# YSGOL BRO TEIFI, LLANDYSUL, CEREDIGION: ARCHAEOLOGICAL EXCAVATIONS 2014

# (NGR SN 4069 4219)

DAT Archaeological Services

Prepared by DAT Archaeological Services
For: Wilmott Dixon

REGISTERED ORGANISATION CIfA

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# (NGR SN 4069 4219)

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# YSGOL BRO TEIFI, LLANDYSUL, CEREDIGION: ARCHAEOLOGICAL EXCAVATIONS 2014

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## EXECUTIVE SUMMARY

*DAT Archaeological Services were commissioned to undertake a series of archaeological investigations during the early planning and construction phases of the new Ysgol Bro Teifi school site to the northwest of Llandysul, Ceredigion. Following geophysical survey and evaluation across the entire site; some areas were subjected to open area excavation.*

*Overall the results of the excavations suggest that human activity in the area dates back to the Early Neolithic Period with further activity identified from the Iron Age and medieval period. Whether this indicates continuous occupation or sporadic use is not possible to determine. The results also indicate that this part of Ceredigion does appear to have extensive evidence of buried prehistoric activity, much of which can only be identified through archaeological survey and excavation.*

## CRYNODEB GWEITHREDOL

*Comisiynwyd Gwasanaethau Archeolegol YAD i gynnal cyfres o ymchwiliadau archeolegol yn ystod camau cynllunio ac adeiladu cynnar safle ysgol newydd Ysgol Bro Teifi i'r gogledd-orllewin o Llandysul, Ceredigion. Yn dilyn arolwg geoffisegol a gwerthusiad draws y cyfan y safle; roedd rhai ardaloedd yn destun cloddio ardal agored.*

*Yn gyffredinol, mae canlyniadau'r cloddiadau'n awgrymu bod gweithgaredd dynol yn yr ardal yn dyddio'n ôl i'r Cyfnod Neolithig Cynnar gyda gweithgaredd pellach wedi'i nodi o'r Oes Haearn a'r cyfnod canoloesol.Nid yw'n bosibl penderfynu a yw hyn yn dynodi galwedigaeth barhaus neu ddefnydd achlysurol. Mae'r canlyniadau hefyd yn dangos ei bod yn ymddangos bod gan y rhan hon o Ceredigion dystiolaeth helaeth o weithgaredd cynhanesyddol claddedig, y gellir nodi llawer ohono dim ond trwy arolwg archeolegol a chloddio.*

# YSGOL BRO TEIFI, LLANDYSUL, CEREDIGION: ARCHAEOLOGICAL EXCAVATIONS 2014

***SUMMARY***

*DAT Archaeological Services were commissioned by Wilmott Dixon to undertake a series of archaeological investigations during the early planning and construction phases of the new Ysgol Bro Teifi school site to the northwest of Llandysul, Ceredigion. Initially the entire development area (c.12ha) was subjected to a geophysical survey which identified a number of interesting features of possible archaeological origin. Subsequently this led to an archaeological evaluation with a total of 15 trenches opened across the development area, the majority specifically targeting features identified in the geophysical survey.*

*The results of the evaluation supported the results of the geophysics and three locations in particular were deemed to contain significant archaeology (Fields C, E and K). For the final phase of archaeological mitigation the identified archaeology within Field C and Field K was subjected to open area excavation; within Field E a strip, map and record exercise was implemented.*

*The geophysical survey and evaluation confirmed the presence of two ring ditches within Field C which have been radiocarbon dated to the Early Neolithic period. The ring ditches are small in size (c.5.0 – 6.0m in diameter) but this is comparable to others found in the nearby area. Typically ring ditches are associated with later period Bronze Age funerary monuments; the ditch surrounding an internal earth mound built over a burial. At Ysgol Bro Teifi no internal mounds or burials were identified. Although it is possible that any evidence of these has been lost to agricultural ploughing it is also possible that they did not exist. The small size and Early Neolithic date of these features, may indicate a new monument form. This theory is further supported by a number of similar features that have recently identified in the region.*

*Geophysical survey and evaluation in Field E confirmed the presence of a narrow, shallow palisade enclosure ditch, which had been significantly eroded through plough action. As a precaution the southeastern part of the field was subjected to a strip, map and record exercise revealing more of the palisade enclosure and a number of pits and postholes within it. A roundhouse of confirmed later Iron Age date truncating the palisade ditch was also excavated; rare evidence of an unenclosed Iron Age settlement. One of the pits excavated within the enclosure contained burnt stone perhaps indicative of an oven, which was radiocarbon dated to the Early Neolithic period. This may point to settlement activity roughly contemporary with the two ring ditches in Field C. The palisade enclosure ditch and the remaining pits and postholes within it were not dated and are most likely of Iron Age date, although some could be as early as Neolithic in date.*

*Field K revealed a large C-shaped ditch identified through geophysical survey and evaluation. The ditch was around 1.5m deep with a steep V-shaped profile having the appearance of a defensive feature. Radiocarbon dates from the basal fill of the ditch were from the Early Medieval and medieval periods. This would indicate that the ditch is most likely of medieval date, although could be a later feature. Its function has not been determined.*

*Overall the results of the excavations suggest that human activity in the area dates back to the Early Neolithic Period with further activity identified from the Iron Age and medieval period. Whether this indicates continuous occupation or sporadic use is not possible to determine. The results of the Ysgol Bro Teifi archaeological investigations would be considered of local, regional and national significance. It also indicates that this part of Ceredigion does appear to have extensive evidence of buried prehistoric activity, much of which can only be identified through archaeological survey and excavation.*

# 1. INTRODUCTION

## 1.1 Project Commission

1.1.1 DAT Archaeological Services were commissioned by Willmott Dixon to undertake a series of archaeological investigations during the early planning and construction phases of a new school site at NGR SN 4069 4219 (Figure 1). The planning application for the new school was submitted by Ceredigion County Council, Planning Application Number A100732/CD, with Willmott Dixon appointed to build the school. The school will take pupils from the ages of 3 to 19, replacing and combining a number of local primary schools and Ysgol Dyffryn Teifi secondary school.

1.1.2 The Llandysul School development now called 'Ysgol Bro Teifi' consists of a *c*.12ha site, on which the new school, car parking, playgrounds and playing fields have now been constructed. The development area comprised 11 fields which were referenced A to K (Figure 2), and are referenced throughout this report.

1.1.3 The archaeological investigation initially commenced with a geophysical survey undertaken in June 2014, this was conducted using a Bartington Grad 601 dual fluxgate gradiometer. The geophysical survey identified a number of potentially interesting features of possible archaeological origin. A summary of the results of the survey is included in this report.

1.1.4 In August 2014 an archaeological evaluation was undertaken to test the results of the geophysical survey and determine the date, character, state of preservation, extent and significance of the archaeological remains identified. A total of 15 trenches were opened across the development area, the majority specifically targeting identified features on the geophysical survey and others targeting blank areas to confirm or otherwise the absence of archaeology.

1.1.5 The results of the evaluation supported the results of the geophysics and three locations in particular were deemed to contain significant archaeology (Fields C, E and K). Subsequently this led to a third phase of archaeological excavation of these areas, which was carried out between September and October 2014.

1.1.6 The post-excavation programme started in the spring of 2016 following a delay in the commissioning of this stage in the project. The final report has been completed following the results of the environmental analysis and a series of radiocarbon dates from charcoal samples taken from a number of the excavated features.

## 1.2 Scope of the Project

1.2.1 Following consultation on the initial application submitted by Ceredigion County Council for the new school, the archaeological advisors to the planning authority recommended the following condition should be placed on any forthcoming approval:

*'No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted and approved in writing by the Local Planning Authority.'*

1.2.2 Following consultation with the archaeological advisors to the planning authority, the Planning Services section of Dyfed Archaeological Trust, (now known as Development Management), suggested that as a minimum

an archaeological watching brief should be undertaken during development, but that an intrusive trial trench evaluation should be considered to reduce risk. Following discussions with Willmott Dixon, DAT Archaeological Services suggested that a geophysical survey of the entire development area well in advance of construction would be the best way to determine the presence or absence of archaeological remains. This was primarily suggested because the development area lies close to a number of prehistoric ring ditches and a palisaded enclosure that were excavated during the construction of the industrial estate directly to the southwest of the development area, at Cwm Meudwy. This indicated that there was a raised potential for archaeology within the school development area, and that if a watching brief methodology was employed, that there was a definite risk for discovering significant archaeological remains which could result in unexpected delays and costs to the development project.

1.2.3 The scope of the archaeological works followed the following sequence:

- Geophysical Survey – non-intrusive gradiometer survey to determine the presence or absence of archaeological remains;
- Trial trench evaluation – intrusive scheme of work where machine excavated trial trenches were opened to test the anomalies recorded on the geophysical survey and also to confirm the presence/absence of archaeology in other areas;
- Targeted excavation – where significant archaeology was identified in Fields C, E and K, a scheme of more detailed excavation was implemented to record the features through record; and
- Preparation of a report and archive – to include analysis of all results, samples and finds and to produce a report on the results and an archive of all records.

1.2.4 Before each stage of work a Written Scheme of Investigation was prepared detailing the methodology for each of the proposed archaeological investigations, which were approved by the archaeological advisors to the planning authority (DAT 2014a, 2014b and 2014c). All stages of work complied with the Chartered Institute for Archaeologists Codes of Conduct and their relevant Standards and Guidance.

1.2.5 Due to the requirement to complete the works as quickly as possible, separate reports were not produced for the results of the geophysical survey and trial trench evaluations but are summarised in this report. The results of these works informed the relevant Written Scheme of Investigation prepared for each next stage of work (DAT 2014b, 2014c, 2014d and 2014e).

1.2.6 Overall the main purpose of the archaeological investigations was to identify and record any features of archaeological significance that might be disturbed during construction of the school. For each stage of the project the over-riding project objectives were:

- To identify and establish the character, extent and date range for any archaeological deposits to be affected by ground works;
- To appropriately investigate and record any archaeological deposits to be affected by the ground works; and
- To produce an archive and report of any results.

## 1.3 Report Outline

1.3.1 This report provides a summary and discussion of the geophysical survey and trial trench evaluation undertaken at the Ysgol Bro Teifi development area, with more detailed analysis and discussion of the three excavation areas undertaken within Fields C, E and K.

1.3.2 All data recovered during the fieldwork has been collated into a site archive structured in accordance with the specifications in Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation (Brown 2011), and the procedures recommended by the National Monuments Record, Aberystwyth. The National Standards for Wales for Collecting and Depositing Archaeological Archives produced by the Federation of Museums and Art Galleries of Wales has also been adhered to. Digital archives have been collated using the Royal Commission on the Ancient and Historical Monuments of Wales systems (2015) and will be deposited with the RCAHMW.

1.3.3 Due to the lack of finds from the development area and simple stratigraphic sequences involved, an initial post-excavation assessment of the results of the fieldwork, based on MORPH Project Planning Note 3 (English Heritage) guidance, was not undertaken. Following site work, an initial collation of the archives and very brief assessment of the remains was undertaken to determine the extent of the required post-excavation works. This was used to inform the costs submitted for the full post-excavation analysis.

1.3.4 This report includes a short desk-based research element to ensure that the development area is placed within its wider archaeological context. The results of the fieldwork have been assessed in local, regional and wider contexts.

1.3.5 A short summary of the project results has already been included in Archaeology in Wales. It is also intended that a longer report on the results will be submitted at the completion of the post-excavation programme.

1.3.6 The paper and digital archive will be deposited with the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW). The few finds recovered from the development area and any resulting environmental material will be deposited with Ceredigion Museum.

## 1.4 Abbreviations

1.4.1 Sites recorded on the Regional Historic Environment Record[1] (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Written Scheme of Investigation – WSI; Dyfed Archaeological Trust – DAT; Ceredigion County Council – CCC;

## 1.5 Illustrations

1.5.1 Printed map extracts are not necessarily produced to their original scale.

[1] Held and managed by Dyfed Archaeological Trust, The Shire Hall, Carmarthen Street, Llandeilo SA19 6AF.

## 1.6 Timeline

1.6.1 The following timeline (**Table 1)** is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

| Period | Approximate date | |
|---|---|---|
| Palaeolithic – | *c*.450,000 – 10,000 BC | Prehistoric |
| Mesolithic – | *c*. 10,000 – 4400 BC | |
| Neolithic – | *c*.4400 – 2300 BC | |
| Bronze Age – | *c*.2300 – 700 BC | |
| Iron Age – | *c*.700 BC – AD 43 | |
| Roman (Romano-British) Period – | AD 43 – *c.* AD 410 | Historic |
| Post-Roman / Early Medieval Period – | *c*. AD 410 – AD 1086 | |
| Medieval Period – | 1086 – 1536 | |
| Post-Medieval Period – | 1536 – 1899 | |
| Modern – | 20th century onwards | |

**Table 1**: Archaeological and Historical Timeline for Wales.

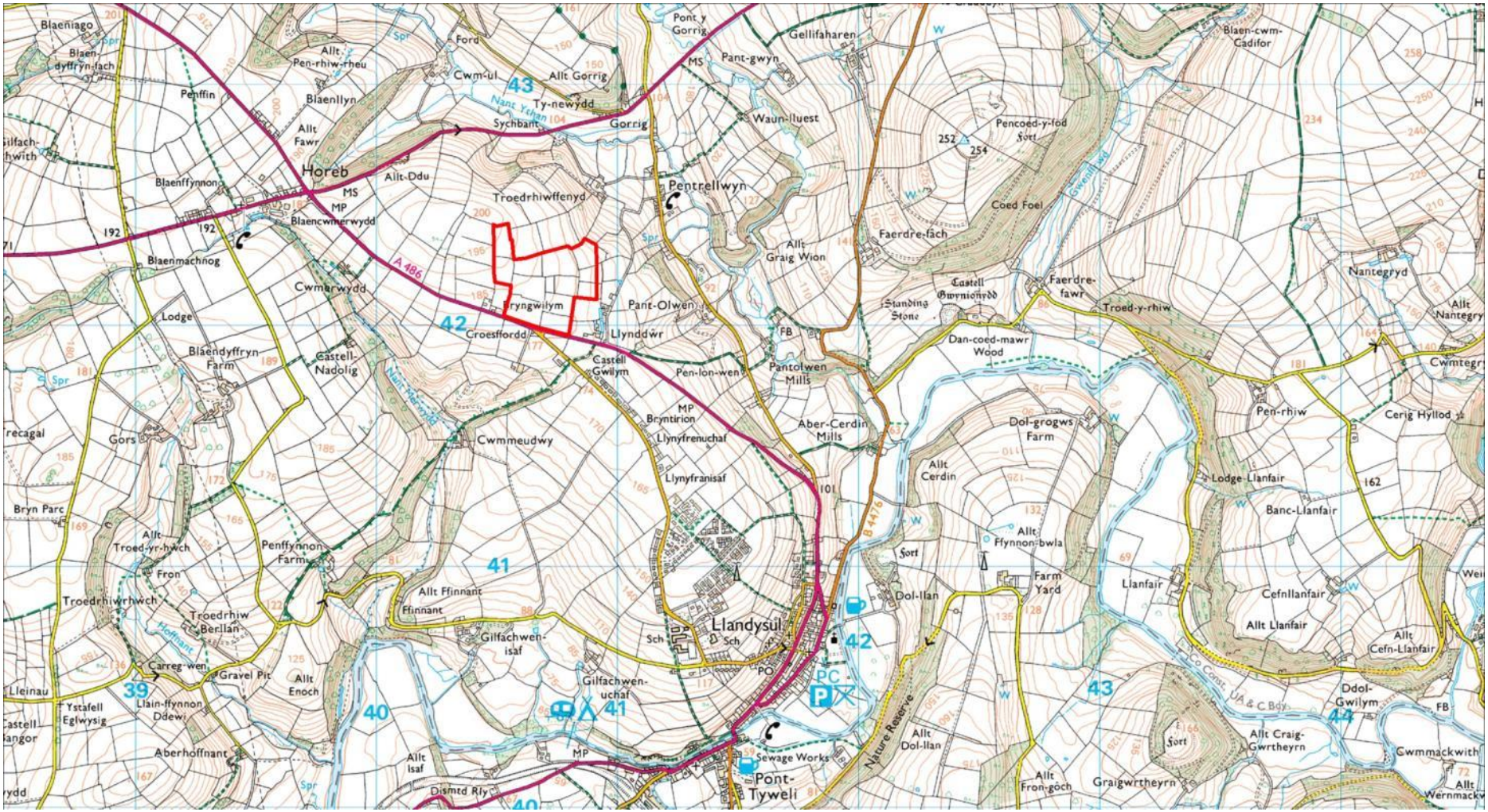



**Figure 1:** Site location of Ysgol Bro Teifi (red line boundary).

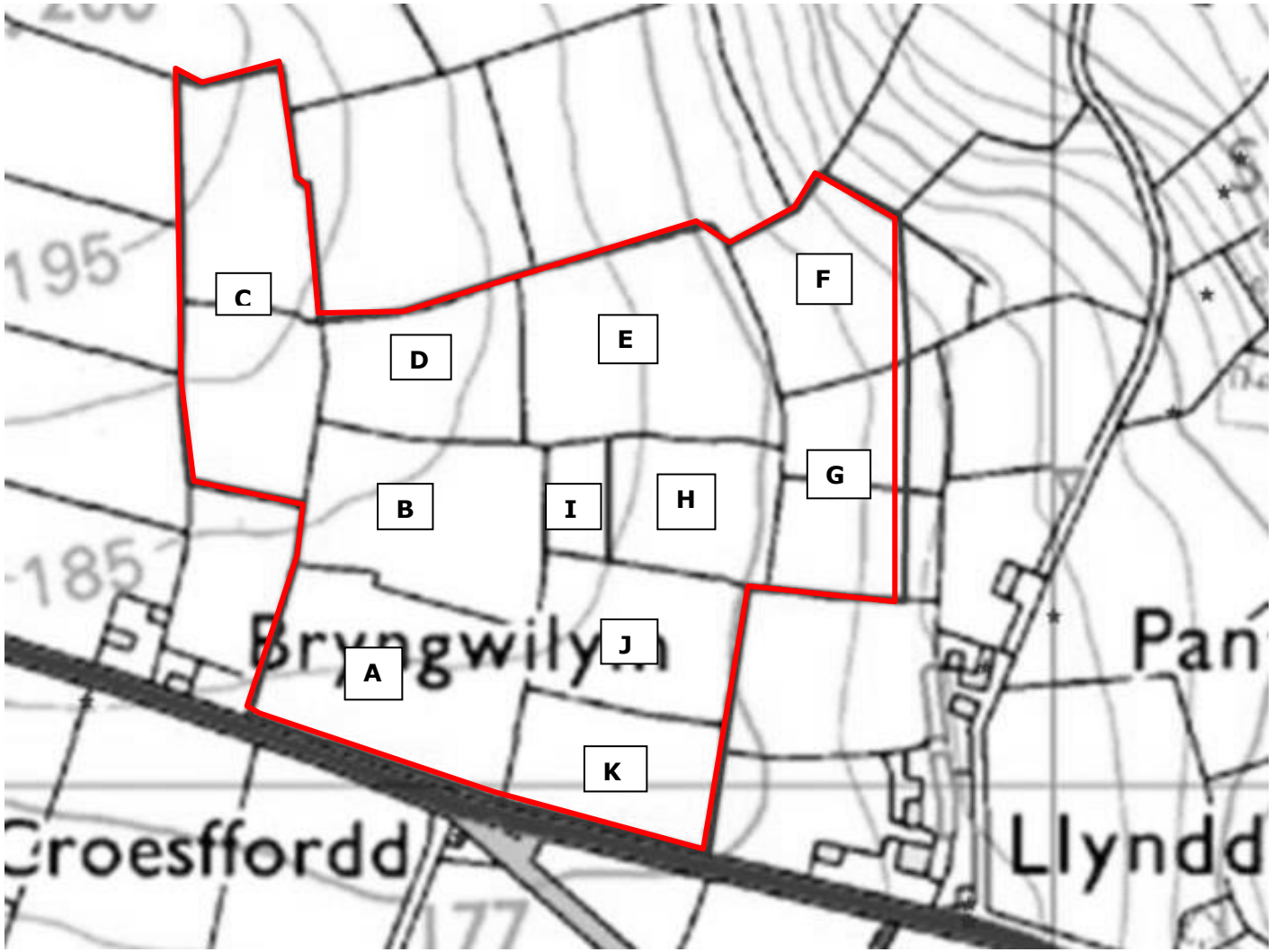



**Figure 2:** Field Layout and assigned letters.
The field boundaries separating Fields C and G into two separate parts had been removed at the time of survey

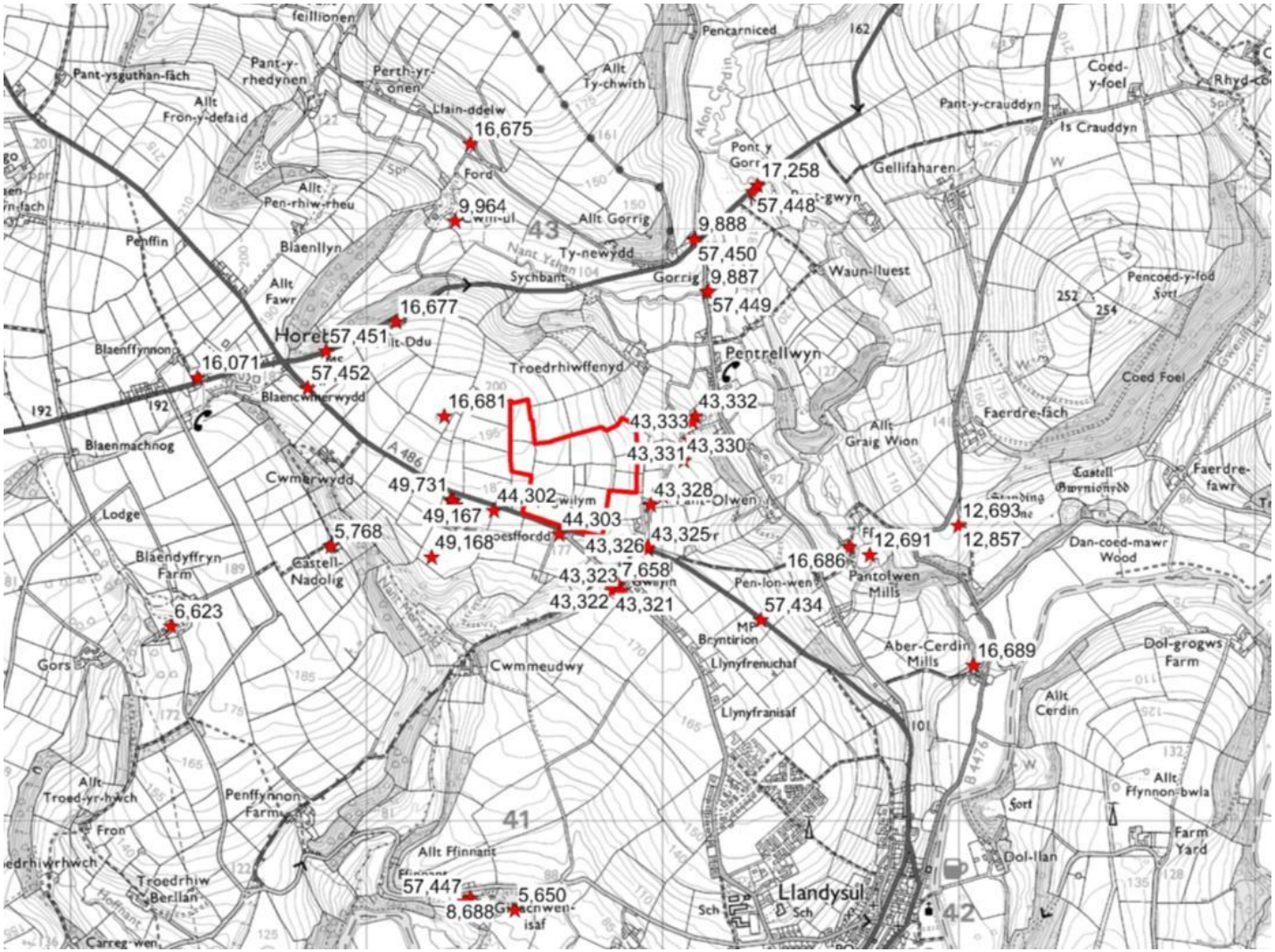



**Figure 3:** Distribution of archaeological sites of interest held on the Dyfed Historic Environment Record

## 2. THE SITE

### 2.1 Site Location

2.1.1 The Ysgol Bro Teifi development area lies on land to the north west of Llandysul, on the north side of the A486 (Figures 1 and 2). The proposed development area gently rises from 177m aOD in the most south eastern corner to 200m aOD in the northwest. The development area was divided up into 11 fields at the time of the evaluation, labelled Fields A to K on Figure 2. The map used in Figure 2 indicates that Fields C and G were previously divided into two parts, but these boundaries had been removed well before the evaluation commenced.

2.1.2 The geological survey identifies the natural geology underlying the development area as Yr Allt Formation – sedimentary bedrock formed 444 to 451 million years ago in the Ordovician period.

### 2.2 Archaeological and Historical Background

2.2.1 The information described below is taken from the regional Historic Environment Record (HER) held by Dyfed Archaeological Trust, within a search area of a 1500m radius centred on the school site. The following tables summarise the results of the HER search and the distribution of these sites is recorded in Figure 3. No known archaeological sites were located within the area of the proposed school development.

2.2.2 The vast majority of the sites recorded within the search area date from the post medieval period and reflect late 18th century and later development. Many of the records have been identified from cartographic research; are listed buildings including milestones; communication routes such as roads or railways; or are field boundaries (Table 2).

| PRN | Site Name | Description | NGR |
|---|---|---|---|
| 6623 | Blaen Dyffryn Hall | Country gentry house which now serves as a residential care home. | SN39344166 |
| 8688 | Gilfachwen Isaf | Farmhouse which was still occupied in 1978, when it was sold along with the rest of the Gilfachwen Mansion estate. | SN40354074 |
| 9887 | Felin Gorig | Former mill building | SN41154279 |
| 9888 | Gorig | Mansion recorded as being in less than perfect condition in 1981. | SN41114297 |
| 9964 | Cwm-Ul | House of architectural interest described by RCAHMW in 1975. Appears to remain occupied – shown on 1987 OS Pathfinder map. | SN40304303 |
| 16071 | Capel Horeb | Chapel | SN39434250 |
| 16675 | Capel Gwern-Llwyn | Chapel | SN40354329 |
| 16677 | Quarry | Quarry shown on early OS map | SN40104269 |
| 16681 | School | School shown on early OS map | SN4026242370 |
| 16686 | Pantolwen Mills | A late 18th century corn mill, recorded on the 1889 1st edition Ordnance Survey map, which was later incorporated into a 19th century woollen mill complex. Listed building Grade II | SN4163041927 |
| 16687 | Henllan Station | Henllan railways station | SN4151341883 |
| 16689 | Quarry | Quarry shown on early OS map | SN4205041526 |

| | | | |
|---|---|---|---|
| 17258 | Pont Y Gorig | Bridge | SN41324315 |
| 43321 | Castell Gwilym | Roadway between Llandysul and Croesfordd, marked on OS map of 1811. | SN40834178 |
| 43322 | Castell Gwilym | Hedgebank with modern gate, along N side of roadway (PRN 43221) between Llandysul and Croesfordd, which is marked on OS map of 1811. | SN40834179 |
| 43323 | Castell Gwilym | Castell Gwilym is a ?19th century cottage, still inhabited, not marked on OS map of 1811 but present by 1831 when marked on OS 1". Appears to lie within Castell Gwilym defended enclosure (PRN 7658). | SN40864178 |
| 43324 | Castell Gwilym | Hedgebank. Not marked on Llandyssil Tithe Map of 1831 but this is probably not significant as few field boundaries are. Marked on OS map of 1891. | SN40924183 |
| 43325 | Castell Gwilym | Roadside boundary along the S side of the A486, now a scarped edge, carrying a modern fence, where the road has been recently widened. Occupies much the same line as an earlier boundary, the line of the A486 (PRN 43226) being marked on OS map of 1811. | SN40954192 |
| 43326 | Croesffordd | The A486 Llandysul-New Quay road, which is marked on OS map of 1811. Shown as the line of a medieval route by Rees (1932). | SN40954193 |
| 43327 | Pen-Walk | Stony hedgebank along the N side of the A486. Occupies much the same line as an earlier boundary, the line of the A486 (PRN 43226) being marked on OS map of 1811. | SN40954193 |
| 43328 | Trewindsor | Hedgebank. Not marked on Llandyssil Tithe Map of 1831 but this is probably not significant as few field boundaries are. Marked on OS map of 1891. | SN40964207 |
| 43330 | Fron-Goch | Hedgebank with many semi-mature standard trees. Not marked on Llandyssil Tithe Map of 1831 but this is probably not significant as few field boundaries are. Marked on OS map of 1891. | SN41074222 |
| 43331 | Llain | Hedgebank with mature standard trees including Laburnum. Marked on Llandyssil Tithe Map of 1841 which mainly depicts ownership blocks. | SN41094229 |
| 43332 | Llain | Cottage and garden marked, and labelled 'Llain', on Llandyssil Tithe Map of 1841 at the centre of field OS no. 1337. They had gone by 1891 (OS map). The field is very steep, with very thin topsoil exposing shale bedrock in many places. | SN41114237 |
| 43333 | Llain | Field boundary, now gone and without physical evidence. Appears to have been established over the site of Llain cottage (PRN 43332) after it had been demolished, and marked on OS maps of 1891 and 1964. Removed after 1964. | SN41104235 |
| 43334 | Pentrellwyn | Hedgebank, along W side of roadway (PRN 43335) between Llandysul and Pentrellwyn/Gorig, which is marked on OS map of 1811. | SN41154243 |
| 43335 | Pentrellwyn | Roadway between Llandysul and Pentrellwyn/Gorig, which is marked on OS map of 1811. | SN41164243 |
| 44302 | Croesffordd | Low earth bank topped with a mature hedge. | SN40434205 |
| 44303 | Croesffordd Cottage | Late 19th century cottage. | SN40654197 |
| 57434 | Milepost | Grade II listed milepost some 600m NW of Pentrellwyn Road Junction, Newquay Road, A486 (W Side) | SN4133141680 |
| 57448 | Milestone | Grade II listed milestone at Pont Y Gorrig, Lampeter Road, Gorrig | SN4130743129 |
| 57449 | Gorrig Mill | Grade II listed former corn mill, Pentrellwyn Road, Gorrig | SN4115642793 |
| 57450 | Gorrig Farmhouse, | Grade II listed farmhouse, Tregroes Road, Gorrig | SN4110742965 |

| | | | |
|---|---|---|---|
| 57451 | Milestone | Grade II listed milestone 200m E of A486 Crossroads at Horeb, Lampeter Road, Horeb | SN3986442589 |
| 57452 | Milestone | Grade II listed milestone south of crossroads at Horeb, Llandysul Road, Horeb | SN3980242466 |

**Table 2:** Post-Medieval Sites

2.2.3 The HER records one early medieval site within the study area, St Winifred's Chapel (PRN 12693; Table 3). It is recorded as one of the six chapels of ease to Llandysul parish, but its exact location is not known. The HER grid reference is merely approximated to a 1km grid square.

2.2.4 Two medieval sites are recorded; one being the medieval antecedent of the early medieval St Winifred's Chapel (PRN 12857), for which the exact location is not known. It was recorded as being in ruins by the early 19th century. The second site is that of Pantolwen Mill (PRN 12691), documented as being present in the 14th century and now occupied by the site of the post-medieval Pantolwen Mills.

| PRN | Site Name | Description | NGR |
|---|---|---|---|
| 12693 | St Winifred's Chapel; Capel Faerdre | Early medieval D site, ie. Possible early medieval origins. Site of one of the six medieval chapels-of-ease to Llandysul parish, also a grange chapel to Talley Abbey (Faerdre Grange). Its precise location is unknown. | SN4242 |
| 12691 | Pantolwen | Site of a medieval mill shown on Rees's map (1932) showing Wales in the 14th century. The site is now occupied by post-medieval Pantolwen Mills (PRN 16686) | SN417419 |
| 12857 | St Winifred's Chapel; Faerdre Chapel | Site of one of the six medieval chapels-of-ease to Llandysul parish, which was also a grange chapel belonging to Talley Abbey. The chapel was in ruins by the early 19th century. There is now no physical evidence for the building and its precise location. | SN4242 |

**Table 3:** Early Medieval / Medieval Sites

2.2.5 A single site of either Iron Age or Roman date is recorded in the study area on the HER (Table 4) which is a possible rectangular enclosure, now visible as a small field or paddock to the south of Castell Gwilym cottage (PRN 7658). No further information is given about this site.

| PRN | Site Name | Description | NGR |
|---|---|---|---|
| 7658 | Castell Gwilym: Castell Bwillim | The 1st Edition Ordnance Survey map of 1831 places Castell Gwilym (called Castell Bwillim on the map) immediately to the south of Castell Gwilym cottage in what is now a small field or paddock surrounded by earth and stone hedge-banks. | SN40854180 |

**Table 4:** Iron Age / Roman Sites

2.2.6 Five prehistoric sites are recorded on the HER (Table 5). These are of most relevance to the investigations undertaken at the Ysgol Bro Teifi site. In 2003, during the early stages of construction of a new industrial estate at Cwm Meudwy, to the southwest of the school site, two excavation areas were opened revealing three ring ditches, a palisade enclosure and adjacent pits and postholes (Murphy & Evans 2006). The three ring ditches (PRN 49167) comprised two larger rings to the east (PRN 49733) and west (PRN 49731) both of around 8.15 – 8.20m diameter, on either

side of a smaller ring ditch (PRN 49732) of 6.5m diameter (Figure 4 below shows the ring-ditches in plan). The ring ditches were located in an area centred at NGR SN 4028 4208, sited on the upper valley slopes, but not at the highest point. They sit within a relatively flat plateau between 177m and 185m and command panoramic views to the south, southwest and southeast (*ibid).* Excavation revealed that in each case the ditches were approximately 1.0m wide. Radiocarbon dates from samples collected from the ditch fills suggest that they silted up in the eighth to fourth centuries BC (*ibid*). No finds were recovered from the ring ditches. The features are discussed further in the conclusions of this report.

2.2.7 The palisade enclosure (PRN 49168) was defined by a shallow pear shaped gully defining an area roughly 30m by 45m. It had an entrance on its northeastern side which consisted of two postholes and a possible additional entrance in the northwest associated with four pits or postholes (Murphy and Evans 2006). Other pits and postholes in the area indicated a range of dates for the features, including the discovery of an assemblage of Early Neolithic Pottery and Late Neolithic / Early Bronze Age pottery. Radiocarbon dates were obtained from a number of the features, mostly returning dates from the Neolithic or Bronze Age but also a posthole at the northeast entrance gave an Iron Age/Romano-British date (*ibid).* No dates were obtained from the palisade ditch itself, and its form might indicate it is more likely of Iron Age date.

| PRN | Site Name | Description | NGR |
|---|---|---|---|
| 49167 | Cwm Meudwy | Three ring ditches excavated in the autumn of 2003 are probably the remains of a round barrow cemetery. The site lies at 192m on the south side and towards the crest of a rounded hill and commands panoramic views to the south, southwest and southeast. | SN40294208 |
| 49168 | Cwm Meudwy | Excavated in the autumn of 2003. A palisaded enclosure about 30m by 45m with two entrances marked by post-holes. Pit and post-holes lay both within and outside the enclosure. A four-post structure of substantial post-holes lay within the enclosure and a less substantial one outside. | SN4021941893 |
| 49731 | Cwm Meudwy | A small ring ditch, 8.2m diameter, associated with two other similar ring ditches excavated in the Autumn of 2003. No central burials or other features were associated with this feature. | SN4028442088 |
| 49732 | Cwm Meudwy | A small ring ditch, 6.5m diameter, associated with two other ring ditches, PRNs 49731 and 49733. Excavated in the autumn of 2003. No central burials or other features were associated with this ditch. This feature identified as ditch 6 in the report. | SN4029442084 |
| 49733 | Cwm Meudwy | An 8.15m diameter ring ditch excavated in the autumn of 2003. It is associated with two other ring ditches. No central burial or other features were discovered during excavation. This feature identified as ditch 4 in the report. | SN4029942070 |

**Table 5:** Prehistoric Sites

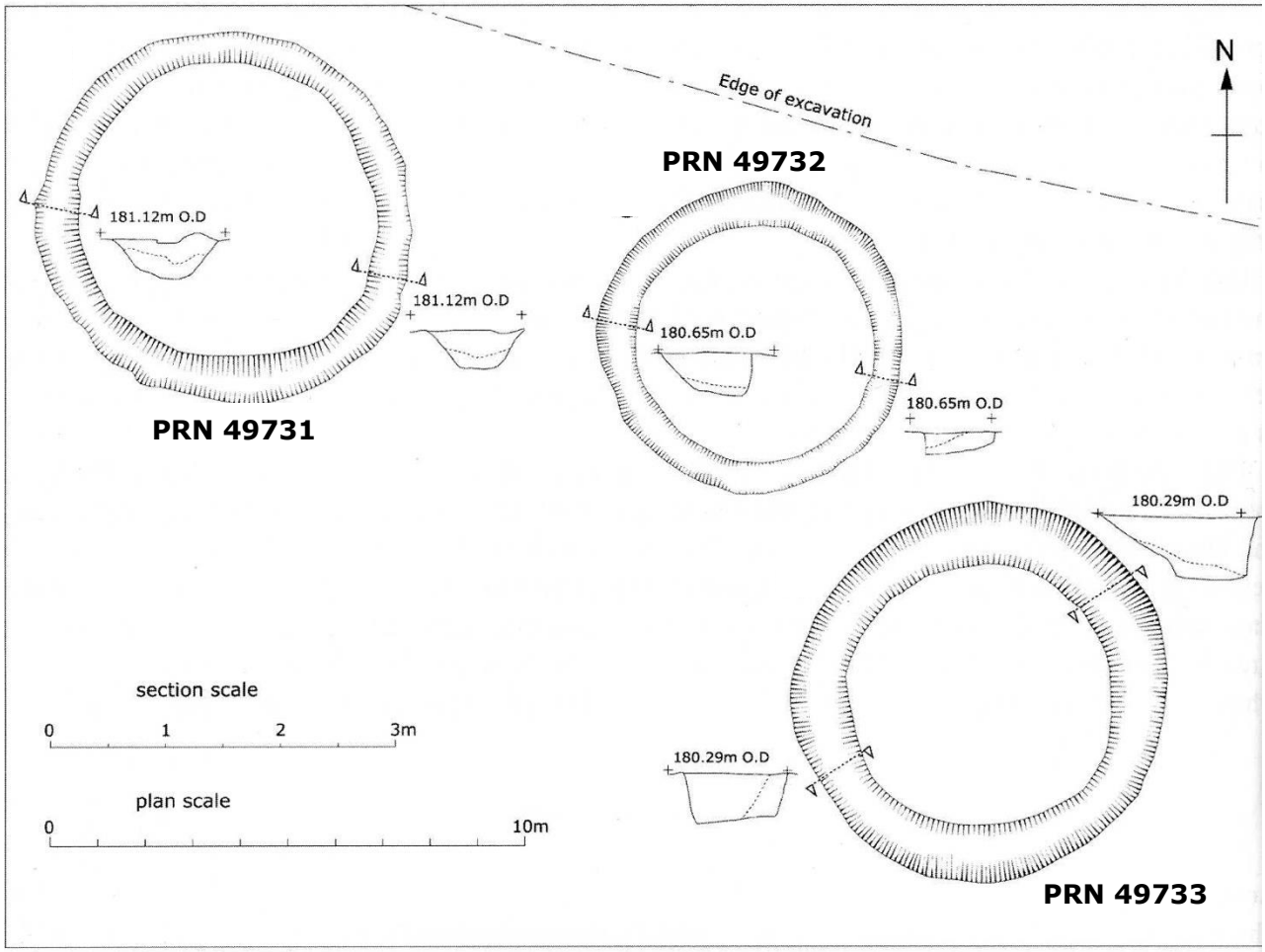



**Figure 4:** Ring ditches Plan and Profiles of the Cwm Meudwy site (Murphy and Evans 2006).

2.2.8 Two sites of unknown date are recorded on the HER (Table 6). The first refers to the place name of Castell Nadolig, the significance of which is not known (PRN 5768). Castell place names often indicate former defended sites, which could potentially date from the Iron Age through to medieval periods, but may merely be a much more recent randomly chosen place name. The second site is of a cropmark which seems to form part of a rectilinear enclosure (PRN 43329). Such cropmarks could be indicative of Romano-British enclosures or earlier field systems, although could also relate to post-medieval enclosures.

| PRN | Site Name | Description | NGR |
|---|---|---|---|
| 5768 | Castell Nadolig | Record of a "castell" place-name of unknown significance. | SN39884193 |
| 43329 | Trewindsor | Positive cropmark observed on aerial photographs in the W half of field. The slender cropmark appears to form the S and E sides of a rectilinear enclosure, each side approx. 50m long. The E side continues the line of the boundary forming the W side of the pond at SN41024218. The nature of the suggested enclosure is however unknown - it is not marked on historic maps and there is no physical evidence. The general area is, however, depicted as occupied by a number of cottages and gardens on the OS 1" of 1831 and the Llandyssil Tithe Map of 1841, and the cropmark may have a similar origin. | SN410421 |

**Table 6:** Sites of Unknown Date

2.2.9 Comparing the most recent OS maps to the Tithe Map of 1843 (Figure 5) shows that the field layout has changed somewhat over the years. At the time of the Tithe Map the development area appears to have been divided up into larger fields.

2.2.10 The 1st and 2nd edition OS maps published in 1889 and 1907 (Figure 6 and 7 respectively) illustrate a modified pattern of fields creating almost the same layout as was extant at the start of the archaeological works. Many of the larger fields shown on the Tithe Map had been sub-divided creating a total of 15 fields covered (or partially covered) by the development area, whereas in 1843 there were only 7. Using Figure 2 as a comparison, it can be seen that Fields A and B were originally two fields but these had been combined at some point before the early 21st century. Fields C and G were also formerly two fields, but had been combined in the few years preceding the archaeological investigations. The fields have been used as agricultural land since at least 1843, and more likely as far back as the medieval period. The fields were all under pasture or a silage crop prior to the start of the archaeological works.

2.2.11 The 1st edition Ordnance Survey map (Figure 5) shows an 'Old Shaft' within the northern part of the development area (Field D), which by the 2nd edition map is marked as a well.

2.2.12 Overall the archaeological potential for the development area was considered greatest for the prehistoric period. The Ysgol Bro Teifi site is located between the 177m aOD and 200m aOD contours, gently rises from the southeast to the northwest and mostly within a similar height range to that in which the three ring ditches were located at Cwm Meudwy. The lower southwest corner of the development area provides panoramic views to the south, southwest and southeast and in the northwest area virtually uninterrupted views can be observed in all directions. The close proximity of the previously identified ring ditches and palisade enclosure located to the southwest of the development area indicated that there was a raised potential for identifying additional archaeology within the Ysgol Bro Teifi development area that has remained hitherto unrecorded.

2.2.13 It was for these reasons that the phased scheme of archaeological works were proposed for the development area comprising an initial geophysical survey; followed by evaluative trial trenches to test the geophysical survey results; and finally schemes of archaeological excavation to record the identified archaeological remains.

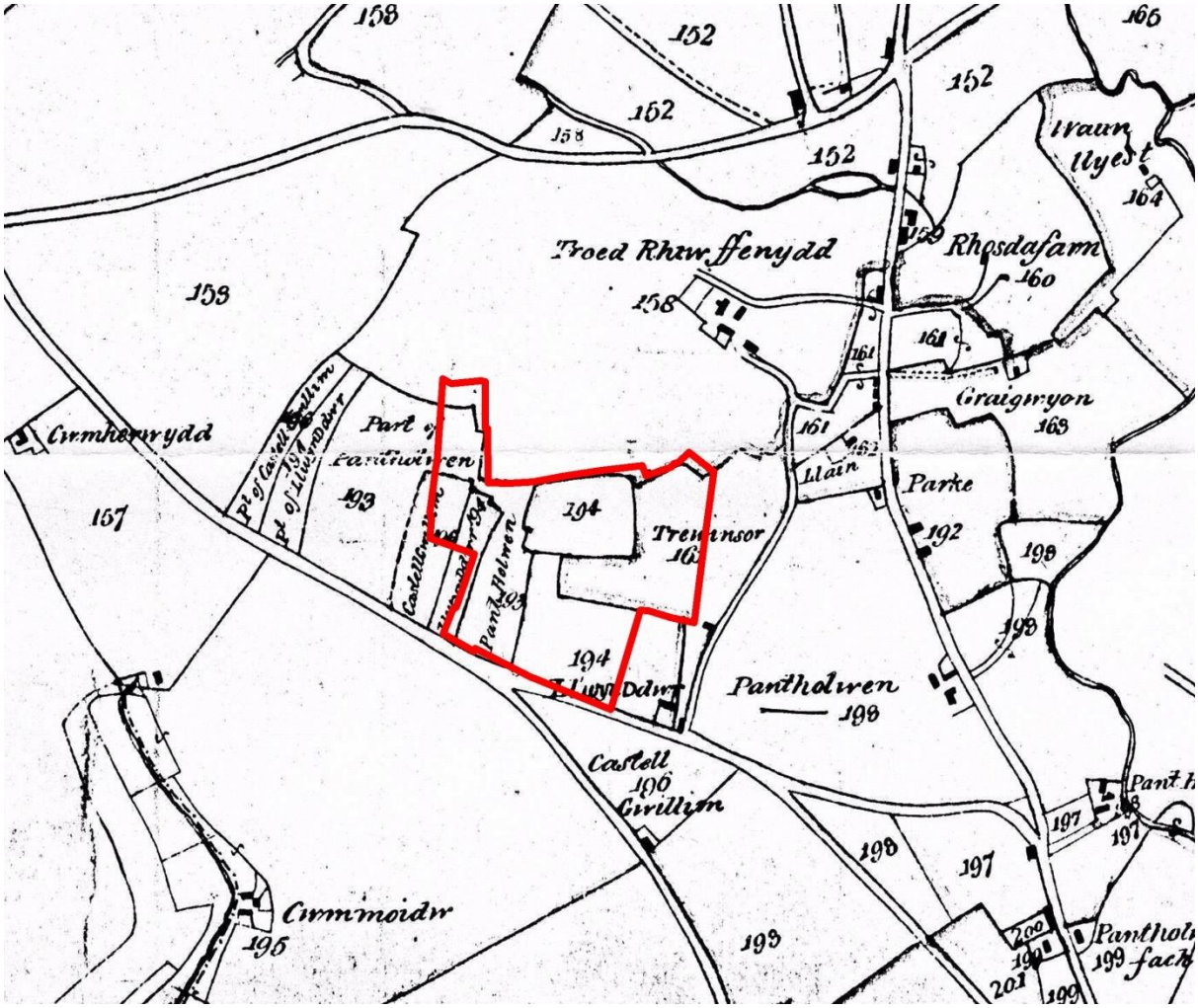



**Figure 5:** Extract from the Llandysul Tithe Map 1843 showing approximate outline of the Ysgol Bro Teifi site.

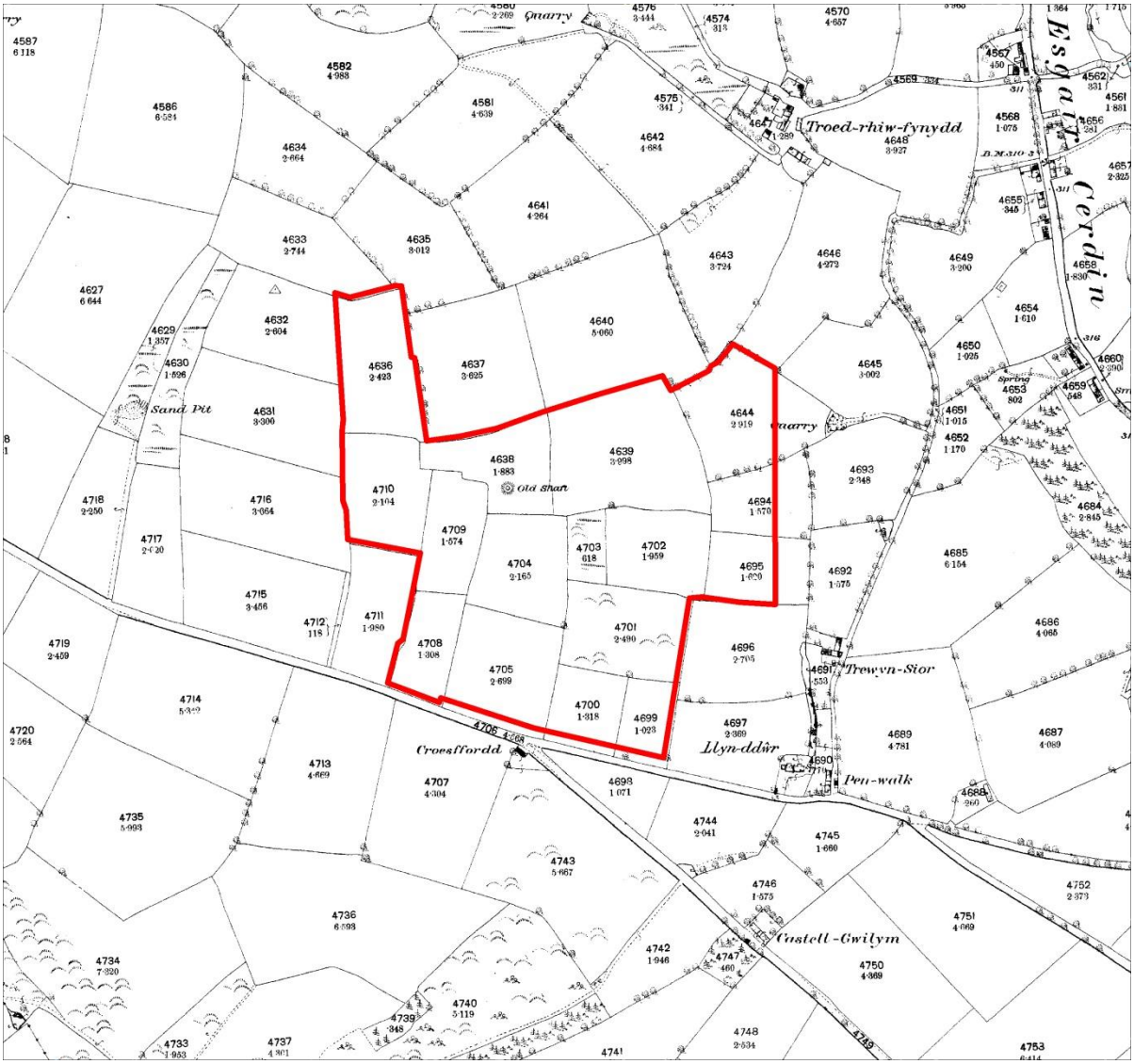



**Figure 6:** Extract of 1889 1:2500 OS map showing the Ysgol Bro Teifi development boundary

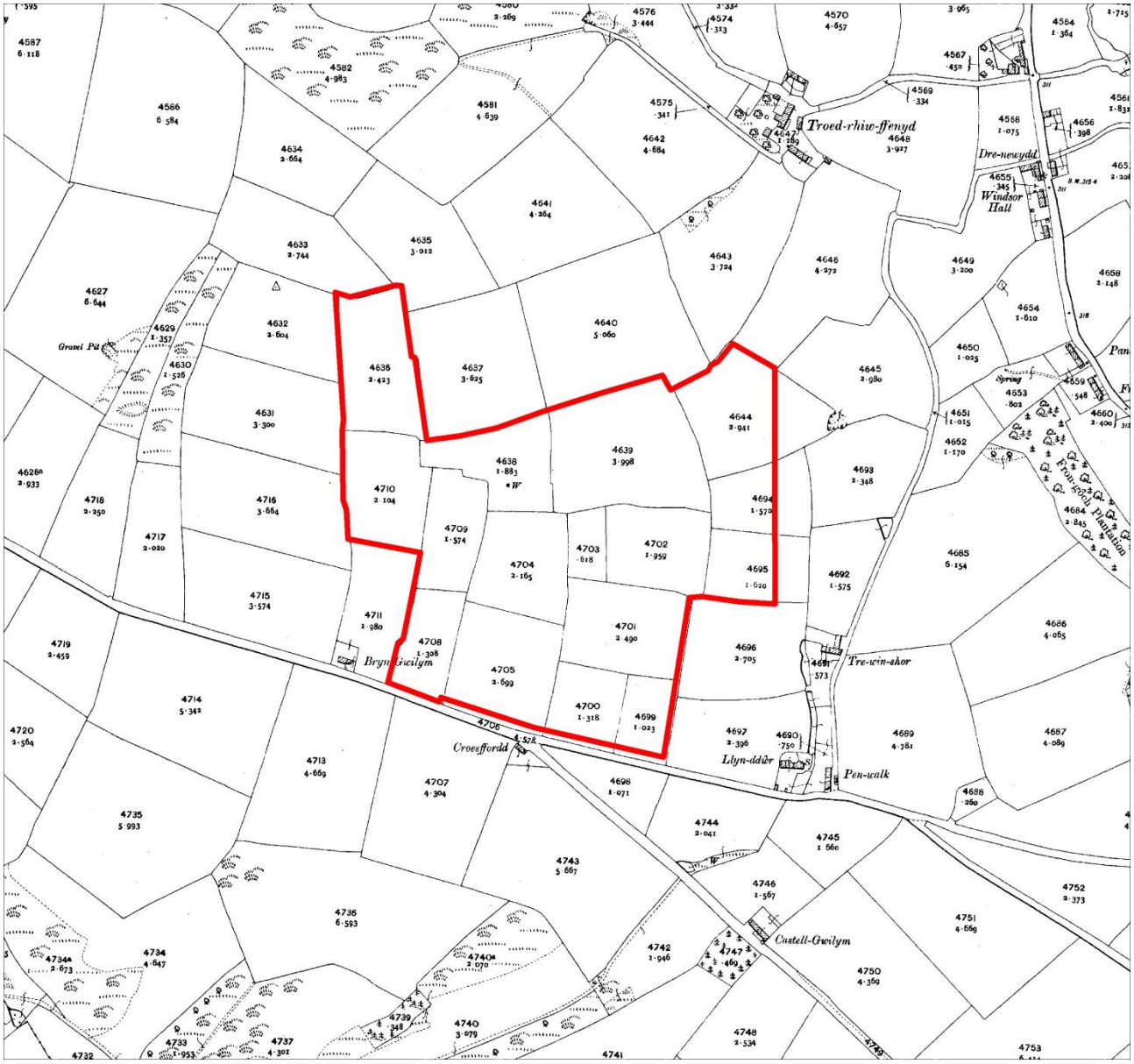



**Figure 7:** Extract of 1907 1:2500 OS map showing the Ysgol Bro Teifi development boundary

# 3. GEOPHYSICAL SURVEY

## 3.1 Introduction

3.1.1 The geophysical survey was undertaken on 25th, 26th & 27th June 2014 and 2nd & 3rd July 2014 across the entire development area to provide a rapid assessment of the presence or absence of archaeological remains. The geophysical survey was conducted using a Bartington Grad 601 dual fluxgate gradiometer.

## 3.2 Geophysical Survey Methodology

3.2.1 A fluxgate gradiometer with a DL601 data logger was used to conduct a detailed survey, which detects variations in the earth's magnetic field. A sample interval of 0.25m (four readings per metre) was used with 1m wide traverses across 30m x 30m grids using the zigzag traverse method of collecting data. The gradiometers sensitivity was set to detect a magnetic variation in the order of 0.1 nanoTesla.

3.2.2 A Trimble TST was used to tie the survey grids into the local Ordnance Survey grid.

3.2.3 The data was processed using *Terrasurveyor 3.0* and presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, have been 'clipped' to remove the extreme values allowing the finer details to show through.

3.2.4 The processed data has been presented as grey-scale plots overlaid on local topographical features.

3.2.5 It was made clear prior to the subsequent stage of trial trench evaluation, that the survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting any geophysical survey features identified, it is their shape that is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response can provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective until further intrusive archaeological works are carried out.

3.2.6 All measurements taken from a geophysical survey will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of identified features can be affected by their relative depth and magnetic strength.

## 3.3 Results and Discussion of the Geophysical Survey

3.3.1 The results of the initial geophysical survey are shown as a basic greyscale plot on Figure 8 and a survey plot with interpretation on Figure 9 (see Table 7 for key).

3.3.2 The 11 fields labelled A – K (Figure 2), were surveyed over the course of 4.5 days. Field C and Field G had until recently each been subdivided into two smaller fields. The dividing boundaries had been removed prior to the geophysical survey.

3.3.3 Generally, a series of discrete dipole anomalies were detected throughout the survey area, these reflect areas of modern ferrous debris represented by such items as horse shoes, plough shares or even high fired brick. These features are not illustrated and were not investigated further.

3.3.4 A number of linear anomalies were detected that appear to truncate some of the fields. After consulting the 1st edition OS maps it was determined that these reflect former field boundaries which have since been removed. Examples of this include a former boundary that extended through Fields A, B and D (yellow dashed lines). Other former boundaries could be seen in Fields C, G and K most of which have been removed in recent years.

3.3.5 A discrete circular dipole anomaly was identified in Field D (brown dot). The 1st edition OS map (Figure 6) depicts the existence of a shaft in this location (labelled *W* for well on the 2nd edition map; Figure 7). Extending from this 'shaft' in a south east direction was a long linear anomaly running through fields B, D, I and J (purple line). This feature exhibited a strong dipole (positive/negative) response. This response is typical of modern services and this feature was interpreted as a ferrous pipe associated with the 'shaft' or well from which it projects.

3.3.6 Field C on the northwestern side of the development area contained a number of features of potential archaeological significance. Located in the southern section of the field were two circular anomalies exhibiting positive magnetic responses (orange arc). These anomalies lay in close proximity to each other and suggested the presence of ring-ditches, similar to those excavated in 2003 at Cwm Meudwy. Near to the most eastern possible ring ditch a positive linear anomaly was seen running to the northeast; indicative of a ditch. Extending from the southern boundary of Field C another ditch like feature was seen with a curved appearance and a possible opening/entrance (green dashed line), which was interpreted as a possible palisade enclosure, also similar to that seen at Cwm Meudwy. A further curving feature was noted to the north of the two ring ditches, although this was evident as a negative response, suggesting a bank rather than a ditch (dotted line).

3.3.7 In the southeast corner of Field E, a curved linear feature was seen extending from the east and south boundaries with a possible entrance to the northwest. This was interpreted as a second possible palisade enclosure, although no obvious continuation of it was identified in the adjacent fields.

3.3.8 Fields F and G appeared to have been subject to deep intensive ploughing over the years, which lead them to exhibit a striation effect on the survey. Deep ploughing would significantly truncate any archaeology within the area making it undetectable even to a geophysical survey. However, underlying these striations it was possible to identify traces of linear features which were thought to potentially be archaeological features.

3.3.9 Field I and J appeared to both be devoid of archaeological remains, excluding the possible service pipe (see 3.3.5). On the 1st edition OS map both fields are depicted as being scrubland.

3.3.10 A broad C-shaped curved linear anomaly was detected extending from the north boundary of field K and sweeping in a westwards direction (green line), with a very subtle circular feature to the south (pink dotted line). These were interpreted as being of archaeological significance and worthy of further investigation. The C-shaped ditch may have extended below the field boundary to the north.

3.3.11 Overall the surveys indicated that the areas with highest archaeological potential were the southern half of Field C with the two ring ditches and possible palisade ditch; the southeastern corner of Field E where the curving possible palisade ditch had been identified (and possibly in the adjacent areas of Fields F, G & H); and the western half of Field K where the C-shaped anomaly and possible ring ditch to the south were identified. Other potential discrete archaeological features were identified in Fields B, D, G and H.

3.3.12 It was considered likely that the ring ditches represented either the remains of Bronze Age (*c.*2300BC to *c.*700BC) round barrow burial mounds, similar to those seen at Cwm Meudwy or potentially the remains of eaves drip gullies around hut circles of Iron Age date (*c.*700BC to 43AD). The ring ditches excavated in 2003 to the southwest gave broad dates from the 8$^{th}$ to 4$^{th}$ centuries BC, although the material came from the backfilled ditches as opposed to any features within the ring and so may be giving a false date of later abandonment as opposed to construction. The small diameter of the ring ditches identified by geophysical survey in Field C suggested they were unlikely to represent the remains of round houses.

3.3.13 The palisade enclosure excavated in 2003 at Cwm Meudwy is also paralleled in the form of the two curving ditched enclosures, with indications of possible entrances, in Fields C and Field E. Both of these features appear very similar in size and shape to the enclosure excavated in 2003. The radiocarbon sample taken from the excavated palisade enclosure at Cwm Meudwy suggested an Iron Age/Romano-British date, which could push the date of the feature into the first century AD.

3.3.14 The 2003 excavations also recovered Neolithic (*c.*4400 to *c.*2300BC) pottery from features in and around the palisade enclosure. This may indicate pro-longed activity within the general area, ranging from the Neolithic through to the Iron Age and encompassing potential settlement and funerary / ritual activity.


**Figure 8:** Greyscale plot of the geophysical survey results without interpretation


**Figure 9:** Greyscale plot of the geophysical survey results with interpretation (see key)

| Colour | Interpretation | Archaeological significance |
|---|---|---|
| Purple Line | probable service | Negligible |
| Brown dots / rings | ferrous disturbances, probably modern | Low |
| Yellow line | known former field boundary | Low |
| Brown circle | probable shaft / well | Low |
| Blue line | unknown linear anomaly with negative response | Moderate/High |
| Green line | unknown linear anomaly with positive response | Moderate/High |
| Green dashed line | possible palisade enclosure | High |
| Orange arc | possible ring ditches | High |
| Pink dotted line | curving features of possible archaeological origin | Uncertain |

**Table 7:** Key to geophysical survey interpretation plot

# 4. ARCHAEOLOGICAL EVALUATION

## 4.1 Introduction to the Archaeological Evaluation

4.1.1 Following the geophysical survey the second stage of archaeological works comprised an intrusive trial trench evaluation. This included the opening of 15 evaluation trenches sited across the development area. Eight trenches were located to target specific anomalies identified in the geophysical survey that were considered likely to be of archaeological origin and the remaining seven trenches were placed in nonspecific locations that targeted blank areas of the geophysical survey which appeared to be devoid of archaeology (Figure 10).

4.1.2 Due to the tight timescales of the project a separate report was not prepared for the geophysical survey before the trial trench evaluation. Plots of the raw data and interpretation of the geophysical survey results were included in the written scheme of investigation (WSI) for the trial trench evaluation. The WSI was prepared prior to the evaluation commencing and was approved by the archaeological advisors to the planning authority (Development Management section of Dyfed Archaeological Trust) prior to the works commencing.

4.1.3 The purpose of the evaluation was to clarify the results of the geophysical survey, identify the presence or absence of archaeology, and determine their state of preservation, date, significance and extent.

## 4.2 Archaeological Evaluation Methodology

4.2.1 The archaeological evaluation was undertaken between the 18th August and the 5th September 2014.

4.2.2 Each evaluation trench was opened using a 360° mechanical excavator with a toothless bucket under the constant supervision of an archaeologist. Each trench was machined down in spits to the top of the uppermost archaeological levels or natural deposits, whichever was encountered first. Each trench was then hand cleaned in order to determine the presence or absence of any archaeological deposits. Trench numbers were prefixed with the field letter (eg: Field C contained Trenches C1, C2 and C3; Field H contained Trench H1 etc).

4.2.3 Recording of all archaeological features or deposits conformed to the best current professional practice and was carried out in accordance with the Recording Manual used by DAT Archaeological Services, using archaeological context record sheets, scale drawings and photographs.

4.2.4 The fieldwork was monitored on a number of occasions by the archaeological advisors to the planning authority in conjunction with the client. During these visits it was also discussed and agreed that further stages of archaeological mitigation in the form of excavation would be needed in certain areas of the development area, namely Fields C, E and K.

4.2.5 The following table outlines the trial trench methodology undertaken at the development area, including field number; number and size of trenches; the reason for the trenches being located within those positions; and a short statement on the results (Table 8; Figure 10). Short summary reports on the evaluation were prepared and included in the WSIs for the further stages of archaeological mitigation, but no separate report was prepared.

| FIELD | Trench Reference | Size of trench | Reason for trench location | Average Topsoil depth | Summary results |
|---|---|---|---|---|---|
| **Field A** | Trench A1 | 35m x 1.9m | Non fixed location trench randomly placed within the field | 0.24m | No archaeology observed |
| **Field B** | Trench B1 | 41m x 1.9m | This trench aimed to cross a linear anomaly of possible archaeological origin (green) and the line of the service pipe leading from the 'shaft' (yellow) | 0.26m | Confirmation of the presence of disused metal pipe leading from the shaft and modern drain |
| | Trench B2 | 40m x 1.9m | Trench placed to cross former field boundary location (green) | 0.20m – 0.30m | Post-medieval field boundary and agricultural features identified |
| **Field C** | Trench C1 | 35m x 1.9m | This trench targeted the possible palisade enclosure in the bottom of the field | 0.28m | Although the trench appears to miss the features on Figure 11, the location of the survey data may not be accurate. No archaeological features identified within the trench, but further investigation was undertaken across this area during mitigation in Field C |
| | Trench C2 | 23m (east west) x 23m (north south) and 1.9m – 3.4m in width | L-shaped trench, targeting the two ring ditches and possible adjacent ditch and possible curving ditch to the north (yellow) | 0.25m | Although the plan suggests that the trench was too far to the south of the survey results, both ring ditches were confirmed as clear features within the trench indicating that the survey location may be slightly inaccurate. |
| | Trench C3 | 31m x 1.9m | Non fixed trench location in the northern half of the field | 0.28m | No archaeology observed |
| **Field D** | Trench D1 | 42m x 1.9m | Non fixed trench location to test negative geophysical survey results and possibly cross former field boundary and other linear anomaly | 0.30m | No archaeology observed |
| **Field E** | Trench E1 | 40m x 1.9m | Non fixed trench location to test negative geophysical survey results in western half of field | 0.28m | No archaeology observed |
| | Trench E2 | 39.5m (east west) x 1.9m with 10m offshoot (north south) 1.9m – 3.4m in width | This trench was targeted on the possible palisade enclosure in the southeastern corner of the field, to cross through one side of the possible entrance and through the interior of the enclosure | 0.22m | The palisade feature was confirmed, although very shallow. A possible posthole was also recorded within the enclosure |
| **Field F** | Trench F1 | 39m x 1.9m | The trench was placed in the centre of the field to avoid badger setts, but targeted to cross identified linear anomalies | 0.25m | One possible shallow pit was identified. The other linear anomalies were confirmed to be geological strata variations |

| | | | | | |
|---|---|---|---|---|---|
| **Field G** | Trench G1 | 39.5m x 1.9m | Trench located to test if there was a continuation of the palisade enclosure seen in Field E and to cross other identified linear anomalies | 0.28m | No archaeology observed |
| **Field H** | Trench H1 | 26.5m x 1.9m | A single trench targeted on the northeastern side of the field adjacent to the palisade enclosure in Field E and crossing the identified linear anomaly, but located to avoid a badger sett | 0.30m | No archaeology observed |
| **Field I** | None | - | No trench in this field | - | - |
| **Field J** | Trench J1 | 30m x 1.9m | Non fixed trench location to test negative geophysical survey results and service trench leading from the 'shaft' | 0.26m | Line of metal pipe trench identified, but no other archaeology observed |
| **Field K** | Trench K1 | 39.5m x 1.9m – 3.6m width | Trench located to target the strong curving anomaly in the northwestern part of the field | 0.20m | Clear and substantial feature identified |
| | Trench K2 | 39m x 1.9m | Trench located to target the possible ring like feature and adjacent linear feature in the southwestern part of the field | 0.22m | Linear feature identified, and evidence suggests that the possible ring feature had been caused by geological variations |

**Table 8:** Summary of results from evaluation trenches (Figures 10 and 11)


**Figure 10:** Evaluation trench locations within the Ysgol Bro Teifi site

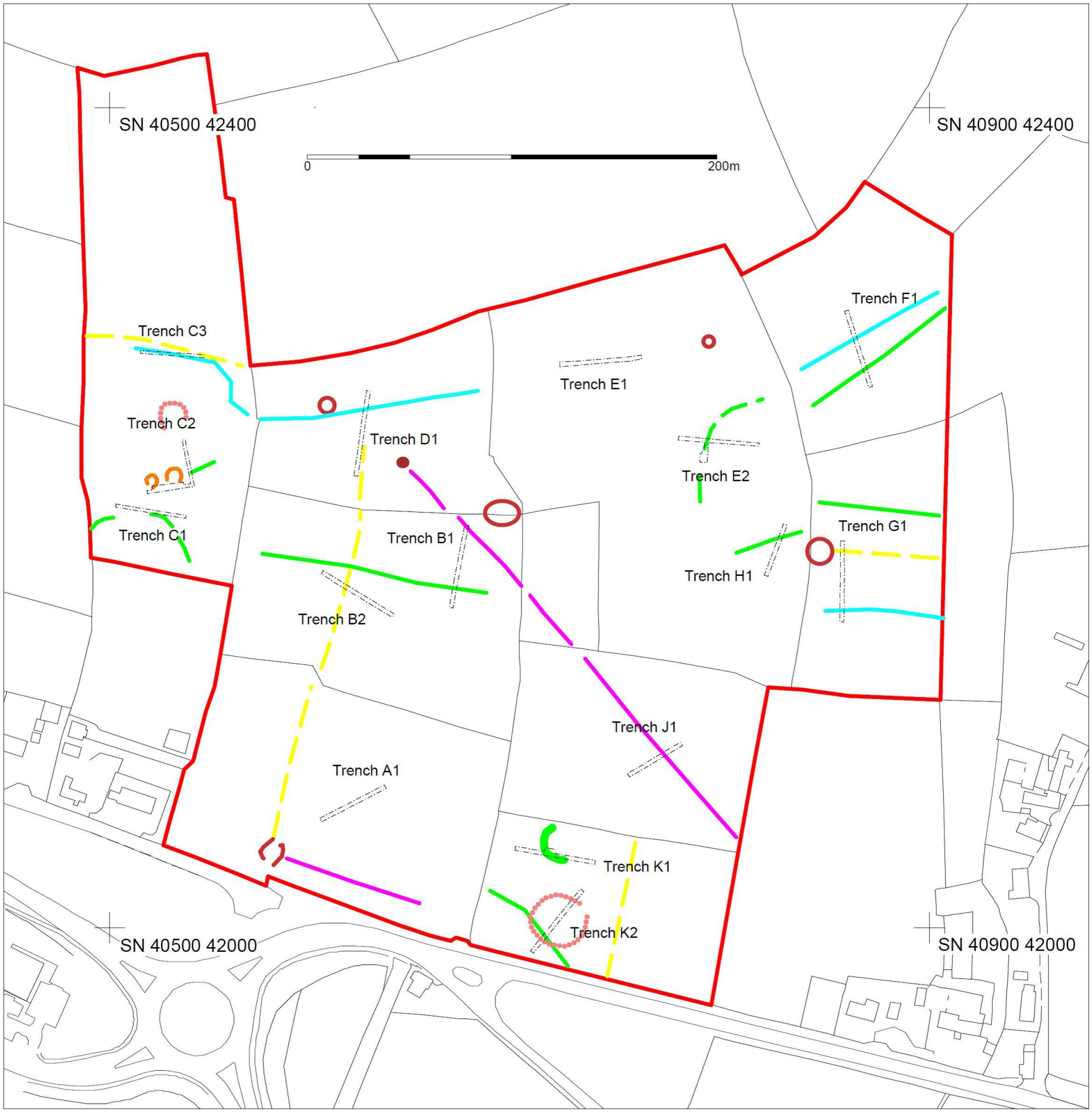



**Figure 11:** Evaluation trench locations overlaid on interpretation of geophysical survey results within the Ysgol Bro Teifi site

| Colour | Interpretation | Archaeological significance |
|---|---|---|
| Purple Line | probable service | Negligible |
| Brown dots / rings | ferrous disturbances, probably modern | Low |
| Yellow line | known former field boundary | Low |
| Brown circle | probable shaft / well | Low |
| Blue line | unknown linear anomaly with negative response | Moderate/High |
| Green line | unknown linear anomaly with positive response | Moderate/High |
| Green dashed line | possible palisade enclosure | High |
| Orange arc | possible ring ditches | High |
| Pink dotted line | curving features of possible archaeological origin | Uncertain |

Key to geophysical survey interpretation plot (as Table 7)

## 4.3 Results of the Archaeological Evaluation

***Trench A1***

4.3.1 No archaeological features were revealed within this trench.

***Trench B1*** (Figure 12)

4.3.2 At the northern end of the trench, the cut B1[103] for the pipe trench running southeast from the shaft or well in Field D was located. The pipe trench was 0.45m in width and 0.27m in depth. It contained a ¾" late 19th century or modern steel pipe within a fill very similar to the topsoil B1(102) (Photo 1).

**Photo 1:** The excavated pipe trench in Trench B1, showing the exposed metal pipe, facing southeast; cut B1[103], fill B1(102). 1m scale

4.3.3 At the southern end of the trench a possible posthole cut B1[105], fill B1(104) was recorded (Photo 2), 0.27m in diameter and 0.15m in depth, It contained no finds or dating evidence and no other associated features were observed.

**Photo 2:** Posthole in Trench B1 facing east; cut B1[105], fill B1(104). 0.5m scale

**Photo 3:** Possible field boundary ditch in Trench B2 facing south; cut B2[203], fill B2(202). 2 x 1m scales and 0.5m scale

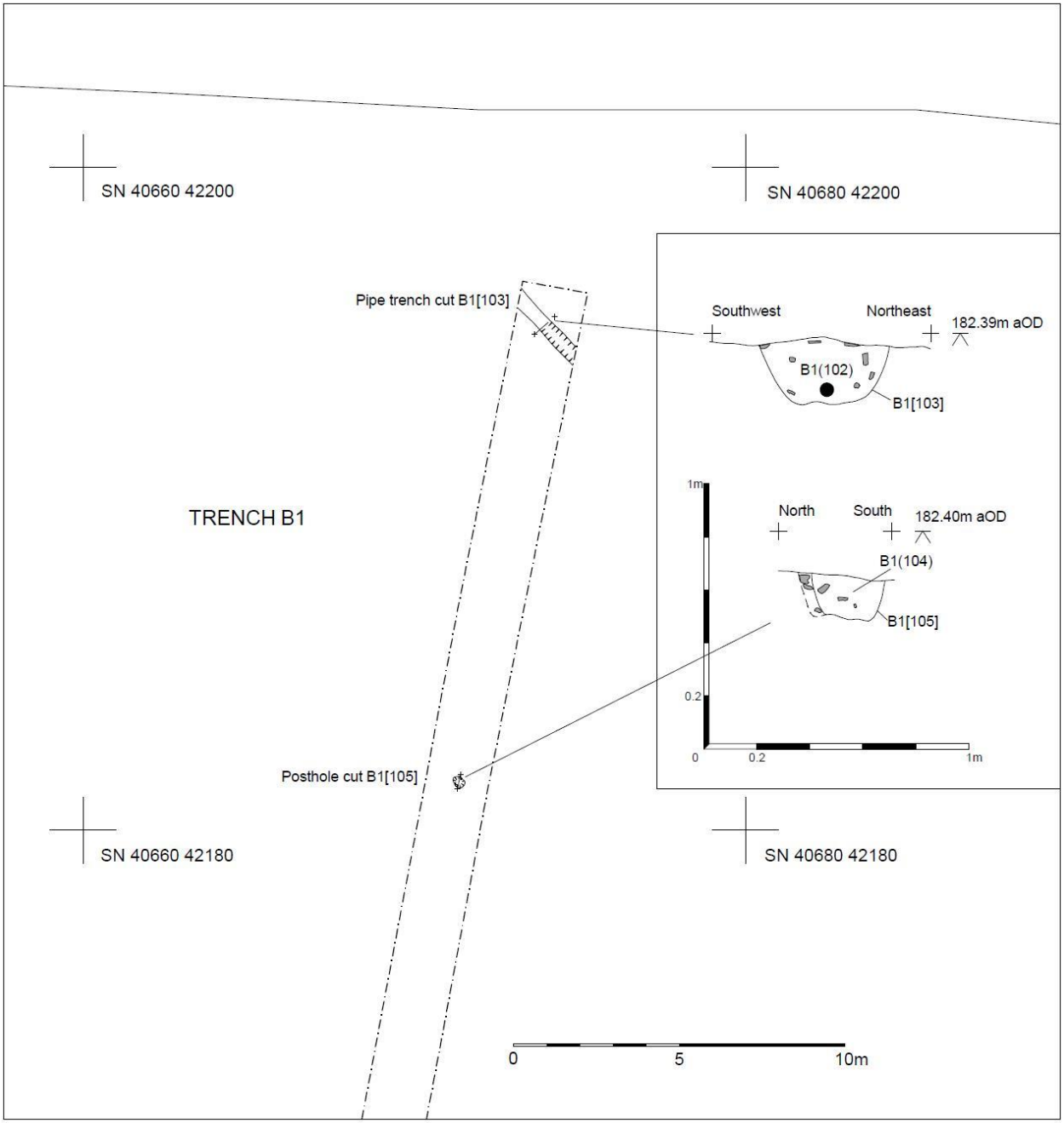



**Figure 12:** Evaluation Trench B1, plan and sections

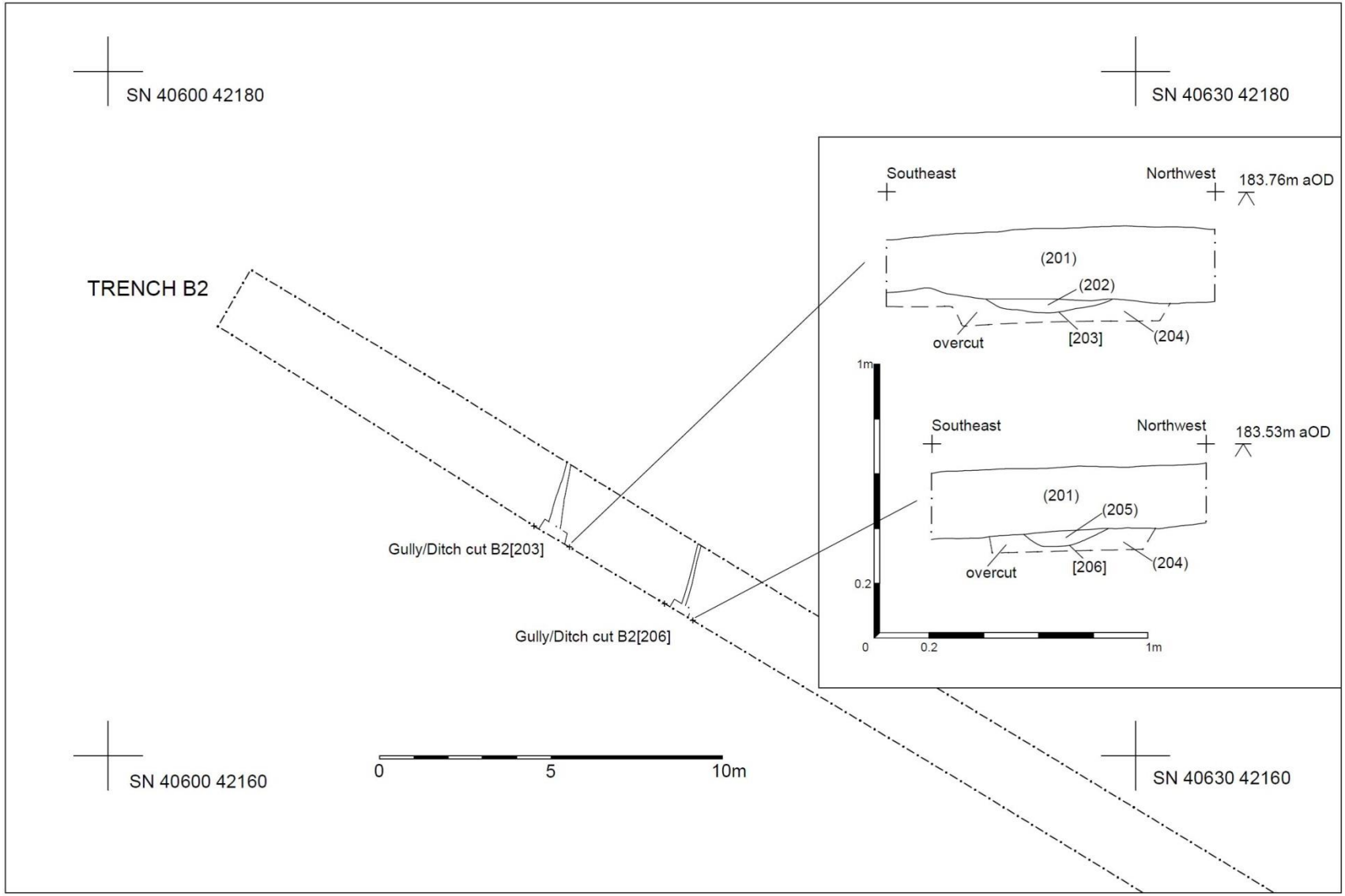



**Figure 13:** Evaluation Trench B2, plan and sections

***Trench B2*** (Figure 13)

4.3.4 Two features were recorded within this trench, both representing the remains of a former field boundary shown on early OS maps. The boundary was visible as a pair of shallow ditches, both less than 0.10m deep. The western ditch cut B2[203] fill B2(202), was a maximum of 0.40m in width (Photo 3). The eastern ditch was only 0.25m in width, cut B2[206], fill B2(205). The field boundary, flanked by the ditches, which was added in the latter part of the 19th century, would appear to have been insubstantial, leaving little evidence in the archaeological record, and thus may have been a very low bank, fence line or just a planted hedge.

***Trench C1***

4.3.5 Although the trench was located to target the possible palisade feature, no archaeology was observed in the trench. The area was subject to further mitigation during the next stage of archaeological works to confirm the absence of the feature (a similar palisade encountered in Trench E2 was very shallow and therefore the palisade feature in C1 could have been missed). As noted below, the location of the geophysical survey within Field C was not accurately plotted and so it is possible the trench missed the feature.

***Trench C2***

4.3.6 In the east to west arm of Trench C2 the remains of both of the ring ditches seen on the geophysical survey were encountered, although the features were further south than initially identified on the interpretation plot due to mis-location of the geophysical survey area. The trench was widened to ensure that a better sample of the features could be recorded (Photos 4 and 5). Two sections were excavated out of each ring ditch; the results of which are discussed below in the excavation results (Section 5).

**Photo 4:** Western ring ditch in Trench C2, facing north. 2 x 1m scales

**Photo 5:** Eastern ring ditch in Trench C2 facing west. 2 x 1m scales

***Trench C3***

4.3.7 No archaeological features were revealed within this trench.

***Trench D1***

4.3.8 No archaeological features were revealed within this trench. No indications of the former field boundary were identified suggesting it was a later 19th century fence line or hedge; a continuation to that recorded in Field B.

***Trench E1***

4.3.9 No archaeological features were revealed within this trench.

***Trench E2***

4.3.10 The trench revealed the remains of the palisade enclosure seen on the geophysical survey plot in the southeastern corner of the field. The feature was very shallow, but there did seem to be a distinct entrance area which was exposed within the trench (Photo 6).

4.3.11 A posthole to the east of the enclosure was also recorded (Photo 7).

4.3.12 Details on the excavated remains in Field E are discussed below in the excavation results (Section 5).

**Photo 6:** View north along palisade ditch in Trench E2. 2 x 1m scales

**Photo 7:** Posthole in Trench E2 facing east. 0.5m and 0.25m scales

**Photo 8:** View north along Trench F1 showing natural stone outcrop, investigated as a possible structural feature. 2 x 1m scales

**Photo 9:** Area of natural geological banding in Trench F1 facing east following removal of context numbers F1(102), F1(103), F1(104), F1(105) and F1(106). 1m scale

***Trench F1***

4.3.13 The trench was placed to target two possible features running roughly east to west across the field. A possible stone built structural feature was identified and excavated. It became clear that the feature was actually caused by variations in the bedrock geology across the development area. The strata of the bedrock followed a general east to west alignment, but with some folds or other variations in the geological planes causing outcrops of larger rocks and accumulations of clay soils which initially had the appearance of archaeological features. These were recorded as context numbers F1(102), F1(103), F1(104), F1(105) and F1(106) (Photos 8 and 9).

***Trench G1***

4.3.14 No archaeological features were revealed within this trench.

***Trench H1***

4.3.15 No archaeological features were revealed within this trench.

**Photo 10:** Pipe trench within Trench J1 facing west; cut J1[103], fill J1(102) 1m scale

***Trench J1***

4.3.16 The continuation of the pipe trench from the shaft or well in trench D was revealed within this trench, cut J1[103] (Photo 10). It was around 0.25m in width and contained very similar fill, J1(102), to that seen in Field B. It was not excavated. No other archaeological features were revealed within this trench.

***Trench K1***

4.3.17 Trench K1 was located over the C-shaped anomaly seen on the geophysical survey. The trench was widened to allow a greater area to be evaluated (Photo 11), with one section excavated through its southwestern side (Photo 12) and a second area excavated near its southeastern terminal. The feature showed up very clearly, comprising layers of backfilled material, including substantial quantities of stone. Details on the excavated remains are discussed below in excavation results (Section 5).

**Photo 11:** Arcing feature in Trench K1 after topsoil strip. 2 x 1m scales

**Photo 12:** Excavated section in the arcing feature in Trench K1. 2 x 1m scales

***Trench K2*** (Figure 14)

4.3.18 This trench targeted a possible large circular geophysical anomaly (pink dotted line Figure 11) seen in the southwestern part of Field K and a second smaller linear feature (Photo 13). The linear feature was identified, represented by a gully 0.92m in width and 0.20m in depth, cut K2[203]. The fill of the linear feature was only slightly darker than the natural and comprised a very similar stony fill K2(204).

**Photo 13:** Excavation of gully in Trench K2 facing west; cut [204]

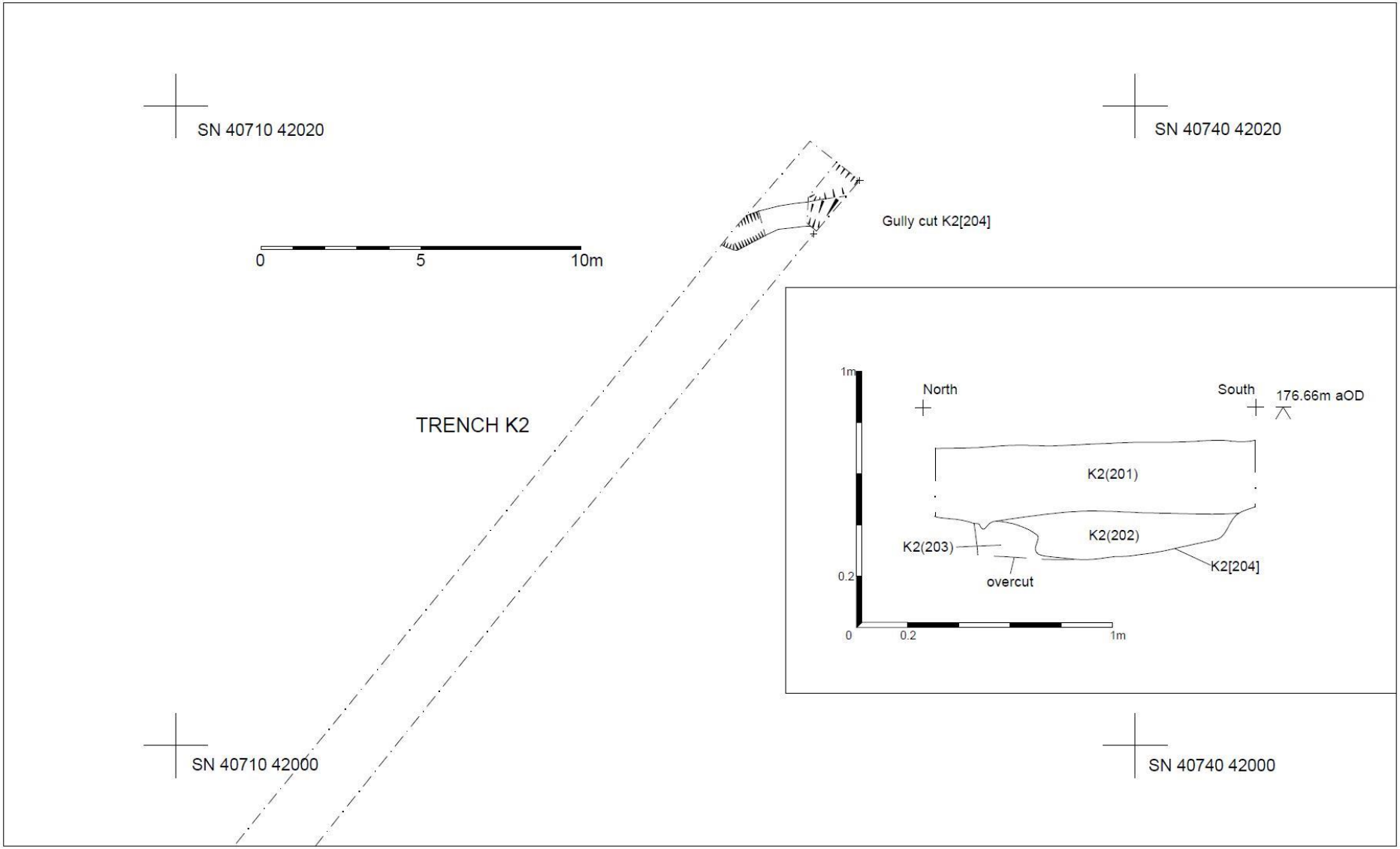



**Figure 14:** Trench plan and section of Trench K2

4.3.19 The possible ring gully was not identified in Trench K2, but the feature did appear to correspond to changes in the natural geology and has been interpreted as being a natural feature.

## 4.4 Conclusions of the evaluation

4.4.1 In summary, all of the anomalies identified by the geophysical survey were identified and confirmed, excluding the curving enclosure ditch in the south of Field C, the possible ring ditch in Field K and the possible linear feature in Field H.

4.4.2 The enclosure in Field C, targeted by Trench C1, may have been missed as the anomaly was intermittent with wide breaks in it. It is also possible the feature was very shallow and could have been machined away. As noted above, it is also possible that the evaluation trench was located too far to the south and thereby missed the anomaly. As the area was regarded as still having archaeological potential further investigation of the area was undertaken during the next stage of archaeological mitigation. The possible curving feature identified as a negative anomaly to the north of ring ditches was not directly targeted with the trial trenches and so part of this area was investigated in the next stage of excavation.

4.4.3 The possible ring anomaly identified within Field K, targeted by Trench K2, may have been a geological feature as it did correspond with a seam of bedrock seen in the northern end of the trench. The underlying geology of the development area was quite varied, with clays and gravels in some areas and bedrock outcrops in others. On the eastern side of the development area, the bedrock strata was warped and folded in places resulting in mis-identification of geological features as possible archaeological features (such as in Trench F).

4.4.4 It is uncertain why the possible linear anomaly did not show up in Field H, but its linear nature and alignment may indicate it was again a geological variation as opposed to an archaeological feature.

4.4.5 No significant archaeological features were identified within Field A, Field D, Field F, Field G, Field H, Field I or Field J. It was thus concluded that no further archaeological mitigation was required within these areas.

### *Field B*

4.4.6 Within Trench B1 the line of the service trench running southeast from the shaft or well within Field D was identified and excavated. This was a modern cut feature with a steel ¾" pipe running through it. Presumably this was a water pipe leading from the shaft or well to supply water to properties to the southeast. The feature was also exposed in Trench J1, but not excavated. The feature was of low archaeological significance and did not require any further archaeological mitigation as the excavation in Trench B1 confirmed its date and character.

4.4.7 In the southern part of Trench B1 a posthole was revealed. This contained no dating evidence and was not associated with any other features. A solitary posthole is of limited archaeological significance and no further archaeological mitigation was undertaken in this area.

4.4.8 Field B also revealed the remains of the former field boundary shown on earlier OS maps. The boundary comprised two parallel, shallow ditches or gullies. These may have flanked a small bank, hedgerow or fence line This boundary was not identified within Trench D1 to the north. The feature is

of limited archaeological significance and no further archaeological mitigation was required.

***Field C***

4.4.9 The southern half of Field C contained two clear ring ditches exposed in Trench C2. The eastern ring ditch was some 1.6m in width and at least 0.5m in depth that of the western ring was slightly narrower and shallower.

4.4.10 Re-deposited bedrock visible within the ditch fill on the internal side of the ditches is likely to indicate that internal mounds were once present; suggesting they were Bronze Age round barrows encompassing a burial.

4.4.11 The ring ditches were of high archaeological significance and thus a scheme of further archaeological mitigation was implemented to record the extents of the ring ditches. A curving anomaly to the north of the ring ditches was not evaluated, but the area was further investigated during the excavation.

4.4.12 The possible palisade ditch to the south of the ring ditches was not identified in Trench C1. Nonetheless this area was still considered to have archaeological potential and thus further mitigation was undertaken.

4.4.13 The area of Trench C3 to the north of the ring ditches did not reveal any archaeological remains and no further mitigation was proposed for the northern half of the field.

***Field E***

4.4.14 In the southeastern corner of Field E the possible palisade ditch was recorded in Trench E2, and although it was very shallow (0.04m to 0.12m) it was still clearly visible. The area had evidently suffered from significant plough damage, but with the presence of an adjacent posthole within the enclosure, the area was considered to have significant archaeological potential and further archaeological mitigation was implemented.

***Field K***

4.4.15 The northern part of Field K contained the very distinct arcing C-shaped anomaly seen on the geophysical survey. Trench K1 was placed over the anomaly and revealed it to be very substantial feature. It comprised a ditch of some 2m width and over 1.3m depth. The full extent of the feature was not determined as it was thought possible that it ran underneath the hedgerow to the north. The visible anomaly formed a horseshoe shaped feature, with the open end to the east-southeast, measuring *c.*15m east to west and potentially *c.*20m north to south. The ditch was steeply V-shaped with a number of different fills, including large amounts of backfilled stone. The stone comprised local bedrock and boulders of a different geology which must have been specifically brought to the site. No dating evidence was revealed during the evaluation. The shape of the feature, its location and the character of its fills indicated that it is of some antiquity and it was thought to be of probable prehistoric date. A further scheme of archaeological mitigation was implemented within this area.

4.4.16 Trench K2 to the south revealed a possible gully at its northern end, close to the C-shaped feature. As there were some significant changes in geology within the area its provenance was uncertain. A possible ring anomaly to the south targeted by the trench was confirmed as being of likely geological origin. The archaeological potential of this area to the south of the C-shaped ditch was thus considered limited and no further mitigation was undertaken in this area.

4.4.17 The eastern side of the field was also considered to be devoid of archaeology and no further mitigation was implemented in that area either.

# 5. ARCHAEOLOGICAL MITIGATION

## 5.1 Introduction

5.1.1 As a result of the geophysical survey and evaluation three specific areas were identified as containing significant levels of archaeology; Fields C, E and K. Consequently each area was subjected to further archaeological mitigation.

5.1.2 In Field C an area was defined covering the two ring ditches, which was then stripped and detailed excavation of the archaeological deposits was undertaken. This area was extended to the north to try and identify part of the negative curving anomaly seen to the north. The area to the south, where the possible palisade ditch was seen on the geophysical survey, was stripped in a series of linear trenches aligned east to west; the intention being that if archaeological features were present they would be identified in the trenches and a wider area could be investigated .

5.1.3 In Field E a strip, map and record exercise was implemented to uncover the remains of the confirmed palisade ditch and test the extent of any associated archaeological remains. Sample excavation of the features exposed during this process was carried out.

5.1.4 The full extent of the area of the C-shaped ditch in Field K was stripped and the feature was mostly hand excavated, with some machine excavation at the end of the recording programme. A wide area around the ditch was exposed and cleaned in order to look for associated features and finds. The hedgebank to the north of the C-shaped ditch was also removed under full archaeological control to confirm the northern extent of the feature.

## 5.2 Methodology

5.2.1 Each area was excavated using a mechanical excavator (360 tracked excavator) fitted with a flat bladed bucket under constant supervision by an archaeologist. The areas were initially excavated to remove all non-archaeologically significant overburden, down onto either archaeological levels or the underlying natural undisturbed ground surface, whichever was reached first.

5.2.2 Following machine excavation, the excavated areas were hand cleaned to determine the extent of the archaeological features and to determine whether any other archaeological features existed in their environs.

5.2.3 Where other archaeological features were identified in their environs these have been either excavated in full or to at least 25%.

5.2.4 Features containing deposits of environmental significance were sampled and have been processed, assessed and analysed.

5.2.5 Charcoal samples were also retained during the mitigation phase for radiocarbon dating, which has now been completed and the results included below.

5.2.6 All deposits were recorded by archaeological context record sheets, scale drawings and photographed. All individual deposits were numbered and recorded in accordance with DAT Archaeological Services Recording Manual. All drawn plans have been related to the Ordnance Datum and known boundaries.

## 5.3 Field C – Results and Discussion

5.3.1 Full archaeological excavation was undertaken in Field C covering an area of *c.*30m x 30m over the ring ditches and surrounding area (Figure 15).

5.3.2 To the south of the ring ditches, 4 trenches of approximately 40m length and 1.8m width each were opened to determine the presence or otherwise of archaeological remains. These were in addition to Trench C1 opened during the evaluation stage (Figure 15). A slight hint of a possible palisade enclosure was observed cutting into the natural geology (Photo 14), as had been identified in the geophysical survey. For the most part this was largely indiscernible in the trenches and likely to have been ploughed away completely in some areas. Where possible, sections were excavated which revealed the cut [5064] to be approximately 0.50m wide, with steep sloping sides and a curved base, with a maximum depth of 0.25m (Photo 15). The cut was filled by (5065), a dark brown silty soil. No artefactual evidence was recovered and no ecofactual samples were retained.

**Photo 14:** Possible palisade enclosure (cut [5064] in Field C as seen in west end of southern most trench. Facing north. 0.5m scale

**Photo 15:** North facing section through the possible palisade enclosure cut [5064]. 0.5m scale

5.3.3 Following machine stripping, the main trench area of the ring ditches was hand cleaned and sample excavation of the ring ditches was carried out. In total four sections were excavated through each ring ditch (adding two more to those excavated during the evaluation). Following recording the remainder of the ring ditch fill between the sample sections was then removed by hand. The entire fill of the Western ring ditch was removed (Photo 16) but only ¾ of the Eastern ring ditch could be excavated within the time available (Figure 15).

5.3.4 Each ring ditch was cut into the underlying broken shale bedrock, which upon trowelling broke up easily. As the fills were also quite stone rich this did lead to some overcutting of the features in places, which may have resulted in a false impression of the width of the ditches in plan. Each ditch formed a continuous circle with no breaks.

5.3.5 The Western ring ditch cut[5051] measured *c.*5.0m in diameter, including the ditch which measured approximately 1.10m wide and ranged in depth from 0.20m to 0.50m.

5.3.6 The Eastern ring ditch cut [5050] measured a total of *c.*6.0m in diameter, including the ditch. The ditch itself measured approximately 1.20m wide and up to 0.40m deep.

5.3.7 Each ditch was a rough rounded U-shape in profile (Photo 17 and 18) and contained a number of fills suggesting a gradual silting up of the ditches over time.

**Photo 16:** Western ring ditch (cut [5051]; Field C after excavation.
Facing southwest. 2 x 1m scales

**Photo 17:** Section excavated through Western ring ditch.
Facing northwest. 1m scale

**Photo 18:** Fully excavated ditch of Western ring ditch (cut [5051]; Field C. Facing east. 1m scale

5.3.8 Radiocarbon dates (SUERC-68020 and SUERC-68021) were produced from samples collected from the basal (deepest and earliest) fills of the ditches of the East and West ring ditches. These samples may reflect the beginning of the silting of the ditches or a backfilling event signifying the end of their use or maintenance. It is also possible that the material has been redeposited from elsewhere and thus the dated material could derive from earlier or later activity.

5.3.9 The estimated date of the sample taken from a charcoal rich lens within context (5055) within the base of the Eastern ring ditch was 3940 – 3705 cal. BC. (SUERC-68020)[2].

5.3.10 The sample collected from the Western ring ditch estimates a date range of 4330 – 4060 cal. BC (SUERC-68021), again produced from charcoal recovered from the lower part of the ditch within fill (5054).

5.3.11 It should be noted that the date ranges for the two ditches potentially cover a period of 600 years. There are no overlaps in the dates obtained, suggesting that the Western smaller ring ditch predates the larger Eastern ring ditch. The dates are very early for ring ditches, which are typically of Bronze Age date (roughly 2300 – 700BC), whereas both of the dates retrieved from these lie within the earlier part of the Neolithic period.

5.3.12 In addition to the ring ditches and possible enclosure, a small isolated posthole cut [5062] was also recorded. The posthole was roughly circular in plan with a diameter of 0.32m. It was half sectioned revealing it

[2] All radiocarbon dates given in the text are provided at the estimated ranges rounded to the nearest 5 years. Full details and calibration curves based on the OxCal radiocarbon date calibration programme version 4.3 are provided in Appendix 2 and 3.

to be up to 0.24m deep with steep vertical edges and a concave shaped base. It was filled by (5063), a mid-brown friable silty clay.

5.3.13 Figure 16 shows the final excavated plan of the ring ditches, with the lines of the recorded sections shown. The sections of the Western ring ditch are illustrated in Figure 17; those for the Eastern ring ditch in Figure 19. Two profiles across the fully excavated Western ring ditch were also drawn and the locations shown in Figure 16; profiles in Figure 18.

5.3.14 No sign of the negative response curving anomaly to the north was seen within the excavated area. Based on the fact that the ring ditches were both slightly further to the south than indicated on the original geophysical survey plot (due to its mis-location), this feature would have extended into the excavation area.

**Photo 19:** Overall view across the two ring ditches in Field C at the end of the excavation, facing east

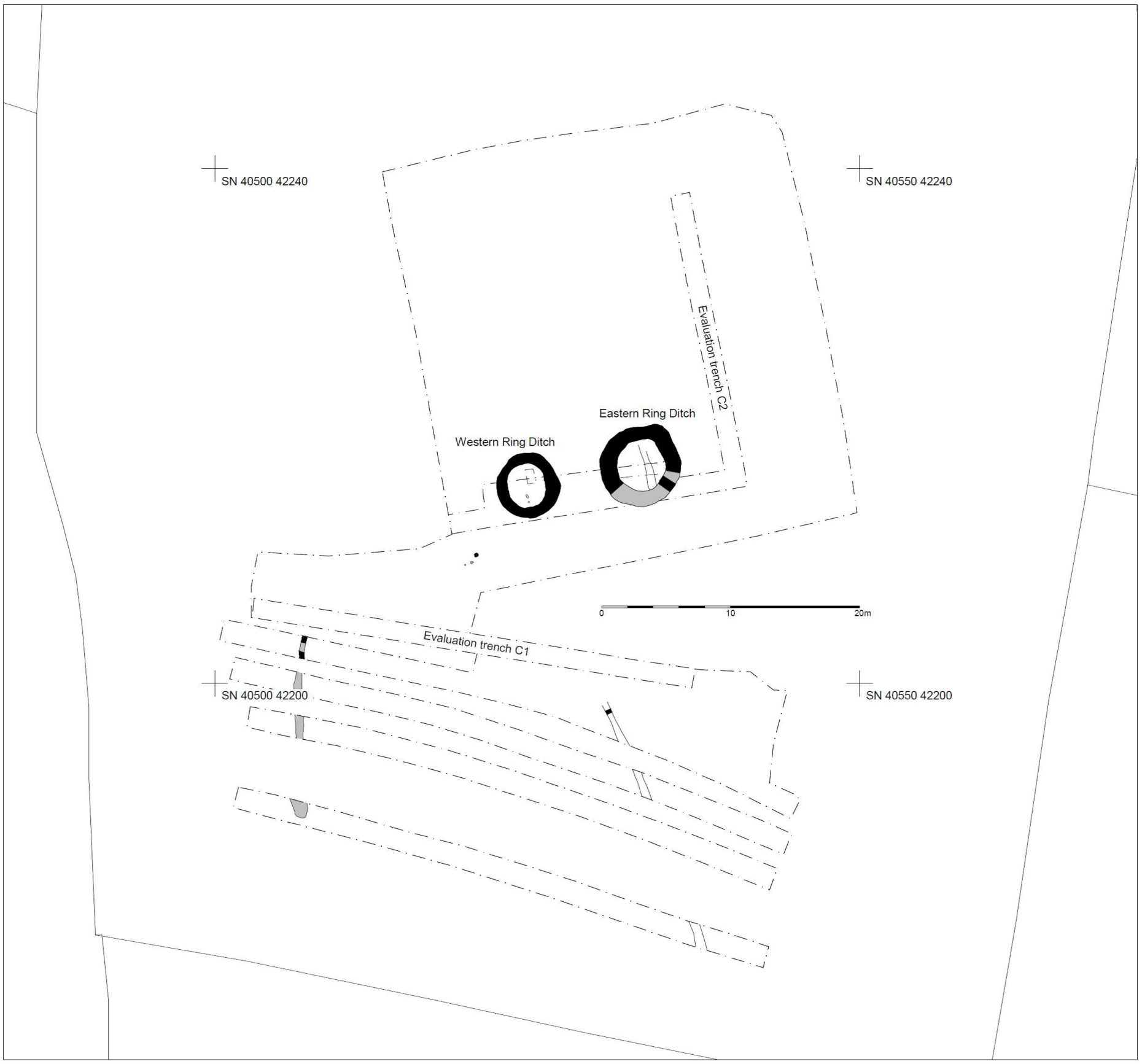



**Figure 15:** Field C showing excavation areas and all recorded features

Black indicates excavated areas within features; grey indicates unexcavated areas; uncoloured features are considered natural

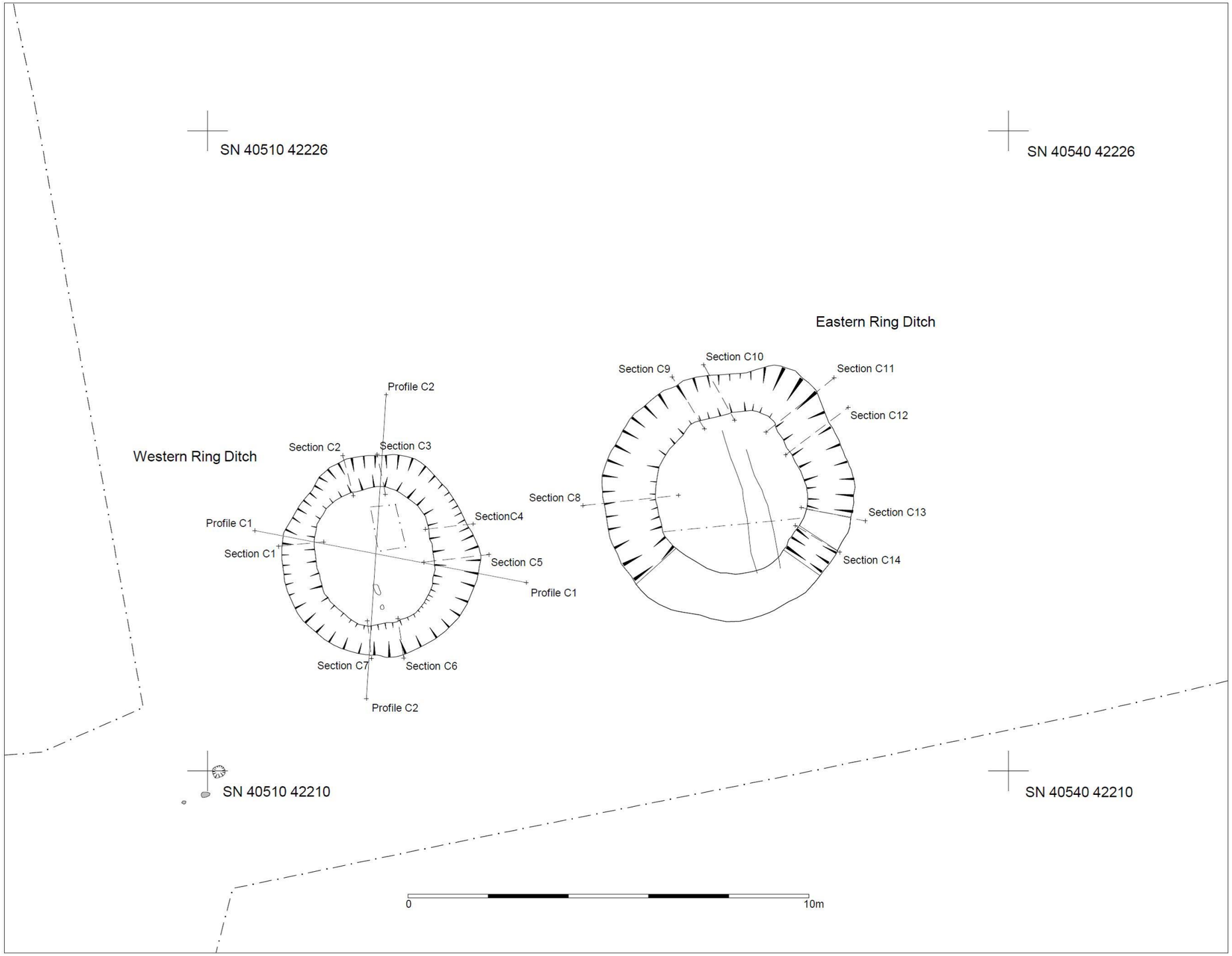



**Figure 16:** Plan of the excavated ring ditches, showing locations of sections (Figure 17) and profiles (Figure 18)

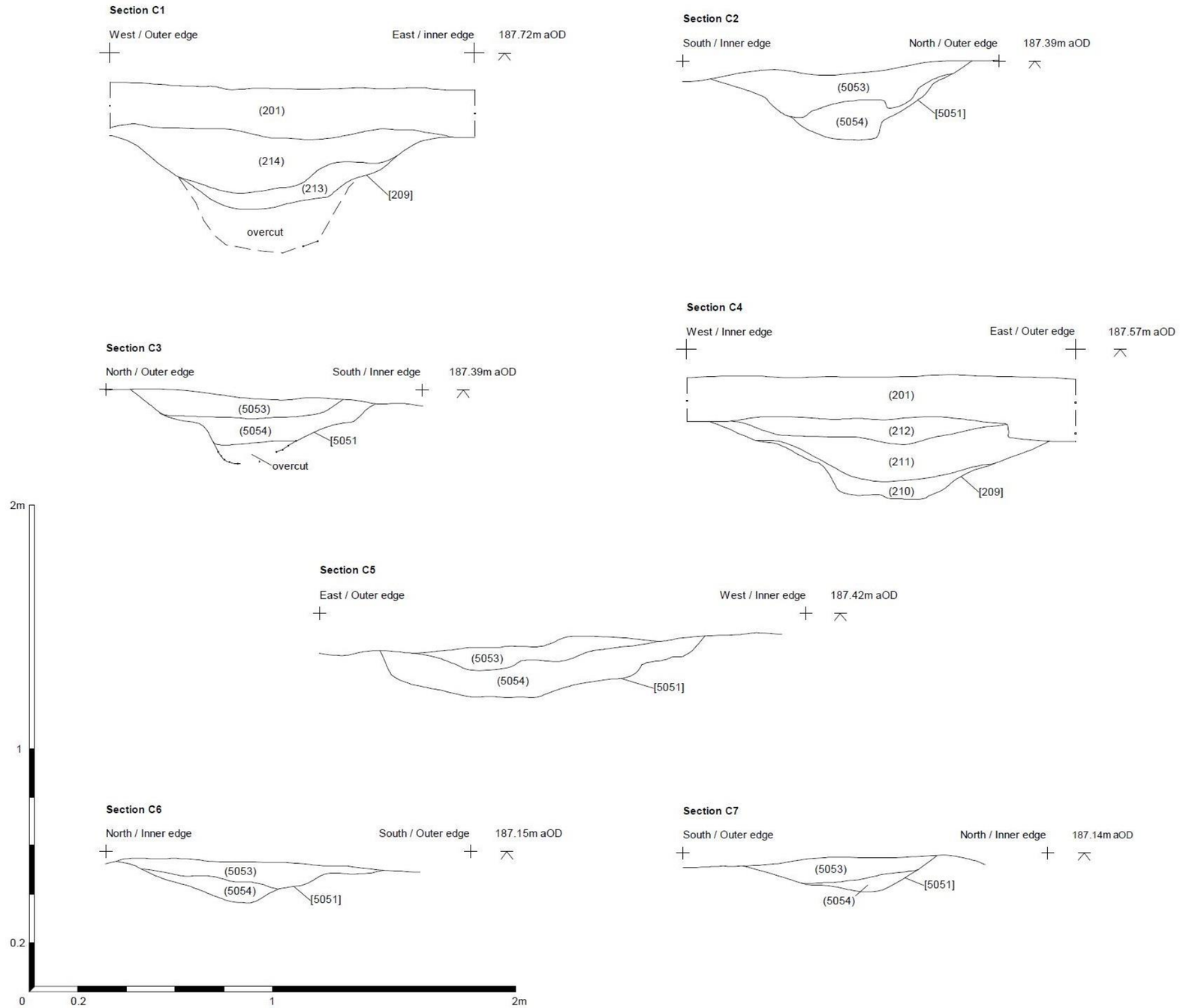



**Figure 17:** Section drawings through the Western ring ditch (locations shown on Figure 16)

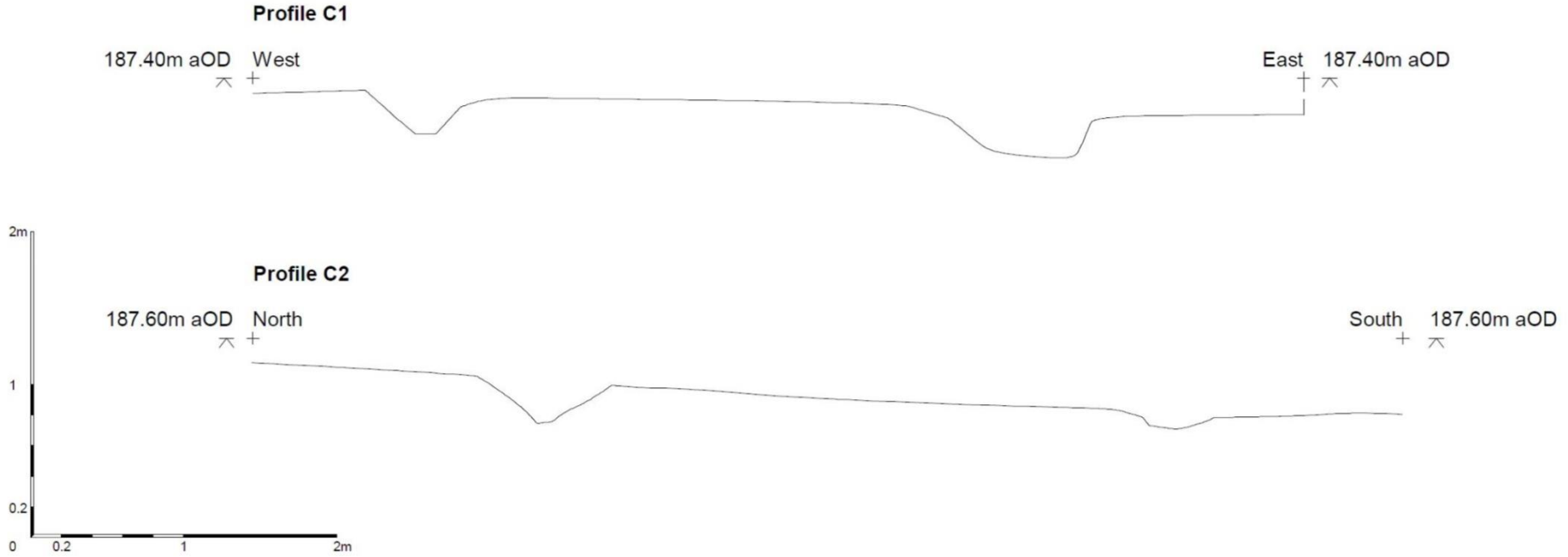



**Figure 18:** Profiles recorded across the fully excavated Western ring ditch (locations shown on Figure 16)

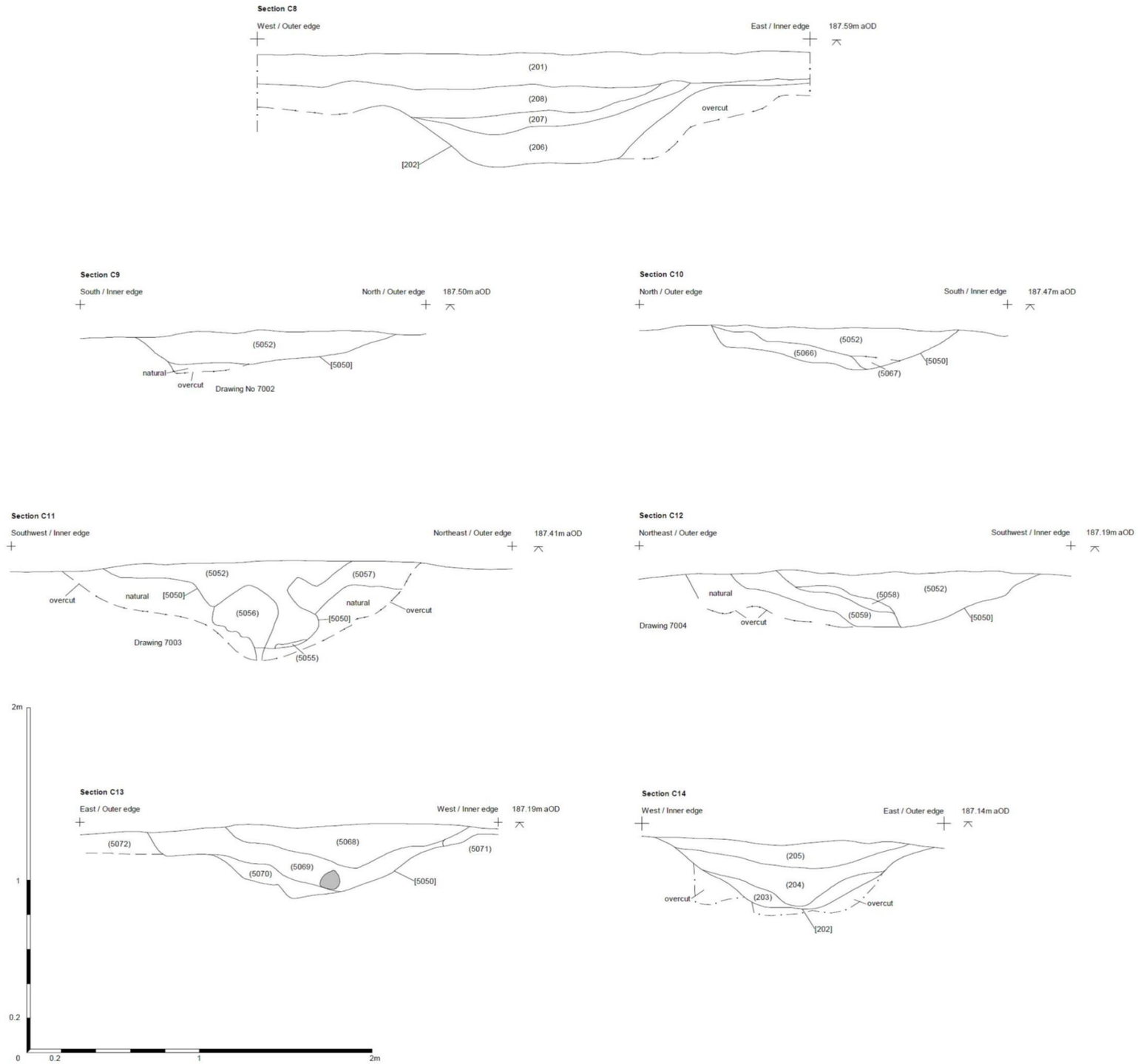



**Figure 19:** Section drawings through the Eastern ring ditch (locations shown on Figure 16)

## 5.4 Field E – Results and Discussion

5.4.1 A strip, map and record mitigation strategy was implemented in the southeastern corner of Field E to investigate the extent of the palisade enclosure recorded on the geophysical survey and confirmed in evaluation Trench E2. This covered an area of around 0.31ha.

5.4.2 The area was stripped by a 360° machine fitted with a flat bladed bucket, under the supervision of archaeologists. Numerous features were identified during this work, which were then tagged in the ground to ease identification before a scheme of excavation was implemented. Due to time pressures the area was recorded relatively quickly and it is possible (though unlikely) that some features were missed.

5.4.3 It was clear that the area had been subject to truncation from ploughing, leaving the archaeology surviving only as shallow features cut into natural geology, as had been suggested by the evaluation.

5.4.4 The main features that were revealed were within the Field E area, and as shown on Figure 20, were:

- The curvilinear palisade ditch;
- A near-circular ring ditch;
- A group of small pits or postholes containing burnt material to the southeast;
- A linear feature containing large stones; and
- An array of smaller features widely distributed over the area and a number of other linear features.

### *Palisade Ditch / Evaluation Trench E2*

5.4.5 The curvilinear palisade ditch cut [5026] initially excavated during the evaluation, proved to be very shallow upon partial excavation and was cut by a penannular ditch to the north, interpreted as the remains of an eaves drip gully around a round house (Figure 21). Beyond this point this feature was impossible to discern, despite further investigation towards the northeastern boundary of the stripped area. It is likely that the feature had been destroyed through ploughing. Where discernible the ditch was cut into the natural geology and measured approximately 0.50m – 0.60m wide but only as little as 0.05 – 0.01m depth survived. The ditch was filled by (5027), a mid-brown friable silty loam.

5.4.6 A possible entrance was located mid-way along its length, as identified during the evaluation (Figure 21). No artefacts were recovered from the fill and no ecofactual samples were retained due to the paucity of remaining material.

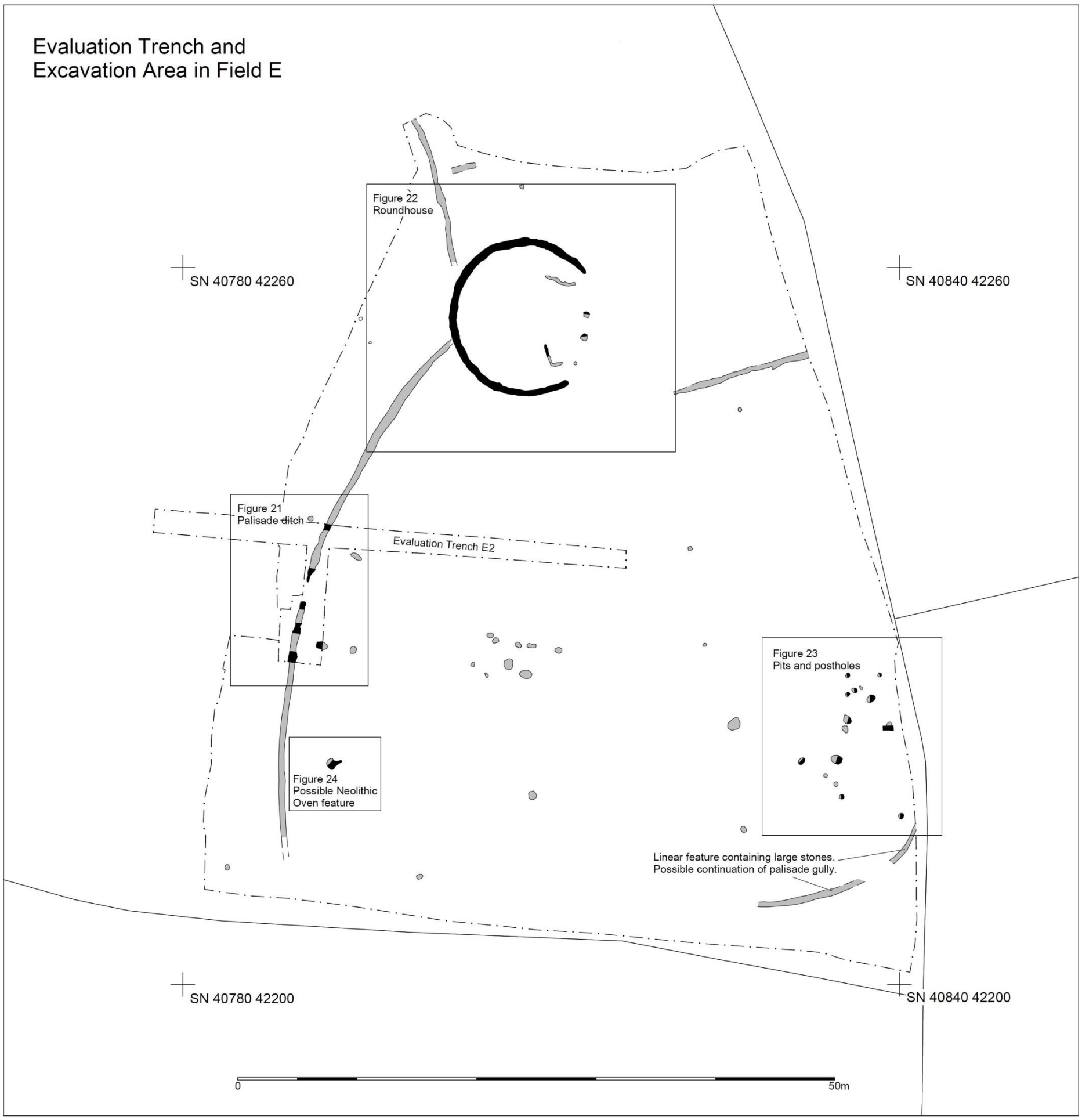



**Figure 20:** Archaeological strip, map and record area within Field E showing all archaeological features and locations of Figures 21, 22 and 23

Black indicates excavated areas within features; grey indicates unexcavated areas or features

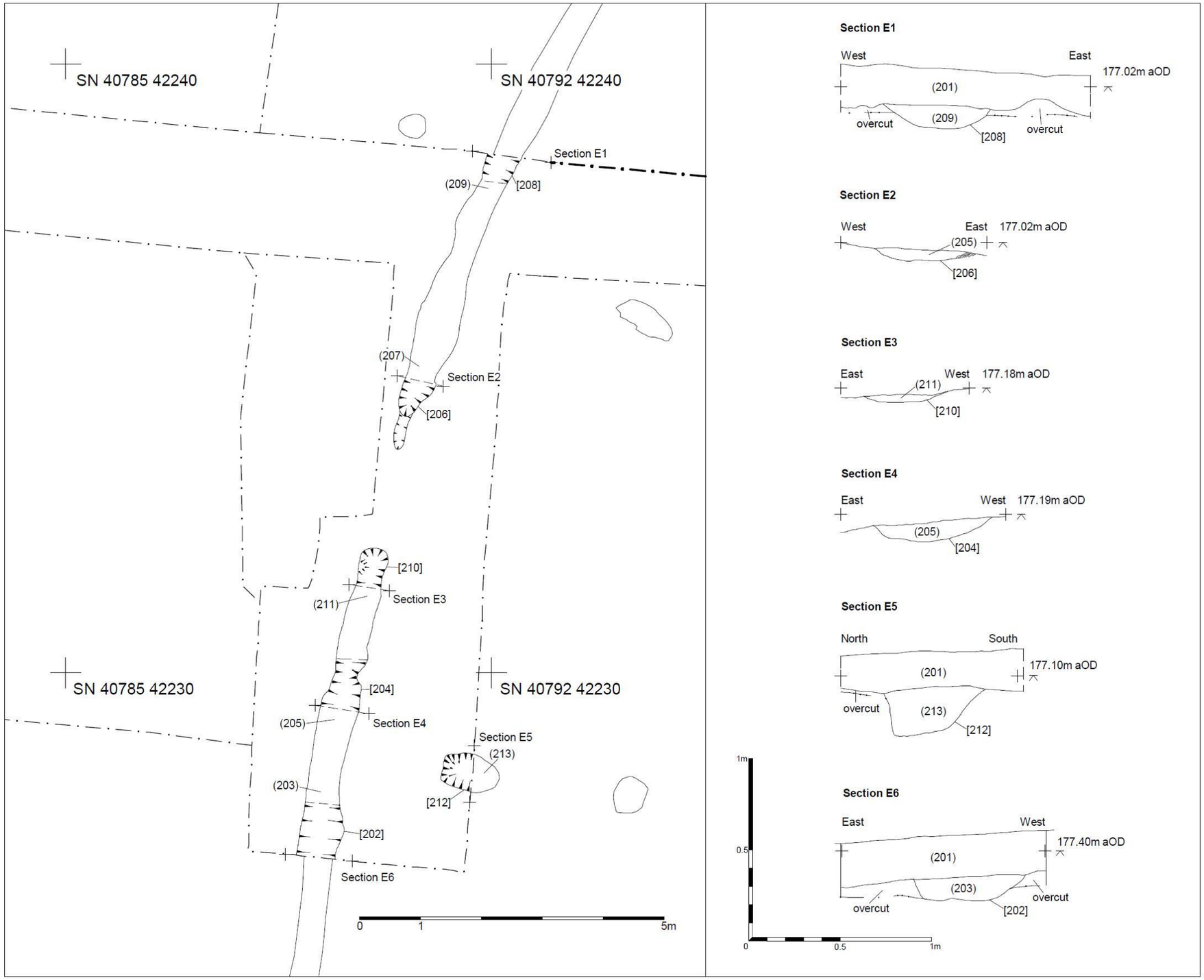



**Figure 21:** Palisade ditch and excavations undertaken within evaluation Trench E2, including section drawings E1 – E6

***Roundhouse area***

5.4.7 The penannular ditch cut [5030] would appear to be either a bedding trench for wall material or a drip gully from under the eaves of a roundhouse (Figure 22). Such structures typically date to the Iron Age, although occasional medieval roundhouses have also been excavated. It is evident that the western side of the ring ditch was higher than its terminals to the northeast and southeast suggesting a possible intentional run-off for rain water (see Profiles 1 -13, Figure 22) down slope and thus most likely an eaves drip gully. The ditch was fully excavated so as to ascertain its exact dimensions.

5.4.8 The ditch was cut into natural bedrock with an overall internal diameter of 12m (north to south). The sides of the ditch were smooth gradual slopes to a relatively concave base. The ditch measured *c.*0.55m wide at the top and 0.13m deep (Photos 20 and 21).

5.4.9 The gully was filled by (5031), mid-brown, friable silty clay found across the full extent of the cut.

5.4.10 No artefacts were recovered from the fill although charcoal was recovered for radiocarbon dating.

**Photo 20:** Excavated section of roundhouse ditch cut [5030]. Facing east. 0.5m scale

**Photo 21:** South facing section of the curving roundhouse ditch cut [5030]. 0.5m scale

5.4.11 Two postholes cut [5032] & cut [5034] were present on the eastern side of the roundhouse, presumably demarcating doorposts at its entrance. The ring ditch did not extend across this entrance area. The general direction of the opening is to the east-northeast facing a point just to the south of Pencoed-y-fod hillfort, the site of which is visible in the distance. Each posthole was sub-circular in plan, with a diameter of 0.42m and 0.53m (cut [5032] and cut [5034] respectively). They were both half sectioned to reveal a rounded profile. Posthole cut [5034] (the southern posthole), was the deepest measuring 0.25m in depth. Posthole cut [5032] measured 0.21m deep (Photo 22). The fill of each posthole consisted of a mid-brown, friable silt (5033) in cut [5032] and (5035) in cut [5034]. A soil sample was collected from the northern posthole (5033), cut [5032], and was subsequently used for radiocarbon dating.

5.4.12 No internal postholes or structural elements survived within the roundhouse. Reconstructions of Iron Age roundhouses, such as the Earthwatch House at Castell Henllys Iron Age Village, have demonstrated that it is possible to support a large conical roof for a roundhouse of this size merely on an earth and timber wall, without the need for any other internal timber uprights. Alternatively, upright timbers may have been placed upon stone pads or in shallow hollows, which have left no trace in

the archaeological record following more recent ploughing. Photo 23 shows the roundhouse upon completion of excavation.

**Photo 22:** North facing section of posthole cut [5032] at the entrance to the roundhouse (Field E). 0.5m scale

5.4.13 Two radiocarbon dates (SUERC-68023 and SUERC-68024) were produced from samples collected during excavation of the roundhouse. SUERC-68024 was retrieved from charcoal found in the roundhouse gully fill (5031). This produced a date of 45 – 75 cal. AD (SUERC 68024).

5.4.14 The radiocarbon date obtained from charcoal within fill (5033) of the northern posthole gave an estimated date range of 110 cal. BC – 55 cal. AD (SUERC 68023).

5.4.15 Both of these dates securely place the penannular gully and associated postholes in the Iron Age period.

**Photo 23:** Roundhouse after completion of excavation. Facing southwest.

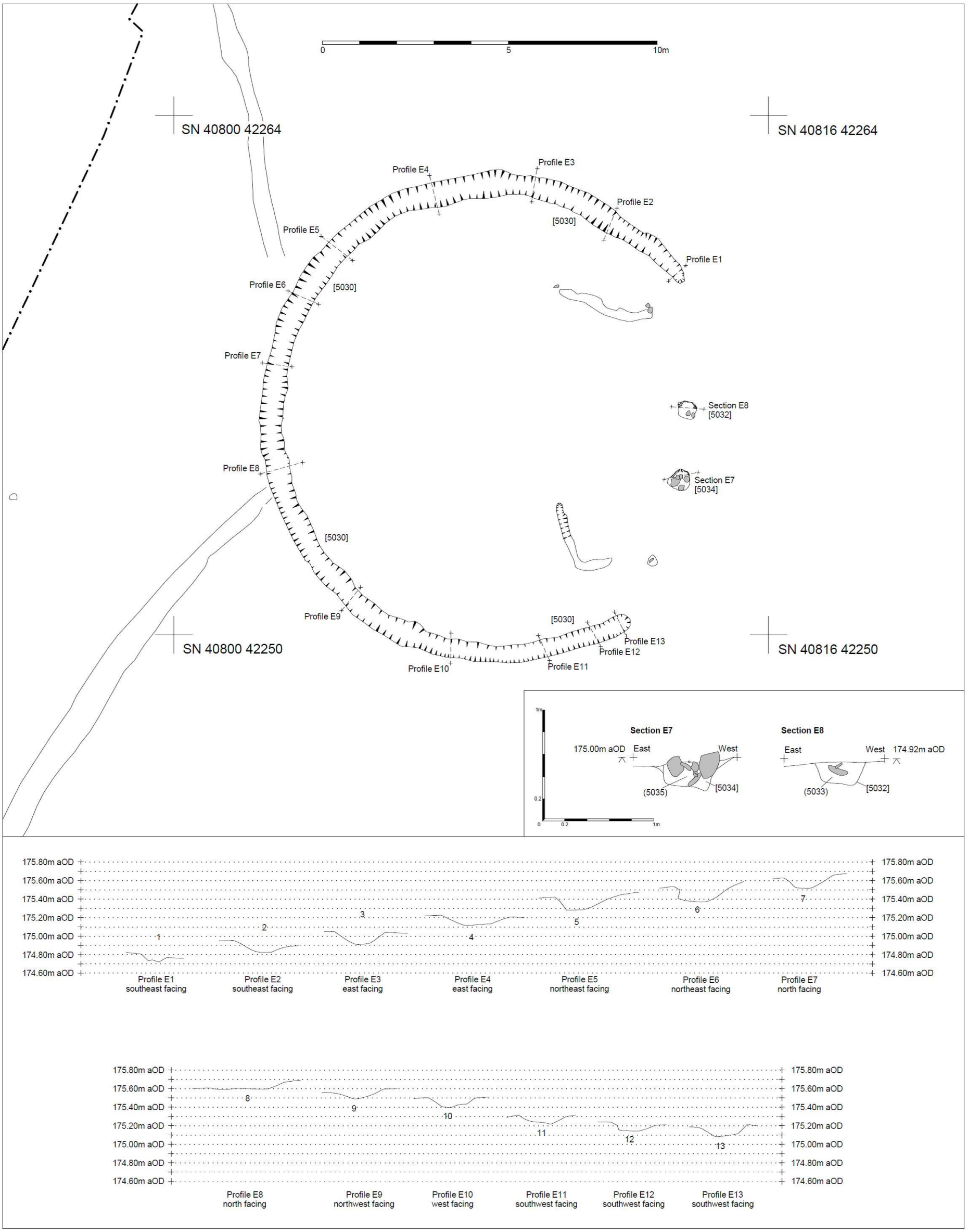



**Figure 22:** Fully excavated plan of roundhouse gully cut [5030] and entrance postholes, with associated section drawings E7 & E8 and Profiles E1 – E13 through the gully

***Area of Pits and Postholes***

5.4.16 A number of pits and postholes were visible across the stripped area, but only one group were excavated and recorded due to time constraints. These were a group located in the southeastern part of the stripped area (Figure 23). Of the group of 14 features, 12 were excavated and recorded cuts [5000], [5002], [5004], [5006], [5008], [5010], [5012], [5015], [5017], [5019], [5021] and [5023]. A few examples of these excavated pits are shown in Photos 24 to 26, with a working shot of the investigation of the area in Photo 27.

5.4.17 The excavated pits ranged in size from as little as 0.35m diameter cuts [5008] and [5021] to 0.80m diameter cut [5019] (Photo 26). The deepest pit cut [5034] measured a maximum depth of 0.25m but the shallowest pit cut [5002] was only a maximum of 0.05m deep.

5.4.18 One of the features contained fragments of burnt bone (unidentifiable) while another yielded two fragments of possible Roman ceramic. The location of these features suggests that they could be associated with the roundhouse and therefore the settlement was of Iron Age / Romano-British date. However, there is no definite association between the pits and the roundhouse so this is a tentative hypothesis.

5.4.19 Each pit was cut into the natural bedrock and ranged in size, depth and shape (Figure 23).

**Photo 24:** Pit cut [5017] prior to excavation, one of a cluster of excavated pits in Field E. 0.5m scale.

**Photo 25:** Facing west. East-facing section of pit cut [5023] one of a cluster of excavated pits in Field E, cut into bedrock. 0.5m scale.

**Photo 26:** Southeast facing section of pit cut [5019] one of a cluster of excavated pits in Field E. 0.5m scale

**Photo 27:** Excavation and recording the cluster of pits in the southeastern corner of Field E

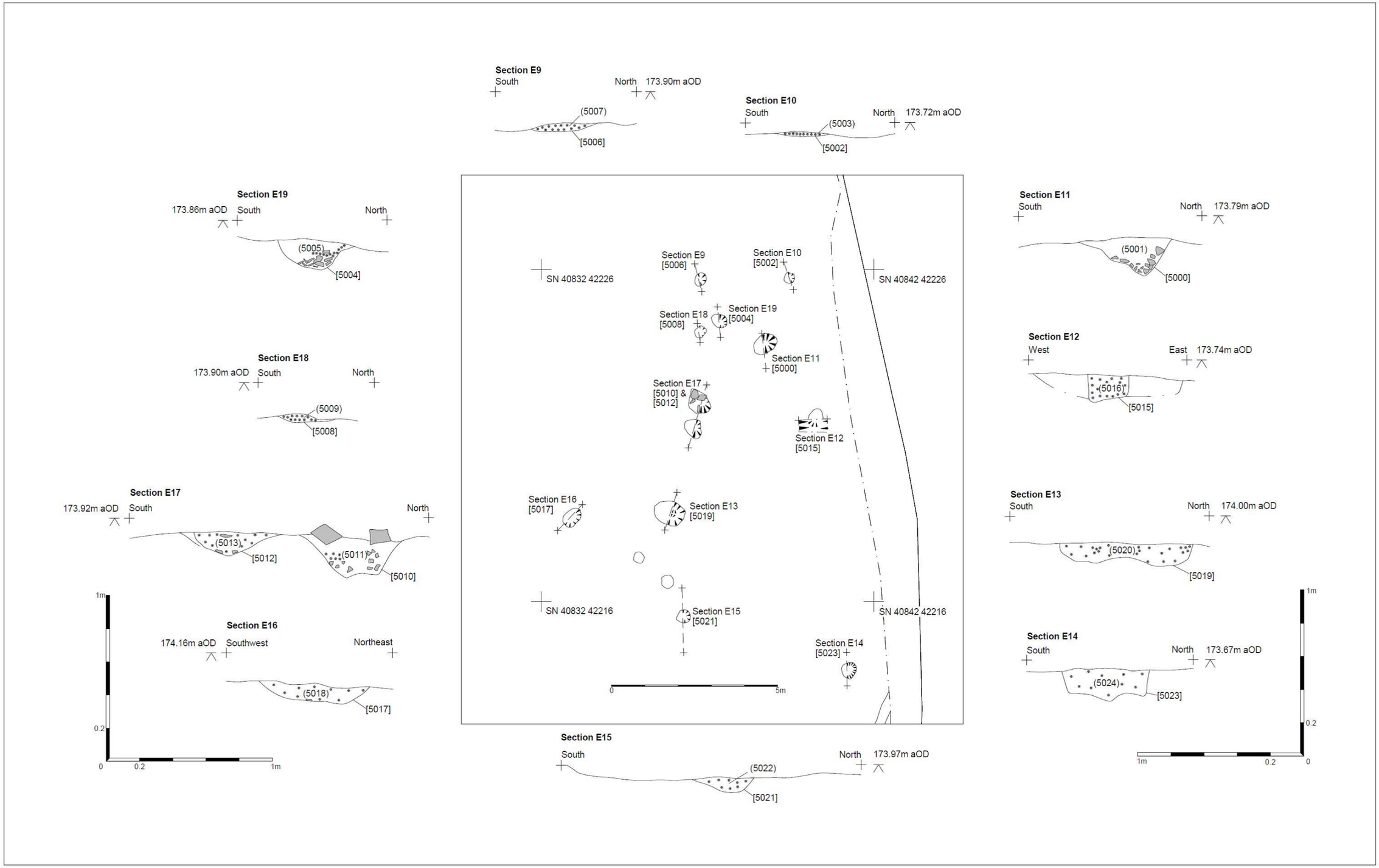



**Figure 23:** Area of pits and postholes in the southeastern part of Field E, showing excavated features and associated section drawings E9 – E19

***Other features***

5.4.20 The strip, map and record within Field E also revealed a linear feature containing large stones immediately to the south of the group of pits and postholes (Figure 20). It was examined and partially excavated but it was impossible to establish its date or function. However, the large stones in the fill strongly suggested that it was the remnant of a wall or palisade and may even be a continuation of the palisade ditch recorded to the west, although this would make a very irregular shaped enclosure.

5.4.21 There were also a large number of other relatively small features scattered throughout the stripped area, with the majority located in the southern half of Field E. Many of these could not be investigated further due to time constraints.

5.4.22 The most notable of these features was located in a relatively isolated location in the southwestern part of the investigated area in Field E (Figures 20 and 24). The fill (5029) of feature cut [5028] was charcoal rich (Photos 28 and 29) and was partially overlaid by a layer of stones which were heat affected on their underside (Photo 30). This implies that the stones may have formed a superstructure over an area used for burning, such as might be expected for an oven or kiln. The significance of the stone layer and the burnt material beneath was not recognised until after partial excavation and was not recorded in detail. It was roughly oval shaped in plan to the southwest, with a shallower projection running to the northeast (Figure 24; Photo 29). Potentially this may have been associated with a flue into a possible oven or kiln.

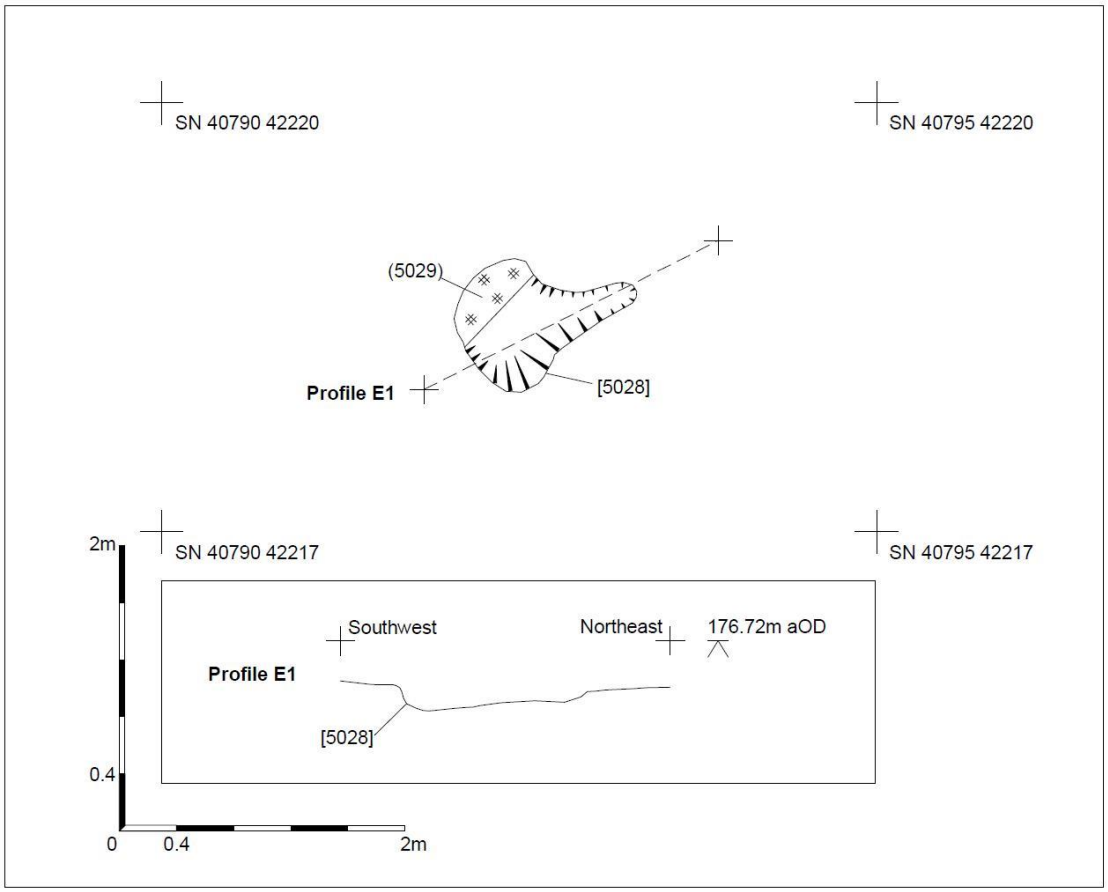



**Figure 24:** Plan and profile of possible oven or kiln feature cut [5028]

**Photo 28:** Working shot of excavation of cut [5028] showing rich charcoal fill of the possible kiln or oven feature.

**Photo 29:** Overview of feature cut [5028] following partial excavation, showing some of the charcoal rich fill left in the main body of the feature, with the shallower projection in the foreground. Facing south. 0.5m scale

**Photo 30:** Some of the heat affected stone recovered from feature cut [5028]. 0.5m scale

5.4.23 Excavation did not yield any artefacts within the feature, other than the burnt stone, but a radiocarbon date was obtained from charcoal within the fill (5029) giving a date range of 3765 – 3645 cal. BC (SUERC-68022). This date places the possible oven in the earlier Neolithic period, significantly older than the roundhouse located nearby. This might suggest a continuous occupation of the development area, but unfortunately there is insufficient information to support this hypothesis.

## 5.5 Field K – Results and Discussion

5.5.1 The machine strip across the area of the C-shaped ditch in Field K included the removal of the hedge bank as it was suspected that the feature was partially covered by the bank (Figure 25). The hedge bank proved to be roughly stone faced with an earth core (Photo 31). Ditches were visible on either side of the bank (larger than those seen in Field B during the evaluation) but these were not investigated further.

**Photo 31:** Profile through the hedgebank on the northern side of Field K. 2 x 1m scales

5.5.2 The final stripped excavation area within Field K measured approximately 30m north to south and between 30m and 36m east to west, and encompassed the entirety of the C-shaped ditch cut [106] and a wide surrounding area (Figure 25, Photos 32 and 33).

5.5.3 A number of possible linear features were identified within the interior of the arc of the C-shaped ditch and a number of possible post-hole features were also identified across the excavation area. Following cleaning most of these features were determined to be root action, animal burrows or natural hollows in the bedrock and so are not discussed further.

5.5.4 The arcing ditch had a well-defined C-shape, measuring *c*.17.5 north to south and *c*.8m east to west, with an east facing opening. The length of the ditch arc was approximately 25m. The ditch did not extend beneath the hedgerow as was originally suspected its entirety had been surveyed by the geophysical survey.

5.5.5 The dark backfill of the C-shaped ditch was clearly visible against the surrounding natural soils. Following hand cleaning of the excavation area it was easy to discern its extent. The previous evaluation Trench K1 and sections were also clearly visible (Photos 32 and 33).

**Photo 32:** Viewing east-northeast across the Field K excavation area after cleaning, showing C-shaped ditch cut [106], evaluation Trench K1 and previous excavated section through ditch. 2 x 1m scales

**Photo 33:** Viewing west across the Field K excavation area after cleaning, showing C-shaped ditch cut [106], evaluation Trench K1 and previous excavated section through ditch. 2 x 1m scales.

5.5.6 The ditch was hand excavated in five large sections along its length (Figure 25; Photo 34): the northeastern terminal, between section K1 to

the north terminal (Photo 35); the area between sections K2 and K3 (Photos 36 & 37); the area between sections K4 to K5 (Photos 38 & 39); the area between sections K6 to K7 (Photos 40 & 41); and the area from section K8 to its southeastern terminal (Photo 42) (Figures 26 & 27). The southeastern terminal and the area between sections K4 and K5 were partially excavated during the evaluation and were completed during this excavation phase (Photo 43).

5.5.7 Following the recording of the sections, the area between Sections K2 and K1 was also hand excavated as shown in Figure 25 (Photo 43).

5.5.8 The C-shaped ditch had been cut into Ordovician Llandeilo shale bedrock and the sides were steeply V-shaped with a jagged appearance due to the shale strata (Photos 35 to 44). It appears to have been excavated in a single phase, with no individual cuts creating its overall shape. The ditch does not appear to have had any recuts. The top of the ditch was an average 2.60m wide and the base 0.20 – 0.30m wide, with a maximum depth of 1.60m.

5.5.9 The lower fills indicate some initial silting whilst the ditch was open. Within the C-shaped ditch, on the outer edge (to the west) fills indicative of slumped material were recorded, containing abundant fragments of broken natural stone. The fills to the east contained larger stones mostly in tip lines that suggest it was backfilled with the same material that had originally been excavated from it, comprising a mix of redeposited natural soils and significant amounts of bedrock. A number of non-local stone blocks were also present within the backfilled ditch. This could indicate the presence of an inner bank, formed of the material excavated from the ditch with the addition of some non-local stone. This was then later used to backfill the feature at the end of its use.

5.5.10 The very upper fills of the C-shaped ditch recorded in all sections comprised dark silty soils with little stone. This suggests that the ditches had slumped to some extent following backfilling and were then gradually filled up through a process of natural silting and/or the movement of topsoil through agricultural practices.

5.5.11 Radiocarbon dates (SUERC-68025, SUERC-68026, SUERC-68030 and SUERC-68031) were obtained from charcoal recovered from various contexts excavated within the ditch sections. The samples provided a range of dates including Iron Age (SUERC-68030), Early Medieval (SUERC-68025) and two dates well placed in the medieval period (SUERC-68026 & SUERC-68031).

5.5.12 Two of the dates were obtained from charcoal recovered from fills in the base of the ditch, presumably associated with the initial silting up of the ditch prior to backfilling. A radiocarbon date retrieved from the lowest fill (142) within the area of its northern terminal from section K1 provided an Early Medieval date range of 775 - 975 cal. AD (SUERC-68025). Context (194) the bottom fill recorded in section K6 from the southwestern excavated area provided a date of 1195 – 1280 cal. AD (SUERC-68030).

5.5.13 One of the radiocarbon dates was recovered from a sample collected in the middle part of ditch section K6, contexts (185/188/190). This context (comprising three separate layers which were only discerned as more than one context after excavation, during cleaning up of the section) was a backfill layer seemingly deposited after initial silting up of the ditch. Charcoal from this fill was dated to 1165 – 1265 cal. AD (SUERC-68026), placing it firmly in the medieval period.

5.5.14 The final date was recovered from later silting up layer in the top of ditch section K6, context (184), but securely located close to the base of that context. The charcoal provided an estimated date range of 195 – 45 cal. BC (SUERC-68030), placing it within the Iron Age. This suggests that it originated from residual material that had been redeposited within the upper fills of the ditch.

5.5.15 No finds were recovered from the C-shaped ditch, excluding modern or post-medieval pottery from its upper fills and a single stone object from the lower part of the central section excavated on its western side between K4 and K5 in a backfill layer (128). The object (Figure 27) was a local stone slab which had been worked to form a rough circular shape, around 9cm in diameter and 2.5cm thick. Two straight lines had been incised on its flattest face forming a symmetrical V.

**Photo 34:** Viewing west, after completion of excavation of sections K1 – K8. 2m scales

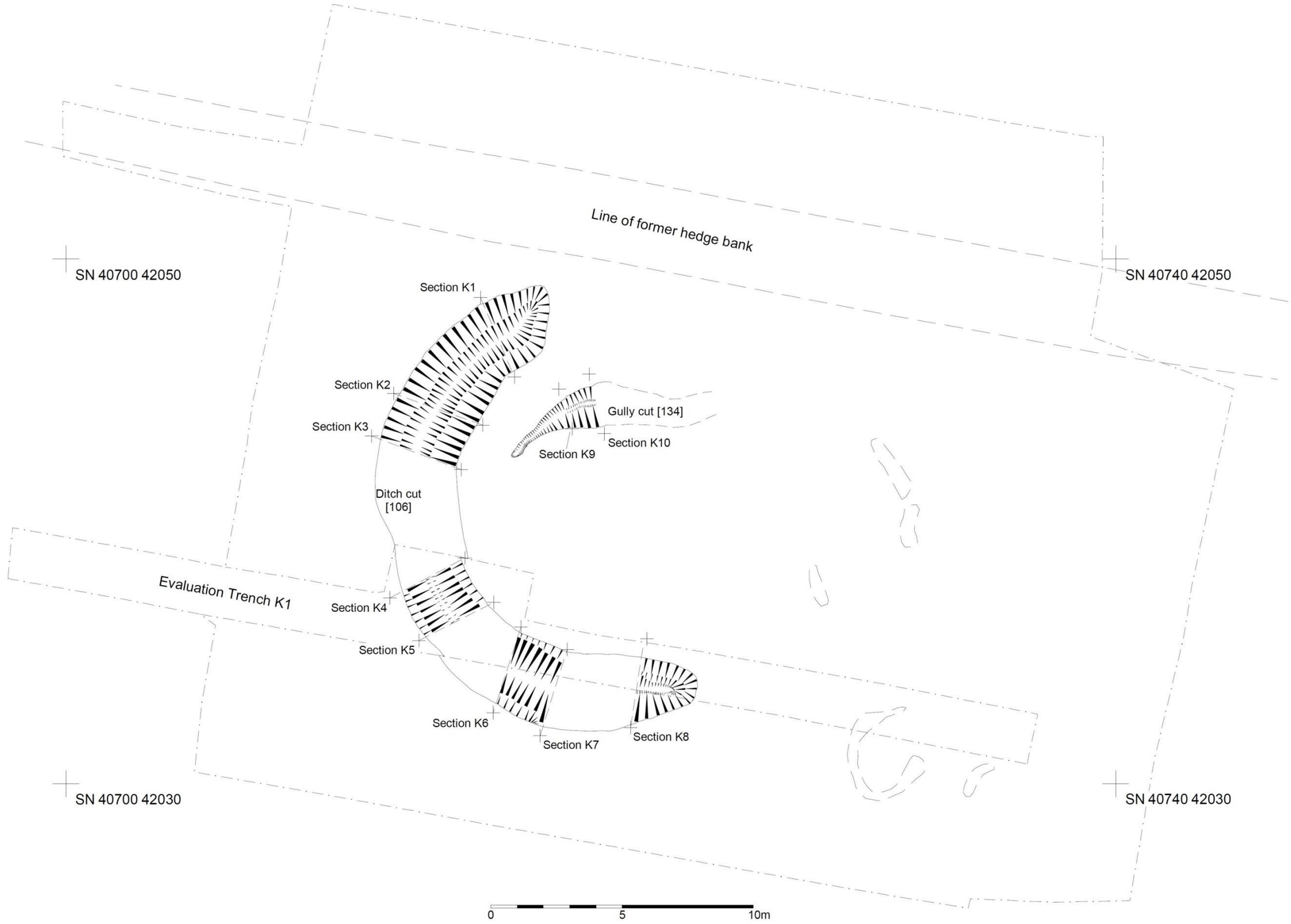



**Figure 25:** Excavation of C-shaped ditch in Field K, showing excavated features and associated sections through the ditch, sections K1 – K8 and sections K9 & K10 through the adjacent gully (Figure 24)

**Photo 35:** Northeast facing section K1 inside of ditch cut [106] to left. 1m scales

**Photo 36:** Southwest facing section K2, inside of ditch cut [106] to left. 1m scales

**Photo 37:** Northeast facing section K3, inside of ditch cut [106] to right. 1m scales

**Photo 38:** Southeast facing section K4, inside of ditch cut [106] to right. 1m scales

**Photo 39:** Northwest facing section K5, inside of ditch cut [106] to left. 1m scales

**Photo 40:** East facing section K6, inside of ditch cut [106] to right. 1m scales

**Photo 41:** West facing section K7, inside of ditch cut [106] to left.
1m scales

**Photo 42:** East facing section K8, inside of ditch cut [106] to right,
1m scales

**Photo 43:** Hand excavated northern end of ditch cut [106] from northern terminal to section K3. 1m scales

**Photo 44:** Sections K6 & 7, showing steep V shaped sides and jagged appearance of ditch cut [106

5.5.16 Located at the eastern terminus of the ditch a possible linear feature filled with large stones appears to be cutting into the ditch (Photos 45 & 46). Upon further investigation this appeared to be a natural phenomenon of two varying rock formations, with the larger rocks below the natural shale layer, as could be seen in the south facing side of section K8 (Photo 47).

5.5.17 At the end of the on-site excavation the remainder of the ditch fills were removed using a machine with flat bladed bucket under constant archaeological supervision. This did not reveal any further information on the feature, other than it was a relatively uniform V-shape along its entire length, cut through the natural bedrock (Photos 48 & 49). Being dug into quite firm bedrock, excavation by machine was quite straightforward and the feature was not overcut to any significant extent.

5.5.18 In addition to the large arcing ditch the initial clean identified a three possible linear features located within the interior of the arc. These were investigated to identify whether they were naturally occurring features or man-made gullies.

5.5.19 Two were found to be natural features but a third appeared to be man-made and formed a possible gully, cut [134] (Photo 50, Figures 25 & 26). The main fill (135) contained a larger number of stones in comparison to the adjacent (136) and (137) and also included small flecks of charcoal. A fragment of post-medieval pottery was found near the surface on the north side. The function of the feature is not known.

**Photo 45:** Linear natural feature filled with large stones which appeared to be cutting into the arcing ditch at Section K8, looking north. 1m scales

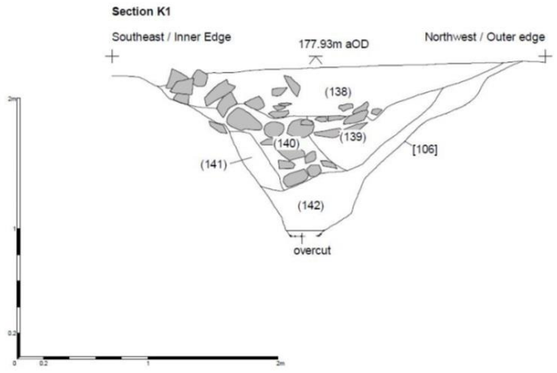
**Photo 46:** View of stone filled natural feature from inside section K8 on its north facing side. 1m scale

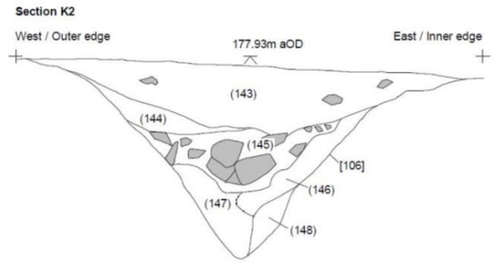
**Photo 47:** Natural formation of large rocks below the shale in the south facing side of section K8. 1m scale].

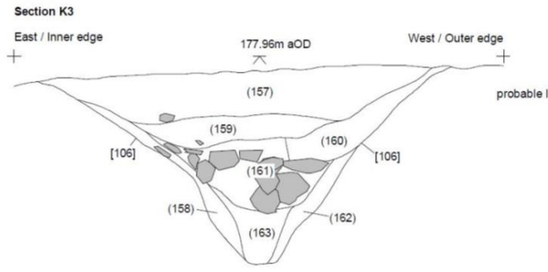
**Photo 48:** View west-southwest across northern end of fully machine excavated C-shaped ditch

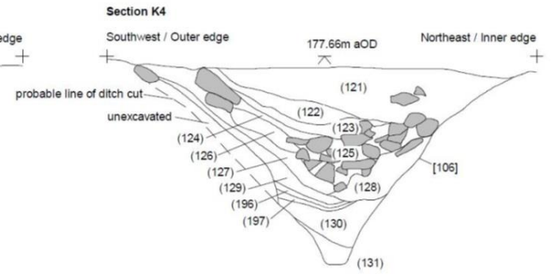
**Photo 49:** View southeast across southeastern end of fully machine excavated C-shaped ditch

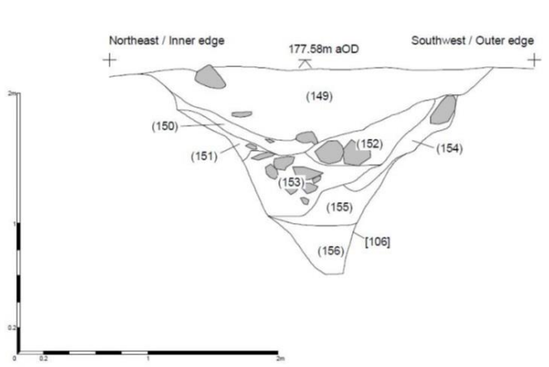
**Photo 50:** West facing section through possible gully cut [134], section K10. 1m and 0.5m scales

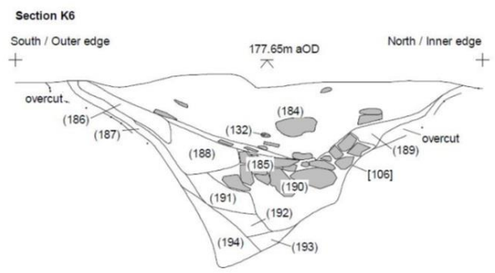


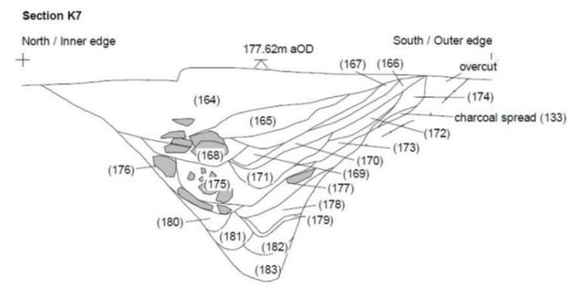



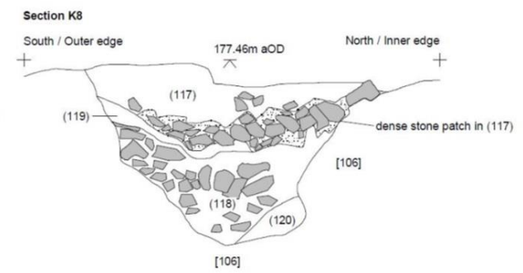



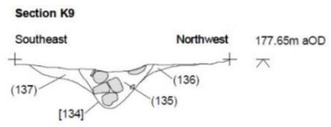



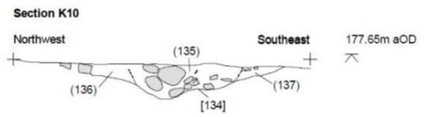




**Figure 26:** Sections drawings through C-shaped ditch cut [106] in Field K, sections K1 – K8 and sections K9 & K10 through the adjacent gully cut [134]

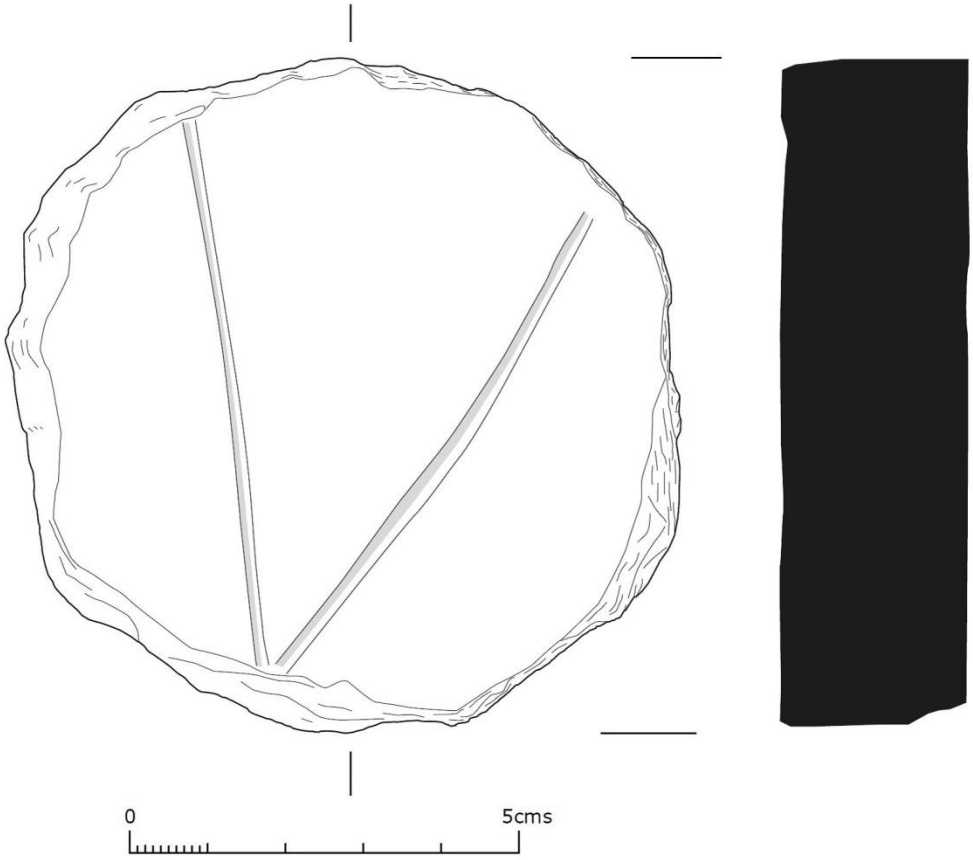



**Figure 27:** Illustration of incised stone found in base of central section excavated through C-shaped ditch cut [106] in Field K.

# 6. DISCUSSION AND CONCLUSION

## 6.1 Introduction

6.1.1 During the course of the investigation DAT Archaeological Services unearthed evidence of over 6000 years of human activity across the 12ha site of the Ysgol Bro Teifi development area. The key discoveries included two early Neolithic ring ditches, an Iron Age roundhouse and a large medieval C-shaped ditch.

6.1.2 Dating evidence has been entirely based on environmental samples collected from ditch and pit fills. As is common with other similar aged sites in Wales, artefacts were almost entirely absent and typically comprised post-medieval pottery recovered from plough soils which were not retained.

6.1.3 The acidic nature of the soils of this region has resulted in the survival of limited environmental remains within ditch fills. No bone, excluding a few fragments of burnt bone, were recovered from any of the features, although a few pieces were noted in the topsoil during the evaluation, but being unstratified and likely of modern date, are not discussed further.

6.1.4 The archaeological investigation was requested by the Planning Advisor to Ceredigion County Council because of the significant findings previously excavated at the adjacent site of Cwm Meudwy. It was believed that Prehistoric remains may extend into the current development area. The archaeological programme of works commenced with a non-intrusive geophysical survey, conducted using a Bartington Grad 601 dual fluxgate gradiometer. Through this survey a number of potentially interesting features of possible archaeological origin were identified.

6.1.5 Based on the results of the geophysical survey an archaeological evaluation was conducted. A total of 15 trenches were opened across the development area, the majority of which targeted features identified on the geophysical survey. The aim was to determine the date, character, state of preservation, extent and significance of all archaeological remains encountered. The results of the geophysical survey were supported by the findings of the evaluation, and in particular three discrete locations were considered to contain significant archaeology (Fields C, E and K). Subsequently this led to a third phase of open area archaeological excavation in the areas of the two ring ditches and C-shaped ditch (Fields C and K) and a strip, map and record exercise being implemented within Field E (and part of Field C).

## 6.2 Field C – The Ring Ditches

6.2.1 The earliest evidence of human activity found on the school development area was in the form of two discrete ring ditches. These ring ditches were located in the southern half of Field C adjacent to a possible palisade enclosure, in the northwest corner of the development area, on south facing slopes between 185m aOD – 195m aOD. The two excavated ring ditches lie just 270m to the northeast of three similar features excavated at the Cwm Meudwy site (Murphy *et al* 2006).

6.2.2 Both of the Ysgol Bro Teifi ring ditches comprised a continuous circular ditch with a rounded profile, bearing a close morphological resemblance to funerary monuments, typically referred to as round barrows, from the Prehistoric period. These monuments are a common form of burial across Britain, the vast majority in Wales date between 3400 and 1500BC with

(minimum) estimates of between 3000 and 4000 constructed during this time (Darvill and Wainwright 2016).

6.2.3 Round barrows are typically formed through the excavation of a circular ditch around a central burial, with excavated material and turfs mounded in the centre over the grave or graves. It is assumed the grave(s) would be of higher status individuals. In some instances, satellite burials would be interred around the mound, perhaps of lesser-status individuals. The size of this monument type can vary greatly with recorded examples being between 5m to over 50m in diameter and as much 6m high (Field 2011). This considerable variation in size and shape is often thought to be a factor that reflects the status and wealth of the people placed in the burial as well as the communities that built them (Darvill and Wainwright 2016).

6.2.4 The examples excavated at Llandysul appear to be at the smaller end of the spectrum in terms of monument size: the Western ring ditch is 6.3m in diameter and the Eastern ring ditch 7.9m. These diameters are in line with those seen at the nearby Cwm Meudwy site, albeit slightly smaller. There was no *in-situ* evidence of a central mound, but this is not uncommon. The stony backfill excavated from the ditches would appear to have been derived from the material originally excavated from them, which would have formed the central mound. Over time this has either slumped back into the ditches or been purposefully backfilled. Few round barrows survive in an undamaged state and are often partly or completely levelled by thousands of years of agricultural practice, surviving as nothing more than shallow earthworks on the ground or buried ditches (Field 2011). Enough material was excavated from the ditches at Llandysul, even following thousands of years of erosion from weathering and agricultural activity, to suggest that a significantly large mound could have been constructed over the burials; mounds that would have been visible for some distance.

6.2.5 The Ysgol Bro Teifi ring ditches had no evidence of a central burial, which again is not unusual. The ring ditches at Cwm Meudwy also had no central burials, nor those at Plas Gogerddan, Ceredigion (Murphy et al 1986), where it was suggested that the burial may actually have been incorporated into the central mound itself and as such had become dispersed as the mound had eroded (*ibid).*

6.2.6 The radiocarbon dates obtained from the basal fill of each ring ditch provided much earlier dates than anticipated. Ring ditches are typically thought to have developed in the Late Neolithic/Early Bronze Age; those excavated at Llandysul are considerably earlier than this. The western ring ditch provided the earliest date of 4330 to 4060 cal. BC, whilst the eastern ring ditch was dated to 3940 to 3705 cal. BC. A small ring ditch of similar date was recently excavated by Rubicon Heritage at Lovelodge Farm, Carmarthenshire, radiocarbon dated to 3710 – 3644 BC, and at the time was thought to be one of the earliest radiocarbon dated ring ditches in Wales (Hourihan *et al* 2015). The small Neolithic ring ditch at Lovelodge Farm was found in association with a number of other larger ring ditches from which radiocarbon dates provided Iron Age dates, although it is considered far more likely they are of Bronze Age date with the dates derived from later material in the backfill. Nonetheless the Lovelodge Farm site suggests a longevity of use for funerary and ritual activity spanning many millennia. In contrast the small Early Neolithic ring ditches at Llandysul were not found in association with any larger, later monuments.

6.2.7 Recent geophysical survey, evaluation (DAT Archaeological Services) and subsequent excavations (Rubicon Archaeology) at the Limes site, west of Carmarthen, revealed the site of three adjacent ring ditches, one of which was small with a dimeter of around 7.5m, very similar to those from Llandysul (Poucher 2012, Bond 2016). A central pit was recorded within this ring ditch indicating a burial. Unfortunately, no radiocarbon dates have been obtained for this excavation as yet, but it is quite likely it could represent another Early Neolithic ring ditch. This lay in close proximity to two larger ring ditches of probable Bronze Age date, the larger of which had a partially surviving mound with central burial beneath (ibid). The slightly smaller ring ditch had no internal features (ibid).

6.2.8 As noted above neither of the excavated ring ditches at the Ysgol Bro Teifi site had evidence for either internal features or any human remains. Although this could suggest the features are not funerary mounds but perhaps boundary or land division markers, the juxtaposition of the two so close to each other and dated just centuries apart would suggest this is not the case. The earlier mound must have had significance other than just a boundary marker as rather than enlarging the existing mound, a second one was constructed directly adjacent.

6.2.9 The environmental evidence recovered from the two ring ditches provides some information about the surrounding environment at the time that the ditches were either backfilled or silted up, rather than evidence from when they were constructed (Appendix A). The samples from the two ring ditches produced small fragments of wood charcoal, predominantly oak, and the occasional identifiable seed. The other remains from the ditch samples were indicative of grass land. Disturbed ground in the vicinity could be suggested by a small quantity of ribwort plantain seed and a single grain and a cleavers seed is indicative of cultivated and arable land, hedgerows and scrub. A hazelnut shell was also recovered from the feature, a standard and relatively common protein source. The relative lack of surviving environmental remains may be indicative of the acidic soils of this region which result in the poor survival of such material.

6.2.10 The dates obtained from the Ysgol Bro Teifi ring ditches point to an interval spanning over 600 years of ritual activity associated with honouring the dead. The early dates, furthermore, suggest the practice is significantly older than currently acknowledged. With the dated example from the Lovelodge Farm site at Ffairfach, perhaps we are starting to recognise a monument type, comprising the small ring ditch with probable internal mound, dating to the Early Neolithic.

## 6.3 Field E – The possible oven, pits and postholes, palisade enclosure and roundhouse

### *The possible oven*

6.3.1 A further feature of Early Neolithic date was revealed within Field E. This feature (5029), cut [5028] was located in relative isolation and had the appearance of an oven, with a possible flue and the remains of a stone capping. A radiocarbon date was obtained from the feature of *c.*3765 BC to 3645 BC that marginally overlaps with the dates of the Eastern Ring Ditch in Field C. This could suggest settlement activity in relatively close proximity to the burial mounds; the nearby location chosen to respect or even be associated with the nearby funerary monuments. It should be noted that radiocarbon dates were not recovered from any other pits and postholes within the surrounding area and it is conceivable that some of

the pits and postholes recorded in a group to the east of the oven could also date to the same period.

6.3.2 Environmental evidence obtained from this possible Early Neolithic oven was purely in the form of charcoal, nearly all of which was identified as being oak (Appendix B) although a small fragment of ash charcoal was also noted during initial assessment (Appendix A). If the feature had been an oven for food preparation, such as a bread oven, it is surprising that no cereal grains or other plant remains were recovered. This absence does not preclude it from being an oven for food preparation, and may be due to the acidic nature of the local soils resulting in poor survival of such material.

***The pits and postholes***

6.3.3 The group of pits and postholes in the southwestern part of Field E were not radiocarbon dated, the assumption being that they were of Iron Age date associated with activity inside of the palisaded enclosure and the nearby roundhouse. No artefacts were recovered from the features excluding a few highly abraded fragments of likely Romano-British pottery (or daub). These features did contain environmental evidence (Appendix B).

6.3.4 The environmental report (Appendix B) notes that the feature with greatest quantity of plant remains was a possible hearth (5024), [5023]. The quantities of blackthorn/sloe fruit stones and charred organic material indicates possible food waste and/or dung. Potentially if the feature does represent a hearth or waste from one, then the possible dung may have been used as fuel. Possible bread wheat grains were also recovered, and further environmental remains included oak charcoal, a hazel nut shell fragment, bramble seeds, an apple type seed, grass seeds, woody stem/root material of plants favouring an acidic soil (ericaceous), a gorse spine and grass stem/rhizome fragments. Of particular interest from this feature was the presence of fibrous material which could have been the remains of a textile and a small quantity of charred thread was also noted. The fill of the feature (5024) evidently contained a large quantity of waste material, both associated with food production and disposal of other materials.

6.3.5 Further features with good environmental evidence included a possible posthole (5013), cut [5012] and a pit (5020), cut [5019]. Environmental remains comprised hazel nut shells, grass seeds and cereal grains, including bread wheat (Appendix B). Burnt bone was also recovered from context (5013). The remaining pits and postholes contained charcoal fragments only, predominantly of oak. Field E was the only area of the development area where assessment of the environmental remains from the features (Appendix A) was thought worthy of more detailed analysis (Appendix B). This survival may be explained through the majority of material being burnt or charred which has aided preservation. Nonetheless overall relatively little environmental material was recovered.

6.3.6 The environmental evidence suggests this group of pits and postholes are associated with settlement activity, including preparation and cooking of foodstuffs. The fact they all lie in close proximity would suggest that they are likely to be broadly contemporary. It is likely that a number of the features were postholes, but no structural plans could be determined from their layout. It is certainly possible that more of these features were present in the area but were not identified due to them having either been truncated by ploughing or missed due to the time pressures placed on the archaeological work. The latter is considered unlikely as all features

identified during the initial topsoil strip were tagged and investigated or surveyed, although not all could be excavated (Figure 20).

***The palisade enclosure***

6.3.7 Palisade enclosures are typically regarded as characteristic of the Iron Age, pre-dating defences constructed of substantial banks and ditches (Murphy and Evans 2006), such as Castell Henllys in south-west Wales (Mytum 2013). But they can date anywhere from the Neolithic to Romano-British period (Murphy and Evans 2006). The palisade would provide a fence line or barrier potentially for livestock husbandry or as a way to demarcate the extents of a settlement. They are very different to the substantial banks and ditches of the defended enclosures that are so prevalent in this region. With the lack of artefactual and ecofactual evidence a possible date can only be implied by looking at comparable examples and what relationships were established during the investigations.

6.3.8 The Ysgol Bro Teifi example is similar to that excavated at Cwm Meudwy, which is generally accepted to be of Neolithic to Iron Age date. No evidence of earthwork defences were recorded at either site. If the sites are of Iron Age date, then they are highly significant as undefended Iron Age enclosures are a rare occurrence in this region. Iron Age settlements are more often found within defended enclosures, which by their very nature are situated on prominent points in the landscape. Their positioning has allowed them to escape destruction from agriculture processes, which might cause a bias in preservation as opposed to a true reflection of actual settlement pattern in the Iron Age (*ibid).*

6.3.9 Based on the geophysical survey results and the lack of any evidence for the continuation of the palisade enclosure in the adjacent fields, it is possible that the enclosed area was of quite an irregular shape, enclosing the southeastern part of Field E. It is possible the small gully seen to the south of the pit group did form the southern boundary of the palisade enclosure.

6.3.10 Unfortunately without dating evidence and no direct physical relationship between any of the features including the group of pits and postholes and the palisade, any inferred relationship between the features is speculative. Yet the location of the group of pits and postholes within the area that appears to be bounded by the palisade would highly suggest that they are associated. The environmental evidence from the pits and postholes indicated they might be associated with settlement, but unfortunately charcoal from these features was not dated due to budgetary constraints.

6.3.11 The palisade enclosure at Ysgol Bro Teifi was truncated by a seemingly un-associated round house, which has been radiocarbon dated to the Late Iron Age. The palisade therefore predates the roundhouse but other than that it is not possible to date it more accurately.

***The Roundhouse***

6.3.12 The Late Iron Age roundhouse had an east facing entrance with two entrance post holes. Roundhouses were circular structures that were the dominant form of domestic housing in Britain in the Iron Age. The ring ditch would appear to represent a drip gully which would have been located directly below the eaves of the conical roof of the structure. An eaves drip gully is a favoured interpretation rather than a bedding trench for a former wall line, as the two entrance postholes, which would have been positioned at the ends of the walls to form the doorway, lie on an arc

inside of that formed by the excavated gully. Recent excavation of the former Cooks House and Earthwatch roundhouse reconstructions (built in the 1980s) at Castell Henllys Iron Age Village revealed that very similar drip gullies had formed around the eaves of the two buildings over their 30 year plus life span, with a large gap in the area where the entrances to the building were (Mytum and Meek forthcoming). Such gullies may form naturally due to rain water action or may have initially been partly hand excavated to aid rain water run-off.

6.3.13 The two doorway entrance posts are a very typical and often the most prominent surviving feature of Iron Age roundhouses; the posts needing to be substantial to take the increased weight of the roof borne on the lintel above the gap for the doorway. The weight of the remainder of the roof would have been spread around the top of the wall line for the remainder of the structure. The reconstructed round houses at Castell Henllys Iron Age Village have demonstrated this fact clearly, where substantial door posts have been necessary for structural stability.

6.3.14 Typically Iron Age houses were constructed from timber, although some stone walled round houses do occur (Hourihan *et al* 2015). The most common form of roundhouses in Wales comprises a circular gully/slot trench which would have contained upright posts for the wall lines. These would then have been bound together with wattle and then covered with daub. The depth of the gully containing these wall timbers was often very shallow or in some cases, such as at Llandysul, there is no evidence for its survival at all. In some cases, evidence shows that a ring of internal postholes was also used in roundhouses to assist in supporting the roof, but again there was no evidence of this at Llandysul. If they were present they could have been supported on post pads which have long since been lost or simply placed in very shallow hollows that have since been destroyed by ploughing. This may have also happened to any evidence for the wall line. The 1980s Cook's House reconstruction at Castell Henllys used very insubstantial wall posts placed in a shallow bedding trench. Any evidence of such a feature would be easily removed by 2000 years of ploughing.

6.3.15 The location of the Iron Age roundhouse cutting the line of the palisade ditch indicates that the roundhouse is a later feature. If the palisade was of earlier Iron Age date then the roundhouse merely indicates a change in settlement layout, or land division. The pits and postholes to the southeast could have been contemporary with the roundhouse, although this is something which could not be confirmed.

6.3.16 The siting of an Iron Age roundhouse in apparent isolation is not unheard of, but is considered unlikely. It was evident during the evaluation that the area had suffered from significant plough damage and it is possible that structural remains of further buildings may have been present in the area but have since been lost. It is also conceivable that further remains may have been present in the areas outside of that subjected to strip, map and record, but which were not identified on the geophysical survey or through evaluation. General observation of the areas around the strip, map and record area during later topsoil stripping did not indicate any further archaeology being present.

6.3.17 Environmental information from the roundhouse samples comprised only charcoal of oak and ash. These may have originated from both firewood and structural timbers.

6.3.18 Overall activity within the vicinity of Field E appears to range from the Early Neolithic period to Late Iron Age, but insufficient dating evidence is

available to suggest if this is continuous or punctuated activity. It would appear that the palisade enclosure had become redundant by the time of the construction of the Late Iron Age round house. The apparently undefended Iron Age settlement should be regarded as highly significant as our current knowledge of this period in south-west Wales comes predominantly from evidence from hillforts and defended enclosures, with over 900 such sites recorded on the regional Historic Environment Record (Murphy and Evans 2006). In contrast, only a handful of undefended enclosure sites have been recorded.

## 6.4 Field K – The C-shaped Ditch

6.4.1 In the southwest corner of the development area (Field K) the C-shaped ditch was first identified by geophysical survey as a ditch with significantly strong contrasting properties to its surrounding environment. It was later identified as a substantial feature during the evaluation and subsequent open area excavation. Located on a relatively level part of the development area between 177m aOD and 185m aOD, the location of the C-shaped ditch offered uninterrupted and clear views out to the southeast, south and southwest.

6.4.2 The character, location, orientation of the ditch and nature of fills initially suggested that it was of probable prehistoric date, typically classed as a 'hengiform' monument (a term used that typically implies a prehistoric monument with religious/spiritual/ritual connotations), but rather unexpectedly dating evidence suggested otherwise.

6.4.3 A number of similar examples have been excavated across the UK often with only subtle variations, all of which have been dated to the prehistoric period. For example a site in Broom, Bedfordshire had a C-shaped ditch with a morphological resemblance to that at Ysgol Bro Teifi, referred to as *'Monument II'* (Cooper and Edmonds 2007). *'Monument II'* had the appearance of a wide reversed C-shape, with its open side facing due west that had an internal diameter of 32m. Upon excavation it was evident that the ditch was not continuous and consisted of a complex sequence of individual pit-dug sections forming the C-shaped feature. This clearly contrasts with that at the Ysgol Bro Teifi site, which was clearly constructed as a single ditch.

6.4.4 Radiocarbon dates obtained from the basal fill of the Ysgol Bro Teifi C-shaped ditch suggest an Early Medieval – mid medieval date range. The lowest fill (142) of ditch section K1 provided a date of 775 – 975 cal. AD (SUERC-68025) and the lowest fill of ditch section K6 (194) a date of 1195 – 1280 cal. AD (SUERC-68030). The radiocarbon date from backfill layers within the middle of section K6 also provided a medieval date 1165 – 1265 cal. AD (SUERC-68026). This may indicate that the ditch was backfilled not long after it had been excavated. In contrast an Iron Age date 195 – 45 cal. BC (SUERC-68030) was recovered from the upper fill (184) of section K6, material which appeared to have been deposited after the ditch was backfilled; suggesting the date reflects residual material from surrounding earlier features. Overall the dates indicate that the feature was open in the medieval period for material of that date to have accumulated in the base of the feature. No other example of an excavated C-shaped ditch researched for this report is of medieval date.

6.4.5 In each of the ditch sections there was evidence of some initial silting-up of the feature when it was initially excavated and left open. As noted above, two radiocarbon dates were obtained from these fills, dating to the

Early Medieval and medieval periods. These would be considered secure contexts for dating material, as they would unlikely to have been affected by root, worm or animal activity. The later of the two dates would thus provide the latest date for which the ditch could have been originally dug out.

6.4.6 Backfilled bedrock and sandy soils were present above the silting layers. The backfill layers dipped down from the interior of the C-shaped ditch, suggesting an internal mound or bank had been thrown back into the ditch. This presumably represented the original material excavated from the ditch, with the addition of a number of non-local. A medieval date was recovered from this backfill material, 1165 – 1265 cal. AD (SUERC-68026).

6.4.7 The final phase identified in a study of the ditch fills comprises more recent silting up of the ditch and levelling through agricultural processes into the slumped backfill. The upper fills of the excavated ditch section comprised darker, silty soils with little stone content. An Iron Age date was recovered from this material which would clearly be through the re-deposition of earlier material into the slumped ditch. This would suggest Iron Age activity had been present in the vicinity.

6.4.8 Only small fragments of wood charcoal and the occasional identifiable seed were recovered from samples taken from the ditch fills for environmental analysis (Appendix A). The environmental report notes that the results of samples from the C-shaped ditch are similar to those taken from the two ring ditches, although of course with widely different radiocarbon dates.

6.4.9 Unfortunately, aside from a small circular stone with a scored 'V' of unknown significance, no finds were found during the excavation of the ditch to assist with determining its function. The lack of finds is not uncommon for the area, where finds are often few and far between, but is surprising for a large feature seemingly of medieval date.

6.4.10 With little useful evidence determining the function of this ditch is purely speculative. The Early Medieval and medieval dates certainly rule out the possibility of it being a 'hengiform' monument, and would instead suggest something more functional. The steep V shaped profile of the ditch is characteristic of a defensive ditch, but the C-shape of the ditch does not fit with a recognised medieval defensive form. The suggestion of an internal bank could indicate a form similar to a raised motte within its centre; although such features are always circular. Alternatively it could have been a medieval ringwork, with both external bank and internal platform, similar to that at Castell Gwynionydd some 1.5km to the east, but again that forms a complete circular enclosure, albeit using natural topography, and is far larger. The C-shape could indicate the feature was never completed.

6.4.11 If a defensive feature, whether completed or otherwise, one would need to consider what it was defending. There is no indication of any medieval or later settlement activity in the near vicinity, the nearest large settlement is located at Llandysul itself, with the smaller settlement of Pentrellwyn to the northeast in an area not visible from the development area. The ditch could have been excavated to create a raised platform as a lookout post, but again without knowing a reason for it being here, it is impossible to speculate.

6.4.12 Another possibility is the feature is a post-medieval defence, such as those erected during the Civil War in the mid-17$^{th}$ century; perhaps a hastily thrown up earthwork for a gun emplacement. These, though, are

normally more angular than C-shaped but would serve the same function: creating a mound on which to place cannon. The Ysgol Bro Teifi C-shaped ditch does lie quite close to Llandysul where Civil War activity is recorded but there is no record of any defences here, and the distance from the feature to a surrounding settlement is too far for cannon.

6.4.13 Although the evidence would suggest otherwise, perhaps there is still a chance that the feature is of prehistoric date and the dating material has become introduced through other processes. If so the C-shaped ditch may be a 'hengiform' monument; the function of which have still not been determined.

## 6.5 Conclusions

### *Archaeological Results Conclusion*

6.5.1 In summary, the excavations at Ysgol Bro Teifi have identified significant, multi phased remains demonstrating at least 6000 years of human activity from the Early Neolithic to medieval periods. Coupled with the results of the excavations at the adjacent site of Cwm Meudwy in 2003 (Murphy *et al)* it suggests a high level of Prehistoric activity within the area.

6.5.2 Early Neolithic ring ditches in Wales are rare, and the dates provided by the radiocarbon dating from the two ring ditches excavated in Field C are unexpected; although similar dated features are starting to be recognised in the region. The examples found here could suggest the basis for one of the earliest developments of more sedentary communities in the area, forming attachments to specific 'special' places and taking the time and effort to construct permanent markers in the landscape. The nearby evidence of a possible Neolithic oven in Field E may also indicate that the people were living and working nearby, in an area that did not encroach upon but allowed them to respect the funerary monuments they had created, suggesting possibly deliberate planning. Although it is not possible to be certain that the ring ditches represent funerary monuments, the similarity of them to later Neolithic/Bronze Age round barrows would suggest this is most likely.

6.5.3 The next confirmed date of activity at Ysgol Bro Teifi dates to the Iron Age in the form of evidence for a single roundhouse recorded within Field E, which was discovered within the vicinity of the Neolithic oven. Whether this indicates continuous occupation or an interrupted one is difficult to determine because of insufficient dating evidence. No dating evidence of Bronze Age activity was recorded within the development area but the gradual evolution of a settlement from Neolithic to Iron Age seems likely and it is possible that Bronze Age activity in the area either left minimal impact or could not be identified during the investigations. The roundhouse cut through a small palisade enclosure ditch of uncertain date, which appeared to enclose an area of pits and postholes. Potentially these are also of Iron Age date, though pre-dating the roundhouse.

6.5.4 The substantial C-shaped ditch in Field K shows evidence of likely medieval activity in the area. Unfortunately with no comparisons of this date to draw parallels with, the function of this ditch remains unknown. The steep V-sided slopes would suggest something of a defensive nature but with no obvious indication as to what it was defending this seems unlikely. It may represent an incomplete feature that was abandoned during its construction.

6.5.5 The Ysgol Bro Teifi archaeological site is considered significant in a local, regional and national context. Not only do the Early Neolithic ring ditches suggest the earliest development of sedentary communities in the local area but they may also be some of the earliest examples recorded in Wales. In addition to this the possible Iron Age undefended settlement evidenced by the round house could be regarded as being of regional/national significance as evidence of such undefended settlement is rarely identified... The possible earlier palisade enclosure could also date to the Iron Age, again demonstrating undefended settlement. As evidence for undefended settlement enclosures are discovered it will not only allow us to study their distribution but also expand our knowledge of the Iron Age beyond the confines of the more typically identified form of defended enclosure.

***Archaeological Methodology Conclusions***

6.5.6 The archaeological works at the Ysgol Bro Teifi site at Llandysul were implemented due to a condition placed on planning permission requiring the implementation of a scheme of archaeological work (initial advice stated a watching brief or trial trench evaluation).

6.5.7 Through discussion with the client and the archaeological advisors to the planning authority (Development Management – Dyfed Archaeological Trust) it was agreed that a programme of geophysical survey should be implemented across the area in the first instance. This was considered necessary due to the proximity of the Cwm Meudwy site excavated in 2003 which had recorded a number of ring ditches, as well as Neolithic and Iron Age activity. The geophysical survey revealed a number of significant archaeological remains directly comparable with the Cwm Meudwy site and thus enabled a targeted programme of further archaeological work to be implemented.

6.5.8 The geophysical survey results enabled a targeted scheme of trial trench evaluation to be developed investigating the geophysical anomalies and blank areas to ensure no further archaeological remains were present. This phased approach is far more preferential to a randomly located percentage of trial trenching across the development area.

6.5.9 Further schemes of archaeological works were then implemented before the development commenced in the areas of Field C (ring ditches), Field E (palisade enclosure) and Field K (C-shaped ditch). For the ring ditches and C-shaped ditch open area excavations were determined as the most suitable form of mitigation providing an opportunity to nearly fully excavate the identified features and enable investigation of other archaeological features in their immediate surrounding area. These schemes of excavation were successfully implemented and remain the best form of archaeological mitigation.

6.5.10 Within Field E, the slight nature of the palisade enclosure identified during both the geophysical survey and evaluation was such that a programme of strip, map and record was implemented to identify and record the archaeological remains. This demonstrated that far more archaeology was present in the area than originally thought, including the remains of a single Iron Age roundhouse and groups of pits and postholes. Due to time pressures from the progress of development and budgetary constraints, the excavation of this area was hurried meaning that some features could only be surveyed and were not excavated (strip, map and record exercises are generally ones where samples of features are investigated rather than full excavation). It is considered unlikely that any archaeological features were missed during the strip, map and record

exercise, and the entire area of the surviving palisade enclosure is likely to have been revealed and surveyed as indicated by the discovery of the possible southern arc of the enclosure. Following the completion of the strip, map and record exercise one of the features from this area which had the appearance of an oven, produced an Early Neolithic date. This is considered to be of high archaeological significance but unfortunately the date was only established after the on-site works had finished. Now knowing this it would have been archaeologically better to have excavated and sampled all of the features within Field E in order that more dates could have been obtained and more environmental evidence collected.

6.5.11 The Ysgol Bro Teifi site clearly demonstrates that archaeological mitigation in the form of a watching brief during development would have been totally inappropriate. Once development started, the significant earthmoving programme was such that topsoil stripping was undertaken rapidly followed by substantial landscaping to create level platforms for the school site and associated playing fields. Not only could the discovery of the ring ditches and C-shaped ditch have led to significant delays in the development programme whilst contingency schemes of archaeological excavation were implemented (and the associated increased costs caused by the delays), but also archaeological remains could have easily been missed. It is considered highly unlikely that any of the shallow features identified within Field E would have been found during a watching brief. For a development of this size, the results of the archaeological works undertaken at Ysgol Bro Teifi shows that a phased programme of archaeological works is essential. It is perhaps unfortunate that a desk-based assessment was not prepared prior to a decision being made on planning permission. This would have highlighted the archaeological potential of the development area, bearing in mind the proximity of the Cwm Meudwy site, and thus a geophysical survey and subsequent archaeological works may have been undertaken prior to the development commencing under less hurried conditions. It would have been more appropriate for a development of this size to have had an initial desk-based assessment to have been prepared prior to a planning decision being made, which would have highlighted the nearby Cwm Meudwy site and thus the archaeological potential of the area

6.5.12 It should be noted that the success of the archaeological works at the Ysgol Bro Teifi site are due to the cooperation and assistance of the clients, Wilmott Dixon on behalf of Ceredigion County Council throughout the works and post-excavation programme. Thanks are also due to the Development Management team at Dyfed Archaeological Trust for the speed with which they reviewed documentation prepared for the development (various written schemes of investigation), allowing for the subsequent detailed phases of archaeological works to be implemented quickly.

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# APPENDICES

## APPENDIX A: INITIAL ASSESSMENT OF THE ENVIRONMENTAL REMAINS FROM LLANDYSUL

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### A1 Introduction.

A1.1 Following the excavations by Dyfed Archaeological Trust at the new school site Llandysul, 21 samples were received at the University of Wales, Trinity Saint Davids archaeology laboratories for assessment of the environmental remains and retrieval/identification of material suitable for AMS dating.

### A2 Methods

A2.1 All the samples were washed, the bulk samples were sieved in the laboratory using a simple wash over technique and hydrogen peroxide was added to aid flotation. The flots were sieved through 2mm, 1mm, 500µm and 250µm sieves, the residues were sieved on to 2mm and 250µm sieves. The flots were examined using a Wild M5 stereoscopic microscope, the plant remains from the bulk samples were noted using a scale of abundance. All non-cereal nomenclature follows Stace (1995)

A2.2 Charcoal for radiometric dating was chosen using low magnification with preference given to diffuse porous species where possible. The charcoal was fractured to produce clean sections in three dimensions (transverse, transverse longitudinal and radial longitudinal). A Leica DMR microscope with incident light source was used to examine the charcoal. Wood identification manuals (Schoch et al 2004, Schweingruber 1978) were consulted for identification purposes. Nomenclature follows Stace (1995).

### A3 Results

#### A3.1 *Field C: The Two Ring Ditches* (Table 1)

**Sample 6050, context 5055:** A small charcoal sample form the mid-section of the eastern ring ditch. The sample contained small fragments of wood charcoal, one was identifiable as *Quercus* sp. (Oak). Other remains included woody, possible Ericaceous stem root material, a possible Ericaceous flower head and a small quantity of charred monocotyledonous stem fragments.

**Sample 6051, context 5060:** Burnt material and charcoal from a spread of burning southwest of the ring ditches. A wood charcoal rich sample, the majority of the charcoal appears to be *Quercus* sp. (Oak). Other remains included charred organic material of an indeterminate origin and a monocotyledonous rhizome fragment.

**Sample 6052, context 5061:** Burnt material and charcoal from a spread of burning southwest of the ring ditches. A wood charcoal rich sample, the majority of which appear to be *Quercus* spp. (Oak). A *Corylus avellana* L. (Hazel) nut shell fragment was also present.

**Sample 6053, context 5054:** Ditch fill, bottom of western ring ditch. Wood charcoal was present in reasonable quantity, however the fragments were small but appear to be ring porous. Other remains included charred Poaceae (grass) rhizome fragments.

**Sample 6054, context 5054:** Charcoal found in western ring ditch, located against side of ditch near bottom. Wood charcoal present, *Quercus* spp. (Oak).

**Sample 6055, context 5066/5067:** Ditch fill, bottom of eastern ring ditch. The identifiable charred remains from this sample comprised *Plantago lanceolata* L. (Rib-wort plantain) seeds and monocotyledonous stem and rhizome fragments.

**Sample 6066, context 5052:** Ditch fill, bottom of eastern ring ditch. A small quantity of wood charcoal present, too small to identify to species.

### A3.2 *Field E: Round Houses and Posthole Area* (Table 2)

**Sample 6001, context 5011:** Posthole type feature. One large fragment of charred wood charcoal, identified as *Quercus* sp. (Oak).

**Sample 6002, context 5018:** Posthole type feature. One fragment of charcoal identified as *Quercus* sp. (Oak).

**Sample 6003, context 5013:** Posthole type feature. The sample contained a charred cereal grain not identifiable to species, monocotyledonous rhizome material and burnt bone fragments.

**Sample 6004, context 5020:** Posthole type feature. Two wood charcoal rich samples, identifiable remains included *Plantago lanceolata* (Ribwort plantain) seeds, possible cereal fragments, monocotyledonous stem and rhizome fragments and charred material of an indeterminate nature. Burnt bone fragments were also present, especially in the residues.

**Sample 6005, context 5016:** Posthole type feature. The sample contained large fragments of wood charcoal the majority of which appear to be *Quercus* spp. (Oak).

**Sample 6006, context 5024:** Posthole type feature. Large charcoal rich samples, plant remains included *Prunus* spp. (Plum/Blackthorn) stones, *Corylus avellana* L. (Hazel) nut shell fragment. Other remains comprised charred material of an indeterminate nature. Ericaceous type stem/root fragments and monocotyledonous rhizomes fragments.

**Sample 6007, context 5029:** Fill of (5028) kiln like feature. Large fragments of wood charcoal, most of which appear to be *Quercus* spp. (Oak).

**Sample 6008, context 5033:** Fill of (5032), posthole at round house entrance. Quercus sp. (Oak) and *Fraxinus* excelsior L. (Ash) charcoal present.

**Sample 6009, context 5031:** Charcoal found in round house gully context. Large fragments round wood charcoal, ring porous and diffuse porous fragments.

### A3.3 *Field K: The large C-shaped ditch* (Table 3)

**Sample 401, context 142:** Lower ditch fill at the base of Section K1 through the large C-shaped curving feature. A small quantity of charred remains present, including small fragments of wood charcoal, charred material of an indeterminate nature, woody stem/root fragments, possibly Ericaceous, monocotyledonous rhizome fragments

**Sample 402, context 163:** Lower ditch fill at the base of Section K3 through the large C-shaped curving feature. Charred plant remains included a small Hordeum sp. (Barley)/ large Poaceae (grass) caryopsis, a *Galium aparine* L. (Cleavers) seed, woody stem/root fragments, possibly Ericaceous and monocotyledonous rhizome fragments.

**Sample 403, context 194:** Lower ditch fill at the base of Section K6 through the large C-shaped curving feature. A small quantity of wood charcoal, woody

stem/root fragments, possibly Ericaceous, monocotyledonous rhizome fragments present in this sample.

**Sample 404, context 185/188/190:** Mid-level ditch fill of Section K6 through large C-shaped curving feature. A small quantity of wood charcoal, woody stem/root fragments, possibly Ericaceous, monocotyledonous rhizome fragments present in this sample. Covers a number of contexts only discerned when section drawing done – but excavated as one context.

**Sample 405, context 184:** Upper ditch fill of Section K6 through the large C-shaped curving feature. Wood charcoal fragments and woody stem/root fragments present.

## A4 Discussion

A4.1 The samples produced varying quantities of identifiable environmental material, the two ring ditches and large C-shaped ditch produced similar assemblages with small fragments of wood charcoal and the occasional identifiable seed present. The samples from the round house and posthole area produced large amounts of identifiable wood charcoal as well as a small quantity of identifiable plant remains.

A4.2 The plant remains and identifiable charcoal from both the ditch sites suggests that the remains probably entered the ditch fill accidentally, with grass remains and possible heather/heath stem or root material present as well as wood charcoal. The wood charcoal from these contexts comprised of oak, blackthorn, birch and apple/pear/whitebeam, the two ring ditch contexts produced mostly oak, whereas the C-shaped ditch produced the blackthorn, birch and apple/pear/whitebeam, the presence of these species may indicate the utilisation of these species because of the removal of oak in the area.

A4.3 The other remains from the ditch samples are indicative of grass land with charred monocotyledonous stem fragments and rhizome fragments present, context 5066 from the two ring ditch produced a small quantity of ribwort plantain seeds, a plant associated with disturbed ground, context 5061 a hazel nut shell fragment. Context 163 produced a small cereal type grain either a barley or a large grass, as well as a cleavers seed, a plant associated with cultivated and arable land, hedgerows and scrub (Stace 1995).

A4.4 The samples from the round house and posthole area differed from those from the ditches in the fact that they all contained large fragments of charcoal, the bulk samples produced significant amounts of charcoal. The type of charcoal from all the samples was noted during sorting and the majority appears to be ring porous, possibly oak, however the large fragment of charcoal from the round house entrance, context 5033 was identified for AMS dating as ash. The round house gully (5031) sample contained large fragments of ring porous round wood charcoal.

A4.5 Other plant remains from the round house and posthole included blackthorn fruit stones, a hazelnut shell fragment, ribwort plantain seeds, monocotyledonous remains, indeterminate cereal remains and indeterminate organic material. The fruit stones and hazelnut shell fragment could indicate deliberate collection for consumption as food on the site or they may have been accidentally brought onto the site with wood intended for fuel. The presence of burnt bone fragments in contexts 5013 and 5020 may be indicative of waste detritus entering the posthole features either deliberately or accidentally.

## A5 Conclusions and Recommendations

A5.1 The samples from the two ring ditches and the C-shaped ditch produced a small amount of environmental material, the wood charcoal from the samples was too small for charcoal identification, and the other plant remains were sparse. The round house and postholes produced numerous fragments of wood charcoal and some other plant remains.

A5.2 The results show that the samples from the round house and posthole area contained a large amount of charred remains, the samples for the assessment were scanned thoroughly, however the full sorting and quantification of the plant and other environmental remains from the flots and residues, as well as a full set of charcoal identifications where applicable would help to give a fuller understanding of the resources available and used by the occupants of the site.

A5.3 More detailed analysis of the environmental evidence from Field E was undertaken and is reported on in the Appendix B of this report.

## A6 References

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**Table A1:** Environmental evidence from Field C

| **Sample** | **6050** | **6051** | **6052** | **6053** | **6054** | **6055** | **6066** |
|---|---|---|---|---|---|---|---|
| **Context** | **5055** | **5060** | **5061** | **5054** | **5054** | **5066/ 5067** | **5052/ 5056** |
| **Volume/ml** | **100** | **200** | **100** | **2000** | **10** | **2000** | **2000** |
| *Corylus avellana* L. (Hazel) nut shell frag | - | - | + | - | - | - | - |
| *Plantago lanceolata* L. (Ribwort Plantain) | - | - | - | - | - | + | - |
| Cf. Ericaceous flower head | + | - | - | - | - | - | - |
| Cf. Ericaceous stem/ root frags | + | + | - | - | - | - | - |
| Poaceae (Grass) rhizome frags | - | + | - | + | - | + | - |
| Monocot. stem frags | + | - | - | - | - | + | - |
| Wood charcoal | ++ | ++ | ++ | ++ | + | + | + |
| Organic material indet | - | + | - | - | - | - | |

+ = 1-5, ++ = 6-25, +++ = 26-50, ++++ = 51-75, +++++ = 75+

**Table A2:** Environmental evidence from Field E

| **Sample** | **6001** | **6002** | **6003** | **6004** | **6005** | **6006** | **6007** | **6008** | **6009** |
|---|---|---|---|---|---|---|---|---|---|
| **Context** | **5011** | **5018** | **5013** | **5020** | **5016** | **5024** | **5029** | **5033** | **5031** |
| **Volume/ml** | **-** | **10** | **2000** | **7000** | **50** | **14000** | **50** | **10** | **175** |
| Cerealia indet | - | - | + | + | - | - | - | - | - |
| *Corylus Avellana* L. (Hazel) nut shell frag | - | - | - | - | - | + | - | - | - |
| *Prunus* spp. (Plum/Blackthorn) | - | - | - | - | - | ++ | - | - | - |
| *Plantago lanceolata* L. (Ribwort plantain) | - | - | - | + | - | - | - | - | - |
| Cf. Ericaceous stem/root frags | - | - | - | + | - | + | - | - | - |
| Poaceae (Grass) rhizome frags | - | - | + | + | - | + | - | - | - |
| Monocot. stem frags | - | - | - | + | - | - | - | - | - |
| Wood charcoal | + | + | ++++ | ++++ | ++ | ++++ | ++ | + | ++ |
| Organic material indet | - | - | - | + | - | ++ | - | - | - |
| Burnt bone fragments | - | - | + | + | - | - | - | - | - |

+ = 1-5, ++ = 6-25, +++ = 26-50, ++++ = 51-75, +++++ = 75+

**Table A3:** Environmental evidence from Field K

| **Sample** | **401** | **402** | **403** | **404** | **405** |
|---|---|---|---|---|---|
| **Context** | **142** | **163** | **194** | **185/ 188/ 190** | **184** |
| **Volume/ml** | **7000** | **10000** | **2000** | **1000** | **5000** |
| *Galium aparine* L. (Cleavers) | - | + | - | - | - |
| Cf. Ericaceous stem/ root frags | + | + | + | + | + |
| *Hordeum* sp./Poaceae (Barley/Grass) | - | + | - | - | - |
| Poaceae (Grass) rhizome frags | + | + | + | + | - |
| Wood charcoal | ++ | ++ | ++ | ++ | ++ |
| Organic material indet | + | - | - | - | - |

+ = 1-5, ++ = 6-25, +++ = 26-50, ++++ = 51-75, +++++ = 75+

**Table A4:** Charcoal identifications in preparation for C14 samples

| **Sample** | **6050** | **6054** | **6055** | **6002** | **6004** | **6007** | **6008** | **6009** | **401** | **403** | **404** | **405** | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Context** | **5055** | **5054** | **5066/ 5067** | **5018** | **5020** | **5029** | **5033** | **5031** | **142** | **194** | **185/ 188/ 190** | **184** | |
| *Quercus* spp. (Oak) | 1 | 5 | - | 1 | 6 | 3 | 1 | - | - | 1 | - | 2 | **20** |
| *Betula* spp. (Birch) | - | - | - | - | - | - | - | - | - | - | - | 1 | **1** |
| *Corylus avellana* L. (Hazel) | - | - | - | - | - | - | - | 1 | - | - | - | - | **1** |
| Maloideae (Apple/Pear/ Whitebeam) | - | - | - | - | - | - | - | - | - | - | 1 | - | **1** |
| *Prunus spinosa* L. (Blackthorn) | - | - | - | - | - | - | - | - | 1 | - | - | 2 | **3** |
| *Fraxinus excelsior* L. (Ash) | - | - | - | - | - | - | 1 | - | - | - | - | - | **1** |
| Diffuse porous indet. | - | - | 1 | - | - | - | - | - | - | - | - | - | **1** |
| **Total** | **1** | **5** | **1** | **1** | **6** | **3** | **2** | **1** | **1** | **1** | **1** | **5** | **28** |

+ = 1-5, ++ = 6-25, +++ = 26-50, ++++ = 51-75, +++++ = 75+

## **Table A5:** Radiocarbon Identification, Ysgol Bro Teifi, Llandysul, Ceredigion

**Table A5.1: Field C: 2 ring ditches**

| Sample | Context | Species | Weight/g | Notes |
|---|---|---|---|---|
| 6050 | 5055 | *Quercus* sp. (Oak) | 0.0194 | 2 rings -twig |
| 6053 | 5054 | - | | No charcoal |
| 6054 | 5054 | *Quercus* sp. (Oak) | 0.1115 | |
| 6055 | 5066/5067 | Diffuse porous | 0.0390 | Not identifiable to species |

**Table A5.2: Field E: Round house and postholes**

| Sample | Context | Species | Weight/g | Notes |
|---|---|---|---|---|
| 6002 | 5018 | *Quercus* sp. (Oak) | 0.9682 | |
| 6004 | 5020 | *Quercus* sp. (Oak) | 0.2346 | |
| 6007 | 5029 | *Quercus* sp. (Oak) | 0.4704 | |
| 6008 | 5033 | *Fraxinus excelsior* L. (Ash) | 3.4408 | Round wood – 7 rings |
| 6009 | 5031 | *Corylus avellana* L. (Hazel) | 0.7107 | 16 rings |

**Table A5.3: Field K: C-shaped ditch**

| Sample | Context | Species | Weight/g | Notes |
|---|---|---|---|---|
| 401 | 142 | *Prunus spinosa* L. (Blackthorn) | 0.0700 | |
| 403 | 194 | *Erica* sp./*Calluna vulgaris* (L.) Hull (Heaths/Heather) | 0.0978 | Stem/root material |
| 403 | 194 | *Quercus* sp. (Oak) | 0.0233 | |
| 404 | 185/188/190 | Maloideae (Apple/Pear/ Whitebeam) | 0.0428 | |
| 405 | 184 | *Betula* sp. (Birch) | 0.0194 | |
| 405 | 184 | *Prunus spinosa* L. (Blackthorn) | 0.0154 | |
| 405 | 184 | *Prunus spinosa* L. (Blackthorn) | 0.0143 | |

## APPENDIX B: THE ENVIRONMENTAL EVIDENCE FROM FIELD E, YSGOL BRO TEIFI, LLANDYSUL, CEREDIGION

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### B1 Introduction

B1.1 Following the assessment of samples taken during the excavation at the Ysgol Bro Teifi site at Llandysul, Ceredigion by DAT Archaeological Services, nine samples were identified as having the potential to provide information about the archaeology and surrounding environment.

B1.2 The samples were from a series of post holes, pit and hearth features which were rich in wood charcoal. All of these samples came from Field E of the Ysgol Bro Teifi development area, Llandysul, Ceredigion. The samples were fully sorted and identifiable remains were fully quantified. These samples were all radiocarbon dated (Appendix C).

### B2 Method

B2.1 All the flots from the site were completely sorted using a Wild M5 stereomicroscope. The plant remains were identified using modern reference material and standard reference books (Berggren 1981, Schoch et al 1988). Nomenclature for the non-cereals follows Stace (1991) and for the cereals follows Jacomet (2006).

B2.2 The number of charcoal fragments identified varied from 1 to 50 depending on the quantity of charcoal available in the sample. All fragments were examined on three planes under a high power microscope using incident light.

### B3 Results (Table B1)

**Sample 6001, context 5011** (post hole): a small charcoal sample which contained one fragment of *Quercus* sp. (oak) charcoal.

**Sample 6002, context 5018** (post hole/pit): – a small charcoal sample which contained one fragment of *Quercus* sp. (oak) charcoal.

**Sample 6003, context 5013** (post hole): A charcoal rich sample with large fragments of wood charcoal including round wood fragments. The other plant remains from the sample included a *Corylus avellana* L. (hazel) nut shell fragment, Poaceae (grass) rhizome material, a cereal fragment of indeterminate type, charred organic material of an indeterminate nature and burnt bone fragments.

**Sample 6004, context 5020** (?pit): A large wood charcoal rich sample, which when a proportion was identified proved to be *Quercus* spp. (oak). Other charred plant remains from this sample included a *Triticum aestivum* L. (bread wheat) grain, a *Corylus avellana* L. (hazel) nut shell fragment, several *Plantago lanceolata* L. (ribwort plantain) seeds and a quantity of both monocotyledenous stem/root fragments and charred organic material indet. Charred bone fragments were also present in this sample.

**Sample 6005, context 5016** (post hole): A small charcoal sample containing seven pieces of *Quercus* spp. (oak) charcoal.

**Sample 6006, context 5024** (hearth): A large charcoal rich sample the majority of which was wood charcoal, with *Quercus* spp. (oak)

predominant, but a small quantity of *Corylus avellana* L. (hazel) was also present. The most frequent identifiable plant remains in the sample were fruit stones from *Prunus spinosa* L. (blackthorn). Other plant remains present included a *Triticum aestivum* L. (bread wheat) and a *Triticum* sp. (wheat) grain, a *Corylus avellana* L. (hazel) nut shell fragment, *Rubus fruticosus* L. Agg (bramble) seeds, Cf. *Malus* sp. (apple) seed, Poaceae (grass) seeds, *Ulex europaeus* L. (gorse) spine and cereal fragments not identifiable to species. Also present in quantity were fragments of burnt organic material of an indeterminate nature, some of the fragments contain fibre material which appear to possibly be some form of textile, a small quantity of cf. charred thread was also present.

**Sample 6007, context 5029** (post hole/pit): A charcoal rich sample comprising purely of Quercus spp. (oak) charcoal fragments, no other plant remains present.

**Sample 6008, context 5033** (post hole): A small charcoal rich sample comprising of *Quercus* spp. (oak) and Fraxinus excelsior L. (ash).

**Sample 6009, context 5031** (fill of gully): A small charcoal sample with comprising of *Quercus* spp. (oak) charcoal.

## B4 Discussion

### B4.1 *The Plant Remains*

B4.1.1 The sample with greatest quantity of plant remains was the hearth (Sample 6006, Context 5024), the assemblage was dominated by blackthorn/sloe fruit stones and charred organic material which is of an indeterminate nature, the origin of which could be possible food waste and/or dung. Other remains included several wheat grains one of which has the morphological features of bread wheat, a hazel nut shell fragment, bramble seeds and an apple type seed. Also present were grass seeds, woody stem/root material of an ericaceous origin, a gorse spine and grass stem/rhizome fragments. Charcoal identified from the feature was mostly oak with a small quantity of hazel present.

B4.1.2 Sample 6004 context 5020 also produced a similar assemblage, with a bread wheat grain and a hazel nut shell fragment present. Indeterminate organic material was also present, although there was no evidence of any textile type material. The remains from this context differed from context 5024 with the absence of blackthorn stones and the presence of burnt bone fragments. Also present were ribwort plantain seeds, a weed associated with agriculture, grass or disturbed ground.

B4.1.3 Sample 6003 context 5013 also produced similar assemblage to contexts 5024 and 5020 with the presence of charred organic material, a hazel nut shell fragment and burnt bone fragments.

B4.1.4 The samples from the other features were small charcoal samples from post hole fills, these only produced fragments of wood charcoal.

### B4.2 *Charcoal Identification*

B4.2.1 The nine contexts all contained fragments of wood charcoal, several contexts (6001 and 6002) had only one fragment of charcoal present.

B4.2.2 Overall 220 fragments of charcoal were identified (Table B2), of which 198 were identified as oak, 16 hazel and 6 ash, the ash was present in a post hole feature, sample 6008, context 5033. The charcoal results

indicate that oak and hazel were available and were probably used as building material. The charcoal from the hearth and pit features probably represent firewood.

B4.2.3 Caution should be taken when applying charcoal assemblages to provide evidence for the environmental dating of an archaeological site as the fragments of charcoal may be derived from a small number of wood pieces. Also the wood species represented may due to selective exploitation, however it would seem likely that oak and ash woodland with a hazel under storey was in close proximity to Field E.

## B5 Conclusion

B5.1 The charcoal from Field E indicates that oak, ash and hazel wood was probably used for both building material and fire wood. All of the post holes contained oak charcoal, with the exception of sample 6008, context 5033, which also contained ash. This suggests that oak, with a small quantity of ash was used for construction. These samples only produced wood charcoal, with no other plant remains present.

B5.2 The samples with both oak and hazel charcoal also contained other identifiable plant remains and indeterminate organic material, the hearth sample (sample 6006, context 5024) produced the largest assemblage which may originate from the burning of domestic waste. The presence of blackthorn/sloe stones could be due to their accidental collection with fire wood, however no blackthorn charcoal was identified, therefore it is likely that they were deliberately collected as a food source, as were the Hazel nuts, brambles and apple type pip. The sample also produced evidence of cereal remains. The presence of textile type material may also represent the burning of domestic material.

B5.3 The other samples with a similar assemblage to context 5024 were; a pit (5020) cut [5019] and a post hole 5013 cut [5012]. Both of these contexts contained burnt bone fragments but did not produce the fruit assemblage or textile type remains, however the pit fill may represent the disposal of burnt domestic waste from the hearth and the post hole general back ground waste, for example material blowing around the site or dropped accidentally and trampled into the feature.

B5.4 Overall the plant remains from the Ysgol Bro Teifi development area are comparative to those found in features from Cwm Meudwy, Llandysul (Caseldine and Griffiths 2006) where features from a palisaded enclosure with an associated four post structure dated to the Iron Age also produced cereal remains, hazel nut shell fragments, fruit remains and organic material of an indeterminate nature. Both sites indicate that although arable agriculture was present in the area, wild food resources also seem to be of importance.

## B6 References

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**Table B1:** Plant remains from Field E, Ysgol Bro Teifi, Llandysul

| **Sample** | **6001** | **6002** | **6003** | **6004** | **6005** | **6006** | **6007** | **6008** | **6009** | **Habitat Preference** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Context** | **5011** | **5018** | **5013** | **5020** | **5016** | **5024** | **5029** | **5033** | **5031** | |
| Volume/litre | - | 0.01 | 2 | 7 | 0.05 | 14 | 0.05 | 0.05 | 0.175 | |
| | Posthole | Posthole /pit | Posthole | ?Pit | Posthole | Hearth | Posthole /pit | Posthole | Fill of gully | |
| *Triticum aestivum* L.- grain (bread wheat) | - | - | - | 1 | - | 1 | - | - | - | A |
| *Triticum* sp. – grain. (wheat) | **-** | **-** | **-** | **-** | **-** | 1 | **-** | **-** | **-** | A |
| Cerealia indet - grain | - | - | - | - | - | 4 | - | - | - | A |
| *Corylus avellana* L. (hazel) nut shell frag | - | - | 1 | 2 | - | 1 | - | - | - | W |
| Ericaceous stem/root frags (heather/heath) | - | - | - | 5 | - | 9 | - | - | - | H, M, W, Hw |
| *Rubus fruticosus* (brambles) | | | | | | 2 | - | - | - | G,W, H |
| *Prunus spinosa* L. (blackthorn) whole | - | - | - | - | - | 15 | - | - | - | W |
| *Prunus spinosa* L. Fragments | - | - | - | - | - | 18 | - | - | - | W |
| Cf. *Malus* sp. (apple) | | | | | | 1 | - | - | - | W |
| *Ulex europaeus* L. - spine (gorse) | - | - | - | - | - | 1 | - | - | - | H, W, G |
| *Galeopsis tetrahit* L. (common hemp-nettle) | - | - | - | 1 | - | | - | - | - | A, D, W, w |
| *Plantago lanceolata* L. (ribwort plantain) | - | - | - | 2 | - | - | - | - | - | A, D, G |
| Poaceae sp. (grass) | - | - | - | - | - | 3 | - | - | - | G, H, M, W |
| Monocot. stem/root frags | - | - | 5 | 11 | - | 81 | - | - | - | G, H, M, W |
| Rhizome fragments | - | - | 6 | - | - | | - | - | - | G, H, M, W |
| Tree bud and twig | - | - | - | - | - | 2 | - | - | - | W |
| Wood knots | - | - | - | 12 | - | | - | - | - | W |
| Wood charcoal | 1 | 1 | +++++ | +++++ | 7 | +++++ | ++++ | 2 | +++ | W |
| Organic material indet | - | - | 37 | 54 | - | 437 | - | - | -- | |
| Burnt bone fragments | - | - | 10 | 1 | - | - | - | - | - | |
| Fibre in charred organic material | - | - | - | - | - | 17 | - | - | - | |
| Strands of fibre | - | - | - | - | - | 4 | - | - | - | |
| Burnt inorganic material | - | - | - | - | - | 2 | - | - | - | |

A = arable and cultivated, G = grass, D = disturbed, H = heaths, M = marshes, fens and bogs, W = woods, hedgerows, scrub, w = wet
+ = 1-5, ++ = 6-25, +++ = 26-50, ++++ = 51-75, +++++ = 75+

**Table B2:** Charcoal identification from Field E, Ysgol Bro Teifi, Llandysul

| **Sample** | **6001** | **6002** | **6003** | **6004** | **6005** | **6006** | **6007** | **6008** | **6009** | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Context** | **5011** | **5018** | **5013** | **5020** | **5016** | **5024** | **5029** | **5033** | **5031** | |
| *Quercus* spp. (oak) | 1* | 1* | 27 | 50 | 7* | 48 | 34 | 16 | 14 | **198** |
| *Corylus avellana* L. (hazel) | - | - | 3 | - | - | 2 | - | - | 11 | **16** |
| *Fraxinus excelsior* L. (ash) | - | - | - | - | - | - | - | 6 | - | **6** |
| **Total** | **1** | **1** | **30** | **50** | **7** | **50** | **34** | **20** | **25** | **220** |

*all the identifiable charcoal in the sample

# APPENDIX C: RESULTS FROM RADIOCARBON DATES TAKEN FROM THE YSGOL BRO TEIFI SITE, LLANDYSUL, CEREDIGION

## C1 Summary of Radiocarbon Dates

C1.1 The following radiocarbon dates (Tables C1 – C3, and subsequent radiocarbon dating certificates) and have been provided by SUERC (Scottish Universities Environmental Research Council).

C1.2 The calibrated ranges have been determined from the University of Oxford Radiocarbon Accelerator Unit calibration programme (OxCal v4.3) (Tables C1 – C3).

**Table C1 Radiocarbon dates for Ring Ditches, Field C, Ysgol Bro Teifi, Llandysul, Ceredigion**

| Lab Code | Context/ *Sample* | Fill description | Radiocarbon Age BP: | Calibrated range at 2 sigma (95.4% probability): | Period |
|---|---|---|---|---|---|
| **SUERC-68020** | 5055/ *6050* | Charcoal rich sediment located at midsection of eastern ring ditch | 5003±29 | 3939 (25.2%) 3869 cal. BC; 3813 (70.2%) 3704 cal. BC | *c.* 3940 – 3700 BC Early Neolithic |
| **SUERC-68021** | 5054/ *6054* | Charcoal found in western ring ditch context (5054) located against wall of ditch near bottom. | 5365±31 | 4328 (19.8%) 4282 cal. BC; 4274 (32.4%) 4222 cal. BC; 4210 (24.2%) 4153 cal. BC; 4133 (19.0%) 4060 cal. BC | *c.*4330-4060 BC Early Neolithic |

**Table C2: Radiocarbon dates for Round Houses and Posthole Area, Field C, Ysgol Bro Teifi, Llandysul, Ceredigion**

| Lab Code | Context/ *Sample* | Fill description | Radiocarbon Age BP: | Calibrated range at 2 sigma (95.4% probability): | Period |
|---|---|---|---|---|---|
| **SUERC-68022** | 5029/ *6007* | Fill of cut [5028] kiln like feature containing substantial burning | 4912±29 | 3763 (8.8%) 3725 cal. BC; 3715 (86.6%) 3643 cal. BC | *c.*3765 – 3645 BC Early Neolithic |
| **SUERC-68023** | 5033/ *6008* | Fill of cut [5032] posthole at round house entrance | 2026±29 | 111 cal. BC (95.4%) 54 cal. AD | *c.*110 BC – 55 AD Iron Age |
| **SUERC-68024** | 5031/ *6009* | Charcoal found in round house gully context | 1983±29 | 45 (95.4%) 74 cal. AD. | *c.*45 – 75 AD Iron Age |

**Table C3: Radiocarbon dates for Large C-shaped Ditch, Field K, Ysgol Bro Teifi, Llandysul, Ceredigion**

| Lab Code | Context/ *Sample* | Fill description | Radiocarbon Age BP: | Calibrated range at 2 sigma (95.4% probability): | Period |
|---|---|---|---|---|---|
| **SUERC-68025** | 142/ *401* | Lower ditch fill at base of section K1 in northern terminus of C-shaped ditch. | 1145±29 | 776 (6.9%) 794 cal. AD; 800 (88.5%) 975 cal. AD | *c.*775 – 975 AD Early Medieval |
| **SUERC-68026** | 194/ *403* | Lower ditch fill from section K3, northwestern part of ditch. Appears to be basal fill of feature. | 819±29 | 1165 (95.4%) 1265 cal. AD | *c.* 1165 – 1265 AD Medieval |
| **SUERC-68030** | 184/ *405* | Charcoal recovered from the upper context in section K6 in the southern part of the ditch, although the sample itself was located at the base of the fill. | 2095±29 | 193 (95.4%) 46 cal. BC | *c.*190 – 45 BC Iron Age |
| **SUERC-68031** | 184/ *405* | Charcoal recovered from this lower fill of the ditch in section K6 in the southern excavated area. | 786±29 | 1194 (0.6%) 1197 cal. AD; 1205 (94.8%) 1280 cal. AD | *c.*1195 – 1280 AD Medieval |

## C2 Radiocarbon Date Certificates

Scottish Universities Environmental Research Centre

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

### RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68020 (GU41457) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 5055 |
| **Sample Reference** | 6050 |
| **Material** | Charcoal : Quercus sp. |
| **$\delta^{13}C$ relative to VPDB** | -22.4 ‰ |
| **Radiocarbon Age BP** | 5003 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

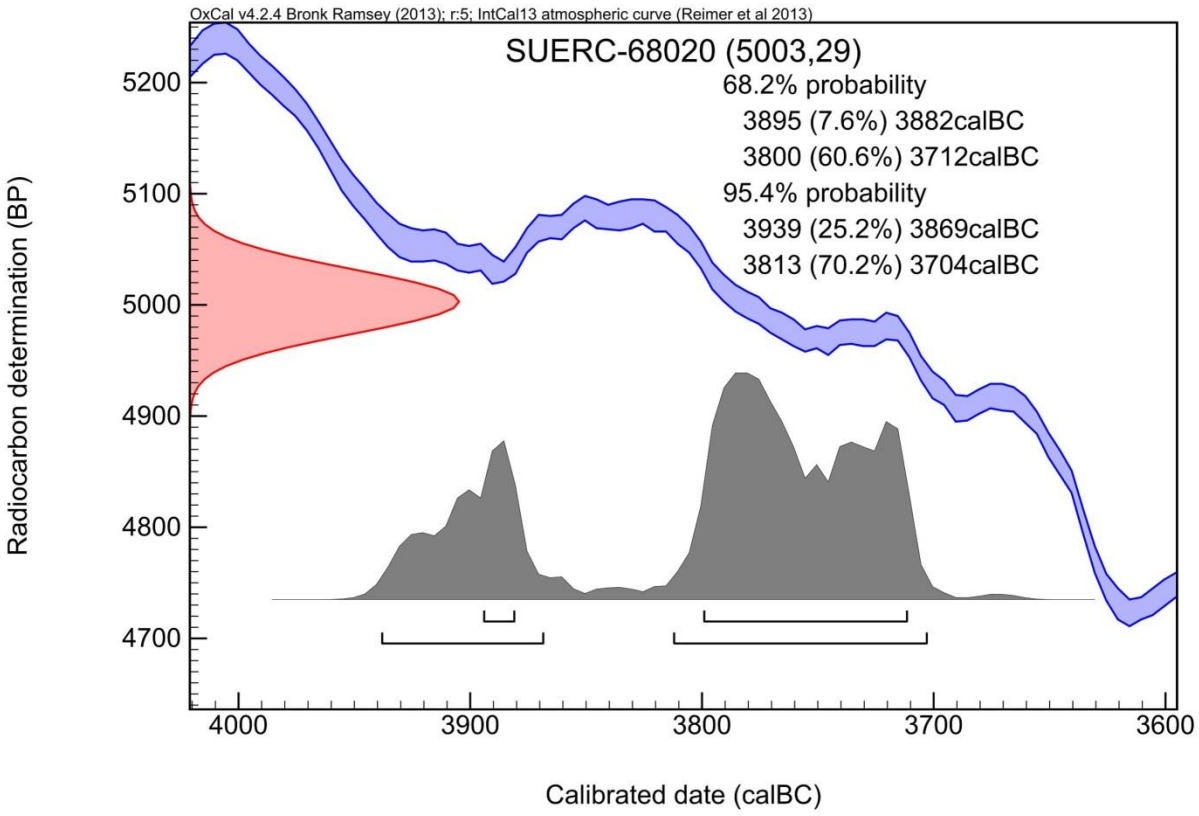
Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

**Calibration Plot**

Context Reference: 5055

Sample reference: 6050



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Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68021 (GU41458) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 5054 |
| **Sample Reference** | 6054 |
| **Material** | Charcoal : Quercus sp. |
| **$\delta^{13}C$ relative to VPDB** | -23.8 ‰ |
| **Radiocarbon Age BP** | 5365 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

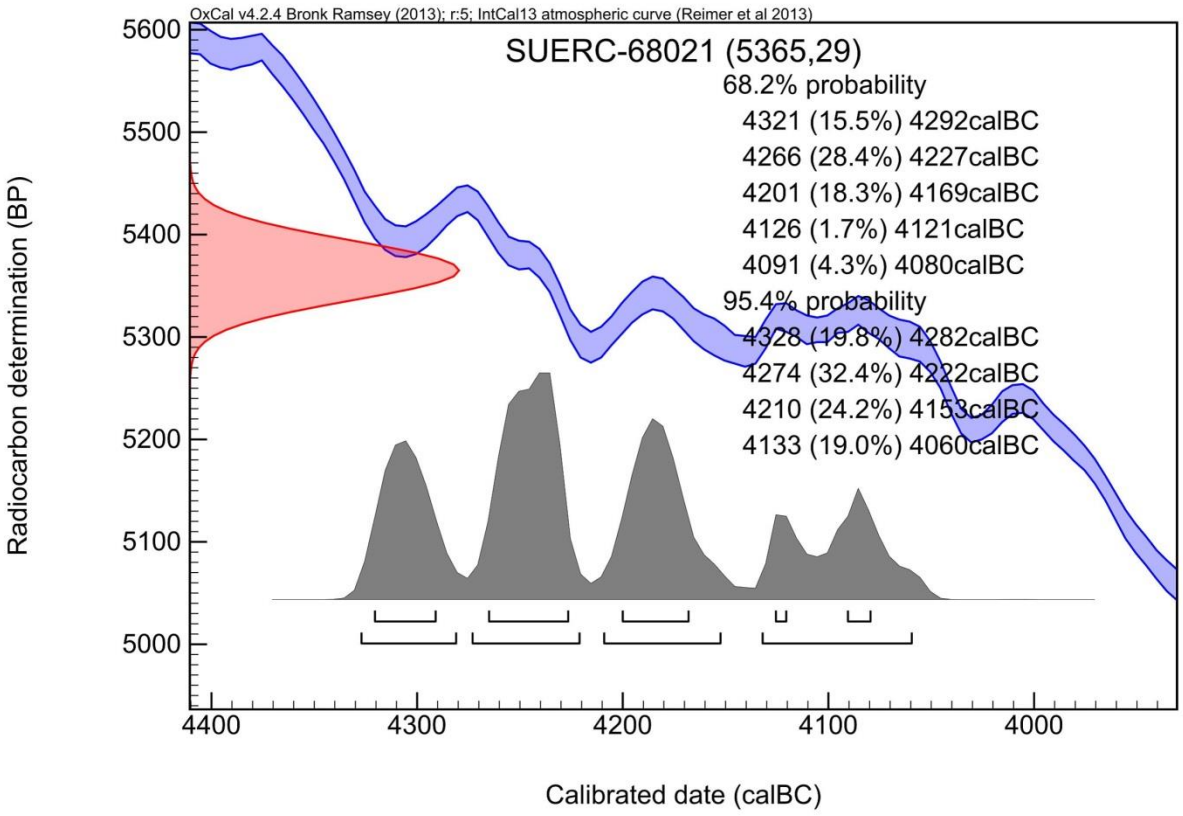
Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

**Calibration Plot**

Context Reference: 5054

Sample reference: 6054



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68022 (GU41459) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 5029 |
| **Sample Reference** | 6007 |
| **Material** | Charcoal : Quercus sp. |
| **$\delta^{13}C$ relative to VPDB** | -24.4 ‰ |
| **Radiocarbon Age BP** | 4912 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

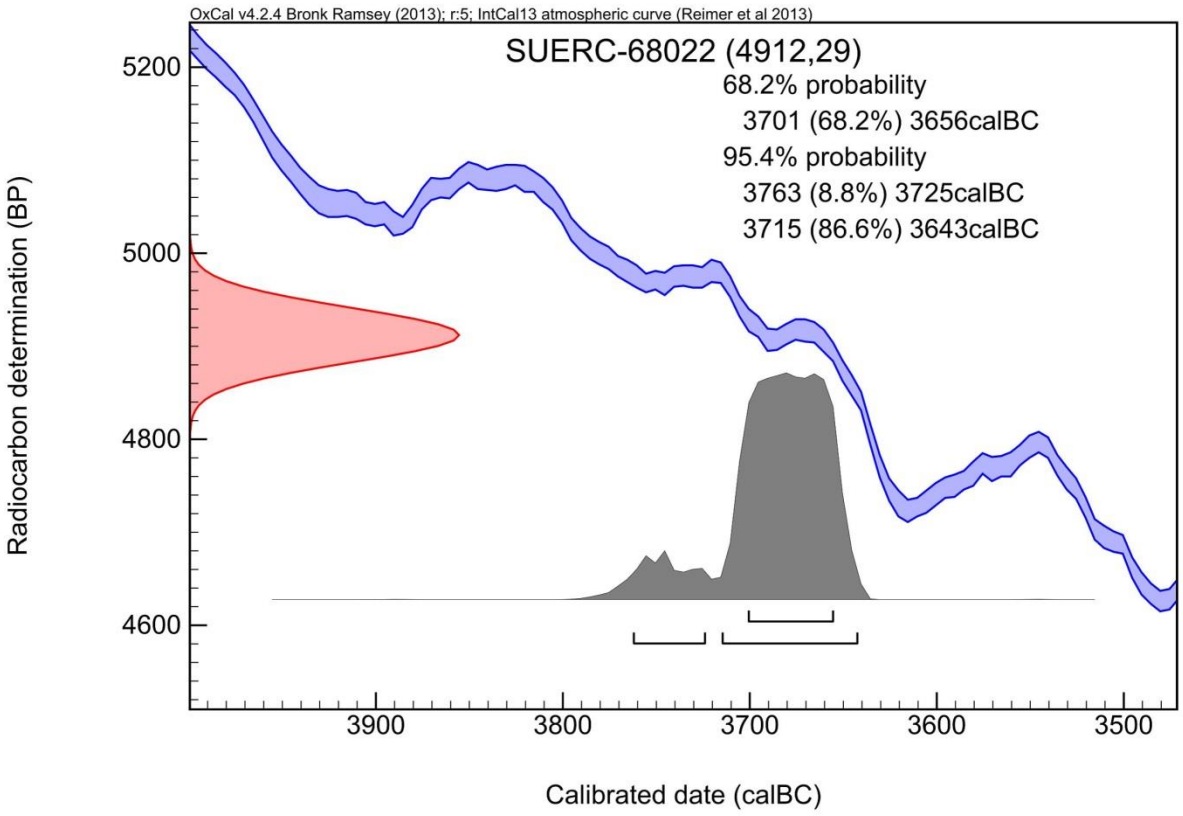
Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

**Calibration Plot**

Context Reference: 5029

Sample reference: 6007



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68023 (GU41460) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 5033 |
| **Sample Reference** | 6008 |
| **Material** | Charcoal : Fraxinus excelsior L. |
| **$\delta^{13}C$ relative to VPDB** | -25.6 ‰ |
| **Radiocarbon Age BP** | 2026 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

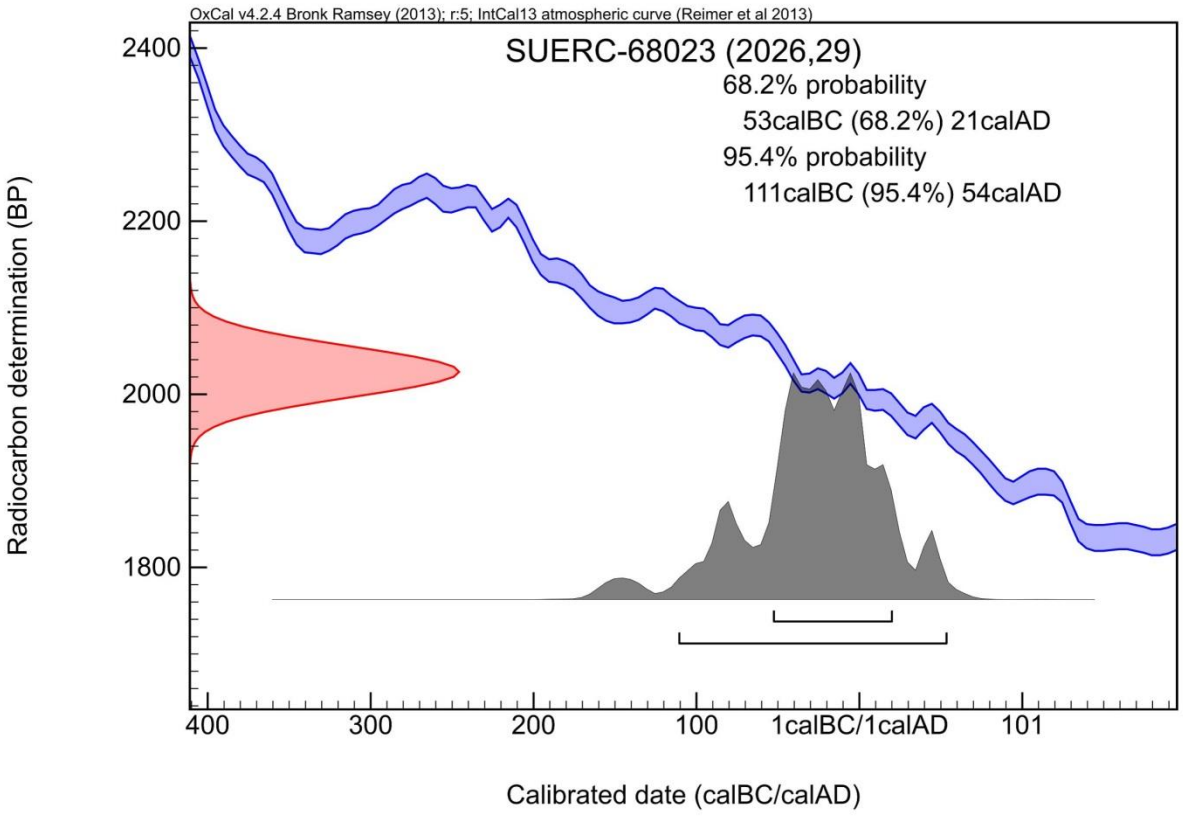
Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

**Calibration Plot**

Context Reference: 5033

Sample reference: 6008



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68024 (GU41461) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 5031 |
| **Sample Reference** | 6009 |
| **Material** | Charcoal : Corylus avellana L. |
| **$\delta^{13}C$ relative to VPDB** | -25.8 ‰ |
| **Radiocarbon Age BP** | 1983 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

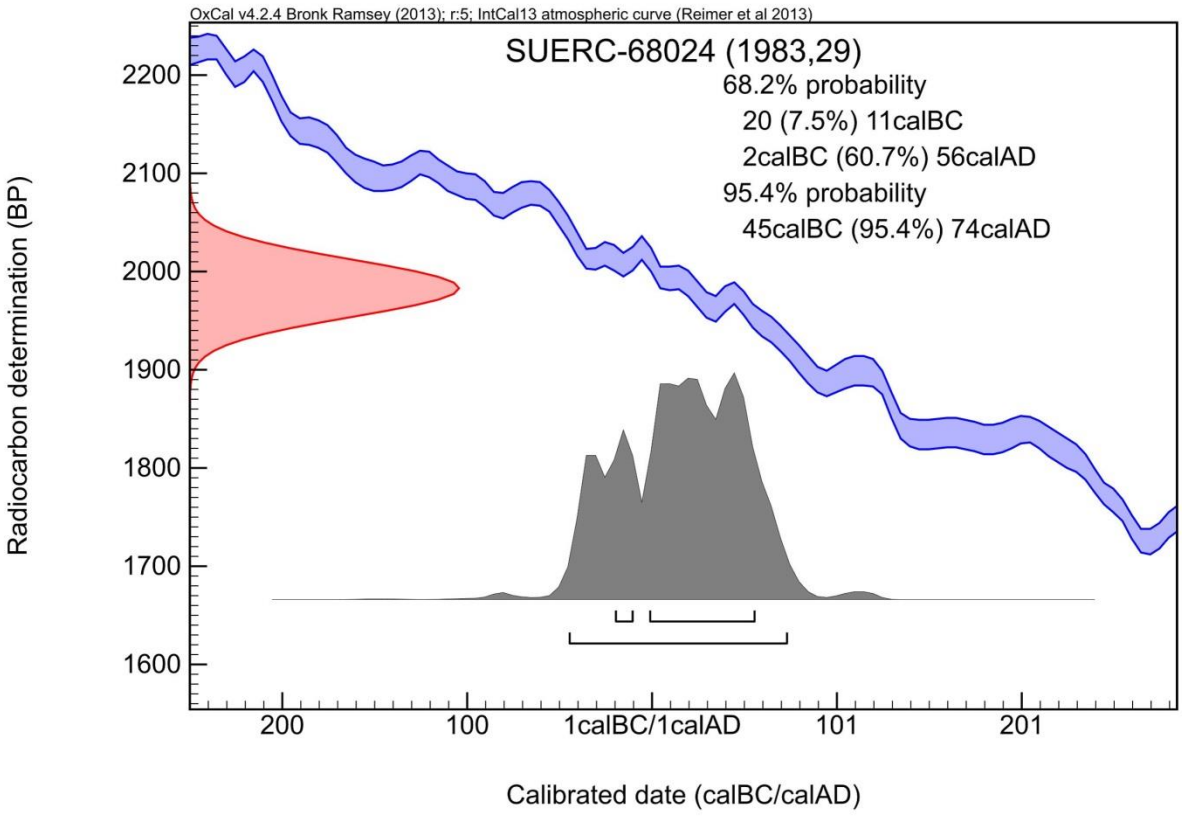
Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

**Calibration Plot**

Context Reference: 5031

Sample reference: 6009



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68025 (GU41462) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 142 |
| **Sample Reference** | 401 |
| **Material** | Charcoal : Prunus spinosa L. |
| **$\delta^{13}C$ relative to VPDB** | -23.9 ‰ |
| **Radiocarbon Age BP** | 1145 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

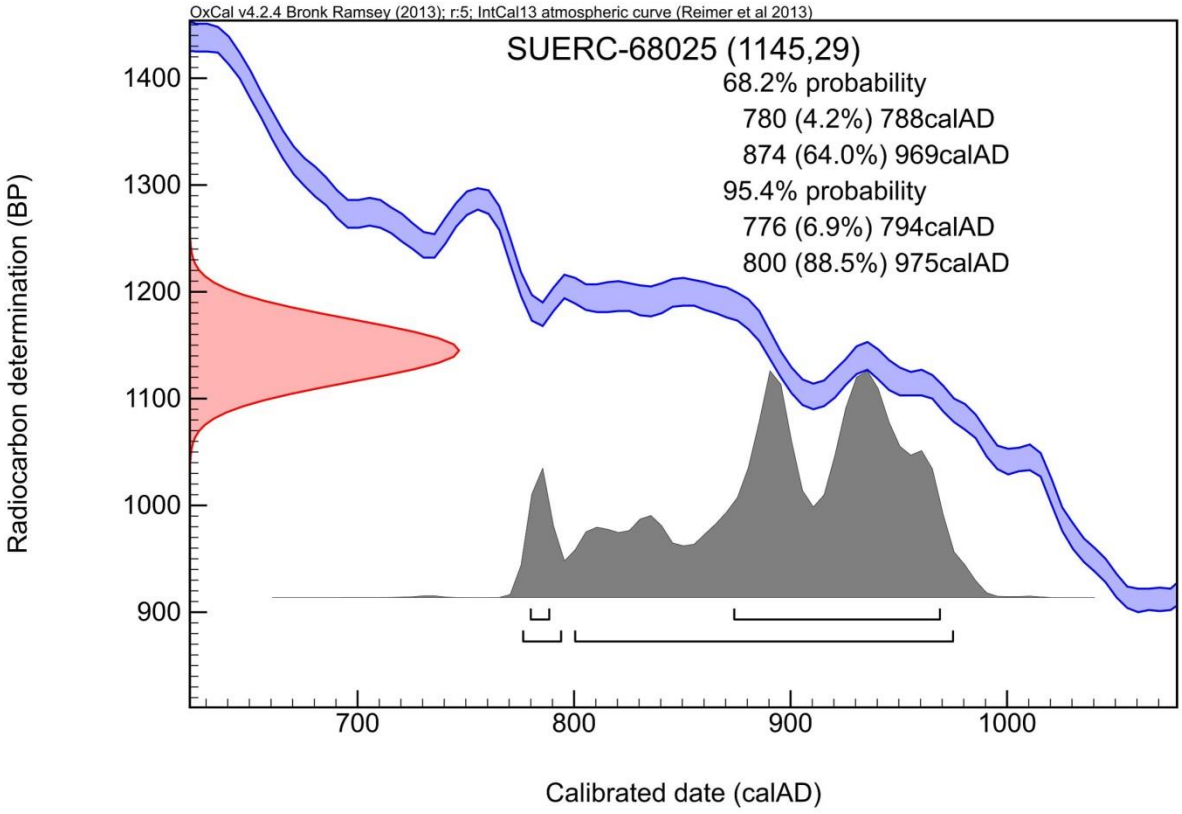
Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

**Calibration Plot**

Context Reference: 142

Sample reference: 401



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68026 (GU41463) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 194* |
| **Sample Reference** | 403 |
| **Material** | Charcoal : Erica sp./Calluna vulgaris L |
| **$\delta^{13}C$ relative to VPDB** | -25.3 ‰ |
| **Radiocarbon Age BP** | 819 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

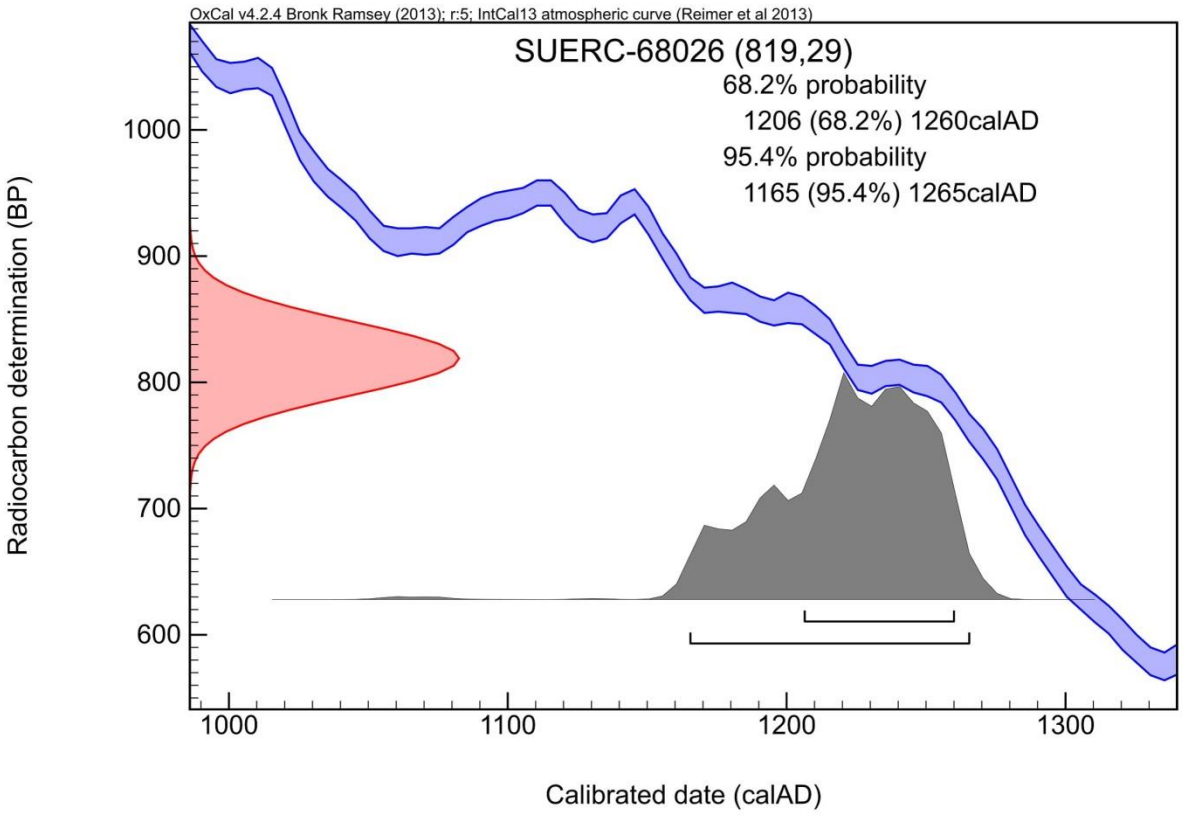


*note incorrectly labelled as 106 (cut number) on original certificate

**Calibration Plot**

Context Reference: 194

Sample reference: 403



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68030 (GU41464) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 184* |
| **Sample Reference** | 405 |
| **Material** | Charcoal : Betula sp |
| **$\delta^{13}C$ relative to VPDB** | -24.2 ‰ |
| **Radiocarbon Age BP** | 2095 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

University of Glasgow
The University of Glasgow, charity number SC004401

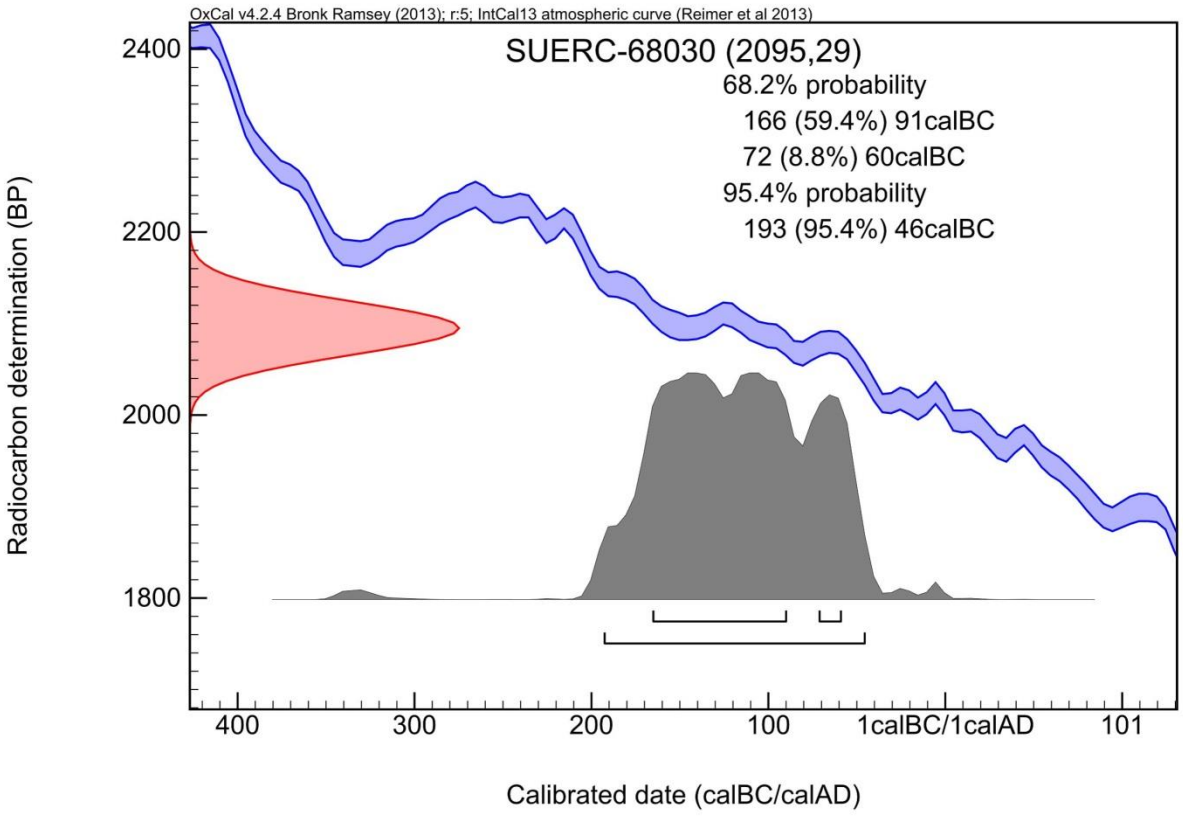
The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336

*note incorrectly labelled as 194 on original certificate

**Calibration Plot**

Context Reference: 184

Sample reference: 405



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# RADIOCARBON DATING CERTIFICATE

15 July 2016

| | |
|---|---|
| **Laboratory Code** | SUERC-68031 (GU41465) |
| **Submitter** | James Meek<br>Dyfed Archaeological Trust<br>Corner House<br>6 Carmarthen Street<br>Llandeilo<br>SA19 6AE |
| **Site Reference** | Llandysul School site, Ceredigion |
| **Context Reference** | 184* |
| **Sample Reference** | 405 |
| **Material** | Charcoal : Prunus spinosa L. |
| **$\delta^{13}C$ relative to VPDB** | -24.7 ‰ |
| **Radiocarbon Age BP** | 786 ± 29 |

**N.B.** 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.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

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 Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :- 15/07/2016

Checked and signed off by :- E. Dunbar Date :- 15/07/2016

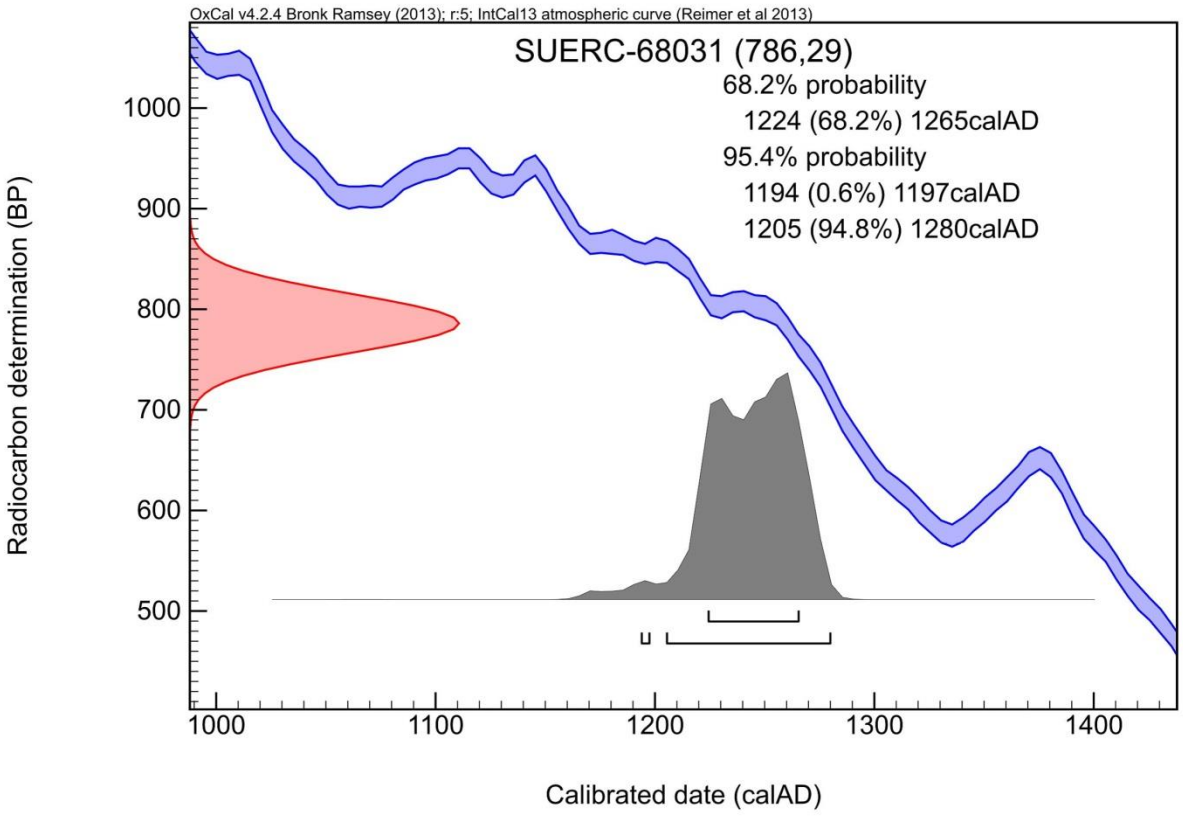


*note incorrectly labelled as 194 on original certificate

**Calibration Plot**

Context Reference: 184

Sample reference: 405



## APPENDIX D: YSGOL BRO TEIFI, LLANDYSUL, CEREDIGION SITE ARCHIVE

### D1 Evaluation Archive – Reference ERN 107505

D1.1 The following list of records and samples was created from the archaeological Evaluation at Llandysul:

- Site indices record sheets.
- Context sheets – 72 context sheets.
- Plan sheets – Seven A2 permatrace sheets containing 13 section drawings.
- Digital photographs – 161
- Digital topographic survey data; including raw data, georeferenced data and CAD compatible plans
- Digital geophysical data in raw format and Terrasurveyor formats

### D2 Field C Archive – Reference ERN 109385

- Site indices and record sheets.
- Context sheets – 18 context sheets.
- Plan sheets - three A2 permatrace sheets containing 15 section drawings and one plan drawing.
- Digital photographs – 149
- Environmental samples -
    - Context 5050 (Charcoal rich sediment from eastern ring ditch) – sample 6050
    - Context 5060 (spread of burning) – sample 6051
    - Context 5061 (spread of burning) – sample 6052
    - Context 5054 (Ditch fill, bottom of western ring ditch) – sample 6053
    - Context 5054 (charcoal – western ring ditch). Sample 6054
    - Context 5066 and 5067 (ditch fill, bottom of eastern ring ditch) Sample 6055
    - Context 5052 and 5056 (Ditch fill, bottom of eastern ring ditch) sample 6066
- Digital topographic survey data; including raw data, georeferenced data and CAD compatible plans

### D3 Field E Archive – Reference ERN 109385

- Site indices and record sheets
- Context Sheets – 37 context sheets.
- Plan sheets – One plan sheet containing 12 section drawings.
- Digital photographs – 98
- Environmental Samples – nine samples excavated from a representation of excavated pits and the round house gully.
    - Context 5001 - Sample 6000 (posthole)
    - Context 5011 – Sample 6001 (posthole)
    - Context 5018 – Sample 6002 (posthole)
    - Context 5013 – Sample 6003 (posthole)
    - Context 5020 – Sample 6004 (posthole)

  - Context 5015 – Sample 6005 (posthole)
  - Context 5024 – Sample 6006 (posthole)
  - Context 5029 – Sample 6007 (posthole)
  - Context 5033 – Sample 6008 (posthole)
  - Context 5031 – Sample 6009 (Roundhouse)
- Digital topographic survey data; including raw data, georeferenced data and CAD compatible plans

**D4 Field K Archive – Reference ERN 109385**

- Site indices and record sheets.
- Context sheets – 78 context sheets.
- Plan sheets – Eight A2 permatrace sheets containing 9 section drawings.
- Digital photographs – 113
- Environmental samples – five from the excavated ditch.
  - Context 142 – Sample 401 (Bottom of Trench E, Section K1).
  - Context 163 – Sample 402 (Bottom of Trench D, Section K3).
  - Context 194 – Sample 403 (Lower fill located in east facing section of Trench B, Section K6).
  - Context 188/185/190 – Sample 404 litres (mid-section fill in east facing section of Trench B, Section K6).
  - Context 184 – Sample 405 (upper fill in east facing section of Trench B, Section K6).
- Digital topographic survey data; including raw data, georeferenced data and CAD compatible plans

# YSGOL BRO TEIFI, LLANDYSUL, CEREDIGION: ARCHAEOLOGICAL EXCAVATIONS 2014

RHIF YR ADRODDIAD / REPORT NO. 2016/47
RHIF Y DIGWYDDIAD / EVENT RECORD NO. 109385

Tachwedd 2018
November 2018

Paratowyd yr adroddiad hwn gan / This report has been prepared by

**James Meek**

Swydd / Position: **Head of DAT Archaeological Services**

Llofnod / Signature  Dyddiad / Date

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith
This report has been checked and approved by

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position:

Llofnod / Signature ..... Dyddiad / Date

*Yn unol â'n nôd i roddi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau sydd gennych ar gynnwys neu strwythur yr adroddiad hwn*

*As part of our desire to provide a quality service we would welcome any comments you may have on the content or presentation of this report*

ymddiriedolaeth archaeolegol
DYFED
archaeological trust