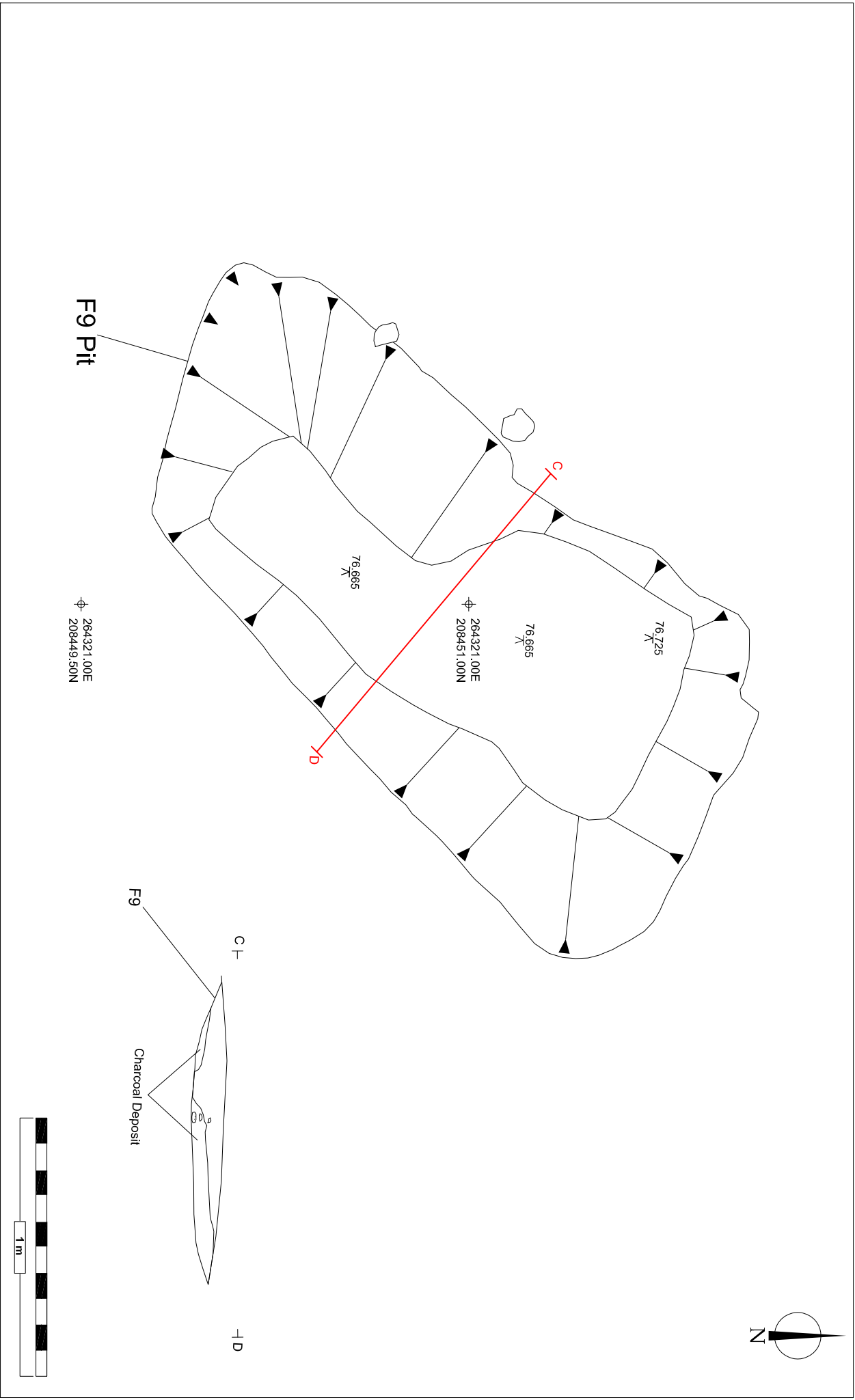
Location of Section. Scale 1:150



Section. Scale 1:50



| Title  | Notes   | Works/Exc No.       | Completed by         | CAD reference           | Client                 | Project                           | Brehon House  | Tel: (+353) 056 4440236               |
|--|---|---------------------|----------------------|-------------------------|------------------------|-----------------------------------|---|---------------------------------------|
| South Facing Cross-Section through Fulacht Fiadh, Site M 03E0571, Ballyfarsoon |  Burnt Mound | 03E0571             | DE/SD/EC             | 1047-03-400/Tera3       | Kildare County Council | N7 Heath Mayfield Motorway Scheme | Kilkenney Road Castlecomer Co. Kilkenny.  | Fax: (+353) 056 4440237               |
|  |   | Date<br>February 10 | Scale<br>1:150, 1:50 | Drawing No.<br>Figure 5 |                        |                                   |  VJK Valerie J. Keelley Ltd. ARCHITECTURAL CONSULTANCY | Email: vjk@vjk.ie Website: www.vjk.ie |



**Title**  
Post Excavation Plan and Southwest Facing  
Section of Pit F9, Site M, 03E0571,  
Ballyjarson

**Notes**

**Works/Exc No.**  
03E0571

**Completed by**  
DE/SD/EC

**CAD reference**  
1047-03-400/Tera3

**Client**  
Kildare County Council

**Project**  
N7 Heath Mayfield Motorway Scheme



**Brehon House**  
Kilkenny Road  
Castlecormer  
Co. Kilkenny.  
Tel: (+353) 056 4440236  
Fax: (+353) 056 4440237  
Email: vjk@vjk.ie  
Website: www.vjk.ie