C1010 ROAD IMPROVEMENT, PENRHYNCOCH, CEREDIGION: ARCHAEOLOGICAL STRIP, MAP AND RECORD 2018

(NGR SN 62702 83443)

DAT Archaeological Services

Prepared by DAT Archaeological Services
For: Ceredigion County Council

REGISTERED ORGANISATION CIfA

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by

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EXECUTIVE SUMMARY

In January and February 2018, DAT Archaeological Services undertook a strip, map and record scheme and a watching brief on behalf of Ceredigion County Council on land adjacent to the C1010 road west of Penrhyncoch, Ceredigion. The work was undertaken as part of planning consent to widen the road.

The scheme recorded remains of Neolithic and Bronze Age date, including Neolithic pottery, which confirmed that the nearby, multi-period ritual and funerary complex of Plas Gogaerddan (PRNs 8237, 11822, 13005, 37110) extended into the development area.

CRYNODEB GWEITHREDOL

Ym mis Ionawr a mis Chwefror 2018, ymgymerodd Gwasanaethau Archaeolegol YAD â chynllun stripio, mapio a chofnodi a brîff gwylio ar ran Cyngor Sir Ceredigion ar dir gerllaw ffordd C1010 i'r gorllewin o Benrhyncoch, Ceredigion. Ymgymerwyd â'r gwaith fel rhan o gydsyniad cynllunio i ledu'r ffordd.

Cofnododd y cynllun olion o'r cyfnod Neolithig ac Oes Efydd, gan gynnwys crochenwaith Neolithig, sy'n gadarnhaodd fod ardal defodol ac angladdol aml-gyfnod gerllaw Plas Gogaerddan (PRNs 8237, 11822, 13005, 37110) yn ymestyn i'r ardal ddatblygu.

1. INTRODUCTION

1.1 Project Commission

1.1.1 DAT Archaeological Services (the contracting arm of Dyfed Archaeological Trust) were commissioned by Ceredigion County Council to provide a scheme of archaeological works in advance of a road widening programme for the C1010 road on land west of the village of Penrhyncoh, Ceredigion (Figure 1, centred on SN 62702 83443). The road widening scheme was part of a larger proposal to develop the nearby Innovation and Enterprise Campus Facility (IEC) of Aberystwyth University (planning application no. A161170). The scheme will improve the visibility for car users entering and exiting the new campus facility.

1.1.2 A condition requiring archaeological mitigation was placed upon the planning approval following advice from the archaeological advisor to the planning authority, Dyfed Archaeological Trust - Development Management (DAT-DM), who was of the opinion that the development had the potential to expose, damage or destroy archaeological remains associated with the nearby multi-period ritual and funerary complex of Plas Gogerddan (Scheduled Monument CE529)(Figure 2).

1.1.3 The full extent of this complex is not known and it is possible that it extends into the development area. Therefore DAT-DM requested that an archaeological strip, map and record scheme be undertaken within the development area. Prior to this a geophysical survey was undertaken within the area to assist in informing the strip, map and record exercise.

1.1.4 A written scheme of investigation (WSI) defining the archaeological works was produced by DAT Archaeological Services and approved by Ceredigion County Council Planning Authority. The WSI outlined the methodology of the archaeological strip, map and record exercise that was undertaken in advance of the C1010 road widening scheme.

1.1.5 The aim of the strip, map and record scheme was to record all archaeological features and deposits that could be destroyed or damaged within the area of road widening.

1.1.6 The WSI was prepared in accordance with the Standard and Guidance for Archaeological Excavation (CIfA 2014).

1.2 Aims and Objectives of the Project

1.2.1 The aims of the project were:

- The implementation of a scheme of archaeological investigation within a defined area of the widening of the C1010 road south of the village of Penrhyncoch, Ceredigion. The investigation included:
    - Geophysical survey
    - Archaeological strip, map and record
    - Archaeological watching brief
- The preparation of a report on the results of all the archaeological works and the creation of an archive of all finds, records, photographs and plans.

1.2.2 The following tasks were completed:

- Production of a written scheme of investigation outlining the methodology for geophysical survey, strip, map and record process and archaeological watching brief undertaken by DAT Archaeological Services;

- The recording of the state of preservation, character, extent and date range for identified archaeological deposits or remains;
- The preservation through record of all archaeological remains within the defined area as mitigation for the total destruction of the remains, which would occur through the widening of the C1010 road;
- Production of a report and an archive of the results.

1.3 Report Outline

1.3.1 This report provides a summary and discussion of the archaeological works and their results and puts those results within their regional and national context.

1.4 Abbreviations

1.4.1 Sites recorded on the regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR).

Sites recorded on the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) are identified by their National Primary Record Number (NPRN).

CADW prefixes scheduled monument (SM) reference numbers in Ceredigion with CD.

Altitude is expressed to Ordnance Datum (OD).

References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

1.5 Illustrations

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

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.

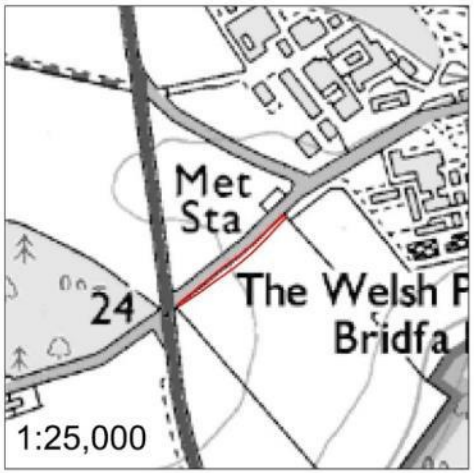
Table 1: Archaeological and historical timeline for Wales.

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[1]	1536 – 1750	
Industrial period	1750 – 1899	
Modern	20th century onwards	

[1] The post-medieval and industrial periods are combined as the post-medieval period on the Regional HER as held by Dyfed Archaeological Trust

Figure 1: Location plan showing development area (outlined in red below).



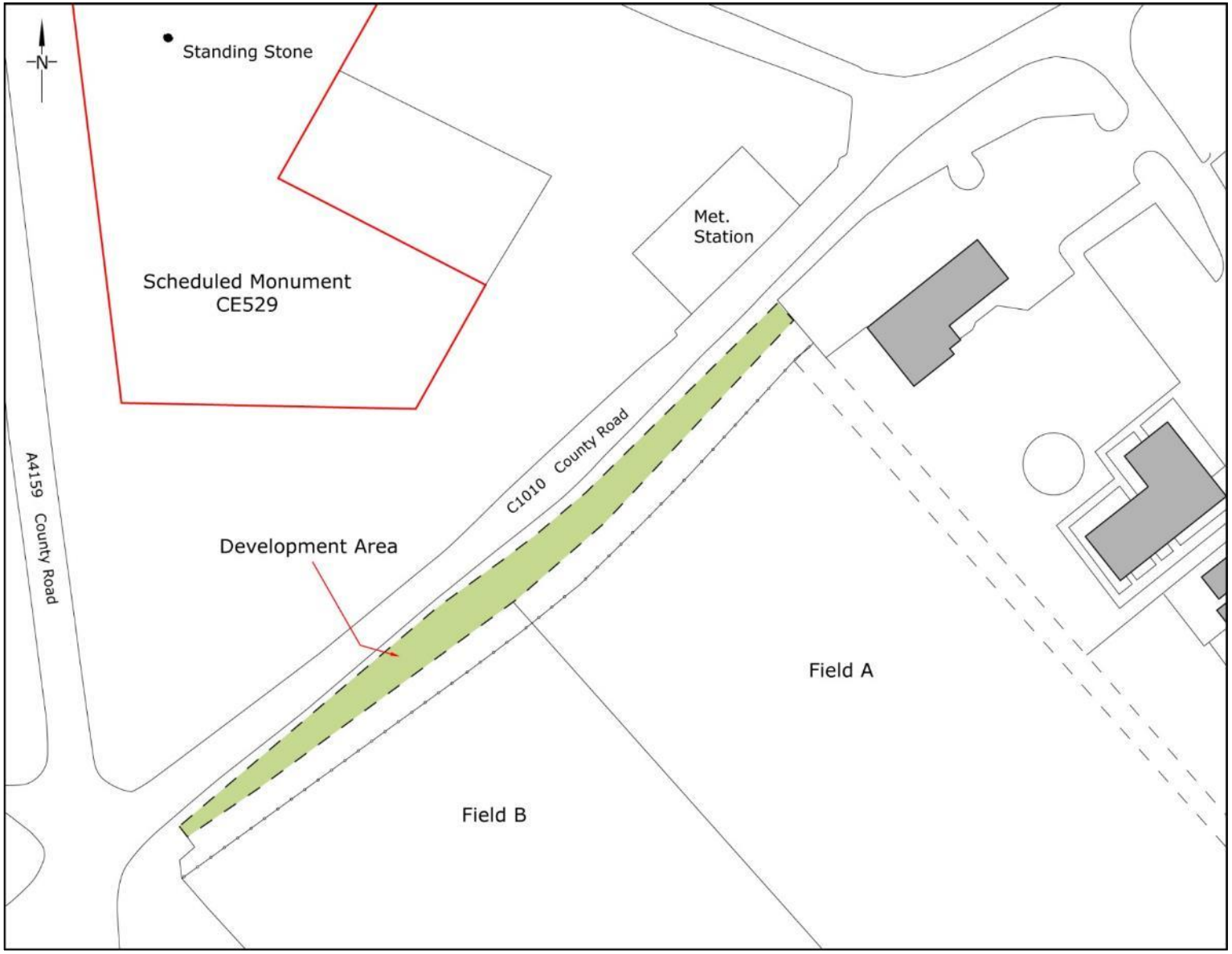


Figure 2: The development site (green) and Plas Gogerddan funerary and ritual site (red outline).

2. THE SITE

2.1 Site Location and Topography

2.1.1 The development site comprised a narrow strip of land *c*.0.08ha in area (Figure 2, centred on SN 62702 83443) located along the southern side of the C1010 road. The strip measured approximately 165m in length; 3m wide at its southern end, expanding to approximately 8m at the centre and 5m at the northern end. The site was situated within land previously in agricultural use and encompassed a strip of land to the south of the northern boundary of two fields. Field A was under grass (Photo 1) and Field B was under a newly planted crop (Photo 2).

Photo 1: Field A – showing beech hedge and wire fence of northern boundary prior to groundworks. View roughly southwest.

2.1.2 The development site was situated on a gentle west facing slope at about 30m OD. The underlying solid geology is the Borth Mudstones Formation - sedimentary bedrock formed approximately 433 to 444 million years ago in the Silurian Period. The overlying superficial deposits are comprised of Glaciofluvial Ice Contact Deposits; Devensian sand and gravel, which formed up to 2 million years ago in the Quaternary Period (BGS viewer).

Photo 2: Field B – showing beech hedge and wire fence of northern boundary. View approximately west.

2.2 Historical Background and Archaeological Potential

2.2.1 Using resources available within the HER, designated and non-designated assets were identified within a 500m buffer zone of the development site. This study area was considered sufficient to enable an assessment of the archaeological potential of the development area to be made.

Scheduled Monuments

2.2.2 The development area lies immediately southeast of the important, nationally protected, multi-period ritual and funerary complex of Plas Gogerddan (Scheduled Monument CD529). This monument is known as the Plas Gogerddan Cemetery complex and consists of two discrete areas of archaeology.

2.2.3 The larger area encompasses a prehistoric earthen circular barrow, a re-erected standing stone and an early medieval cemetery. The second area contains a single standing stone. It is considered that both areas are associated and essentially form one group (Bell and Murphy 2016).

2.2.4 These sites are considered to be of national importance as they are important relics of a prehistoric and early medieval funerary and ritual landscape.

Known Archaeological Remains

2.2.5 Figure 3 and Table 2 show the designated and non-designated archaeological and historic assets that are recorded in the regional HER and the NMR within a 500m radius of the development site.

2.2.6 There are no known archaeological sites within the boundary of the development area

Prehistoric

2.2.7 There are three sites recorded within 500m of the development area which are noted as prehistoric, without any specific period assigned. The most notable is the Gogerddan Park Enclosure Cropmark (NPRN 404548) which is located approximately 350m north of the development area. This cropmark was documented during RCAHMW aerial reconnaissance in 2006 and survives as a segment of an oval ditched enclosure measuring approximately 46m x 37m. The remainder of the cropmark has been built upon by modern farm buildings to the east and obscured by a road and woodland to the south. The cropmark is not visible on recent satellite imagery and its present condition is unknown (Bell and Murphy 2016). The remaining two prehistoric sites are a concentric enclosure cropmark (PRN 37110) and an artefact scatter (PRN 37111) located around 450m northwest of the development site (ibid.).

2.2.8 A findspot record (PRN 9994) represents the discovery of a large Neolithic scraper 190m northeast of the development area.

2.2.9 Numerous Bronze Age sites recorded within 500m of the development area relate to the Scheduled Plas Gogerddan Cemetery complex (PRNs 5405, 8237, 13063 and 55942; all part of CD259I). In addition, a former standing stone (PRN 55926) has been recorded 330m northwest of the development site and may also be associated with cemetery complex CD259.

2.2.10 There are no Iron Age sites recorded within 500m of the development site.

2.2.11 The prehistoric sites recorded are predominantly associated with funerary and ritual activity. The desire to erect permanent structures such as barrows and standing stones suggests a strong attachment to the land in this area and therefore the potential for hitherto unknown sites to be present is high.

These could include further funerary monuments and evidence of prehistoric settlement.

Roman

2.2.12 There are no Roman sites recorded within 500m of the development boundary.

Early Medieval

2.2.13 There is one early medieval site (PRN 13005) recorded immediately adjacent to the development area. This is an early medieval inhumation cemetery that is scheduled as part of the multi-period Plas Gogerddan Cemetery complex (CD259). At least twenty-two graves were excavated in 1986, but the full extent of the cemetery is not known (Murphy et al. 1992).

Medieval

2.2.14 There are two medieval sites recorded within 500m of the development site boundary. A square crop mark (PRN 11826) recorded approximately 200m northwest of the development area is believed to be medieval in origin. It has been suggested that this may be associated with the early medieval cemetery (PRN 13005), where three graves were surrounded by rectangular trenches. The second record is documentary evidence for a medieval ford (PRN 12440) 360m north of the site.

Post Medieval

2.2.15 There are nine post-medieval records recorded throughout the 500m buffer zone of the development site. They typically relate to managed woodlands and structures associated with the surrounding parkland of the Plas Gogerddan estate.

Table 2: *Non-designated sites recorded on the HER and NMR within 500m of the development (illustrated in Figure 3).*

PRN	NPRN	Site Name	Site Type	Period	NGR
5405		Carreg Llwyd	Standing Stone (CD 259)	Bronze Age	SN6249483544
5411	23873	Gogerddan Bridge	Bridge	Post-medieval	SN6289983636
7075	5487	Gogerddan	Mansion	Post-medieval	SN6295883653
8237		Carreg Llwyd	Standing Stone (CD 259)	Bronze Age	SN62648351
9994		Gogerddan	Findspot	Neolithic	SN629836
11822	402198	Gogerddan	Round Barrow (CD 259)	Bronze Age	SN6264783477
11826		Gogerddan	Cropmark	Medieval	SN6245783500
12440		Gogerddan	Ford	Medieval	SN629838
13005	310262	Gogerddan	Cemetery (CD 259)	Early medieval	SN62648351
13063		Gogerddan	Trackway, Terrace (CD 259)	Unknown	SN626835
19243	5490		Lodge	Post-medieval	SN6256983809
19249			Quarry	Post-medieval	SN63188335
36859	265098	Gogerddan	Park	Post-medieval	SN62858377
37110	3056836	Gogerddan	Cropmark	Prehistoric	SN62338371
37111	301089	Gogerddan	Finds	Prehistoric	SN62358373
38137		Gogerddan Parkland Structure I	Structure	Post-medieval	SN6281683852
38138		Gogerddan Parkland Structure II	Structure	Post-medieval	SN6295583792
38140		Allt Ddel Footbridge I	Footbridge	Post-medieval	SN6316883704
38143		Allt Dderw Quarry II	Quarry	Post-medieval	SN6311083472
55926		Carreg Llwyd	Standing Stone (CD259?)	Bronze Age	SN6236383558
55942		Plas Gogerddan	Prehistoric Monument Complex (CD 259)	Bronze Age	SN6263783507
	404548	Gogerddan Park	Enclosure	Prehistoric	SN62648378

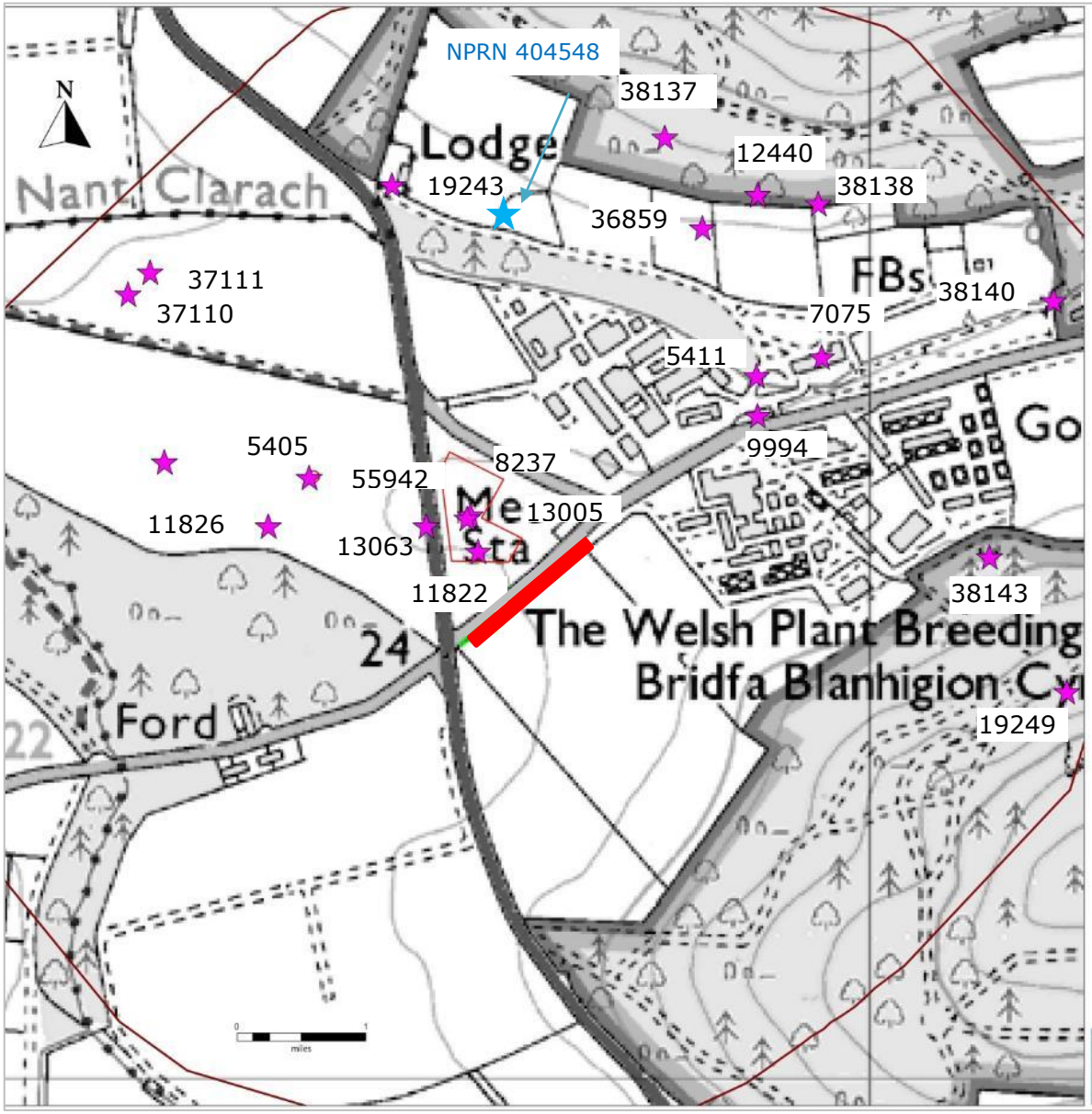


Figure 3: Map extract showing the location of archaeological assets within 500m of the development area

KEY:

HER points

CD259 Scheduled monument

Development area

500m buffer zone

DAT Archaeological Services

2.3 Historic Mapping

Ordnance Surveyor's Drawings 1823

2.3.1 The earliest consulted map is the Ordnance Surveyor's Drawings of 1823 which shows that the boundary of the unmarked field within which the development area lies has changed very little since the early 19th century (Figure 4), with managed woodland on the steep northwest facing slopes to the east. This map marks three 'Erect Stones' in the field to the northwest of the development area, two of which are somewhat comparable to the positions of the two existing standing stones within the Plas Gogerddan Cemetery complex (PRNs 5405 and 8237; CD259). Plas Gogerddan mansion (PRN 7075) and its associated buildings are depicted.

2.3.2 The published article on the archaeological excavations of the Plas Gogerddan Cemetery complex (CD259) refers to a map based on the Ordnance Surveyor's drawing, which also depicts three standing stones in the area, forming a triangular formation with the surviving two (Murphy et al. 1992, 4). It is stated that staff at the Gogerddan campus (formally known as the Plant Breeding Station), recalled that in 1961 a small standing stone, located to the west of the extant western standing stone, was removed (ibid., 4.

Llanbadwrn Fawr parish tithe map of 1845

2.3.3 The Llanbadarn Fawr tithe map of 1842 does not vary greatly from the Ordnance Surveyor's Drawing (Figure 5). The standing stones are not marked but the route of a racecourse is shown running through its locality. Although not depicted on the 1823 Ordnance Surveyor's drawings, the racecourse had been established by 1812, and the locations of the standing stones would have offered prime viewing locations (ibid., 4). The development area lies within Field 118, listed as an arable field forming 'part of Cefn Rhosgoch' on the accompanying tithe apportionment.

1st edition Ordnance Survey 25" map published in 1888

2.3.4 The 1st edition Ordnance Survey map published in 1888 shows that Plas Gogerddan had developed somewhat during the latter half of the 19th century (Figure 6). The mansion house and associated agricultural buildings on the northern side of the road remain much the same whilst the enclosed dwelling south of the road has developed into several small garden plots that have encroached slightly into the northeastern side of the field within which the development area lies. The two standing stones (PRNs 8237 & 5405) are still depicted in the field to the northwest of the development but the third one, which has now gone, is no longer depicted. The racecourse is no longer shown although the line of a footpath follows the route of its course past the standing stones.

2nd edition Ordnance Survey 25" map published in 1905

2.3.5 The 2nd edition Ordnance Survey map published in 1905 shows little change apart from the increased area of woodland that has reduced the size of the development field on its southeast side (Figure 7). Only the western stone (PRN 5405) is depicted here.

Figure 4: An extract of the Ordnance Surveyor's drawing of 1823 showing the locations of the two standing stones in SAM CD259 and Plas Gogerddan. The approximate position of the development area is outlined in red.

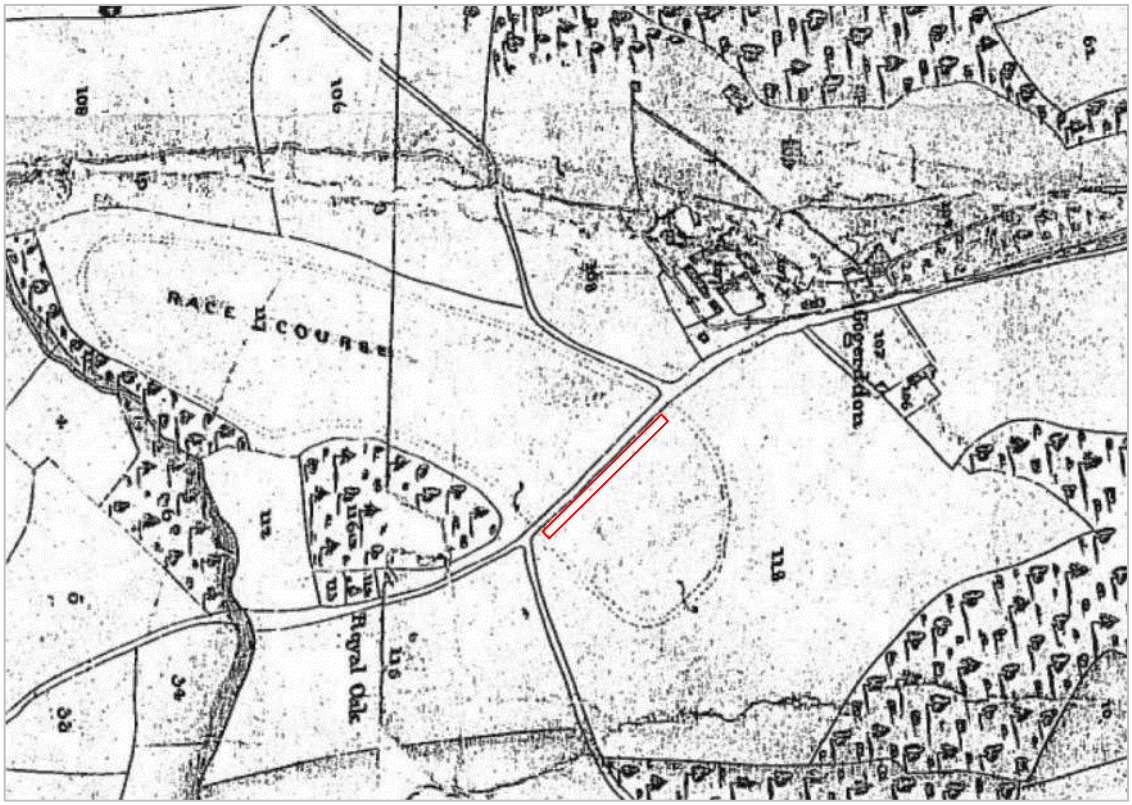


Figure 5: An extract of the Llanbadarn Fawr tithe map of 1845 with the approximate position of the development area outlined in red.

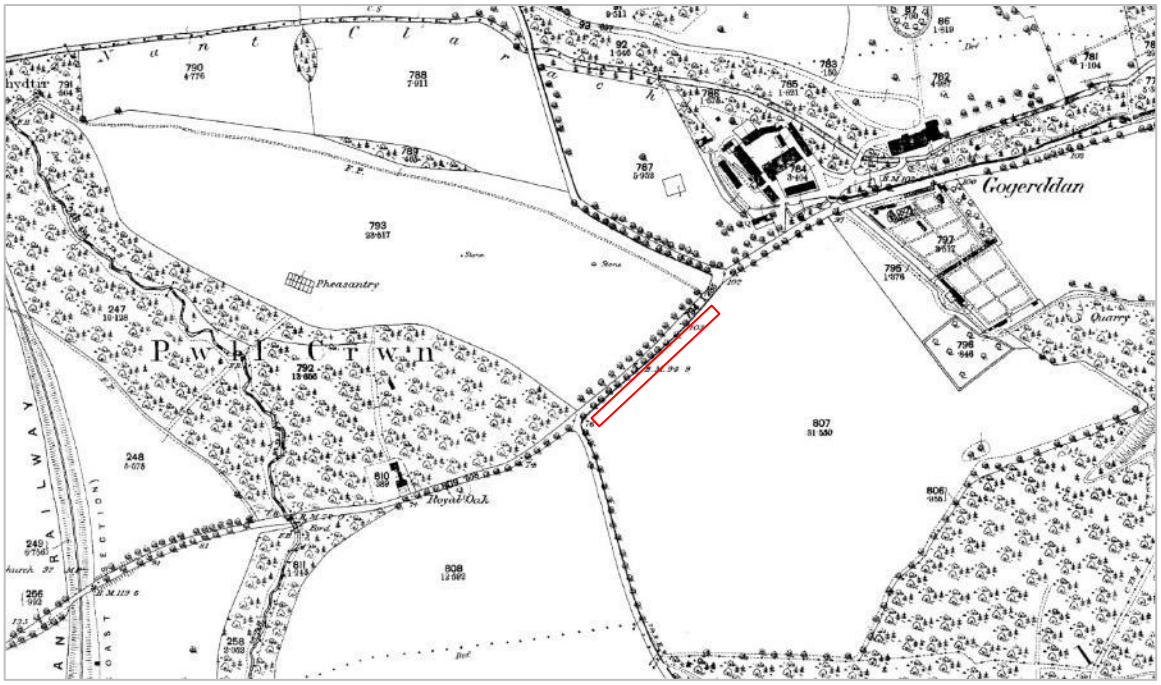


Figure 6: The first edition 25" Ordnance Survey map published in 1888 with the development area outlined in red.

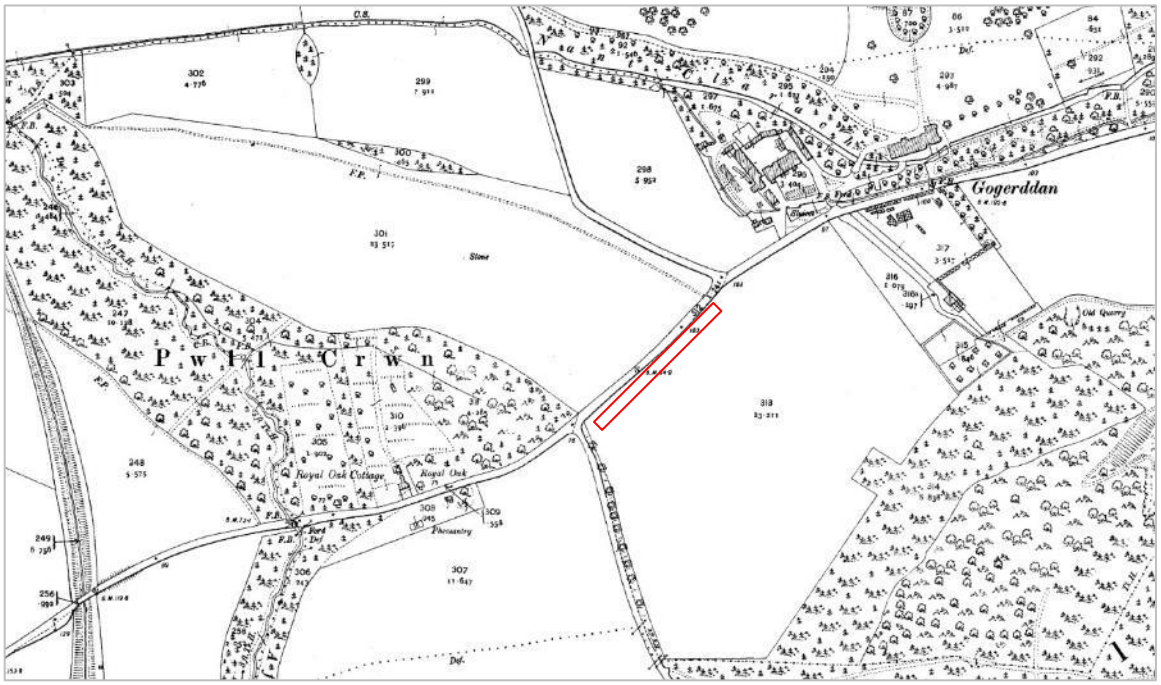


Figure 7: The 2nd edition 25" Ordnance Survey map published in 1905 showing the development area outlined in red.

2.4 Previous Archaeological Work

2.4.1 As already mentioned, the development site lies immediately adjacent to the nationally protected, multi-period funerary and ritual complex of Plas Gogerddan (SM CD259). This was partially excavated in 1986, which subsequently led to the scheduling of the site. Further archaeological investigations in the close vicinity, prior to the current activity due to the road widening scheme, include:

- 2007: Watching brief
- 2008: Watching brief
- 2016: Historic environment desk-based assessment
- 2016: Geophysical survey followed by machine trenching
- 2016: High resilution fluxgate gradiometer survey

1986 excavations

2.4.2 The excavations were conducted in response to the construction of a gas pipeline which passed directly through the two standing stones (PRNs 5405 and 8237)and ring ditches (PRN 11822). Dyfed Archaeological Trust undertook the excavations and a summary was published in *Archaeology in Wales* the same year, followed by a detailed publication in *The Archaeological Journal* in 1992 (Murphy 1986; Murphy et al. 1992).

2.4.3 Site plans of the excavation can be seen in Figure 9. It consisted of a long, linear trench along the route of the gas pipeline, following the western boundary of the field (through what is now the larger of the two scheduled areas). The remains of three Bronze Age ring ditches and associated inhumations and cremations were recorded, along with three Iron Age burials (Murphy 1986; Murphy et al. 1992).

2.4.4 A larger area was also excavated to the east of the linear trench, incorporating the setting of the standing stone (PRN 8237). This revealed that the standing stone had been re-erected during the 19th century and was no longer located within its original pit, which is believed to have been identified some two metres to the north.

2.4.5 Several features considered to be of prehistoric date were observed around the standing stone, and believed to be associated with it. These included numerous post-holes, pits, a hearth, a small cist and a possible cremation. It was possible to obtain radiocarbon dates from these features which indicated late Neolithic to late Bronze Age activity (Murphy et al. 1992, 28).

2.4.6 At least 22 west-east aligned graves were discovered clustered around the north, east and south of the standing stone. Three of these were enclosed by rectangular trenches representing beam slots associated with the remains of rectangular timber structures. Coffin stains were present in nine of the graves. The material from a coffin stain in one of the graves provided a radiocarbon date range of the 3rd to the 7th centuries AD, indicating that the burials dated from the early medieval period (ibid*.,* 22*)*.

2.4.7 The limits of the cemetery were not defined within the excavation and it is considered very probable that it is more extensive, particularly to the north and east (ibid. 1992). This meant further burials may be located within the boundary of the development area.

2007 and 2008 watching briefs

2.4.8 These were undertaken in close vicinity to the development area. The first was conducted during development of the Vehicle Maintenance Workshop at the Aberystwyth Innovation and Enterprise Campus (IEC) (centered on NGR SN 06298 83420). The second watching brief was undertaken during the development of new glasshouses at the eastern end of the campus (SN 63155 83570). In each instance, no deposits, features or artefacts of archaeological significance were revealed (Halfpenny 2007;2008).

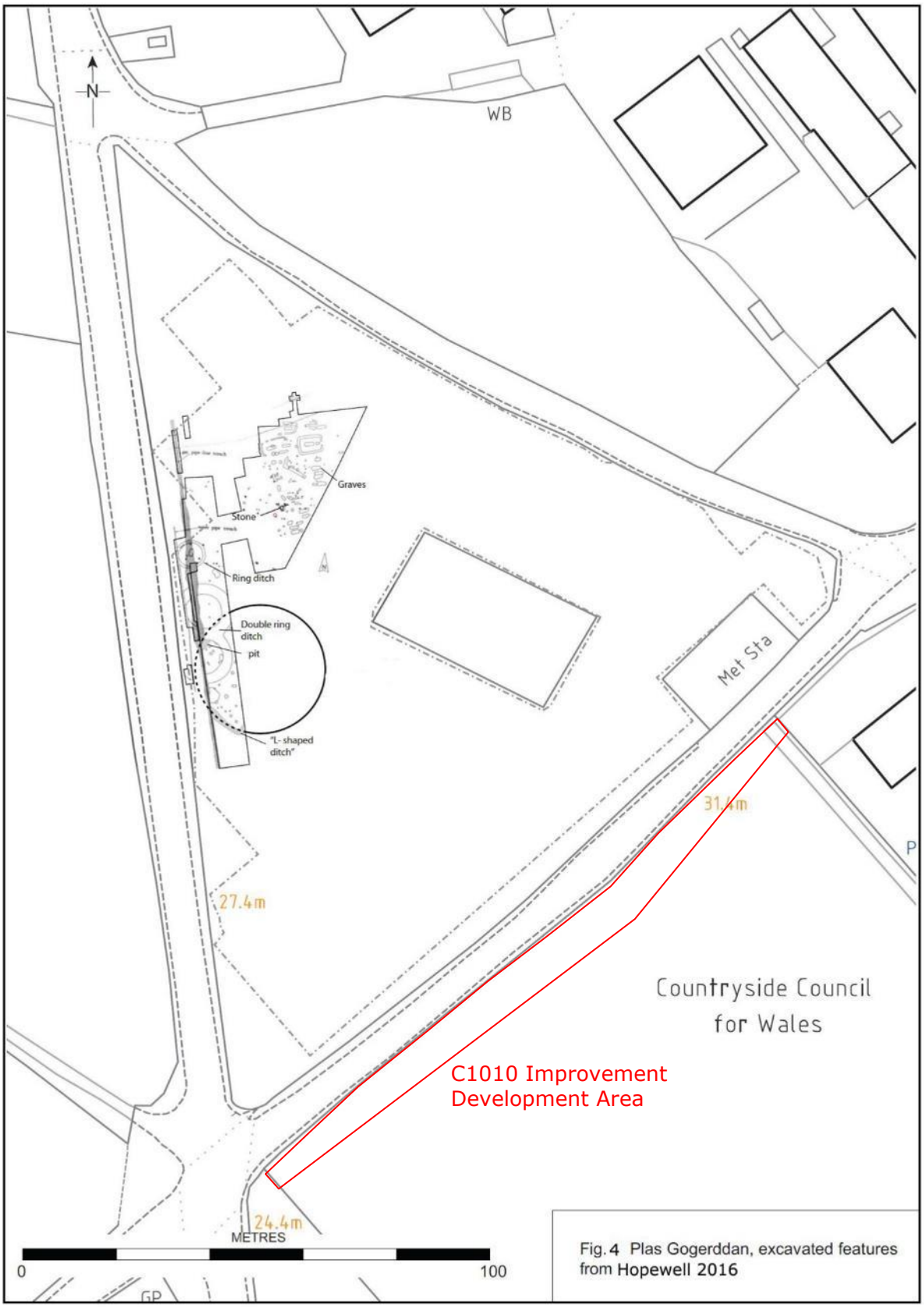


Figure 8: Plan of the 1986 excavation and site of road widening scheme (outlined in red)

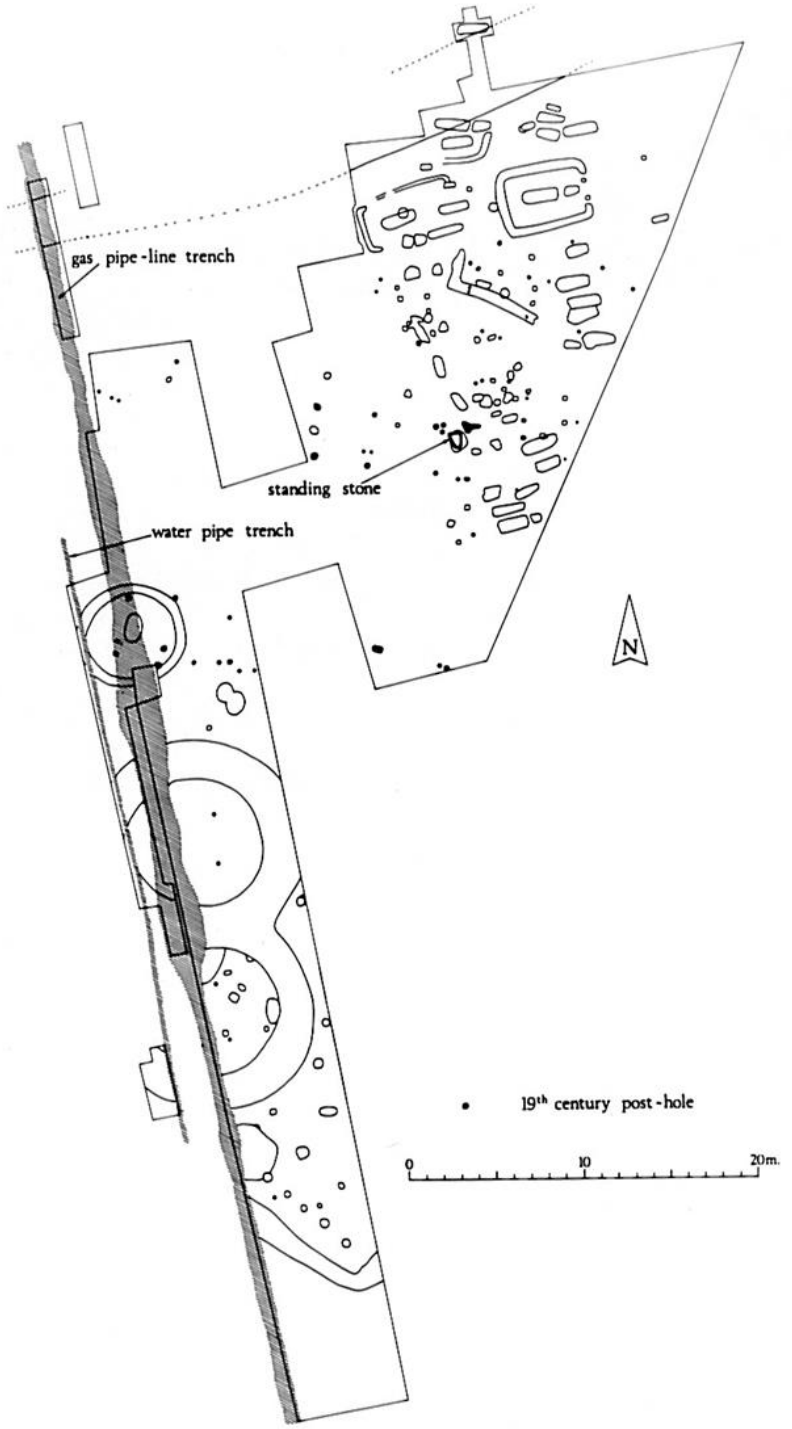


Figure 9: Detailed site plan of the excavation undertaken in 1986 showing the extent and nature of the archaeology investigated (Murphy 1986, 29).

2016 historic environment desk-based assessment

2.4.9 This was produced by Dyfed Archaeological Trust ahead of development of the Innovation and Enterprise Campus (IEC), located slightly to the north of the current development area (Bell and Murphy 2016). The assessment study area was wider than the one used in the present report. The assessment concluded that the development '*lies within an area containing a high density of archaeological sites of many periods…. It is considered that there is a high potential for buried archaeological remains of Neolithic,*

Bronze Age and early medieval date to survive within the proposed development areas' (Bell and Murphy 2016, 43).

2016 geophysical survey and machine trenching

2.4.10 Following the desk-based assessment, DAT Archaeological Services were commissioned by Aberystwyth IEC Ltd to undertake a geophysical survey of two areas within the Plas Gogerddan Campus of Aberystwyth University (Day 2016). These areas were to be developed as part of the proposed construction of a new Centre of Innovation and Enterprise. Two of the three areas of proposed development were surveyed: the 'Northern Area' and the 'Cae Lodge Areas' (Figure 10).

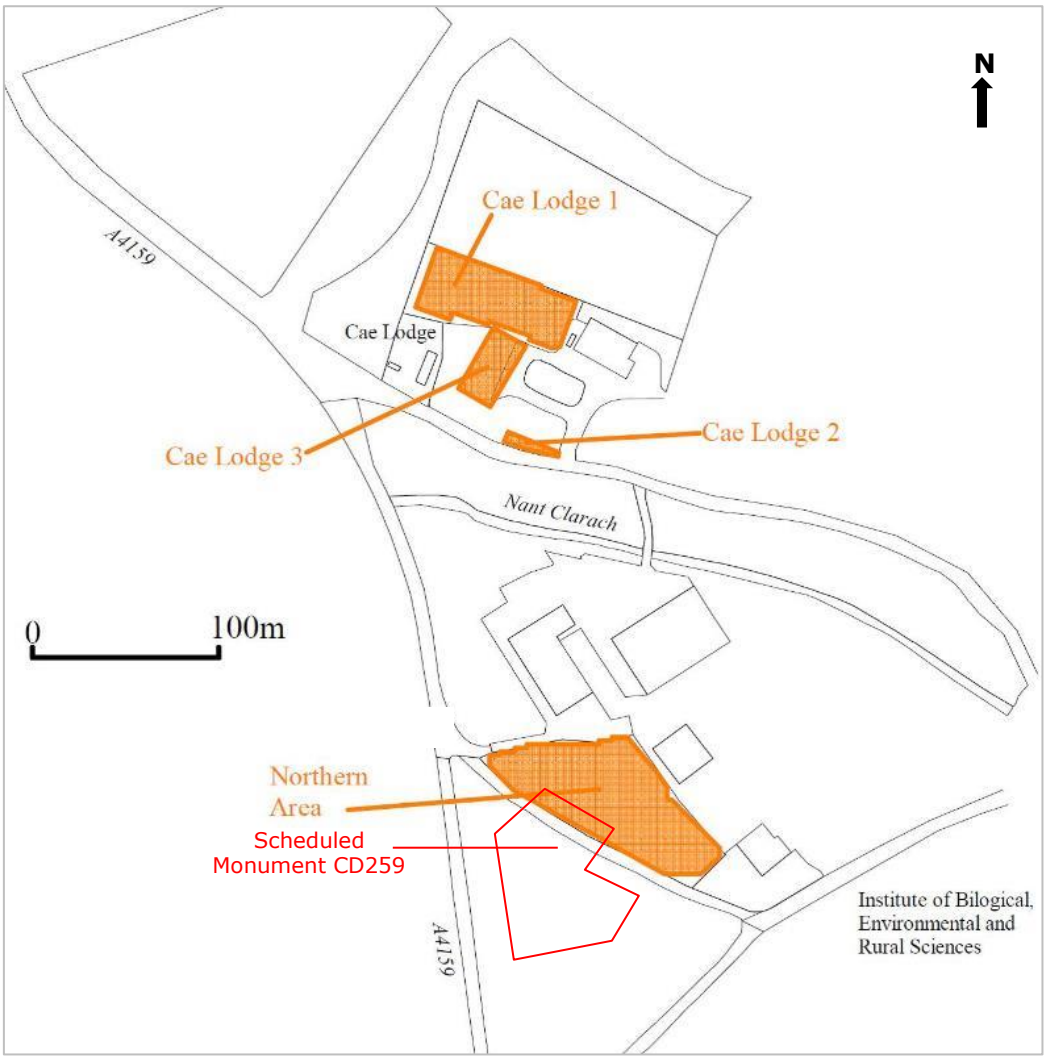


Figure 10: Plan showing the areas subjected to geophysical survey in 2016.

2.4.11 The survey was conducted using a fluxgate gradiometer which detects variations in the earth's magnetic field. The results demonstrated that gradiometer surveying worked successfully on the geology of the site and that there was potential for a range of archaeological features to have survived in these two areas.

2.4.12 Following the geophysical survey an archaeological evaluation was undertaken in August 2016 (Poucher 2016). The evaluation comprised the archaeological investigation of ten machine-excavated trenches; five within the Cae Lodge Areas and five within the Northern Area. These trenches were

largely located to target areas of potential archaeological significance identified by the geophysical survey.

2.4.13 Within the Cae Lodge Areas no finds, features or deposits of archaeological interest were recorded. Within the Northern Area a small number of archaeological features were identified.

2016 excavation

2.4.14 Following the results of the August 2016 evaluation, an archaeological excavation was undertaken at the Gogerddan Campus in January 2017 (Poucher & Shobbrook 2017). The archaeological excavation investigated a linear ditch with a possible associated trackway recorded in the southeast part of the Northern Area, both of which were undated.

2.4.15 The excavation report suggests that these features represent a former field boundary, comprising a field bank with adjacent drainage ditch. No dateable material was found, although it was conjectured that the feature may represent a medieval or early post-medieval field boundary removed by 18th century landscaping. Mixed and redeposited material evident in this area suggested that significant historic landscaping had been undertaken that may be associated with a reorganisation of the landscape around Gogerddan House during the 18th century.

2016 high resolution fluxgate gradiometer survey

2.4.16 In October 2016 Gwynedd Archaeological Trust carried out a high resolution fluxgate gradiometer survey at Plas Gogerddan (Hopewell 2016). The survey area comprised the triangular area of 1.4ha bounded on all three sides by modern roads, much of which is occupied by Scheduled Monument CD259 (Figures 11 and 12).

2.4.17 Unfortunately a water pipeline (Feature 2, Figure 12) created a significant anomaly that masked any archaeological anomalies that might have existed close to the current development area.

2.4.18 Despite the modern pipeline disturbance the geophysical survey produced clear results for a number of archaeological features, some of which had not been previously recorded. The ploughed out round barrow (PRN 11822, Feature 5; Figure 12), visible as a poorly defined earthwork on the ground, retained a considerable amount of structure. The circular 30m-diameter barrow appeared to have a circular outer ditch with a corresponding upcast bank on the inside, a second inner ditch and within that a number of post-holes or other cut features that show that the barrow is a complex and possibly multiphase structure (Hopewell 2016).

2.4.19 Two circular features (Features 7 and 8; Figure 12) revealed immediately west of the meteorological station appeared to be small ring ditches of 8.0m and 9.2m diameter respectively.

2.4.20 A cluster of anomalies (10 and 11; Figure 12) could have indicated burials. Feature 10 appeared to comprise a sub-rectangular feature, 5.0m across, with a central pit, possibly of a similar nature to the dated early medieval burial excavated to the north of the area in 1986.

2.4.21 The accumulated evidence from past archaeological investigations demonstrates that this area was a focus for ritual activity across several millennia. The extent of this activity was not known, and it was quite possible that it extended into the area of the C1010 road improvement.

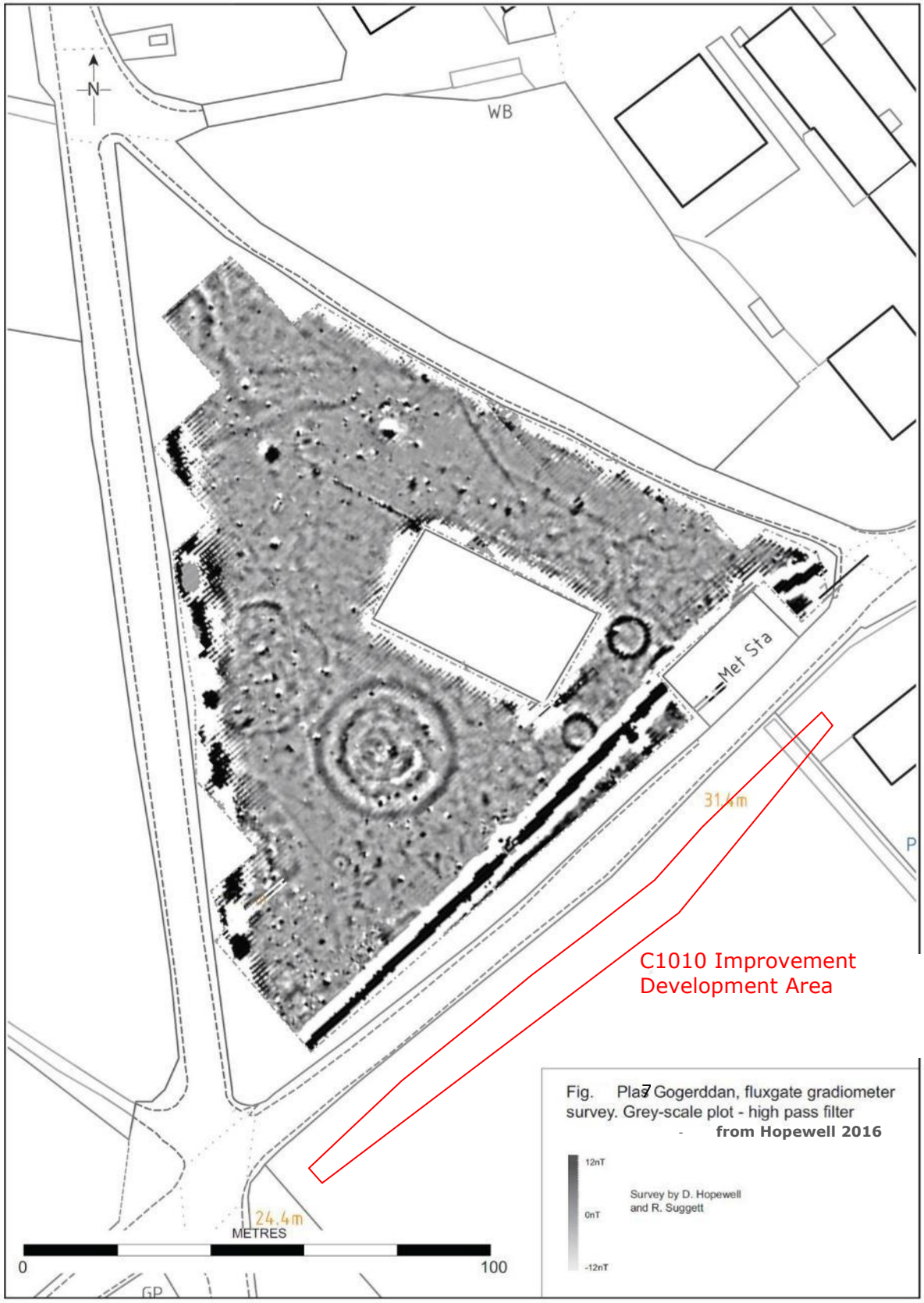


Figure 11: Results of high-resolution, fluxgate gradiometer survey at Plas Gogerddan carried out in 2016.

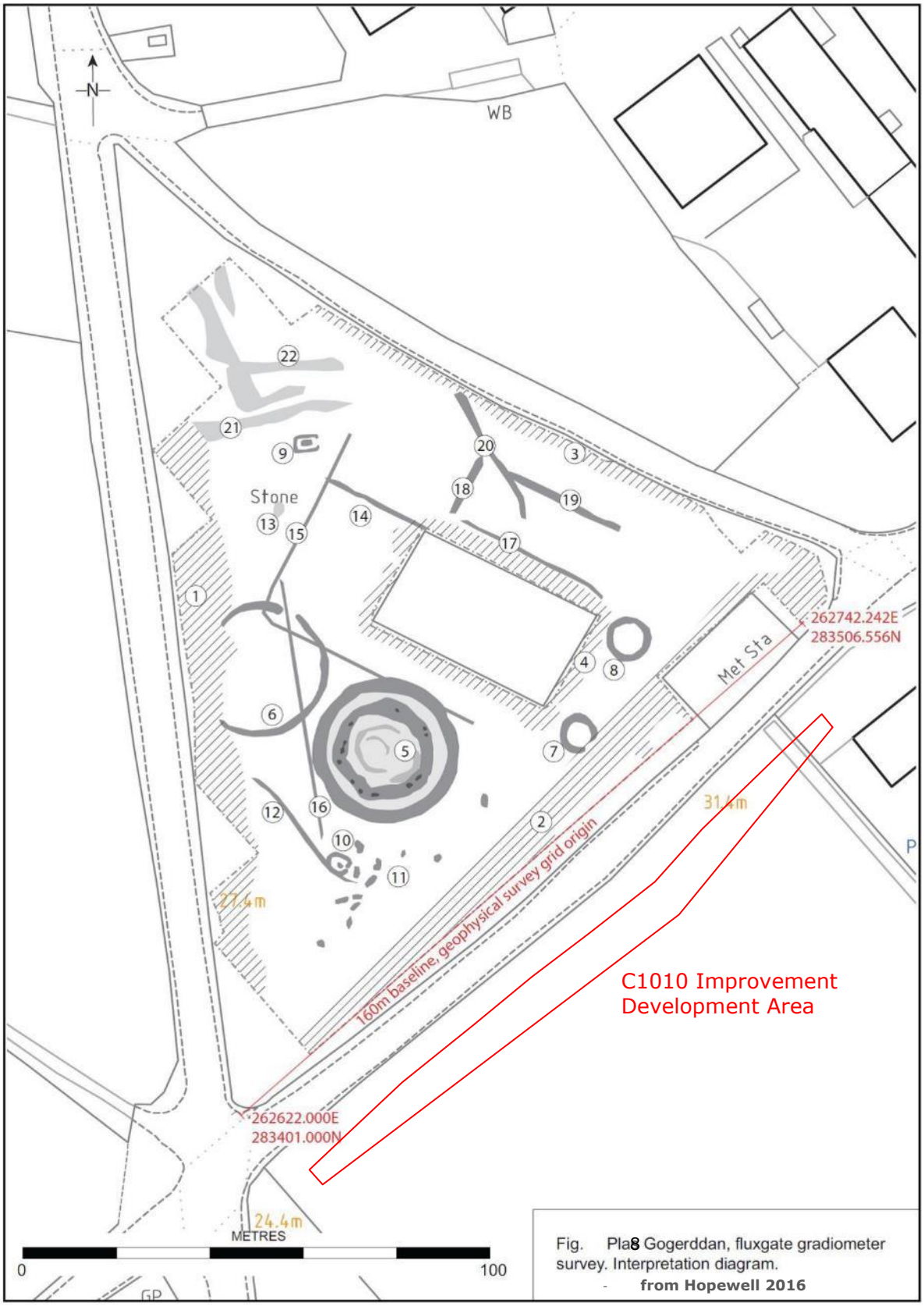


Figure 12: Interpretation of results of geophysical survey at Plas Gogerddan carried out in 2016.

3. METHODOLOGY

3.1 *Geophysical Survey*

3.1.1 Prior to the site being fenced, a gradiometer survey was undertaken of the area proposed for development (Figure 13).

3.1.2 A fluxgate gradiometer was used for the survey, which detected variations in the earth's magnetic field. Readings were taken on traverses of at most 0.5m wide and every 0.25m within 20m x 20m grids across the site. A Trimble TST was used to tie the survey grid into the local Ordnance Survey grid.

3.1.3 The underlying geology and soils were suitable for geophysical survey.

Processing, presentation and interpretation

3.1.4 Processing was performed using *TerraSurveyor 3.0*. The data is 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, was 'clipped' to remove the extreme values, allowing finer details to show through.

3.1.5 The processed data is presented as grey-scale plots overlaid on local topographical features. The main magnetic anomalies have been identified and plotted.

3.1.6 The resulting survey results and interpretation diagrams should not be seen as a definitive plan of what lies beneath the ground surface, as not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded, the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology.

3.1.7 All measurements given are 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.

3.1.8 The interpretation diagrams were used to indicate the presence/absence of potential archaeological deposits and informed the archaeological excavation.

3.2 *Strip, Map and Record*

3.2.1 Once the site had been fenced the development area (shaded green in Figure 2) was stripped of soil using a 360˚mechanical excavator. The area to be stripped measured approximately 138m long and between 3 and 8 metres wide. Following discussions with the site contractors, the machine strip began at the western end of the area and continued eastwards.

3.2.2 The area was machine excavated to remove all non-archaeologically significant overburden, down to either archaeological levels or the underlying natural undisturbed ground surface. The machine was fitted with a flat-bladed bucket And arisings were stored adjacent to the area (at a safe distance).

3.2.3 Following machine excavation, the ground was appropriately cleaned to demonstrate the presence or absence of archaeological features and to determine their significance. The excavation included, where necessary, the full excavation of all identified features to elucidate their character, distribution, extent, date and importance.

3.2.4 All archaeological deposits and features were recorded by archaeological context record sheet, scale drawing/detailed survey, photography and site notebooks. All individual deposits were numbered using the open-ended numbering system in accordance with the DAT Archaeological Services' Recording Manual (as developed by English Heritage Centre for Archaeology and a copy of which is available for inspection if required). Significant deposits were recorded by scale drawing /

survey; drawn plans were related to Ordnance Datum and, where possible, known boundaries. A digital photographic record was maintained.

3.2.5 Features containing deposits of environmental significance were sampled.

3.2.6 All archaeologically significant artefacts, ecofacts and samples were retained and, where possible, related to the contexts from which they derived. Finds are temporarily stored by DAT Archaeological Services in stable conditions. All finds, except those deemed to be Treasure, will remain the property of the landowner, but it is assumed that permission has been given by the landowner for these to be stored as part of the archive in a suitable repository (ownership will still be with the landowner).

3.3 *Watching Brief*

3.3.1 As well as the archaeological excavation detailed above, the section of hedge bank that formed the northern boundary of the development area was removed by the site contractor. During this work an archaeological watching brief was undertaken.

3.3.2 The definition of an archaeological watching brief, taken from the Chartered Institute for Archaeologists *Standard and guidance for an archaeological watching brief* (CIfA 2014), is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

3.3.3 The purpose of a watching brief, as defined by CIfA (2014) is:

to allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works

to provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment.

3.3.4 The watching brief entailed an archaeologist being present during all ground works where there was the potential for archaeological remains to be exposed, damaged or destroyed. This was carried out during the hedge bank removal, or any ground levelling works as part of the development.

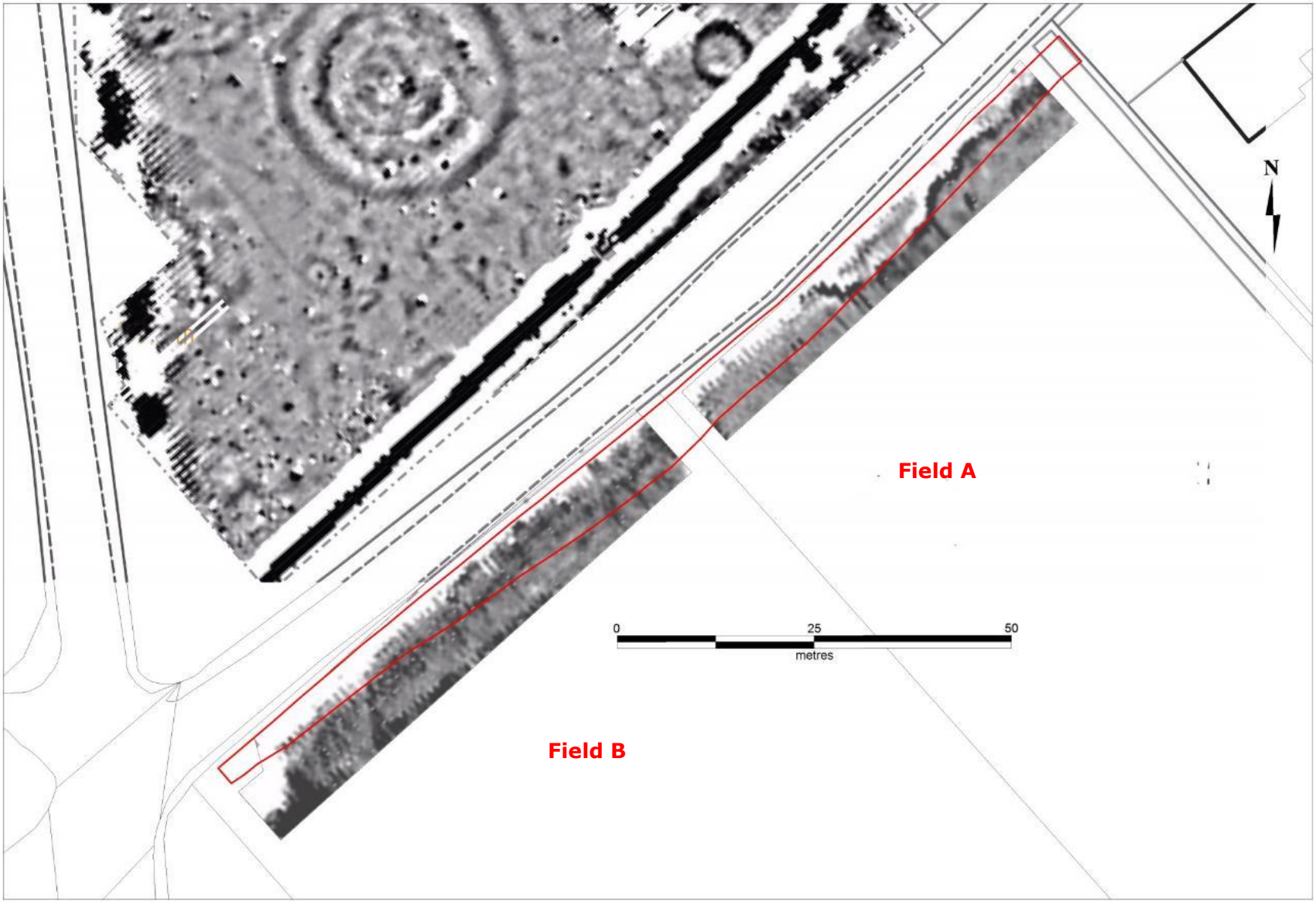


Figure 13: Interim plot of 2018 geophysical survey results (development area in red)

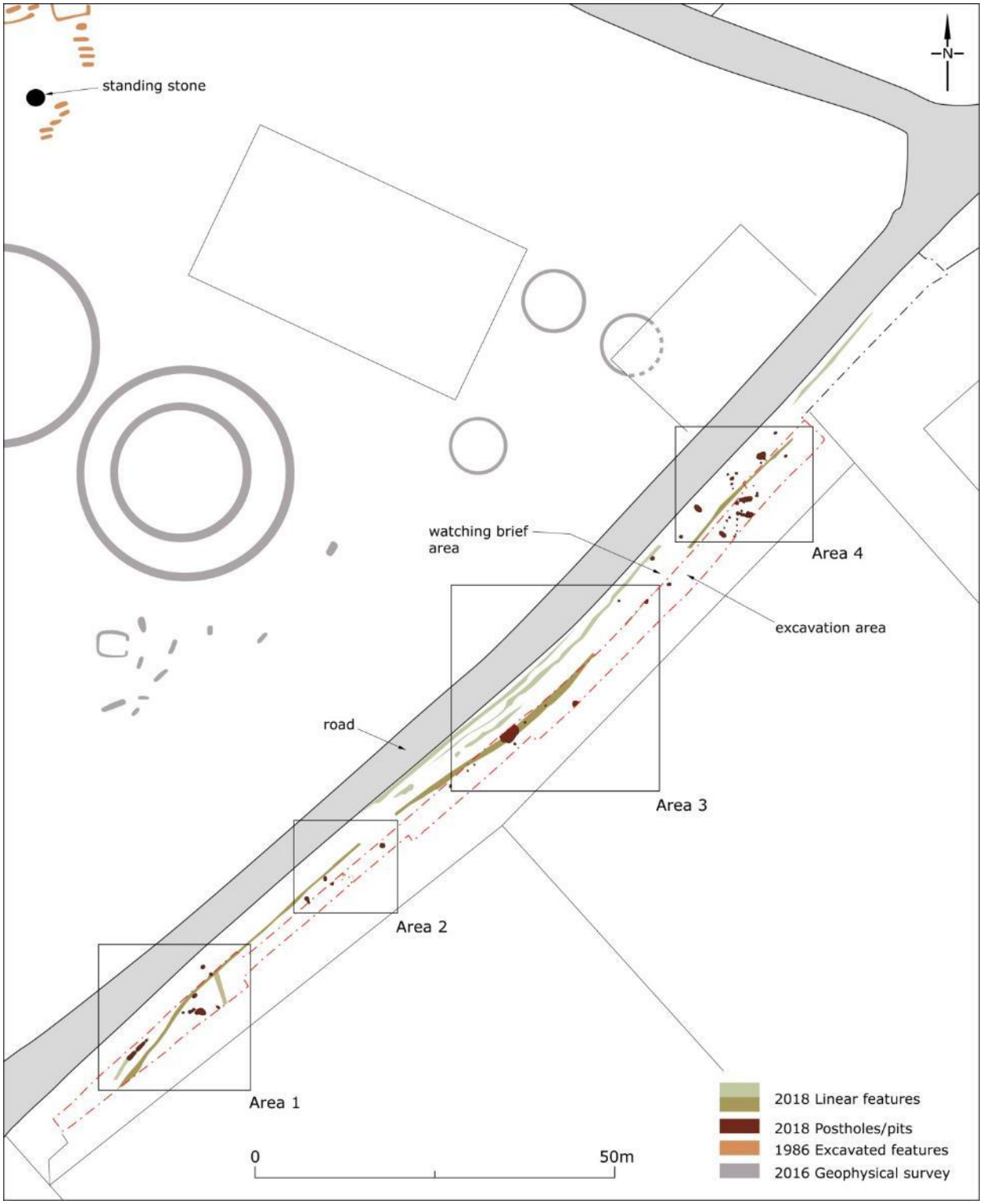


Figure 14: Overall site plan following 2018 archaeological mitigation including strip, map and record and a watching brief.

4. RESULTS

4.1 *Geophysical Survey*

4.1.1 The area of investigation was surveyed over the course of one day on 8th January 2018. As the results of the geophysical survey undertaken to the north of the road have shown, this non-intrusive method of recording is often very successful in providing information on the distribution and type of archaeological features that may survive.

4.1.2 Unfortunately the presence of a steel wire fence running along the northern and western boundaries of the development area caused significant masking of the data and the results of the survey (Figure 13) did not lend themselves to interpretation. A number of possible features were suggested but unfortunately the narrow width of the area surveyed and the proximity of the wire fence meant the results were not useful.

4.2 *Strip, Map and Record and Watching Brief*

4.2.1 The fieldwork was undertaken over a three-week period beginning Monday 22nd January 2018. The strip, map and record exercise to the south of the hedge began on 22nd January and the watching brief during removal of the hedge bank began on 31st January.

4.2.2 The numbers within brackets in the text refer to a unique context number given to all individual deposits using the open-ended numbering system in accordance with the DAT Archaeological Services' Recording Manual. Square brackets [] refer to a cut feature and round brackets () refer to a deposit.

4.2.3 A linear trench measuring 3m - 8m wide was stripped by machine using a flat bladed bucket under constant archaeological supervision, to the south of the hedge bank (Photo 3). The trench was machined from west to east following the upward slope of the field; all non-archaeologically significant overburden was removed, down to either archaeological levels or the underlying natural undisturbed ground surface. Arisings were stored adjacent to the trench, at a safe distance.

4.2.4 Beneath the turf and topsoil (100) was a remnant of a gravel track [021] that ran around the perimeter of the field. The track lay above a deposit of soft brown silt (020), containing a moderate amount of small and medium stones (Photo 4). This deposit was recorded across the whole of the trench and became notably deeper towards the western end of the trench. It sealed most of the archaeological features and lay above the undisturbed natural subsoil of orangey/red banded sand, silts and gravels (019).

4.2.5 Once deposit (020) had been removed by machine down to the top of the natural subsoil (019) the area was cleaned by hand and all archaeological features recorded in full (Photo 5).

4.2.6 On the 31st of January the hedge bank and post and wire fence were removed at the western end of the hedge under archaeological supervision. All archaeological features noted during this process were recorded in full and, as they are clearly a continuation of those features recorded during the strip, map and record exercise, both areas are amalgamated for this report.

4.2.7 For ease of explanation the recorded archaeological features have been grouped into four main areas (Figure 14).

Photo 3: Removal of deposits (021) and (020) in Field B.

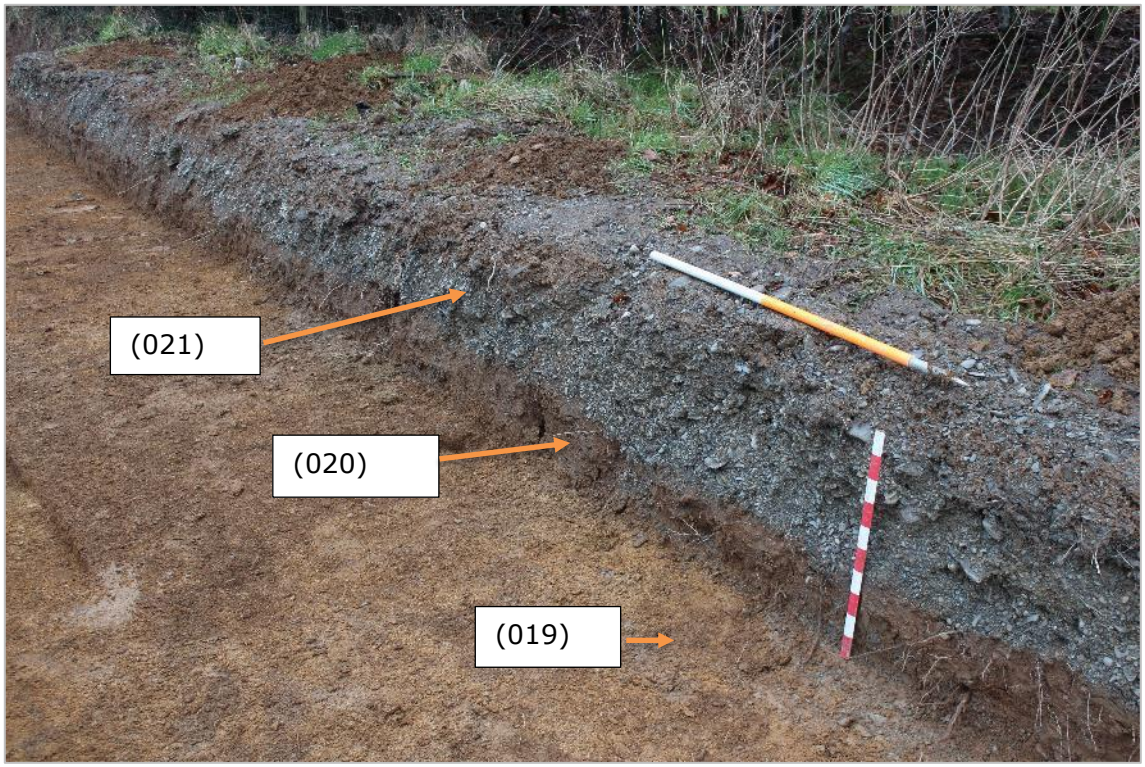


Photo 4: Gravel track [021]; brown, silt deposit (020); natural subsoil (019). 1m and 0.5m scales.

Photo 5: View SW - site is hand-cleaned after removal of (020).

4.3 Area 1 (Figure 11)

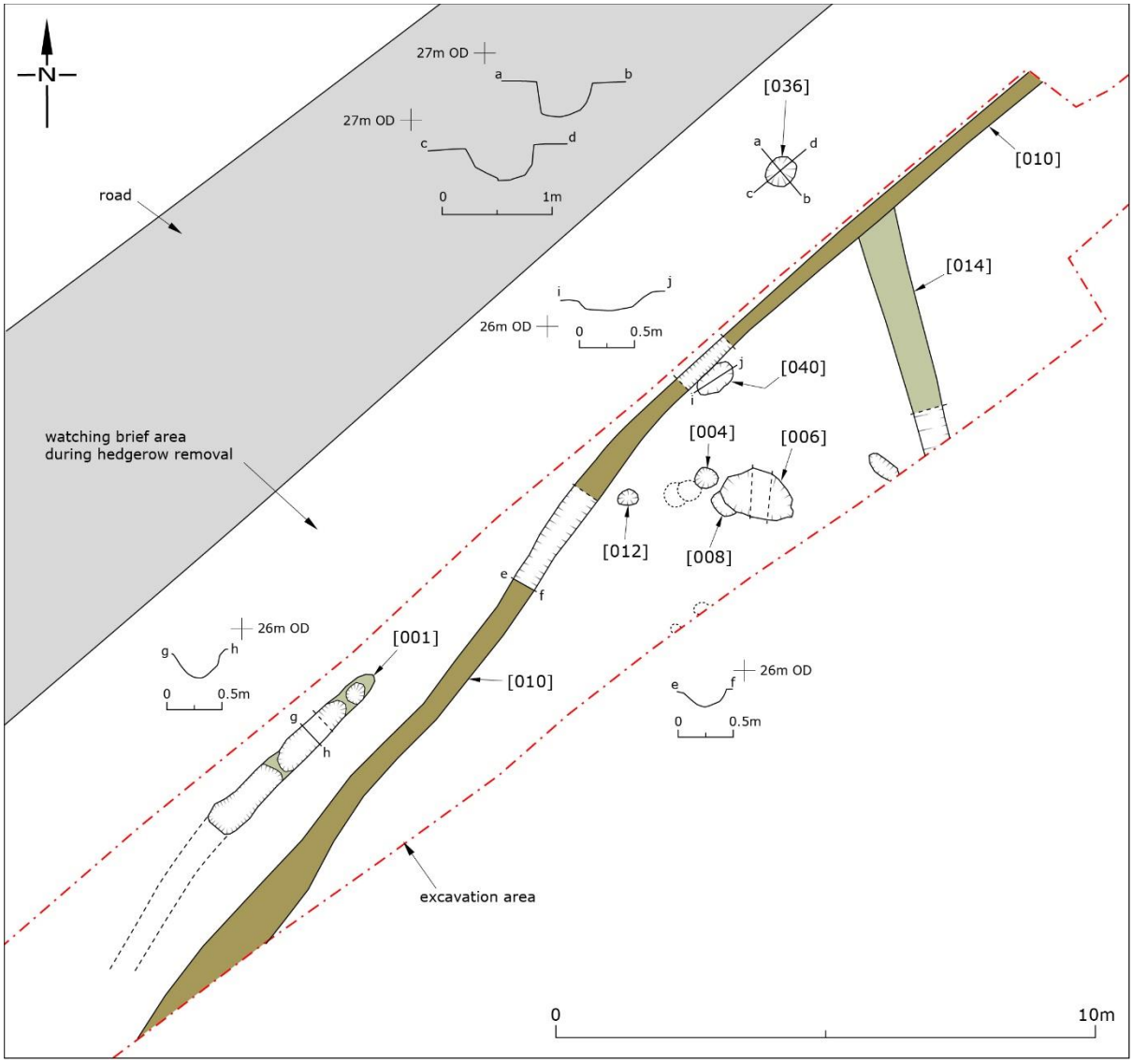


Figure 15: Plan and section drawings of Area 1.

All the recorded archaeological features shown in Figure 15 (from the 2016 high resolution fluxgate gradiometer survey) were cut through natural subsoil (019) and were initially visible on the ground as areas of different coloured soils. The silt deposit (020) sealed several shallow, small pits/post holes and gullies (Photo 6) – their shallowness probably the consequence of repeated ploughing.

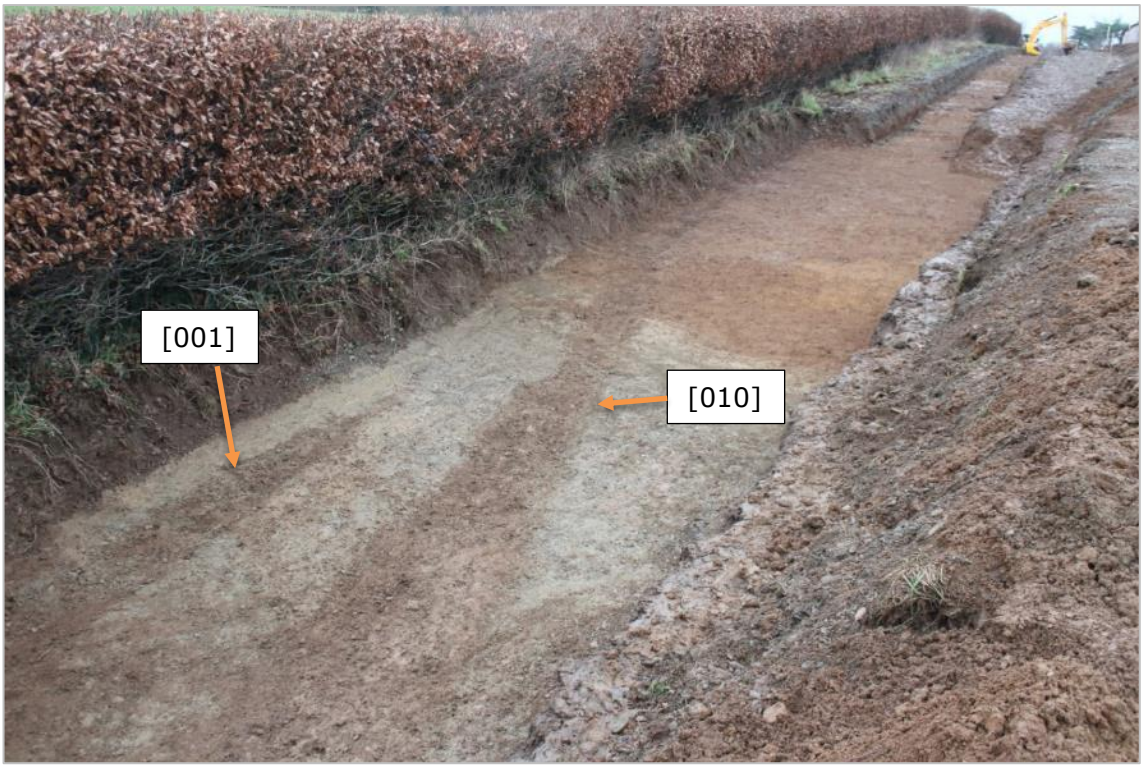


Photo 6: View NW; gully [001] and ditch [010] revealed as soil marks in Area 1.

[001] - A 3m long segmented gully with a rounded eastern end enclosing a small posthole. The ditch had a maximum depth of 0.30m and was between 0.30 and 0.50m wide. To the west the ditch faded away and was no longer visible on the ground. The fills of the ditch (002, 003) were slightly darker, though very similar to the surrounding natural subsoil, but contained no finds or dating material (Photo 7).

[004] - A circular posthole c.0.40m in diameter and 0.15m deep, with steeply sloping sides. The dark, sandy-silt fill (005) contained many small stones, charcoal flecks, burnt daub/fired clay, cracked, heat-affected stone and one sherd of pottery. To the west of this cut were vestiges of what were probably two more post holes that survived as dark, circular stains (Photo 8).

A sample collected from the fill of [004] was analysed in the laboratory and found to contain charcoal with *Corylus avellana L.* (hazel) nutshell fragments.

Photo 7: View SW; of the segmented gully [001]. 1m and 0.5m scales

[006] – A rounded, shallow, sub-circular cut measuring 1.30m E-W by 0.96m N-S and 0.08m deep. Visible as an area of darker soil against the natural subsoil. The fill contained charcoal flecks but no finds (Photo 8).

[008] – A shallow circular cut c.0.45m diameter and 0.06m deep. The dark silty fill contained pieces of heat-affected stone and one sherd of decorated Neolithic pottery. A substantial part of this feature had been removed by cut [006] (Photo 8).

A sample collected from the fill was analysed in` the laboratory and found to contain charcoal fragments and *Corylus avellana L.* (hazel) nutshell fragments, as well as pottery. Radiocarbon dating on the hazel shell fragments resulted in a 68.2% probability that the sample dates between 3327 and 3100 cal. BC, but there is a reasonable chance (31.8%) that the sample is either older or younger than this. However, there is a 95.4% probability that it dates between 3339 and 3309 cal. BC. These dates place the sample within the Neolithic period.

[010] – A slightly curving, shallow, linear gully that runs somewhat parallel with the current road. Approximately 0.45m wide and 0.15m deep, although it appears to widen at its western end. It has a D-shaped profile (Photo 9). Two sections were excavated across the feature revealing a single fill of brown, silty clay (011). At the base of one excavated section a small, corroded, ferrous object was recovered: possibly a nail.

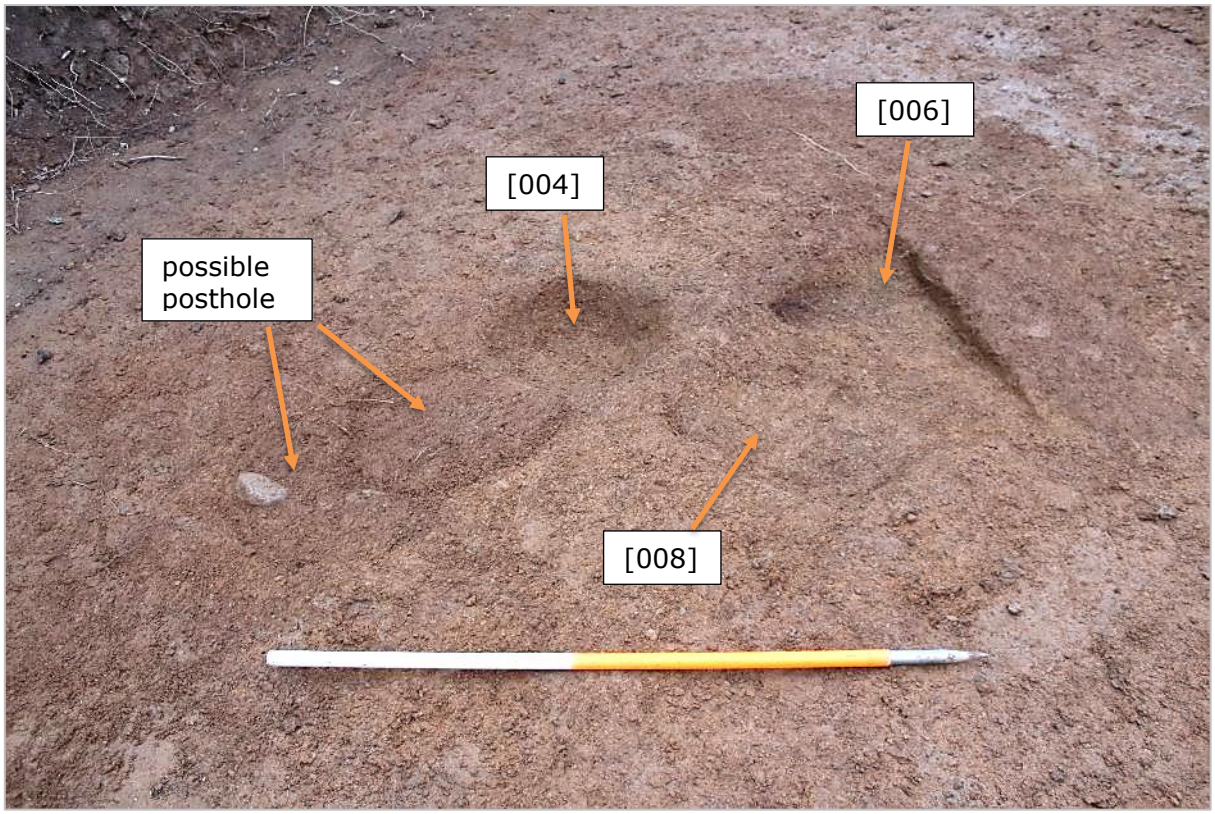


Photo 8: View NE along half-sectioned ditch [010]. 1m scale

[012] – A circular posthole *c.*0.35m in diameter and 0.20m deep. The loose silty fill (013) contained 2 large stones - possibly post packing - and one piece of fired clay or daub (Photo 9).

[014] – A very shallow linear feature, oriented approximately north-south; c.0.55m wide and 0.04m deep. It was filled with a clean, light orangey-brown silty clay (015) that contained no finds or datable material. It appeared to be truncated by [010].

[036] – A small pit, oval in plan, measuring 0.50m N-S by 0.60m E-W and 0.32m deep with steep sides and a flat base, revealed during hedgerow removal (Photo 10). A large stone had been placed at the bottom of the pit which was subsequently covered by a charcoal-rich, silty-clay deposit (036) containing decorated sherds of Neolithic pottery and pieces of heat affected stone. One sherd of decorated pot had been pressed into the northeastern side of the pit. In addition, a flint scraper, a fragment of polished stone and fragments of pottery (some decorated) were recovered during sieving of the fill.

A sample collected from (036) was analysed in the laboratory and found to contain wood charcoal, one wheat glume base and *Corylus avellana L.* (hazel) nutshell fragments. Radiocarbon dating (SUERC-82879) of the *Corylus avellana L.* (hazel shell fragments) recorded a 68.2% probability that the sample dates between 3326 and 3098 cal. BC with a reasonable chance (31.8%) that the sample is either older or younger than this. However, there is a 95.4% probability that it dates to between 3337 and 3036 cal. BC. These dates place the sample within the Neolithic period.

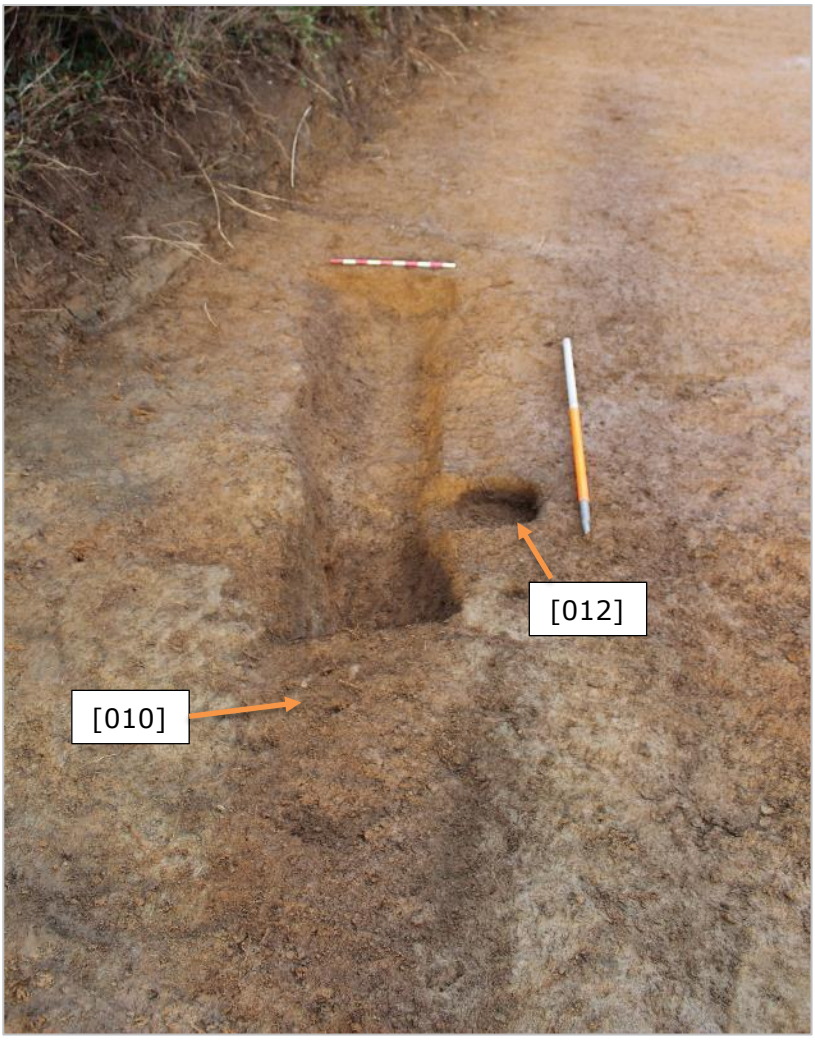


Photo 9: View NE along half-sectioned ditch [010] and posthole [012]. 1m and 0.5m scales

[040] – A small shallow pit, oval in plan, measuring 0.40m N-S, 0.65m E-W and 0.18m deep with gently sloping sides and rounded base. Revealed during hedgerow removal. The fill was dark brown, charcoal rich, clayey silt (041) containing sherds of decorated Neolithic pottery and pieces of heat affected stone. The pit was cut by linear gully [010] (Photo 11).

A sample collected from the fill (041) was analysed in the laboratory and found to contain wood charcoal and *Corylus avellana L.* (hazel) nutshell fragments. During sieving a flint flake and pottery fragments were recovered.

The *Corylus avellana L.* (hazel shell fragments) were submitted for radiocarbon dating (SUERC-82880). The results recorded a 68.2% probability that the sample dates between 3307 and 3022 cal. BC, with a reasonable expectation (31.8%) that the sample is either older or younger than this date. However, there is a 95.4% probability that it dates to between 3329 and 2941 cal. BC. These dates place the sample within the middle to late Neolithic period.

Photo 10: View north; pit [036] before removal of placed stone. 0.5m scale

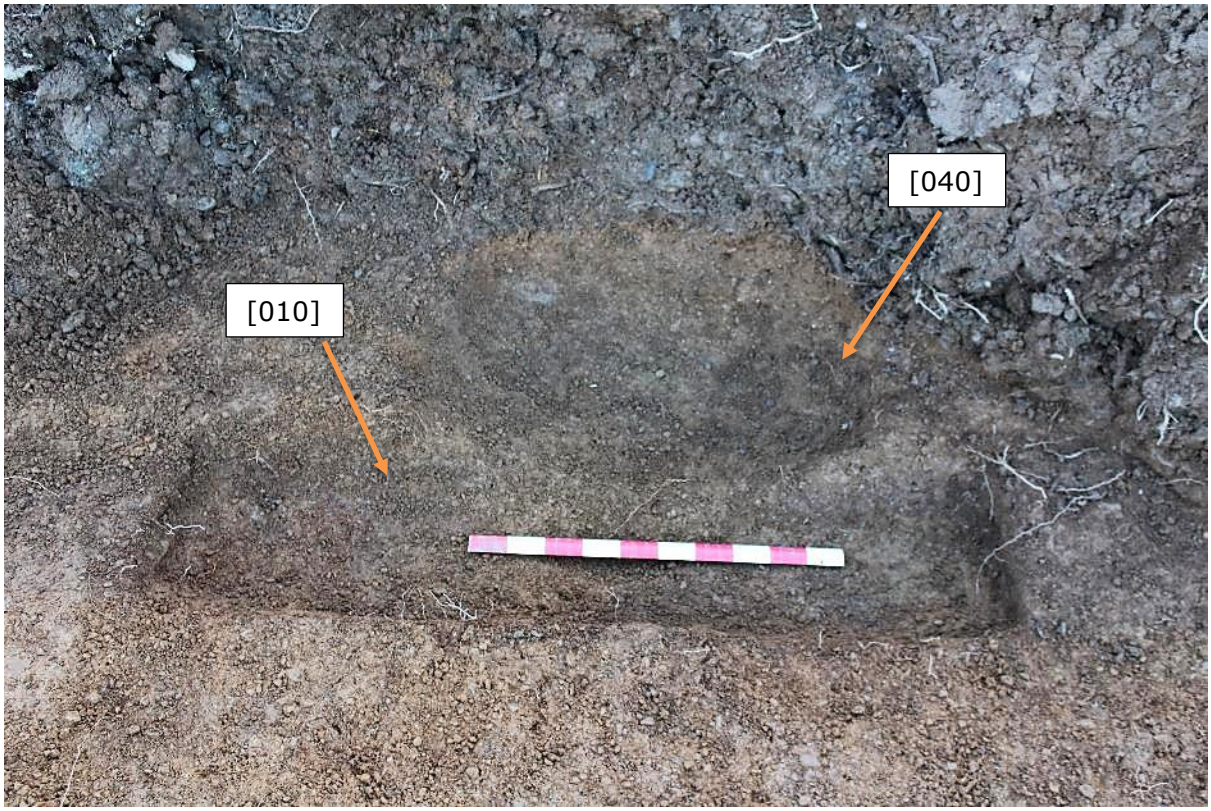


Photo 11: View SW; pit [040] and partially excavated ditch [010]. 0.5m scale

4.4 Area 2 (Figure 16)

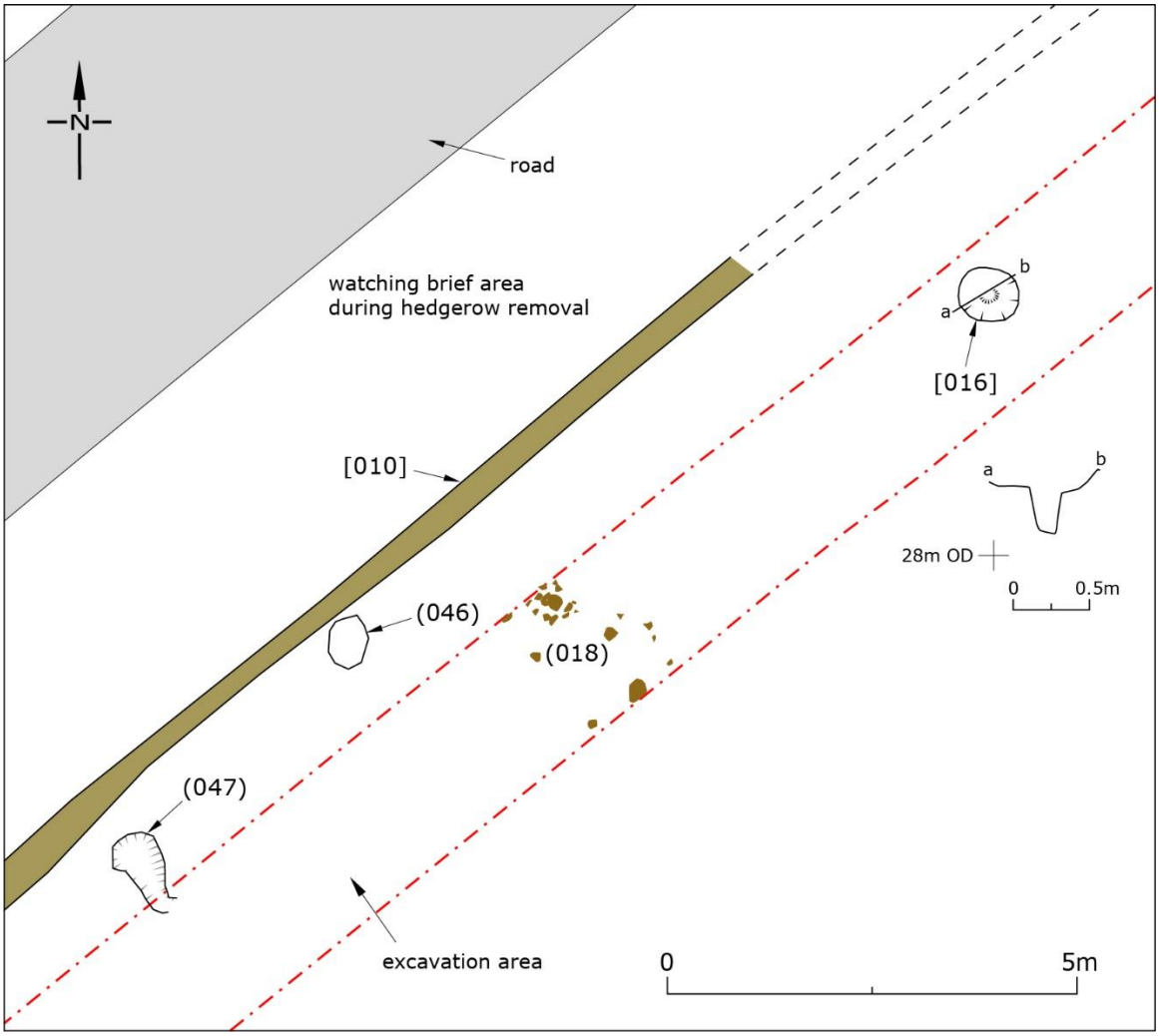


Figure 16: Plan and section drawings of Area 2

Situated upslope from Area 1 in a northeast direction, Area 2 contains a continuation of linear gully [010], post hole [016] and a conspicuous deposit of stones. Each feature was cut through the natural subsoil (019) and was sealed by silt deposit (020). Features [046] and [047] could not be conclusively defined as archaeological in nature.

[010] - See Area 1.

[016] – A shallow circular post hole with gently sloping sides and what appeared to be a post pipe in the centre (Photo 12). The posthole measured 0.70m in diameter by 0.13m deep. The post pipe was 0.25m wide and filled by a grey-brown silt containing charcoal flecks (017).

(018) – A discrete band of medium – large sized stones (Photo 13). The stone deposit appeared to sit within the natural, but no similar deposit was observed elsewhere making their occurrence appear unnatural. They could be the truncated remains of an archaeological feature but the lack of any clear characteristics hinders interpretation.

(046) – A deposit of orangey-brown, clay-silt with a high concentration of charcoal deposits situated within an amorphously shaped area measuring approximately

0.49m wide, revealed after the removal of the hedge bank. Excavation showed that there were no clear edges and the charcoal ran in root-like channels into the surrounding soil. This suggested a non-archaeological origin and was most likely a natural feature.

(047) – This was a similar deposit of charcoal as (046), with the same natural characteristics suggesting it was not archaeological in origin (Photo 14).

Photo 12: View north**;** half section posthole [016] with post pipe. 0.5m scale.

Photo 13: View north; discrete band of stones [018]. Scale 1.0m and 0.5m.

Photo 14: View south: unexcavated ditch [010] and excavated feature [047]. 1m scale.

4.5 Area 3 (Figure 17)

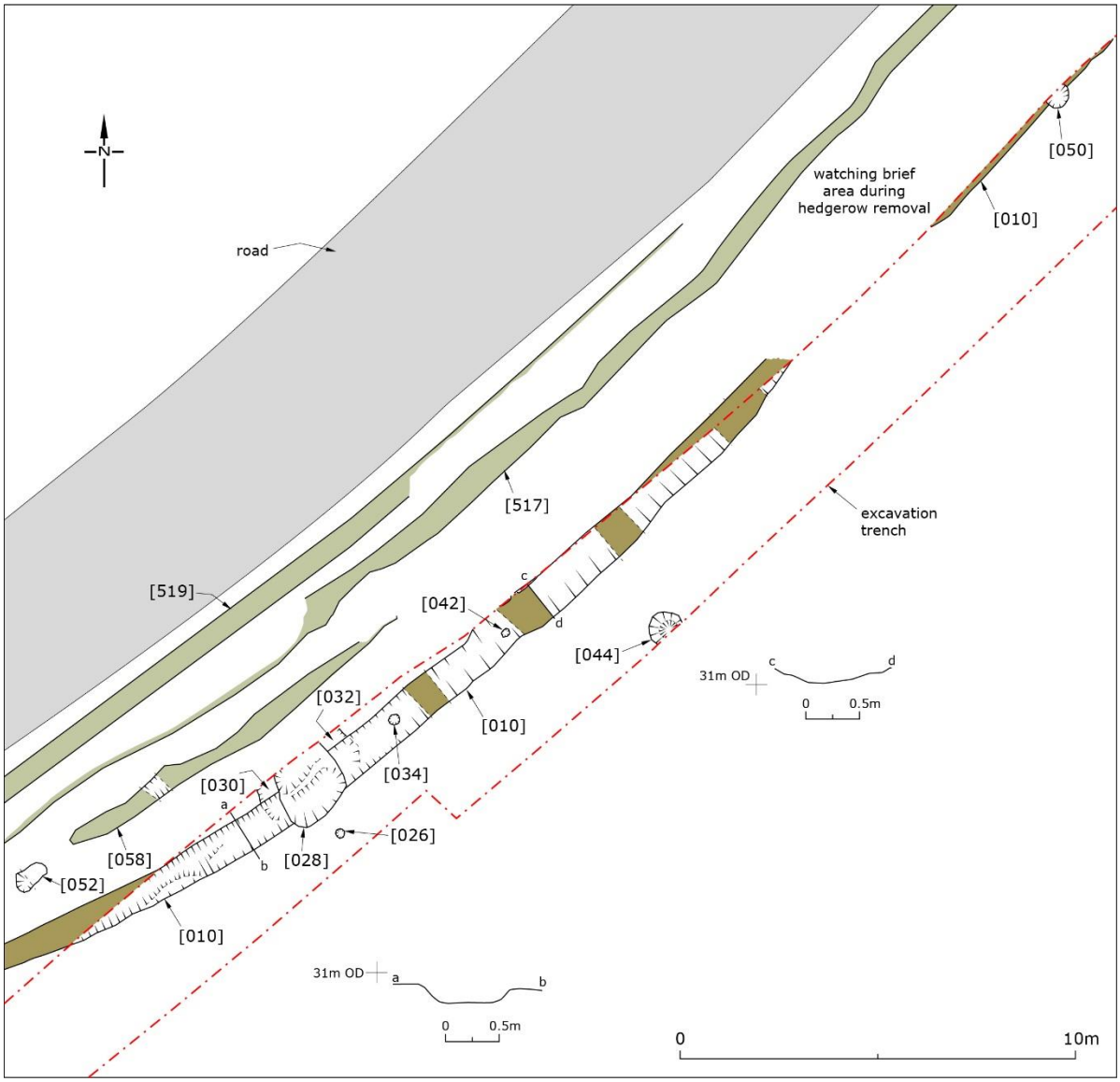


Figure 17: Plan and section drawings of Area 3.

Located upslope from Area 2, apart from the westernmost 3m, most of Area 3 was on level ground and contained the continuation of linear gully [010], postholes [026], [034], [042] and [044] and pits [028], [030/032], [050] and [052]. Each feature cut through the natural subsoil (019) and was sealed by silt deposit (020).

[010] – Before entering Area 3 from the southwest [010] had completely faded out, reappearing 7m upslope in perfect alignment. At its western end it was 0.48m across and up to 0.26m deep with a U-shaped profile, expanding to 0.88m wide and 0.1m deep with a flat base and steep sides at its eastern end. The ditch cut pit [030/032] and was cut by pits [028] and [050]. It was filled with a friable grey/brown silty clay with frequent small, sharp and angular stones (Photos 15, 16 and 17).

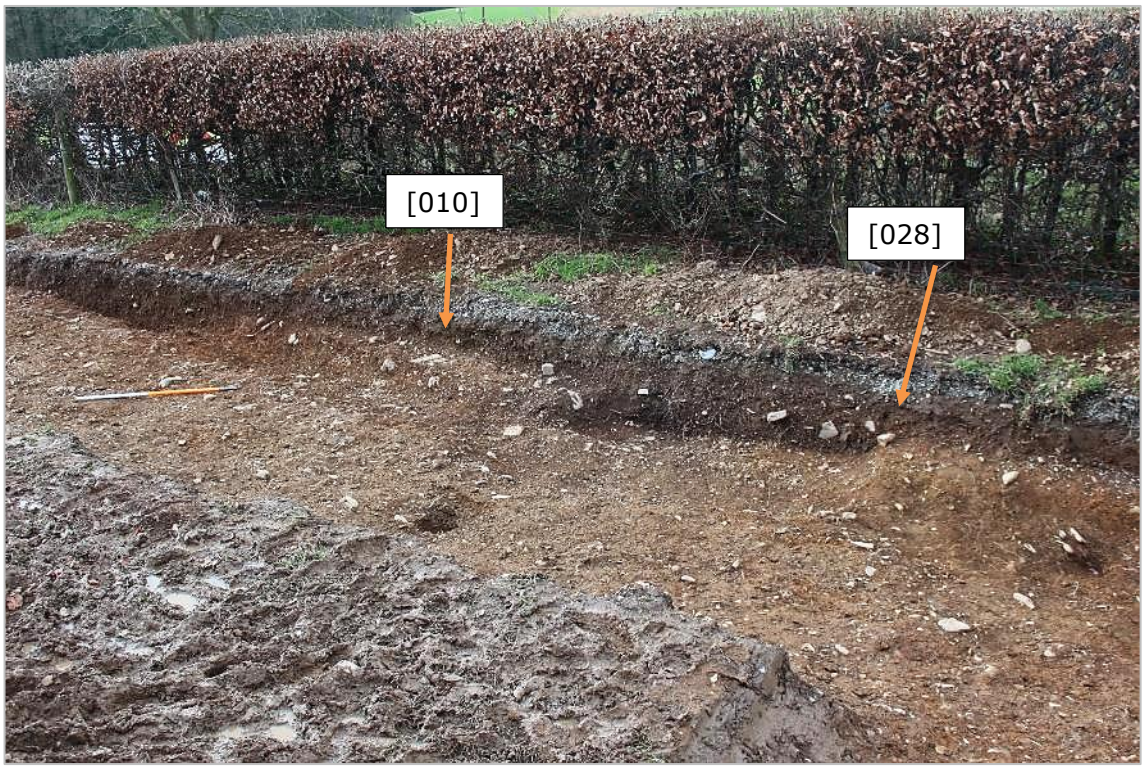


Photo 15: View north; fully excavated ditch [010] and [028]. 1m scale.

Photo 16: View NE; excavated ditch [010]. 1m scale.

Photo 17: View southwest; section across ditch [010]. 0.5m scale.

[026] – A small circular post hole with almost vertically sloping sides and flat base cut into the natural [019]. The post hole was filled by a dark brown, silty loam (027). It was approximately 0.22m in diameter and 0.15m deep. There were no finds within the fill, but one flat stone was placed at the bottom of the cut (Photo 18).

Photo 18: View northeast; Posthole [026]. Scale 0.5m.

[028] – A large sub-circular pit which cut ditch [010] and pit [030]/[032] and was cut from beneath trackway [020] (Photos 19, 20). The full extent of the pit to the north was not ascertained as it continued into the south facing section, but it measured 1.7m (east-west) and was 0.2m deep. It was filled with a friable, silty loam (029) containing a noticeable amount of medium to large stones, many roots and was seemingly disturbed by an animal burrow.

[030] and [032] – Although not physically joined, having been bisected by pit [028], these cuts probably represented the same pit, with both showing similar fills; a dark brown, silty loam containing lumps of clay and flat stones. They were also cut by ditch [010] but a faint trace of the bottom of the pit could be seen. The east-west diameter would have been approximately 2.5m (Photo 20). Both features cut silty deposit (020).

[034] - A small circular posthole with vertical sides and a flat base cut into the bottom of ditch [010] and filled with a charcoal-rich silt which was sampled. The posthole became visible after the fill of [010] was removed (Photo 21).

[042] – A possible post hole observed in the base of [010] of which appeared to be mostly set within the fill, and only slightly cut into the side and bottom, of [010]. Excavation revealed one large stone pressed into its side which may be a packing stone. It was filled by a single deposit (043) consisting of a loose brown silt with charcoal flecks.

[044] – With only the north side of this feature protruding from the trench section, it was unclear whether this was a large posthole, a small pit or a ditch terminus. The top of the feature was 0.82 wide with steep, sloping sides approximately 0.3m deep, after which the sides became vertical and dropped a further 0.32m to a flat base. The fill (046) was a loose silt with a very high concentration (approx. 70%) of small – medium sub-angular stones - the highest concentration of stones observed in any of the excavated features on site – (Photo 22)

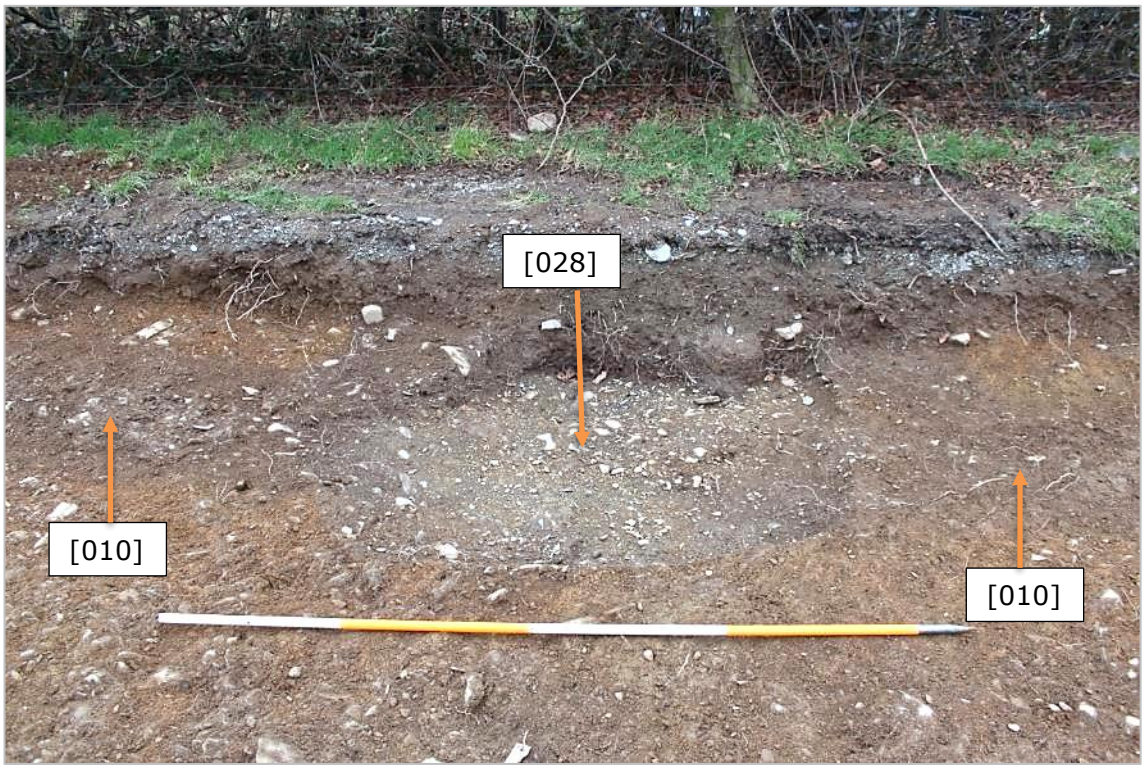


Photo 19: View northwest; pit [028] cutting ditch [010]. 2m scale.

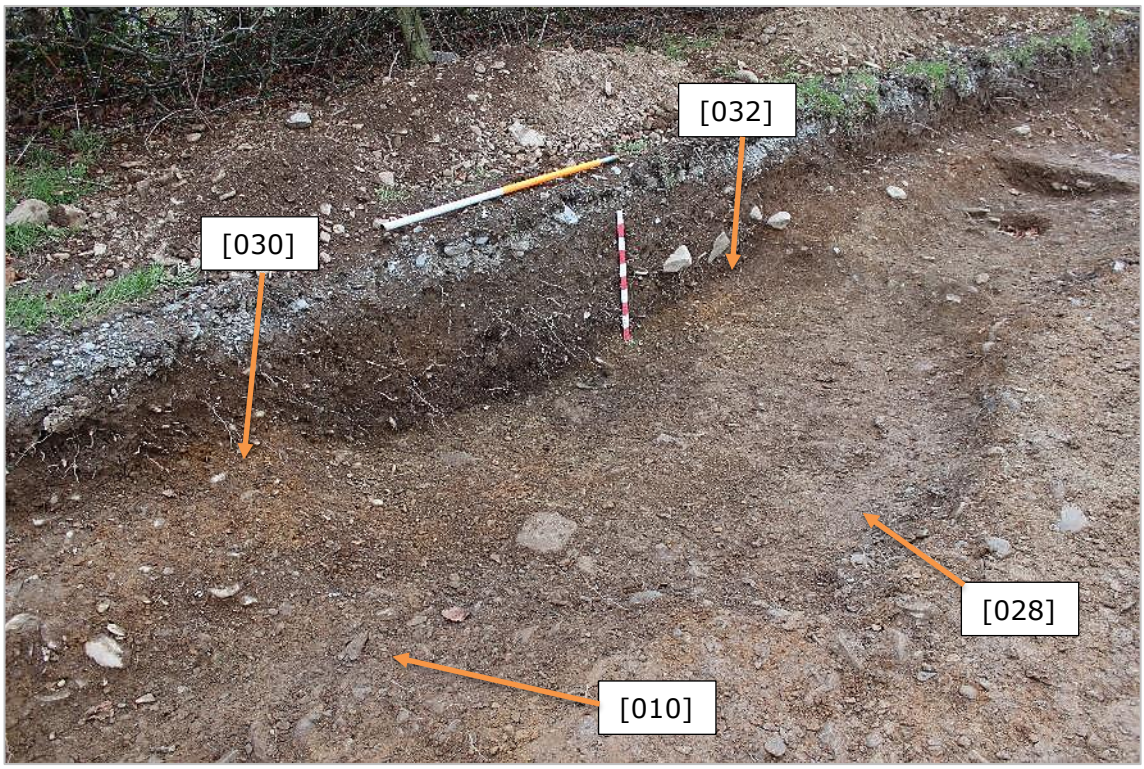


Photo 20: View north showing intercutting features. 1m and 0.5m scale.

Photo 21: View NE; partially excavated posthole [034] showing charcoal-rich fill. 0.5m scale.

Photo 22: View SE: excavated feature [044] against southern section of trench. 0.5m scale

[050] – A sub-circular pit, measuring 0.65m by 0.50m and 0.38m deep. It cut linear ditch [010] and had vertical sides and a flat base. The fill (051) was a loose, brown silt containing brick, slate, mortar, iron nails and dairy ware, indicating a relatively recent feature (Photo 23).

[052] – A shallow, oval pit measuring 1.65m by 0.60m and 0.19m deep, cut into the natural subsoil (019). It was filled by a loose, grey-brown silt with frequent small – medium flat, angular stones. Possibly associated with [058].

[058] – Remnants of a curvilinear gully aligned roughly northeast-southwest, measuring *c*.9m long, 0.40m wide and 0.06m deep; filled with a loose, brown silt (059). Possibly a truncated drain (Photo 24).

Photo 23: View NW; excavated modern pit [050]. 1m and 0.5m scale.

Photo 24: View SW along curvilinear gully [058]. 1m and 0.5m scales.

[517] – A south-west/north-east aligned linear gully measuring approximately 30m long x an average of 0.25cm wide. This feature, which was recorded during the watching brief for hedgerow removal, was present throughout the length of the trench in Area 3. It had irregular edges and ran parallel to curvilinear features [010], [058] and [519] as well as to the road. No dateable material was present within the fill (518).

[519] – A south-west/north-east aligned linear gully measuring approximately 20m long x an average of 0.20m wide, recorded during the watching brief for hedgerow removal. This feature ran parallel to the road and to curvilinear features [517], [058] and [010]. Unlike features [517], [058] and [010] it had very regular edges (see Figure 17). No dateable material was recovered from the fill (520).

4.6 Area 4 (Figure 18)

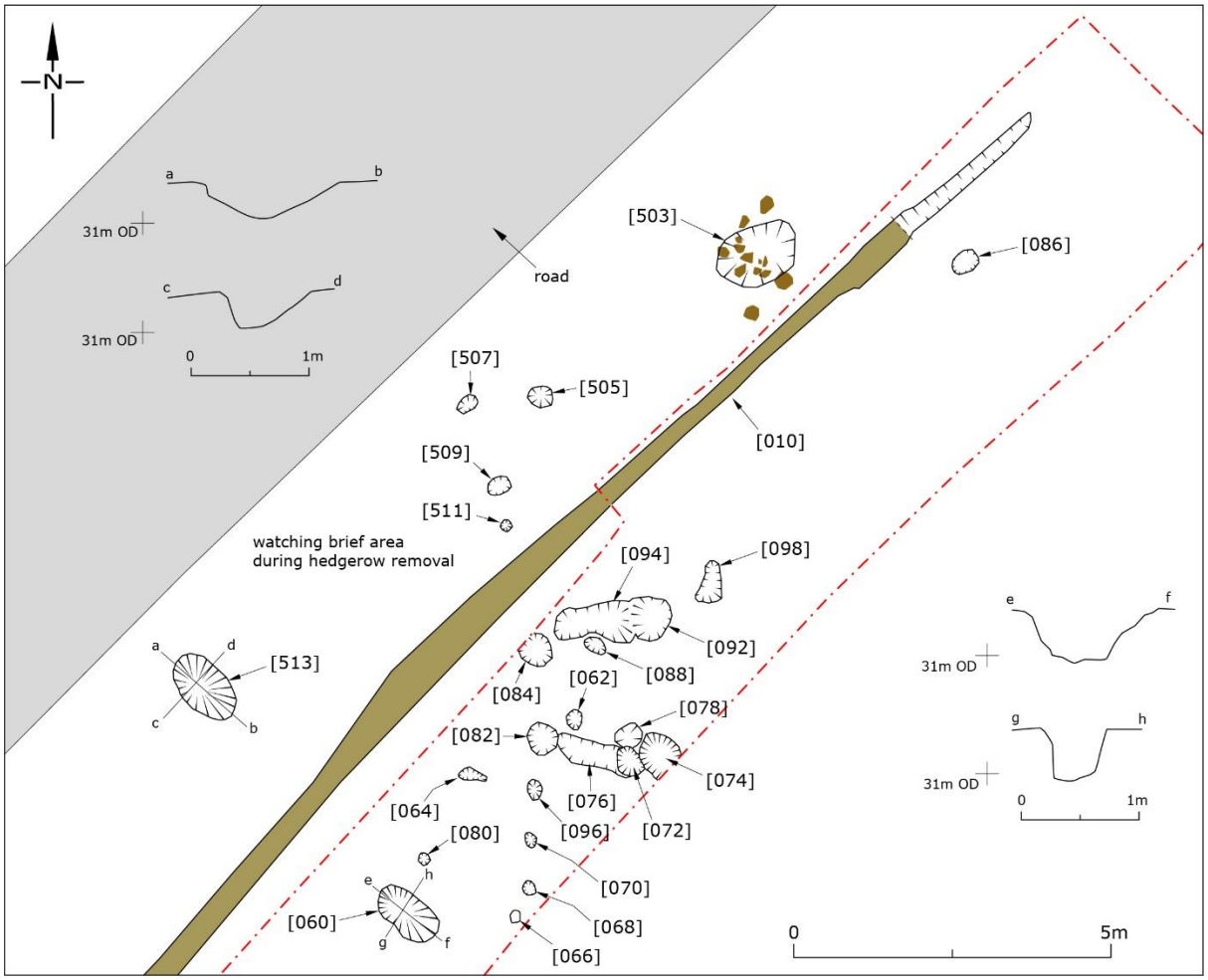


Figure 18: Plan and section drawings of Area 4.

Area 4 was located on level ground at the northern end of the site and measured approximately 20m by 7.5m. In comparison with Areas 1, 2, and 3 it possessed the greatest number of features comprising postholes, pits, one stakehole and the termination of ditch [010]. Some of the features were part of intercutting complexes whilst others were components in conspicuous lines and arcs. All features were cut into the natural (019) and sealed by layer (020).

[060] – A large oval pit measuring 1.10m long, 0.55m wide and 0.40m deep, with steep sides that tapered to a narrow base and was filled with (61) a pink-brown silt containing frequent small to medium stones (Photo 25). The pit appeared to cut through a deposit of compacted orange/brown silt containing frequent charcoal flecks and pieces, which possibly represented a former buried soil or mound. To the east of [060] was a possible arc of postholes - [064], [066], [068], [070], [080] and [096] - (Photos 26, 27 and 36).

A sample collected from the fill of [060] (061) was analysed in the laboratory and produced a small quantity of charcoal wood, an amorphous non-organic charred material – possibly burnt soil – two heath grass caryopses, as well as a possible fruit/capsule fragment and stem/root/rhizome material. There was also a very small quantity of *Corylus avellana L.*

The *Corylus avellana L.* (hazelnut shell fragments) were submitted for radiocarbon dating (SUERC-82881). This recorded a 68.2% probability that the sample dates between 1374 and 1233 cal. BC, but there is a reasonable chance (31.8%) that the sample is either older or younger than this. However, there is a 95.4% probability that it dates to between 1387 and 1218 cal. BC. These dates place the sample within the middle Bronze Age.

Photo 25: Looking south at half-sectioned pit [060] showing fill (061). 1m and 0.5m scales.

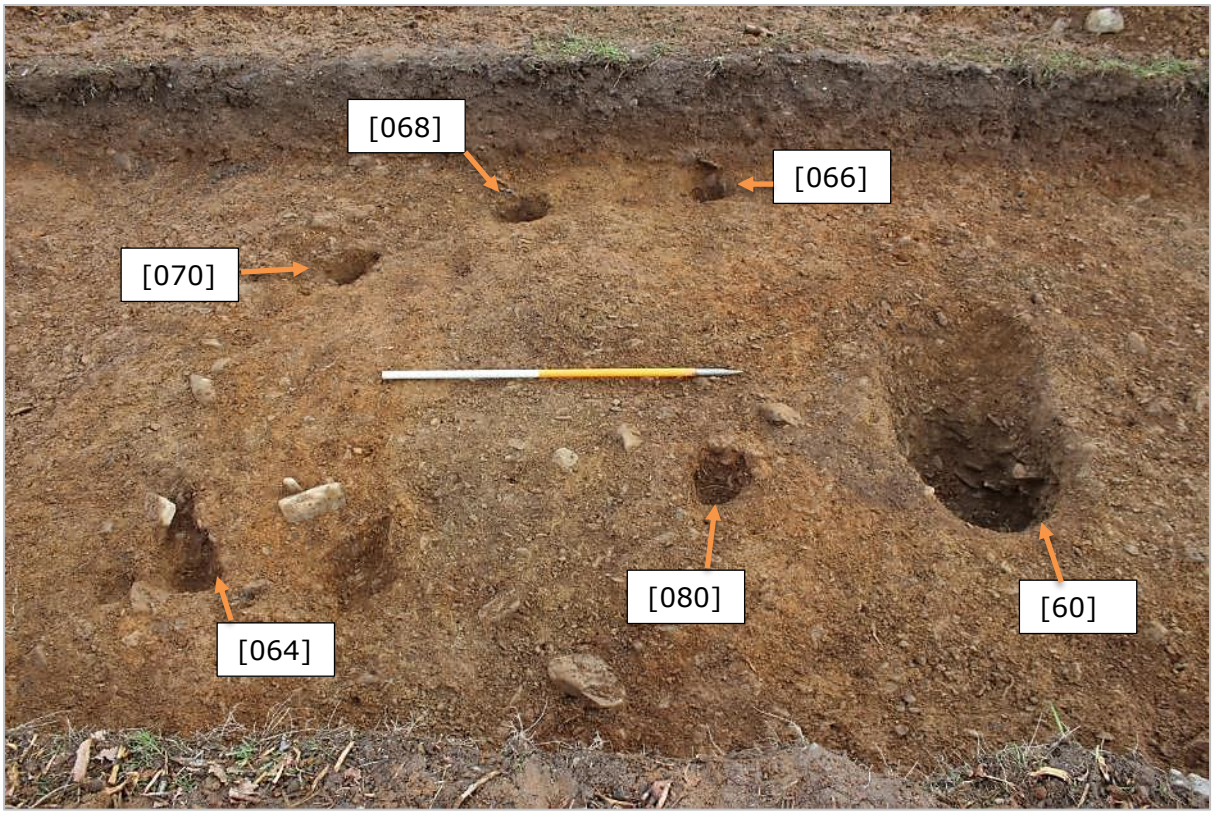


Photo 26: View SE; pit [060] and possible arc of postholes. 1m scale.

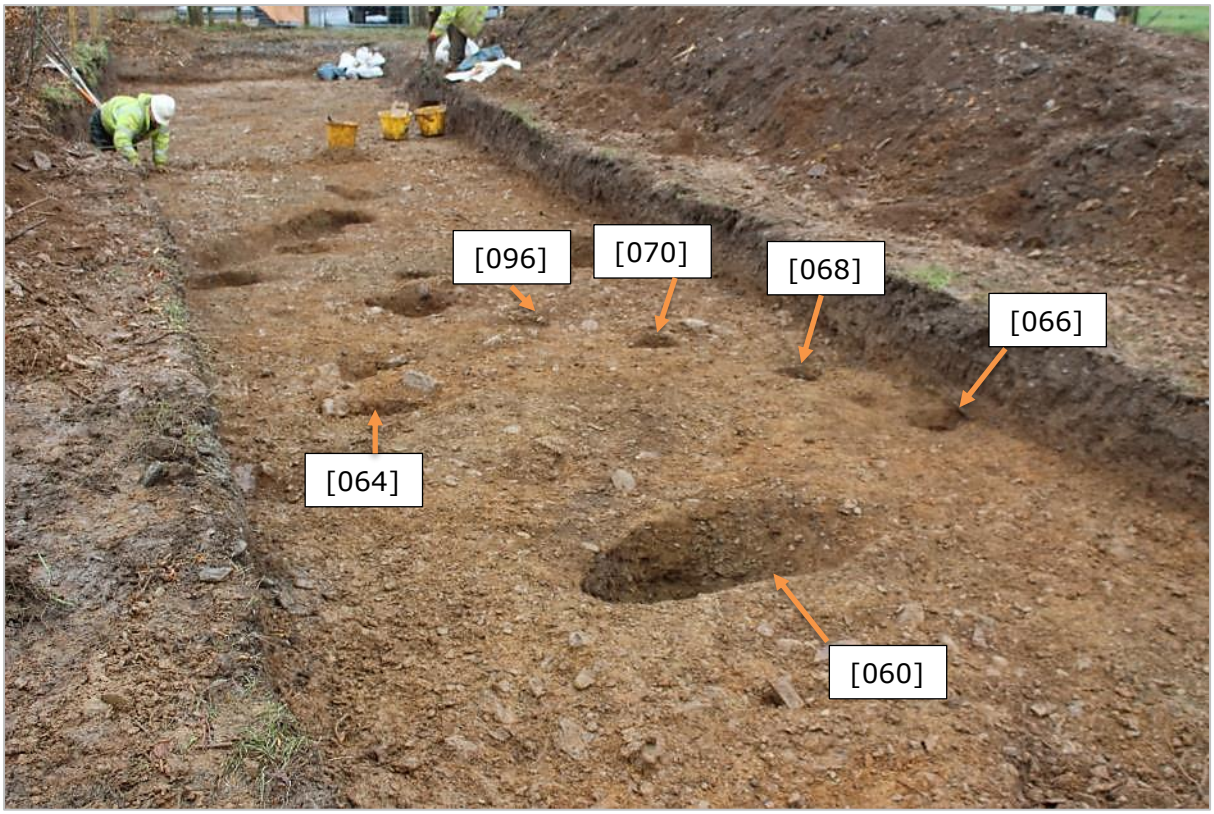


Photo 27: View of NE end of the trench with [060] in foreground and possible arc of postholes beyond.

[062] – A sub-circular posthole measuring 0.30m in diameter and 0.18m deep, situated near a group of features - [072], [074], [076] and [078]. It contained a grey-brown, clay-silt (063) (Photos 28, 29 and 32).

Photo 28: View west; excavated posthole [062]. 0.5m scale

[064] – An oval posthole measuring 0.4m long, 0.13m wide and 0.16m deep with steep sides tapering to a rounded base. This might be two intercutting postholes with similar fills and a component of thepossible arc of postholes to the east of [060] (Photos 26 and 27).

[066] – A sub-circular posthole measuring 0.27m long, 0.2m wide and 0.16m deep with steep sides tapering to a rounded base. Its fill (067) was a brown silt which contained charcoal flecks. It might be a component of the possible arc of postholes to the east of [060] (Photos 26 and 27).

[068] – A circular posthole measuring 0.2m in diameter and 0.19m deep with steep sides tapering to a rounded base. It might be a component of the possible arc of postholes to the east of [060] (Photos 26 and 27).

[070] – A circular posthole measuring 0.32 in diameter and 0.14m deep with sloping sides and a rounded base. It might be a component of the possible arc of postholes to the east of [060] (Photos 26 and 27).

[072] – A sub-circular pit with a U-shaped profile situated within a group of intercutting features - [074], [076] and [078] and measuring 0.45m in length, 0.28m wide and 0.28m deep. The pit cut [076] and [078]. The fill was a friable, medium brown, clay-silt (Photos 29 and 32).

[074] – A sub-circular pit with steep sides and a flat base situated within a group of intercutting features – [072], [076] and [078]. It was 0.69m long, 0.58m wide and 0.28m deep. The southern edge of the pit extended into the southern baulk and part of its western edge was contiguous with [072] (Photos 29 and 32).

[076] – A 1.0m long, 0.30m wide and 0.08m deep linear feature with a concave profile and a stony base. This feature was part of a group of intercutting features

([072], [074] and [078]) with a fill similar to [072] and [074]. Its eastern end was cut by [072] (Photos 29 and 32).

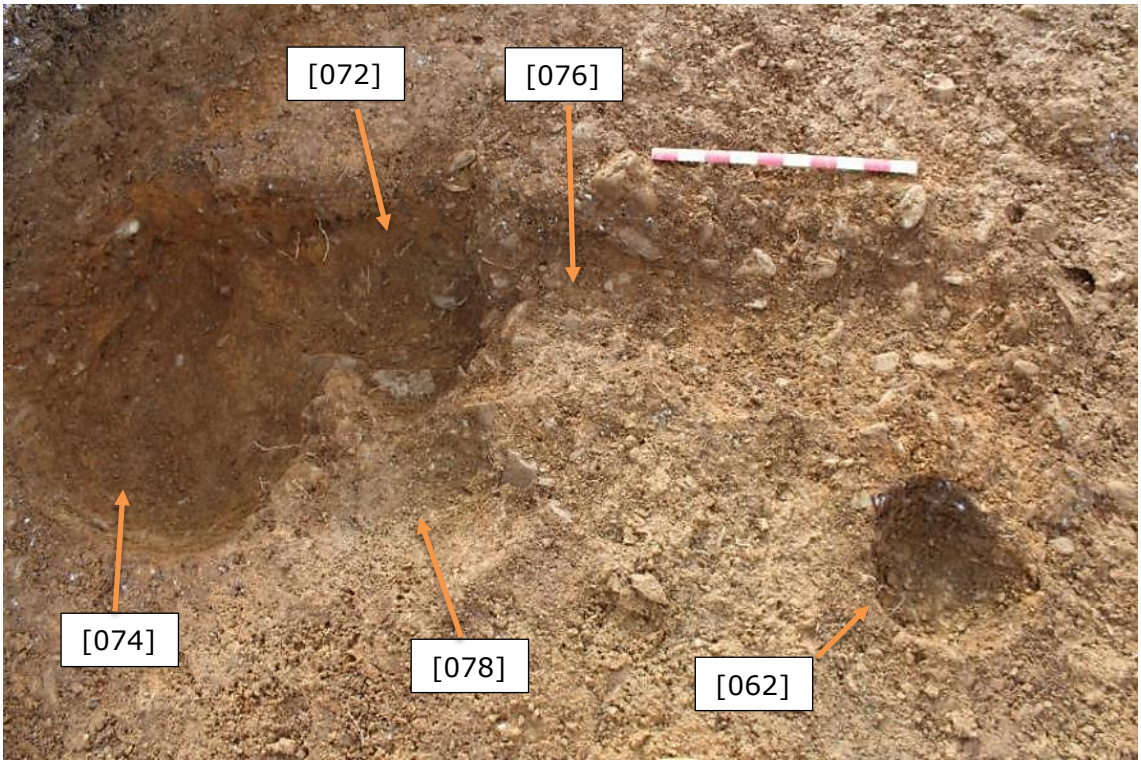


Photo 29: View SW; group of intercutting features at NE end of site. 0.5m scale

[078] – A circular pit feature measuring 0.40m long by 0.33m wide and up to 0.10m deep. It had a shallow, U-shaped profile with a flat concave base. The pit was part of a group of intercutting features - [072], [074] and [076]) and its fill was identical to theirs.It was cut by [072] to the south (Photo 29).

[080] – A circular feature with steep sides and a flat base measuring 0.18m in diameter and 0.08m deep. It was visible in plan as an area of heat-affected soil; a compact, reddish-brown silt.

[082] – A circular pit, 0.50m in diameter and 0.15m deep, with steep, vertical sides and a concave base, filled with a compact, dark reddish-brown silt (083). Its eastern edge possibly cut feature [076]. It was noted that [082] might be a component in a line of postholes and pits or, alternatively, in a four-post arrangement with features [072], [084] and [092] (Photo 30 and 32).

A sample collected from the fill (083) was analysed in the laboratory and found to be a wood charcoal rich sample which also produced a charred *Robus fruiticosus* (Agg.) L. (Bramble) and a fruit-stone/nutshell fragment. A very small quantity of *Corylus avellana L.* (hazel) shell fragments was also recovered.

The *Corylus avellana L.* (hazelnut shell fragments) were submitted for radiocarbon dating (SUERC-82882). The results recorded a 68.2% probability that the sample dates between 1127 and 1051 cal. BC, but there is a reasonable chance (31.8%) that the sample is either older or younger than this. However, there is a 95.4% probability that it dates to between 1195 and 1020 cal. BC suggesting that the samples derive from the mid-Bronze Age.

[084] – An oval pit with steep sides and a flat base measuring 0.50m long, 0.49m wide and 0.2m deep, filled with a friable, brown, clay-silt. The northern edge of the pit extended into the trench section (Photos 30, 32 and 33).

[086] – An oval pit at the north end of the trench with steep sides and a rounded base, measuring 0.45m long, 0.34m wide and 0.11m deep (Photo 31).

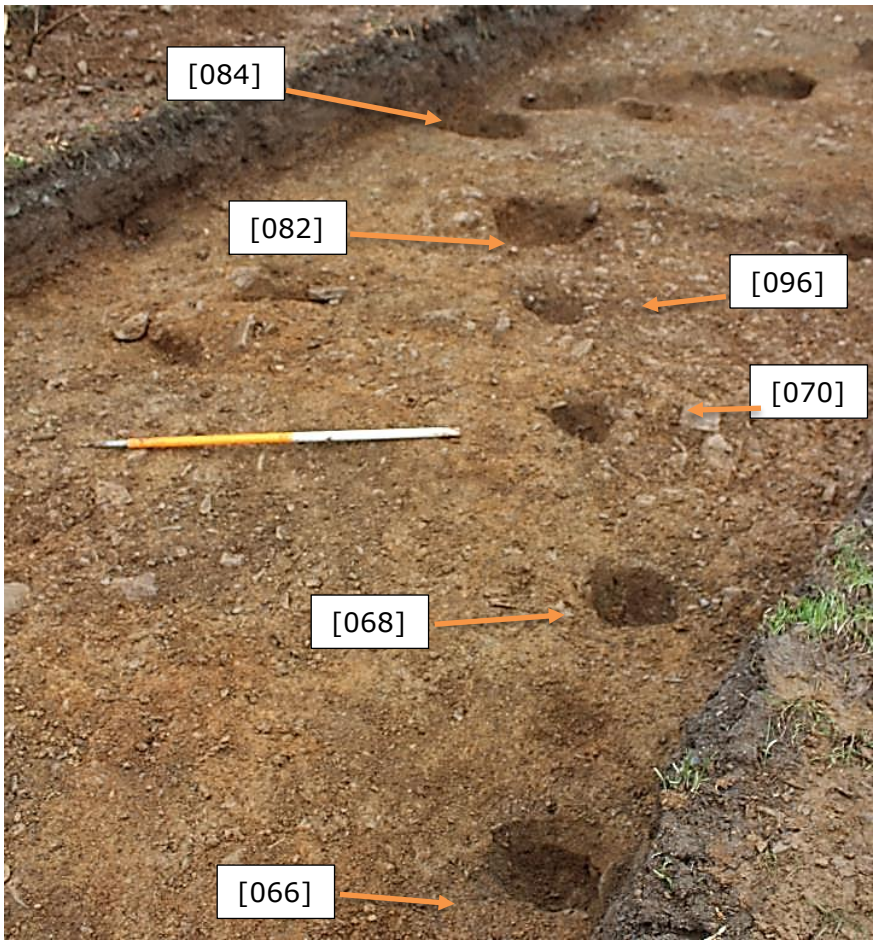


Photo 30: View north showing [082] and [084] in relation to other features. 1m scale

Photo 31: View NE at excavated pit [086]. 0.5m scale

[088] – A small oval post hole with steep sides and a rounded base, measuring 0.37m long, 0.22m wide and 0.12m deep with steep sides and a rounded base. The fill was friable, medium-brown, clay-silt (Photo 32 and 33).

[092] – A sub-circular pit with steep sides and a flat base, 0.68m in diameter and 0.25m deep. The fill (093) was a loose, brown silt, with frequent large, angular and rounded stones. It was possibly cut by [094] on its western side or was contemporary with it. The arrangement of features in this vicinity - [088], [092] and [094] was similar to that of [072], [074], [076] and [078] (Photos 32 and 33).

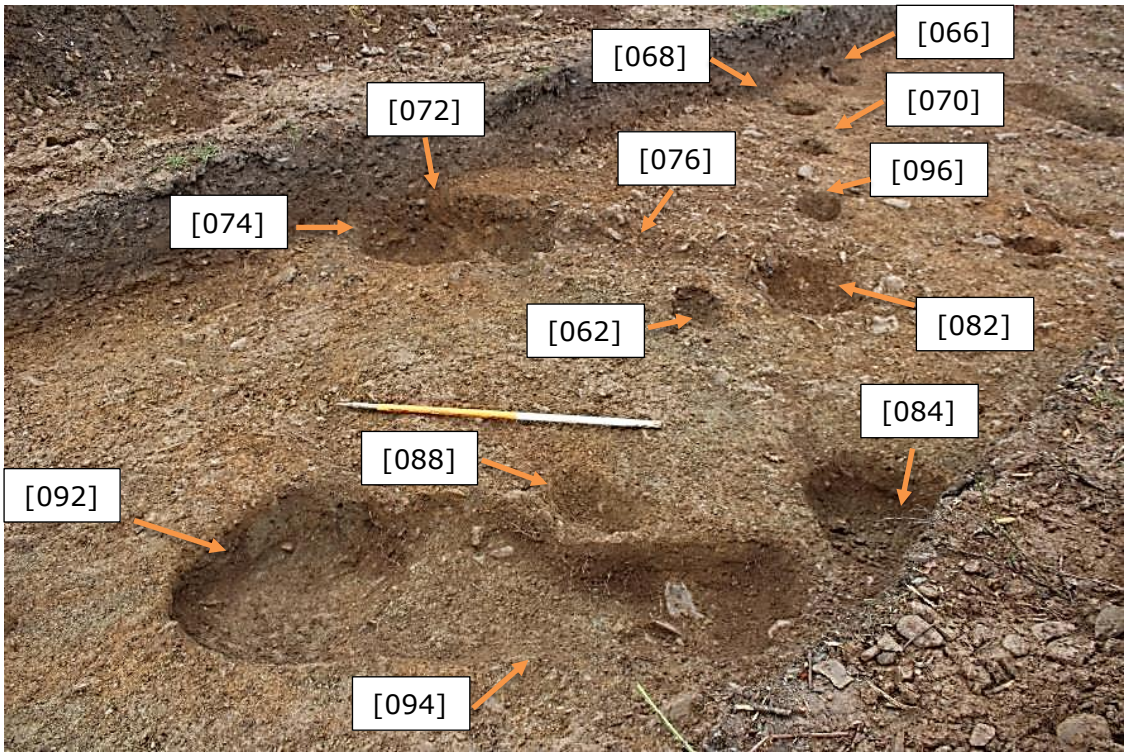


Photo 32: A view south showing the realtionships of two distinct feature groupings. 1m scale

[094] – A shallow, linear gully with steep sloping slides and a flat bottom measuring 1.2m long, 0.6m wide and 0.12m deep. The fill (095) was a loose, brown silt with frequent small stones, some large stones and frequent flecks of charcoal. It was difficult to discern whether the gully truncated [092] or was contemporary and situated very close to it (Photos 32 and 33).

[096] – An oval posthole with steep sides and a curved base measuring 0.82m long, 0.24m wide and 0.16m deep. It was cut into the natural deposit and filled with a friable, medium brown, clay-silt with occasional charcoal fragments (097). It is possible that it formed a line of features with [066], [068], [070], [084] and [084] (Photos 30 and 32).

[098] – This cut had been heavily intruded by root disturbance making the edges unclear but it possibly represented the remnants of a posthole or pit. It measured 0.68m long, 0.40m wide and 0.15m deep with a friable, grey/brown silty clay fill (099).

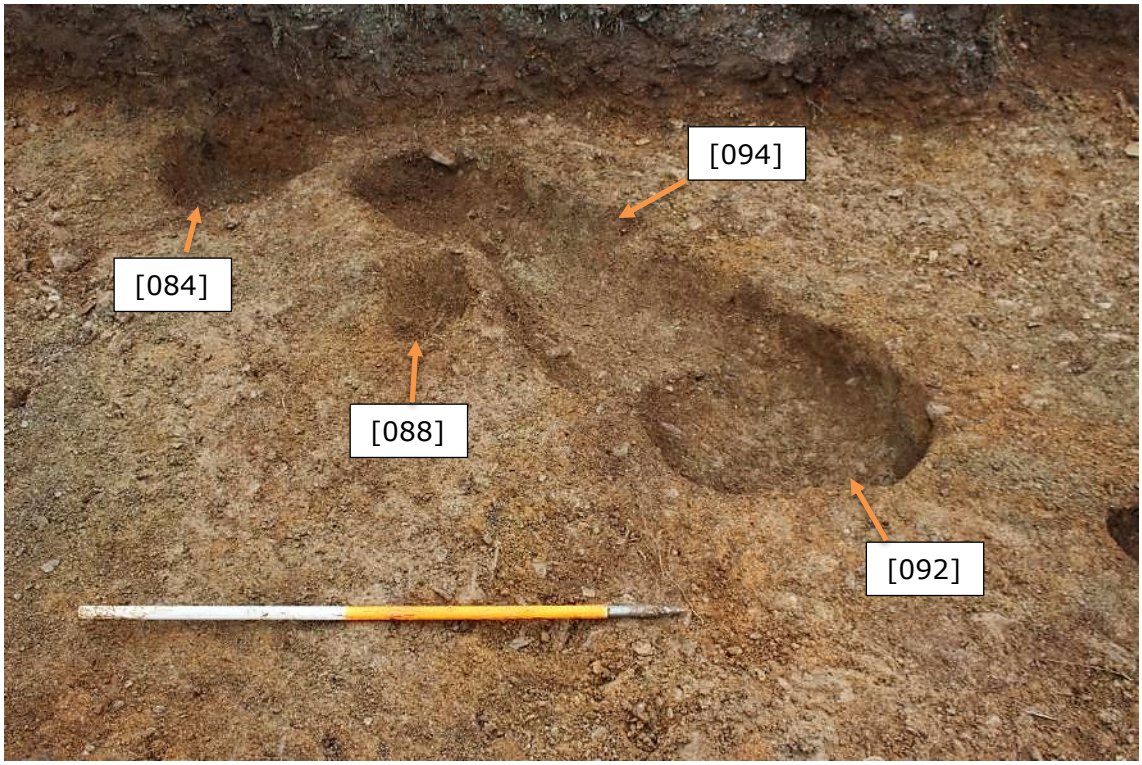


Photo 33: View north towards a complex of features at NE end of trench. 1m scale

[503] – A broad, shallow, circular pit with steep sides and a concave base measuring 1.02m long, 0.80m wide and 0.12m deep. The fill (504) was a dark brown, charcoal-rich silt containing large, rounded stones and shattered, heat affected stones. The surrounding natural ground did not show signs of a fire, which would suggest that the burning did not happen *in-situ* (Photo 34).

A sample collected from the fill (084) was analysed in the laboratory and found to contain wood charcoal with charred seeds, a possible fruit pip and a charred tree bud. A very small quantity of *Corylus avellana L.* (hazelnut fragments) was also recovered.

The *Corylus avellana L.* (hazelnut shell fragments) were submitted for radiocarbon dating (SUERC-82883). The results recorded a 68.2% probability that the sample dates between 3320 and 3030 cal. BC, but there is a reasonable chance (31.8%) that the sample is either older or younger than this. However, there is a 95.4% probability that it dates to between 3331 and 3025 cal. BC. This suggests that the sample derives from the Neolithic period.

[505] – An oval posthole with a conical profile measuring 0.43m long, 0.3m wide and 0.27m deep, containing a grey-brown, clay-silt fill (506) and small sub-angular stones.

[507] – An oval posthole with steep sides and a curved base measuring 0.31m long, 0.22m wide and 0.12m deep, containing a loose, dark brown, silt (508) and frequent sub-angular stones.

[509] – An oval posthole with vertical sides and concave base, measuring 0.36m long, 0.29m wide and 0.10m deep, filled with a compact, dark brown silt (510) (Photo 35).

[511] – A stake hole situated 0.5m south of posthole [511] measuring 0.18m in diameter and 0.15m deep, with vertical sides and a rounded base (Photo 35)

Photo 34: View NE; fill (504) of pit [503]. 1m scale

Photo 35: View west; posthole [509] and stakehole [511] (left). 0.5m scale

[513] – An oval pit with steep sides and flat base, measuring 1.02m long, 0.70m wide and 0.35m deep, containing a loose, mid-brown silt (514) and becoming stonier with charcoal flecks towards the base (Photo 36).

[010] – A continuation of the curvilinear ditch encountered in Areas 1,2 and 3 (Photo 36).

Photo 36: View SE: pit [060] and pit [513] in background. Ditch [010] can be seen as a dark bank between both features. 1m scale

5. DISCUSSION

5.1 The strip, map and record scheme has demonstrated that the complex of prehistoric features that was discovered at Plas Gogerddan in 1986 extends southwards beyond the area that was subsequently scheduled as CD259. The features that have been revealed by the current scheme are undoubtedly associated with those within the scheduled area to the north, however their character differs subtly in terms of the associated material culture.

5.2 No evidence for funerary activity was revealed during the strip, map and record scheme. Instead, a series of linear features, pits and post holes was revealed. Similar features were also revealed during the Plas Gogerddan excavation where pit [206] produced an assemblage of carbonized cereal grains, hazelnut shells and apple remains that was radiocarbon dated to the mid-Neolithic (Murphy et al. 1992, 26–27). Several of the features revealed by the current scheme also produced mid-Neolithic dating evidence, however this was predominantly in the form of the Mortlake substyle of Impressed Ware (formerly Peterborough Ware) (Appendix I). In contrast, no pottery was recovered during the 1986 excavation.

5.3 Plant remains were recovered during the strip, map and record scheme but, in a further contrast with the Plas Gogerddan excavation, the assemblage was dominated by hazelnut shells, with scant evidence for cereals and fruits. Despite this, the evidence is still considered representative of the classic Neolithic plant assemblage (see Appendix I). A tentative interpretation of the differing character of the cereal evidence from the two excavations is that it represents evidence for seasonally mobile, cereal cultivating communities of the early Neolithic (c.3800-3400 BC) having become fragmented, entirely mobile, pastoral communities by the Late Neolithic (c.3000-2400 BC) (Peterson 2003, 152).

5.4 The complete absence of cremated bone means that the pits that were excavated were not former cremation burials. However, the presence of pot sherds, charred hazelnut shells, lithics and heat affected stones within the fills of several pits is suggestive of non-utilitarian structured deposition (Thomas 1999). This widespread phenomenon is seen on Neolithic sites elsewhere in west Wales, such as Coygan Camp, Carmarthenshire (Burrow 2003), Croesgoch, Pembrokeshire (Murphy 2016), Site 37, near Red Roses, Carmarthenshire (Barber, Hardy & Mudd 2019), Cwm Meudwy, Ceredigion (Murphy & Evans 2006) and Wiston, Pembrokeshire (Darvill 2020). The character of these pit deposits can vary but commonly includes pot sherds, lithics and hazelnut shells. In Wales, the closest parallel for the pit assemblages at Penrhyncoch comes from pits at Pen-y-banc, Carmarthenshire, which also contained Middle Neolithic Mortlake Ware along with charred hazelnut shell but no cereal grains (Darvill 2020, 46–48).

5.5 Typically, the objects found in Neolithic pits appear to have been deliberately removed from other contexts for secondary deposition (Thomas 1999, 68). In particular, a relationship between pits and material selected from midden deposits has been identified (Thomas 2012, 8). The evidence that the pot sherds found within several pits at the current site had been deliberately selected for removal from midden deposits (see Appendix I) therefore strengthens the argument for structured deposition. Episodes of recurring activity are suggested by the intercutting seen among small clusters of pits on the site.

5.6 Similar pit clusters from sites across Britain represent a tradition that endured throughout the fourth and third millennia BC (Darvill 2020, 48). It has been suggested that their creation was ceremonial, commemorating activity at significant locales, and functioning either to mark the end of a period of occupation/activity, to deposit material from a significant event, or perhaps to create/reinforce links with that place (Darvill 2020, 39).

5.7 Interpretation of the other cut features on the site is hindered by the small size of the excavated area. The presence of post holes, particularly the possible four-post arrangement in Area 4, might be indicative of some form of settlement activity although, aside from the pottery assemblage and the possible burnt daub fragments, the evidence for habitation is scant. Moreover, no midden has been found in the vicinity and it is entirely possible that the pot sherds that were found could have been brought to the site from elsewhere by the type of fragmentary and mobile Neolithic communities envisaged by Peterson (2003). The possible arc of post holes is reminiscent of a horseshoe-shaped setting of post holes at Pen-y-banc, Carmarthenshire, which was interpreted as a possible Early Neolithic house (Darvill 2020, 40). Yet it also shares parallels with an arc of stake holes associated with the Iron Age phase of a multi-period funerary and ritual site at Stackpole Warren, Pembrokeshire (Benson et al. 1992), and in this regard it may be significant that Murphy et al (1992, 28) note parallels between the arrangement of pits and post holes seen at Plas Gogerddan in 1986 and those around the Devil's Quoit standing stone at Stackpole Warren. The pottery assemblage recovered at Penrhyncoch provides a further parallel between these two sites, since Middle Neolithic and Bronze Age pottery was also present at Stackpole Warren (Benson et al. 1992).

5.8 Among the linear features that were revealed, ditch [010] which produced a probable nail, and gully [058] which was probably a drain, are likely to be no earlier than post-medieval in date. Gully [001] and gully [014] may be earlier; the former was cut by posthole [012] and the latter was cut by ditch [010], but neither produced any dateable material, therefore their date and function remain unknown. None of the cut linear features recorded were as substantial as ditch [283], which delimited the southern extent of activity around Bronze Age ring-ditches excavated to the north in 1986 (Murphy 1992).

5.9 The small lithic assemblage represented by one flake from a polished axehead, one scraper and two waste flakes also contrasts with the 1986 excavation, which did not recover any lithics. However, three of these four lithics came from the fill of pit [36], which also contained thirteen pot sherds, charred hazelnut shells and heat affected stone, while the fourth came from the fill of pit [40], which contained an almost identical assemblage of material. Rather than the knapping and use of flint artefacts on the site, this evidence strongly suggests that these objects might have been brought in from elsewhere, having been deliberately selected for the purpose.

5.10 A silty deposit sealed all archaeological deposits on the 2018 site. This layer, which had probably built up relatively recently, had protected the archaeology. Downslope, at the west end of the trench, the depth of the silt deposit was responsible for the level of survival of features dating from the Neolithic period. Upslope, at the east end of the trench, the silt deposit was very thin and almost ploughed out. While this suggests that in other areas where the silt deposit is not present, the oldest archaeological features are likely to have been severely damaged/destroyed by the plough, it should be noted that some Neolithic features were nonetheless present in Area 1, where the silt deposit was thinnest.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Archaeological excavation, accompanied by specialist analyses, investigated an area of land to be affected by improvements to the C1010 road near Penrhyncoch, Ceredigion.

6.2 It was found that in the area investigated, further prehistoric archaeological features associated with a known multi-period funerary and ritual complex to the north were located. The area to the north had been the subject of archaeological investigation during the 1980s and was subsequently protected by scheduling as CD259.

6.3 The full extent of the funerary and ritual complex at Plas Gogerddan/C1010 Penrhyncoch is still not known. However, the 2018 strip, map and record exercise has added to the evidence which shows that the site was a significant location for potentially as long as three millennia. The single Middle Neolithic pit [206] that was discovered in 1986 was given brief mention as a 'neolithic food deposit' in that report (Murphy 1992, 27), but was not discussed further, being eclipsed by the far greater quantity of evidence for Bronze Age, Iron Age and early medieval funerary activity that had been found. The current exercise, along with the results of excavation and subsequent research into Neolithic pits elsewhere in Wales and further afield, has shown that rather than being a somewhat random early anomaly on a later site, pit [206] was one element of a complex of structured pit deposits that represent the first use of the site, and the possible origin of a tradition of significance.

6.4 These results, together with the evidence revealed by the recent geophysical survey of CD259 (Hopewell 2016) and the evidence for a former standing stone in the field to the west, demonstrate unequivocally that further archaeological features survive below ground over an extensive area, despite the effects of ploughing. This means that any further ground-breaking activity proposed in the vicinity will require prior archaeological intervention.

6.5 Further geophysical survey, covering a wider area around the locations of known archaeological features, with the aim of defining the extent of the site would be highly beneficial for both further understanding of the site and for informing any future evaluation/excavation that might become necessary.

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Cartographic

Llanrhian Parish Tithe Map & Apportionment 1842

1st edition, Pembrokeshire, 1:25000" Ordnance Survey, 1889

2nd edition, Pembrokeshire, 1:25000" Ordnance Survey, 1907

APPENDIX I: POTTERY ASSESSMENT

by Alex Gibson BA PhD FSA MCIFA FSA (Scot)

INTRODUCTION

An assemblage of pottery from the excavations at Penrhyncoch, Ceredigion, was submitted to the writer in April 2018 for report. The assemblage comprised some 360g of pottery (32 sherds) and was laid out by context in good daylight and examined macroscopically with a x10 hand lens where necessary. Fabrics were identified and descriptions prepared. Sherd groups were identified and quantified. Note that the writer prefers the term 'sherd group' (SG) rather than 'vessel' in assemblages where conjoining sherds are few. The term SG acknowledges that whilst there are fabric similarities between the sherds, they cannot definitively be assigned to the same vessel in the absence of conjoining sherds. No microscopic or chemical analyses have been undertaken so fabric observations made here are liable to revision should such analyses be undertaken in the future. A full descriptive catalogue is provided in Appendix 1. The photographs provided in Appendix 2 are for identification purposes only and for the guidance of an illustrator and/or conservator.

FABRICS

Only two fabrics are represented in the assemblage.

Q Crushed Quartz. Soft and quite crumbly fabric with abundant large angular quartz and quartzite inclusions. These inclusions can often reach up to 11mm across.

QG Crushed Quartz and Grog. The quartz inclusions are similar to fabric Q but there are also large, black, grog inclusions within the fabric which seem to measure up to 20mm across.

TECHNOLOGY

The pottery is thick, heavy and hand-built as is the norm for British prehistoric pottery. The blotchy nature of some of the cleaner surfaces indicate the variable atmospheres that occur within open fires and the invariably dark cores suggest economic firing times as they represent the carbonisation of naturally occurring organic materials within the clay (Gibson and Woods 1997, 118-9). The softness of the fabric also suggests a short firing time and/or a low firing temperature. The outer surfaces are generally light in colour suggesting good levels of oxygen within the fire. Join voids between coils or rings of clay are not immediately visible suggesting a competence on the part of the potter.

DISCUSSION

The pottery from Penrhyncoch is exclusively Middle Neolithic Impressed Ware, formerly known as Peterborough Ware and is in the Mortlake substyle. The restricted fabric range is also in keeping with this identification and coarsely crushed quartz is the overwhelming opening agent in Mortlake style Impressed Ware (Gibson 1995, Fig 3.8). Occasionally the quartz is abundant, as in the present assemblage, and sometimes seems to have been deliberately intended to be visible on the outer surface of the pot: the white quartz contrasting with the surface colour of the vessel. This would appear to have had an ideological rather than a technological significance.

Impressed Ware is rare in western Wales (with the exception of Anglesey) though a possible sherd was recovered from the excavations at the tomb of Carreg Coetan Arthur (Pembrokeshire) (Gibson in Rees 2013) and from Llanilar (Ceredigion) some 10km to the South of Penrhyncoch (Darvill in Briggs 1997). Between these two sites, a sherd of Impressed Ware was found in a pit associated with hazelnut shells and a cereal grain on the site of the later palisaded enclosure at Cwm

Meudwy, Llandysul (Murphy and Evans 2006). These sparse finds nevertheless prove that Impressed Ware is not absent in western Wales and its paucity may be due to limited excavation and/or research fieldwork.

The main distribution of Impressed Ware in Wales is along the borderlands and the south coast (Gibson 1995) and accordingly bears strong comparison to Impressed Ware from England. The use of bone impressions on SG1, 3, 5 and 6 is a technique that is commonly found in Wales and is, in fact, the predominant decorative technique (60% of known vessels – Gibson 1995, Fig 3.4). Since pioneering experimental work by Liddell (1929) it has been well known that a variety of small animal bones were employed to form these impressions so clearly there is great variation seen in the individual impression shapes within this cover-all term. The most extensively bone decorated vessels from Wales are from Sarn-y-bryn-Caled, Powys, Caldey Island, Pembrokeshire and Llanilar, Ceredigion (Gibson 1995; Gibson in Blockley and Taverner 2003, Briggs 1997) where the bodies of the vessels seem to have been decorated all over with the technique arranged in broad horizontal lines. All these vessels are in the Mortlake substyle. Bone impressions were also found on the unusual flat-base Impressed Ware from Dyffryn Lane, Powys (Gibson 2010a) and on another Mortlake vessel from Parc Bryn Cegin, Gwynedd (Lynch in Kenney 2008) and once again seem to cover the whole body of the pots. The fingernail 'nicks' on the edge of the rim moulding of SG5 can also be seen on a vessel from a shallow pit at Sarn-y-Bryn-Caled (Gibson 1995, Fig 3.5). Related to this may be the vertical impressions on SG11 made by impressing a round-ended object obliquely into the clay. The shape of the individual impressions suggests that the implement was probably the rounded tip of the calamus of a moulted feather The writer knows of no other instance of this exact technique in Wales though it is clearly part of the suite of impressions made using tools involving animal parts (including fingernail impressions) used by the makers of Impressed Ware. Motifs involving paired opposed impressions are common (Gibson 1995) and small circular impressions on a rim from Bryn yr Hen Bobl, Anglesey, may represent another use of moulted feathers.

The filled chevron motif on the rim bevel of SG4 is well executed and more difficult to parallel though an incised version of the motif occurs on the collar of a Fengate style vessel from Ogmore, Glamorgan (Gibson 1995, Fig 3.7) and on Fengate vessels from Parc Bryn Cegin where the chevrons occur in a variety of techniques (Lynch in Kenney 2008, Fig 11). A Mortlake style vessel from Upper Ninepence also has this motif on the rim but it is executed using closely-spaced bone impressions but gives the same overall appearance (Gibson 1999, Fig 51, P3). Another Fengate vessel from Brynderwen, Powys, is unusual in having twisted cord chevrons but they are multiple rather than filled. The incised cross-hatching in the neck can also be found at both Sarn-y-bryn-caled and Dyffryn Lane and occurs internally at Upper Ninepence, Powys (Gibson 1999). The fingernail impressions on SG5 are close-set and shallow and suggest that the fingernail was lightly impressed at an angle to flatten the clay rather than leave a deep depression. Such light impressions were found arranged in horizontal lows at Upper Ninepence (Gibson 1999, Fig 51) and arranged randomly on a flat-based vessel from Dyffryn Lane (Gibson 2010a, Fig 23). The deep fingernail herring-bone motif of SG7 and SG9 is more difficult to match but such a motif has been found on the tops of rims At Parc Bryn Cegin (Lynch in Kenney 2008, Fig 11) and Upper Ninepence (Gibson 1999, Fig 51).

The stab and drag decoration on SG8 resembles the comb impressions seen on later Beaker and Bronze Age pottery and must have been labour intensive to produce. It is found along with other techniques on a rim from Bryn yr Hen Bobl (Anglesey) (Gibson 1995, Fig 3.6.9) and on a wall sherd from a pit at Dyffryn Lane (Gibson 2010a, Fig 23, P2). It has also been identified on a vessel from

Ogmore (Glamorgan) erroneously originally identified as comb (Gibson 1995; 2001).

The Impressed Ware from Wales comes largely from pit deposits. Complete vessels are not represented even though there may be substantial pieces such as at Dyffryn Lane (Gibson 2010a) or sufficient sherds to suggest reconstructions as at Parc Bryn Ceggin (Lynch in Kenney 2008). Furthermore, rarely are cross-context joins recognisable with the notable exception of Llanilar where fragments from the same vessels were recovered from two or more pits (three in the case of pot 7) (Darvill in Briggs 1997). This suggests that the sherds have been taken from a place of primary deposition, perhaps a midden or similar site, and have been chosen for deliberate deposition in these usually single-filled pits. The midden hypothesis is supported by the microwear on the associated flint artefacts from Upper Ninepence which proved to have been extensively used and trampled as evidenced by edge damage and dorsal ridge rounding (Donahue in Gibson 1999). This selection of midden material for deliberate deposition in pits must be a structured process perhaps related to fertility rituals (returning to the earth that which comes from the earth) perhaps as a ceremonial 'planting' (Gibson 1999).

The radiocarbon dates of 4477±20 BP (SUERC-82879) and 4411±25 BP (SUERC-82880) from contexts 37 (vessels 1-3) and 41 (vessels 4-8) respectively are entirely in keeping with the later 4th millennium date range for Impressed Wares though they suffer from the Middle Neolithic Plateau in the calibration curve, roughly between 3300-3100 cal BC.

The radiocarbon dates associated with Welsh Impressed Ware were reviewed in 1999 and since then more dates have been obtained from Upper Ninepence (Gibson 1999), Llandegai (Lynch and Musson 2004), Dyffryn Lane (Gibson 2010a) and Sarn-y-Bryn-Caled Site 2 (Gibson 2010b). The data have also been reviewed and modelled nationally by Marshall *et al.* (in Beamish 2009) which allows us to refine the Welsh dates further. In the light of these new dates the dates from Cefn Bryn (Birm-1235, 1236 and 1238) can be discounted as too young and one of the dates from Sarn-y-Bryn-Caled Site 2 can be discounted as too old being derived from oak charcoal (BM-2820) (Gibson 1995; 2010b). The Impressed Ware at Sarn-y-Bryn-Caled Site 2 was also residual and the new dates suggest that this site is better interpreted as a later Neolithic cremation cemetery dating to the first half of the 3rd millennium BC (Gibson 2010b). The dates from the ditch of Llandegai Henge A (NPL-221) can also be discounted as the date was obtained from residual bulked oak charcoal (Gibson forthcoming). The reliable dates, in keeping with the national picture and with the dates from Penryhncoch, place Impressed Ware in the second half of the 4th millennium BC. The broadly contemporary dates of 4483±22 BP (SUERC-82875) and 4459±21 BP (SUERC-82883) from contexts 9 and 504 at Penryhncoch although also falling on the Plateau in the curve, indicate that the Middle Neolithic activity at the site was more extensive than the ceramic assemblage suggests.

FURTHER STUDY

Thin section analysis of the fabric would, of course, refine the macroscopic descriptions given above. Absorbed residue analysis may provide traces of contents and supplement the palaeoenvironmental/economic data. However, both forms of analyses are destructive. C14 dates from secure and reliable associated short-lived samples and/or the carbonaceous residues on the inner surfaces of some sherds (isolated in aluminium foil) would contribute towards refining the Middle Neolithic chronology for Wales and western Britain.

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CATALOGUE OF THE POTTERY

Catalogue ERN 111237

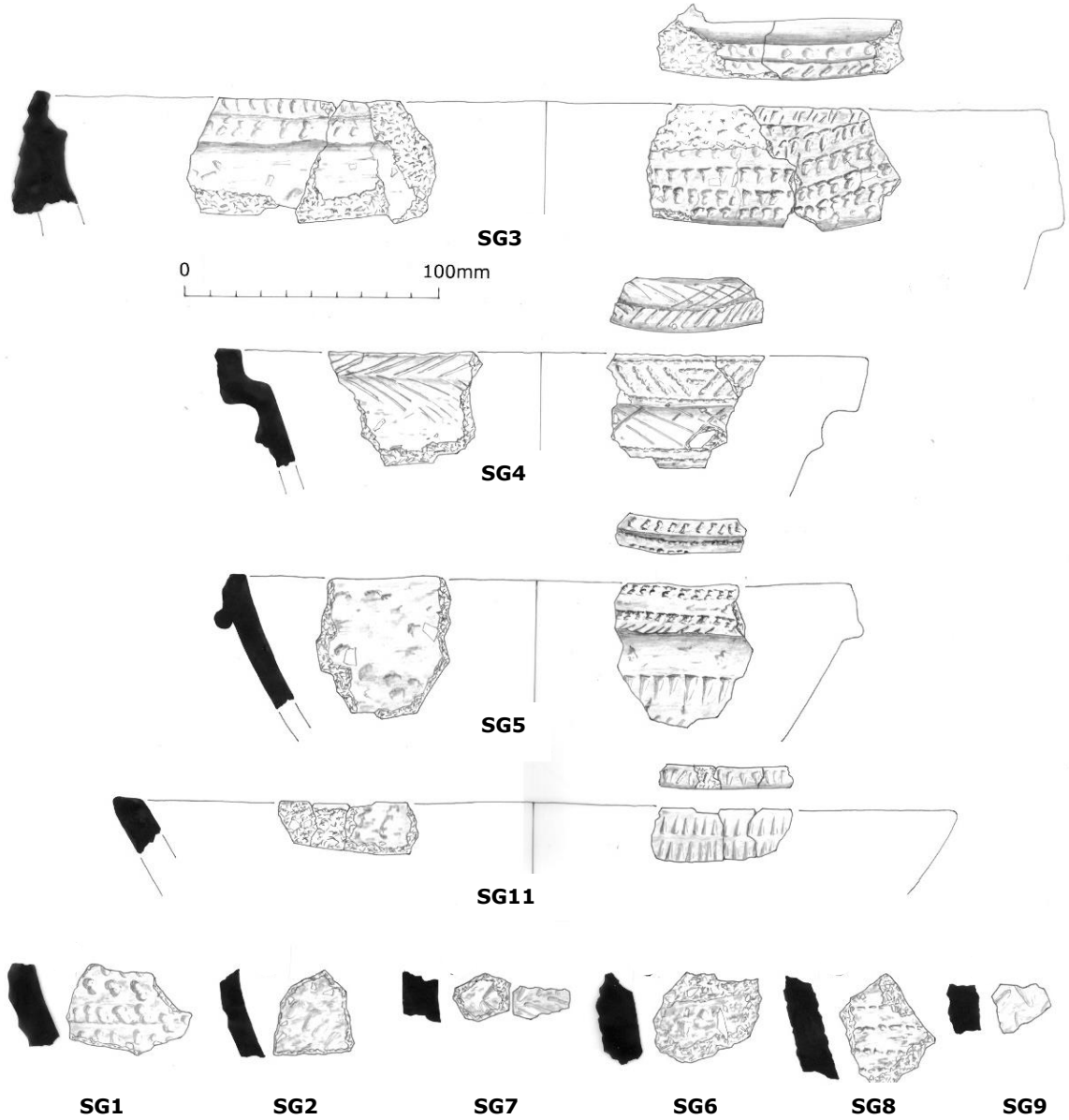
SG No	Context	Fabric	Sherd count	Weight (Grams)	Description
1	037	Q	3	35	Friable sherds with light brown surfaces (occasional pink tinges) and a black core. The fabric averages some 12mm thick. The outer surface is decorated with abraded and indistinct oval impressions ('birdbone' impressions?) arranged in horizontal lines. Carbonaceous residues remain on 1 smaller sherd.
2	037	Q	8	38	Friable sherds with light brown surfaces and a black core. The fabric averages 9mm thick. The outer surface of the largest sherd is decorated with lightly impressed and slightly oblique lenticular impressions, probably fingernail. One sherd has carbonaceous residues.
3	037	QG	2	109	Friable sherds with light brown surfaces and a black core. The sherds represent the rim and collar of a substantial vessel and the fabric thickness below the collar averages 13mm thick. The collar itself is 45mm deep and the collar base has an overhang of about 10mm. Fingernail impressions from the forming process can be detected under the collar. The decorative scheme is busy. *Top of the rim* This narrow area (6mm across) is flat and is decorated with small, oblique and close-set twisted cord impressions. *Interior* The interior of the rim has a concave bevel some 20mm deep and is decorated with two lines of vertically-set oval impressions, probably 'birdbone'. *Exterior* A row of vertically set light fingernail impressions lie just below the rim. Below these are 4 roughly horizontal rows of rows of vertically and closely set 'birdbone impressions. Rim diameter estimated 44cm.

SG No	Context	Fabric	Sherd count	Weight (Grams)	Description
*4	041	Q	3	45	Rim sherd in a hard well fired fabric with light brown outer surface, black inner surface and core. The rim diameter is 16cm, and the fabric averages 10mm thick. The sherd is extensively decorated. Two rim sherds conjoin. *Internal*

					Row of finely executed herringbone motif up to 25mm deep. *Rim bevel* Close set oblique incisions. *External rim moulding* Zone of opposed filled chevrons in stab and drag technique (resembling comb) bordered above and below by a single encircling line in the same technique. The rim moulding averages 20mm deep. *Neck* Finely incised open cross-hatching. Neck averaging 20mm deep. *Body* Below the shoulder are traces of two horizontal lines in well-executed stab and drag technique.
*5	041	Q	1	44	Rim sherd on a hard and well-fired fabric with brown outer surface and black inner surface and core. The fabric averages 10mm thick and the rim diameter is estimated as 18cm. The interior is undecorated. The top of the rim is decorated with close-set 'birdbone' impressions. The outer rim moulding is 20mm deep and decorated with two encircling lines of vertical 'birdbone' impressions and with thinly incised 'nicks', possibly fingernail impressions, on the bottom of the moulding. The neck is shallow, *c.*11mm deep and is undecorated. The body is decorated with two rows of close-set vertical, oval fingernail impressions similar to the abraded examples on SG 2.
*6	041	Q	1	20	Single sherd in a soft poorly fired fabric, light pinkish-brown throughout. The fabric is some 15mm thick. The outer surface has traces of shallow pits representing 'birdbone' impressions.
*7	041	Q	2	9	Two sherds in a soft poorly fired fabric, light pinkish-brown throughout and measuring 15mm thick. The outer surface is decorated with deeply incised herringbone. The inner surface of the larger sherd has carbonaceous residues.
*8	041	Q	6	29	Sherds in a soft, crumbly and poorly fired fabric. The outer surface is light brown and the inner surface and core are black. The fabric measures some 12mm thick. The largest sherd has traces of three parallel lines of stab and drag technique on the outer surface.

SG No	**Context**	**Fabric**	**Sherd count**	**Weight (Grams)**	**Description**
*9	005	Q	1	5	Sherd in a soft fabric with light brown outer surface, black core and inner surface. The fabric averages 12mm thick and the outer surface has lenticular fingernail impressions apparently arranged in a herringbone motif.
10	005	Q	1	15	Sherd in a soft, crumbly and poorly fired fabric with angular inclusion voids suggesting inclusions up to 8mm across. Undecorated. Carbonaceous residue on the inner surface.

*11	009	Q	1	10	Rim sherd in a hard, well-fired fabric with black surfaces and core. The fabric averages 11mm thick. The rim has an internal bevel but this is abraded and damaged however it seems to have been decorated with crossed fingernail impressions or incision. The outer surface is decorated with two rows of vertical elongated oval impressions made by a round-pointed implement, probably a moulted flight feather, pressed into the clay at an angle.
	005		1	10	Daub or fired clay.
	013		1	1	Daub or fired clay.

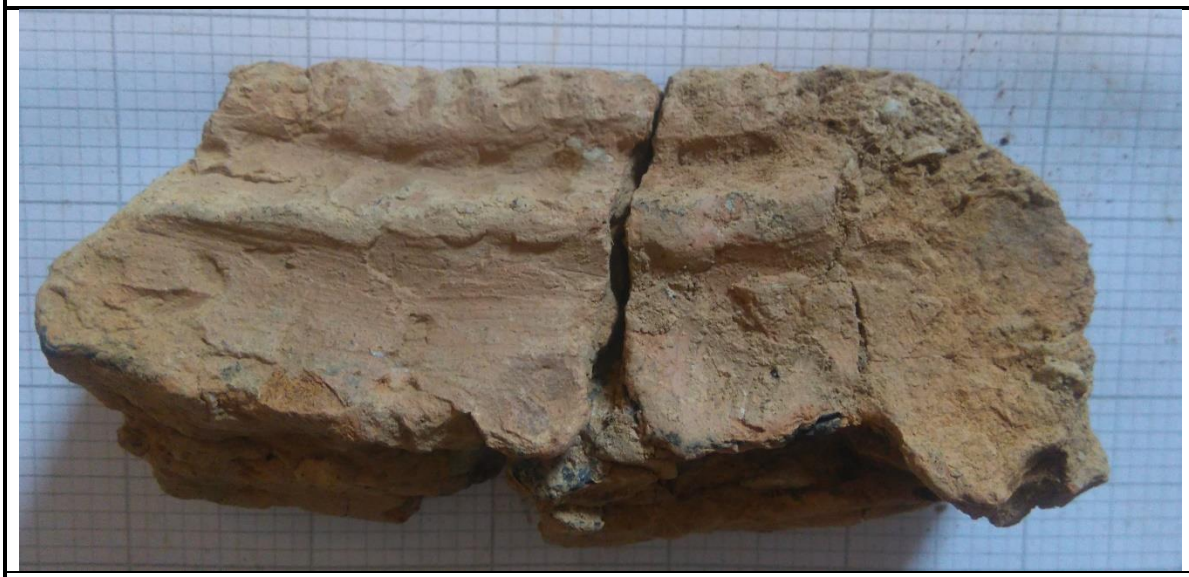


GUIDE PHOTOGRAPHS OF THE POTTERY

SG 1

SG 2

SG 3 exterior



SG 3 interior

SG 4

SG 5

SG 6

SG7

SG 8

SG9

	
SG11	

APPENDIX II: ASSESSMENT OF CHARRED PLANT REMAINS

by C. J. Griffiths

Introduction

Following the excavations at Penrhyncoch (Plas Gogerddan) – C1010 Improvement by Dyfed Archaeological Trust, thirteen soil sample were received for processing and assessment of charred plant remains from the site. Previous excavations in the area had produced evidence of cereal and other plant remains dating from the Neolithic period.

Methods

All the sample were processed in the laboratory using a simple wash over technique, the flots were sieved onto a 250µm mesh and allowed to dry, the flots were dry sieved through 2mm, 1mm, 500µm and 250µm sieves prior to sorting for assesment. The residues were sieved through 4mm and 250µm mesh, any pottery or flint visible during sieving were removed and dried. The residues were air dried and bagged as 4mm and 250µm fractions still wrapped in the foil they were dried on.

The flots were assessed by scanning the flots using a Wild M15 stereomicroscope and scoring any plant macro fossils using a scale of abundance.). Nomenclature for the non-cereals follows Stace (1991) and for the cereals follows Jacomet (2006).

Results

Area A

Sample 102 context 005 – fill of post hole 004

Wood charcoal predominant with *Corylus avellana* L. (hazel) nut shell fragments present.

Pottery fragments

Sample 104 context 009 – fill of the remnant of posthole 008

Wood charcoal fragments and and *Corylus avellana* L. (hazel) nut shell fragments present.

Pottery fragments.

Sample110 context 035 – fill of posthole 034

Wood charcoal predominant, one cereal grain, cf. *Hordeum* sp. (barley) present. A small quantity of Polygonaceae seeds (knotweed) were also present.

Sample 111, context 037, Fill of pit 036

Wood charcoal predominant, one *Triticum* sp (wheat) glume base and *Corylus avellana* L. (hazel) nut shell fragments were present.

A flint scraper, fragment of polished stone and fragments of pottery (some decorated) were recovered whilst sieving the 4mm residue.

Sample 137, context 037 – one piece of charcoal from fill of pit 036

Quercus sp. (Oak) charcoal

Sample 112, context 041, fill of shallow (truncated) pit 040

Wood charcoal and *Corylus avellana* L. (hazel) nut shell fragments present.

A flint flake and pottery fragments were recovered from the 4mm residue

Sample 138, context 041, fill of shallow pit 040

One fragment of diffuse porous wood charcoal.

Area B

Sample 117 context 061 – the fill of one of two deep rectangular cuts.

The largest sample of the assemblage produced a relatively small quantity of wood charcoal, other remains included amorphous non organic charred material, possibly burnt soil, two *Dathonia decumbens* (L.) DC (heath grass) caryopses were present, as well as a possible fruit/capsule fragment and stem/root/rhizome material.

Sample 118, context 061, a small area of charcoal from the bottom of cut 060, sealed by a stone.
A wood charcoal rich sample, with one indeterminate thorn recovered.
Sample 121, context 067, fill of post hole 066
Small fragments of round wood charcoal.
Sample 131, contxt 093, fill of pit 092 from base of pit.
Quercus spp. (Oak) charcoal.
Sample 133, context 504, fill of shallow pit 503.
A wood charcoal rich sample, with charred seeds including *Galium aparine* L. (cleavers), *Rumex* sp. (dock), a possible fruit pip and and a charred tree bud.
Sample 127, context 083, fill of post hole 082
A wood charcoal rich sample which also produced a charred *Rubus fruticosus* (Agg.) L. (bramble) and a fruit stone/nut shell fragment.

Discussion

The assessment of the plant remains indicate that the features from Area A produced the greatest quantity of material, with hazelnut shell fragments predominant. The features from Area B did produce some plant remains, however not in the quantity found from Area A. The plant remains from Area B were also small weed seeds which were not evident in the assessed material from Area A. Cereal remains from both areas were scarce, with one barley grain, wheat rachis and grain noted from Area A and one cereal grain not identifiable to species in Area B.
The excavation was an extension of the multi-period ritual and funerary complex excavated in 1986, the plant remains from the 1986 excavations comprised of numerous emmer wheat grains, spikelet forks and glume bases, a smaller quantity of barley grains, apple remains including pips, endcocarp, epidermis and stalks and hazelnut shell fragments (Caseldine 1992), the assesmblage from Area A has a similar assemblage of hazelnut shell fragments but is lacking the cereal and apple remains. However unlike the previous excavation Neolithic pottery was found in this area of the complex both during excavation and in four of the samples from Area A processed in the laboratory. In addition a flint scraper and fragment polished stone was recovered from the 4mm residue of context 037 from pit 036 and a small flint flake from context 041 the fill of a shallow pit 040.
The samples from Area B processed in the laboratory did not produce any pottery or other finds as was the case during excavation, the plant remains also varied from Area A with smaller quantities of hazelnut shell fragments present, there were however some small seeds present that possibly indicate rough grassland (heath grass and docks) conditions along with cleavers a pesistant weed and bramble. Possible fruit remains were also noted. The smaller weed seeds from the site are of interest as the plant remains from the 1986 excavation were limited to those from a 1mm size sieve (Caseldine 1992), therefore any smaller seed were not retrieved.
Overall the plant remains from Area A display the classic Neolithic plant assemblage with numerous hazelnut shell fragments and the presence of some cereal, which along with the evidence from the 1986 excavation indicates the presence of arable agriculture in the area. Although Area B produced smaller quantities of material the presence of smaller seeds is of interest.
The wood charcoal from site was a mixture of oak and diffuse porous material.

Recommendations

The samples which had plant remains present should be fully sorted and quantified, the smaller fractions have the potential to produce evidence of the smaller weed seeds not available from the 1986 excavation.
The 250µm residues from samples 102, 104, 110 111, 112, 133 and 127 should be re-flotted as there is the potential for the recovery of remains that did not float in the first cycle of sieving. This technique of resieving the residue was employed with samples from Gwernvale Neolithic chambered tomb and the second flots typically contain cereal grains and hazelnut shell fragment
A full programme of the identification of wood charcoal from the samples has the potential to give information the woodland resources available.

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Table 1. The plant remains from Plas Gogerddan

Area	A	A	A	A	A	A	A	B	B	B	B	B	B
Context	005	009	035	037	037	041	041	061	061	067	093	504	083
Sample	102	104	110	111	137	112	138	117	118	121	131	133	127
Feature	P/H	P/H	P/H	Pit	Pit	Pit	Pit	Cut	Cut	P/H	Pit	Pit	P/H
Volume/ Litre	7.5	4	0.5	16	-	10	-	28	0.5	2	-	6	4.5
Plant remains													
Hordeum sp. grain	-	-	+	-	-	-	-	-	-	-	-	-	-
Triticum sp. glume base	-	-	-	+	-	-	-	-	-	-	-	-	-
Triticum sp. grain													
Cereal indet	-	-	-	-	-	-	-	+	-	-	-	-	-
Corylus avellana L. (Hazel) nut shell frags	++	+++	-	++	-	+	-	-	-	+	-	-	-
Rumex sp. (Docks)	-	-	-	-	-	-	-	-	-	-	-	+	-
Polygonaceae	-	-	+	-	-	-	-	-	-	-	-	-	-

(Knotweed)													
Galium aparine L. (Cleavers)	-	-	-	-	-	-	-	-	-	-	-	+	-
Rubus fruticosus L. agg. (Bramble)	-	-	-	-	-	-	-	-	-	-	-	-	+
Dathonia decumbens (L.) DC (Heath Grass)	-	-	-	-	-	-	-	+	-	-	-	-	-
Cf Fruit remains	-	-	-	-	-	-	-	+	-	-	-	+	+
Charred stem/root frags	-	-	-	-	-	-	-	+	-	-	-	+	+
Tree bud												+	
Wood charcoal	++++	++++	++++	++++	+	++++	+	++++	+	++++	+	++++	++++
Cf. Burnt soil	-	-	-	-	-	-	-	+	-	-	-	-	-
Finds													
Worked flint	-	-	-	+	-	-	-	-	-	-	-	-	-
Flint flake	-	-	-	-	-	+	-	-	-	-	-	-	-
Pottery	+	+		_+		+							

APPENDIX III: ASSESSMENT OF LITHIC MATERIAL

by Andrew David

Plas Gogerddan, Ceredigion: SN 626 835 (DAT excavations 2018, Project Record Number 111237)

(1) Description: flake of pale grey-green fine-grained igneous rock, the dorsal surface of which retains a smooth overall artificial polish (34mm x 24mm x 10mm)

Context: [37]
Sample 111

Comment: this is a flake from a former finely polished stone tool, probably an axe-head; it appears to be hard hammer-struck and has undamaged edges, with no other culturally diagnostic features. The rock-type seems to be igneous, and resembles Group VIII in hand specimen; however, this is speculative and formal petrological identification is called for.

(2) Description: a partial flake of pale grey-green fine-grained igneous rock, the convex dorsal surface of which is smoothed and lightly pitted (21mm x 17mm x 3mm).

Context: [37]
Sample 111

Comment: the dorsal surface of this piece does not have the same surface characteristics and may be of a different rock-type than (1). It is without a lustrous polish or fine directional striations and is not certainly part of a formerly polished artefact; instead, it may be a 'natural' flake off a small pebble.

(3) Description: a secondary flake of unpatinated semi-translucent mottled grey/reddish flint with a portion of ?beach-pebble cortex surviving on one lateral edge; the opposite edge and proximal end have been carefully defined by inclined semi-invasive retouch (46mm x 30mm x 10mm).

Context: [37]
Sample 111

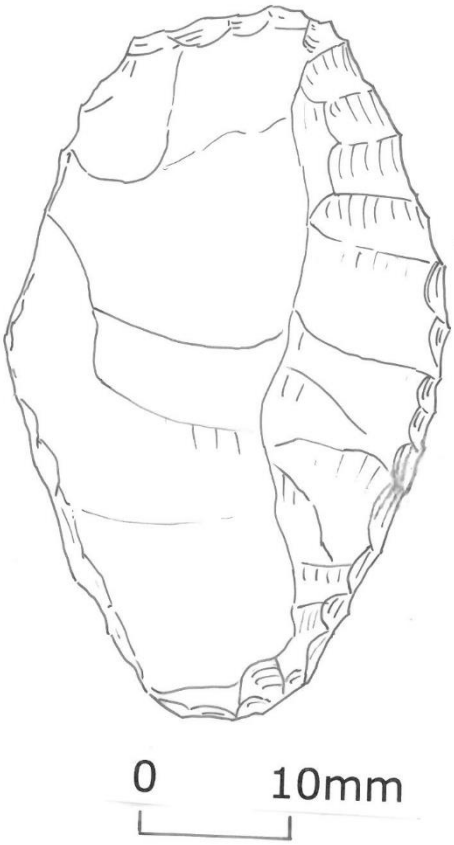
Comment: this piece is most simply defined as an elongated convex scraper; or (alternatively) as an end- and side-scraper. That said, it also has the somewhat 'slug-shaped' outline and retouch characteristic of a crude plano-convex knife, so 'knife' is another possible classification. The neat and inclined retouch is characteristic of Bronze Age technology, consistent with its unpatinated state. The flake may also be the product of bipolar working which is a predominantly Bronze Age reduction technology in Wales. Microscopic analysis of the flint edges might inform on its use-wear history.

(4) Description: a small unpatinated tertiary flake of good quality translucent grey flint
(14mm x 12mm x 2mm).

Context: [041]
Sample: 112

Comment: a well-defined flake (hard/soft hammer struck) perhaps from the finishing stages of core preparation or tool manufacture.

Overall comments: the polished fragment was probably from a well-finished ?local stone axe-head and is Neolithic or later; the scraper is very probably Bronze Age, and both would be in keeping with the Neo/BA activity for which this area is already known (despite a curious lack of other finds of this age).



APPENDIX IV: CONTEXT REGISTER

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
001	Cut	Linear cut, possibly a series of closely packed post holes. Appears to be at least one ridge suggesting at least one post hole at eastern end. Very hard obvious edges at eastern end where surrounding natural is hard compacted grey. Moving west, surrounding natural changes to red silt (soft) and edges of cut can no longer be discerned.	3m x 0.34 to 0.5mx 0.12 to 0.22m deep			
002	Deposit	Upper fill of [001]. Reddish silt with small angular stones. Loose compaction.				
003	Deposit	Lower fill of [001]. Gritty grey silt with small and medium angular stones. Loose compaction.				
004	Cut	Shallow circular post hole with steeply sloping sides and a flat base.	40m diameter x 0.13m deep			
005	Deposit	Fill of [004]. Dark orangey brown sandy silt with frequent small stones.				Cracked heat-affected stone, BA pot, burnt daub.
006	Cut	Very shallow, truncated, sub-rectangular cut. Oriented E-W	1.3m x 0.96m x 0.08m deep		[008]	
007	Deposit	Fill of [006]. Fairly compact light orangey brown silt with occasional small stones and charcoal flecks.				
008	Cut	Very shallow, truncated, circular cut. Post hole?	Av. 0.45 diameter x 0.06m deep	006		
009	Deposit	Fill of [008]. Fairly compact dark orangey brown silt with occasional small stones and larger, heat-affected stones. Produced a C14 date of 3339 – 3091 cal. BC.				Cracked heat-affected stone, 1 Neo/BA decorated pot sherd
010	Cut	Curvilinear, D-shaped (profile) gully.	c.22m x av. 0.44m x 0.15m deep			

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
011	Deposit	Fill of [010]. Friable mid-brown silty clay with frequent small stones.				Corroded Fe object – probably a nail
012	Cut	Circular post hole with sides tapering to a concave base.	0.35m diameter			
013	Deposit	Fill of [012]. Loose brown silt with small angular stones.				Two probable packing stones; possible pot/daub.
014	Cut	Possible ditch cut, wide but very shallow.	6m x c.0.55m x 0.04m deep			
015	Deposit	Fill of [014]. Friable light orangey brown silty clay with frequent very small stones.				
016	Cut	Shallow, circular post hole/pit with gently sloping sides. Probable post pipe in centre.	0.70m diameter. Post pipe 0.25m diameter.			
017	Deposit	Fill of [016]. Very compact, mid-greyish brown silt with occasional medium sized stones and charcoal flecks.				
018	Deposit	Discrete deposit of medium to large stones that appears to sit in the natural.	1.8m x 0.6m			
019	Deposit	The natural. Deposit of predominantly firm, orange silt with small angular stones. Gravelly and quite grey in places with bands of soft compaction.				
020	Deposit	Probable colluvial deposit of soft brown silt with small to medium stones overlying the natural and all archaeological features except track (021)				
021	Deposit	Trackway of loose stones and gravel, found well below the topsoil.				
022	Cut	Steep-sided ditch with flat to undulating base. Edges parallel in some places, less so in others.	6.5m x 0.48 to 0.80m x 0.26 to 0.10m deep.	028	019; 030	
023	Deposit	Fill of [022]. Friable medium greyish brown silty clay with numerous small sub-angular stones				

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
024	Cut	Curvilinear ditch cut with sharp break at top of slope, steep sloping sides and a wide, shallow, flat base. Same as [101] and [022]? Appears to have truncated probable post hole [034].	15m excavated length x 1.0m x 0.15m deep.		034	
025	Deposit	Fill of [024], Loose brown silt with frequent small angular stones.				
026	Cut	Small, circular post hole with steeply sloping sides and a flattish/slightly concave base	0.22m diameter		019	
027	Deposit	Fill of [026]. Fairly compact dark brown silty loam with very occasional small and medium stones. One flat (split) stone placed at bottom of cut.				
028	Cut	Large, very shallow sub-circular pit. Full extent to the north not known. Appears to be cut from below trackway (021)	c.1.7m E-W x c.0.20m deep		023; 025	
029	Deposit	Fill of [028]. Very loose, friable dark greyish-brown silty loam with fairly frequent medium and large stones. Cut from beneath trackway (021)				Clay pipe stem (discarded)
030	Cut	Together with [032] this is probably the cut of a truncated pit.		022	020	
031	Deposit	Fill of [030]. Very compact dark brown silty loam with small, medium and a noticeable number of large, flat stones (more than the surrounding soils). Very similar to (033).		022		
032	Cut	Together with [030] this is probably the cut of a truncated pit.			020	
033	Deposit	Fill of [032]. Very compact dark brown silty loam with large flat stones. Very similar to (031).				
034	Cut	Small, circular post hole with vertical sides and a flat base. Sealed by (025)			024	
035	Deposit	Fill of [034]. Compact dark brown silt with a few small stones and frequent charcoal.				

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
036	Cut	Sub-circular pit with steep sides and a flattish base.	c.0.50m diameter x 0.32m deep		019	
037	Deposit	Fill of [036]. Compact dark brown clayey silt with chunks of heat-affected stone and very infrequent small stones. Charcoal rich. One large boulder and two medium stones. Produced C14 date of 3337 to 3036 cal. BC.	Av. 0.57m diameter x 0.32m deep.			Sherds of decorated pottery, one pressed into NE side.
038	Cut	Narrow, shallow, linear gully orientated approximately SW-NE. It is very straight and cuts shallow pit [040]. Possible land drain.	0.27m wide X 0.10m deep		019; 040	
039	Deposit	Fill of [038]. Fairly compact light brown clayey silt with infrequent small stones. Much lighter in colour than the fill of shallow pit [040].				
040	Cut	Truncated, sub-circular possible pit with gently sloping sides and a gently rounded base.	0.65m E-W x 0.40m N-S	038	019	
041	Deposit	Fill of [040]. Compact dark brown clayey silt with very infrequent small stones and charcoal pieces. Produced a C14 date of 3329 – 2942 cal. BC.				Chunks of heat-affected stone; decorated pottery; cigar-shaped stone.
042	Cut	Possible circular post hole with vertical sides and a tapered base. Appears to be set within (and not sealed by) the fill of ditch [024]. One large stone pressed into the side may be packing.	0.15m diameter x 0.13m deep.			
043	Deposit	Fill of [042]. Loose brown silt with very small angular stones.			024	
044	Cut	Unclear whether this sub-circular feature is a post hole, a pit or a ditch terminus because it enters the south side of the excavation trench. Sloping sides to half its depth, becoming vertical to the flattish/U-shaped base. It	0.82m x 0.62m x 0.48m deep			

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
		is cut from the natural (019).				
045	Deposit	Fill of [044]. Loose, light, slightly olive brown silt with large quantity of small to medium sub-angular stones. The only cut feature on the site to contain this quantity of stone (c.70%).				
046	Deposit	Amorphously shaped area of dark orangey brown clayey silt with frequent charcoal. Probably natural.	Excavated to c. 0.49m diameter x 0.20m deep.			
047	Deposit	Amorphously shaped spread of intensely reddened and dark brown soil, with very frequent charcoal. No definite edges. Probably natural.				
048	Cut	Slightly curving, NE-SW aligned linear gully/ditch. Only the southern edge was visible; the rest was beneath the north section of the trench. Cut by pit [050] 4.3m from its southern end. Profile unclear.	5.8m x at least 0.16m x at least 0.13m deep	050		
049	Deposit	Fill of [048]. Friable greyish brown silty clay with occasional small sub-angular stones.				
050	Cut	Relatively recent, sub-circular pit with vertical sides and a flat base. Appears to be cut from fairly high up.	0.65m x 0.50m x 0.38m deep		048	Brick dust; slate; mortar; iron nails, Dairy ware
051	Fill	Fill of [050]. Loose brown silt with frequent slate and mortar.				
052	Cut	Shallow oval pit	1.65m x 0.60m x 0.19m deep			
053	Fill	Fill of [052]. Loose grey/brown silt with frequent small to medium flat, angular stones				
054	Cut	Linear cut with a curved terminus. Sharp break of slope with sloping sides to a tapered base. Possible continuation of other linear features on site.	0.36m wide x 0.18m deep			
055	Deposit	Fill of [054]. Loose brown silt with moderate inclusion of pebbles.				

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
056	Cut	Amorphously shaped pit with gently sloping sides and a flat base.	0.87m x 0.49m x 0.10m deep.			
057	Deposit	Fill of [056]. Loose purple/brown silt with moderate inclusion of small stones.				
058	Cut	Curvilinear (sinuous) probable drain, possibly associated with other linear features on the site.	0.4m wide x 0.06m deep			
059	Deposit	Fill of [058]. Loose brown silt with infrequent small stones.				
060	Cut	Large, oval pit with steep sides leading to a tapered base.	1.10m x 0.55m x 0.40m			
061	Deposit	Fill of [060]. Pink/brown silt with frequent small stones and moderate large stones. Fill is very compact at the top and looser at the bottom due to the presence of more stones. Slight indication of heat-affected soil beneath large stone at the base of the fill. Produced a C14 date of 1387 – 1218 cal. BC.				
062	Cut	Circular post hole with a rounded profile.	0.30m diameter x 0.18m deep			
063	Deposit	Fill of [062]. Fairly compact grey brown clayey silt with infrequent small stones. Noticeably different fill in comparison with other features in this possible group.				
064	Cut	Elongated oval possible post hole; may be two intercutting post holes. Steep sides tapering to a rounded base. Appears to be part of a possible arc of post holes.	0.40m x 0.13m x 0.16m deep			
065	Deposit	Fill of [064]. Varying compaction, brown silt with frequent small angular stones.				
066	Cut	Oval post hole with steep sides tapering to a rounded base. Appears to be part of a possible arc of post holes.	0.27m x 0.20m x 0.16m deep		019	

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
067	Deposit	Fill of [066]. Loose brown silt with small stones and charcoal.				
068	Cut	Circular post hole with steep sides tapering to a rounded base.	0.20m diameter x 0.19m deep			
069	Deposit	Fill of [068]. Loose brown silt.				
070	Cut	Circular post hole with gradually sloping sides and a tapered, round base. Appears to be part of an arc of post holes	0.32m diameter x 0.14m deep			
071	Deposit	Fill of [070]. Loose brown silt.				
072	Cut	Oval pit. U-shaped profile with a flattened base. One of a group of intercutting features	0.45m x 0.28m x c.0.28m deep	074 & 076?	019; 078	
073	Deposit	Fill of [072]. Friable mid-brown clayey silt with small stones and charcoal fragments.				
074	Cut	Sub-circular pit with steep sides and a flat base. One of a group of intercutting features.	0.69m x 0.58m x 0.28m deep		072 & 076?	
075	Deposit	Fill of [074]. Friable mid-brown clayey silt with small stones and charcoal fragments.				
076	Cut	N-S aligned linear gully. One of a group of intercutting features. Shallow, curved profile with a stony base.	c.1.0m x 0.30m x 0.08m deep	074? 082	072?	
077	Deposit	Fill of [076]. Friable mid-brown clayey silt with small stones and charcoal fragments.				
078	Cut	Shallow, circular pit/post hole. U-shaped, with a rounded flattened base. One of a group of intercutting features.	0.40m x 0.33m x 0.10m deep	072		
079	Deposit	Fill of [078]. Friable mid-brown clayey silt with small stones.				
080	Cut	Small, circular, flat-bottomed post hole.	0.18m diameter x 0.08m deep			
081	Deposit	Fill of [080]. Fairly compact reddish brown silt with infrequent small and medium stones.				
082	Cut	Circular pit with steep sides and a flattened rounded base.	0.50m diameter x 0.15m deep		076	

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
083	Deposit	Fill of [082]. Fairly compact to loose dark reddish brown silt with infrequent small and medium stones and charcoal. Produced a C14 date of 1195 – 1020 cal. BC.				
084	Cut	Steep sided, flat-bottomed oval pit. North side is in trench section.	0.50m x 0.49m x 0.20m deep			
085	Deposit	Fill of [084]. Friable medium brown clay silt with occasional small to medium stones and charcoal fragments.				
086	Cut	Oval pit with steep sides and a flat base.	0.45m x 0.34m x 0.11m deep			
087	Deposit	Fill of [086]. Loose grey brown silt with frequent small stones.				
088	Cut	Small, lozenge shaped post hole with steep sides and a rounded base.	0.37m x 0.22m x 0.12m deep			
089	Deposit	Fill of [088]. Friable mid brown clayey silt with very infrequent small stones. Fill identical to that of [087].				
090	Cut	Shallow, circular pit with a flat base.	0.40m diameter x 0.10m deep			
091	Deposit	Fill of [090]. Compact dark pinkish brown clayey silt with occasional medium sized stones and one piece of charcoal.				
092	Cut	Sub-circular pit with steep sides and a gradually sloping base with a flat bottom.	0.68m diameter x 0.25m deep	094?		
093	Deposit	Fill of [092]. Loose brown silt with frequent large angular and rounded stones, and charcoal.				
094	Cut	NW-SE aligned linear, gully-like feature with gradually sloping sides and a flat bottom.	1.20m x 0.60m x 0.12m deep		092?	
095	Deposit	Fill of [094]. Loose brown silt with frequent small stones, moderate large stones and lots of charcoal.				
096	Cut	Steep sided oval post hole with a U-shaped base.	0.32m x 0.24m x 0.16m deep			

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
097	Deposit	Fill of [096]. Friable mid brown/purple clay silt with occasional small stones and charcoal fragments.				
098	Cut	Possibly a former post hole but the sides have been heavily truncated by roots.	0.60m x 0.40m x 0.15m deep			
099	Deposit	Fill of [098]. Friable grey brown silty clay with occasional small stones				
100	Deposit	Turf & topsoil				
501	Cut	Small circular post hole containing post pipe	0.40m diameter x 0.30m deep			
502	Deposit	Fill of [501]. Loose dark greyish brown clayey silt. Medium sized stones used as post packing.				
503	Cut	Large, shallow, circular pit with a slightly concave base.	1.02m x 0.80m x 0.12m deep.			
504	Deposit	Fill of [503]. Very friable dark brown silt with very frequent charcoal and small, shattered, heat-affected stone. Probably not burnt in-situ as surrounding area shows no sign of burning. Produced a C14 date of 3331 – 3025 cal. BC.				
505	Cut	Oval post hole with a conical profile.	0.43m x 0.30m x 0.27m deep			
506	Deposit	Fill of [505]. Friable medium grey/brown clay silt with small/medium sub-angular stones and no charcoal.				
507	Cut	Oval post hole with steep sides and a concave base.	0.31m x 0.22m x 0.12m deep.			
508	Deposit	Fill of [507]. Loose dark brown silt with frequent sub-angular stones and no charcoal.				
509	Cut	Oval post hole with near vertical sides and a slightly rounded flat base.	0.36m x 0.29mx x0.10m deep			
510	Deposit	Fill of [509]. Compact dark brown silt with moderate small stones. Evidence for heat – reddish colours.				
511	Cut	Circular stake hole with near vertical sides and a rounded base.	0.18m diameter x 0.15m deep			

Context Number	Cut or Deposit	Description	Dimensions	Cut by	Cuts	Finds
512	Deposit	Fill of [511]. Loose brown silt with frequent charcoal flecks.				
513	Cut	Oval pit with steep sides and a flattish base. Pit is aligned with pit [060], 3-4m to the south.	1.02m x 0.70m x 0.35m deep			
514	Deposit	Fill of [513]. Friable medium brown silt with charcoal present near the bottom. Stonier near the bottom.				

APPENDIX V: RADIOCARBON DATES

Scottish Universities Environmental Research Centre
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RADIOCARBON DATING CERTIFICATE
20 November 2018

Laboratory Code	SUERC-82875 (GU49333)
Submitter	Fran Murphy Dyfed Archaeological Trust Ltd Corner House 6 Carmarthen Street Llandeilo, Carms SA19 6AE
Site Reference	Plas_Gogerddan_111237
Context Reference	9
Sample Reference	104
Material	nut shell fragments : Corylus avellana L. (hazel)
$\delta^{13}C$ relative to VPDB	-24.5 ‰
Radiocarbon Age BP	4483 ± 22

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, 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.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by :

Checked and signed off by :

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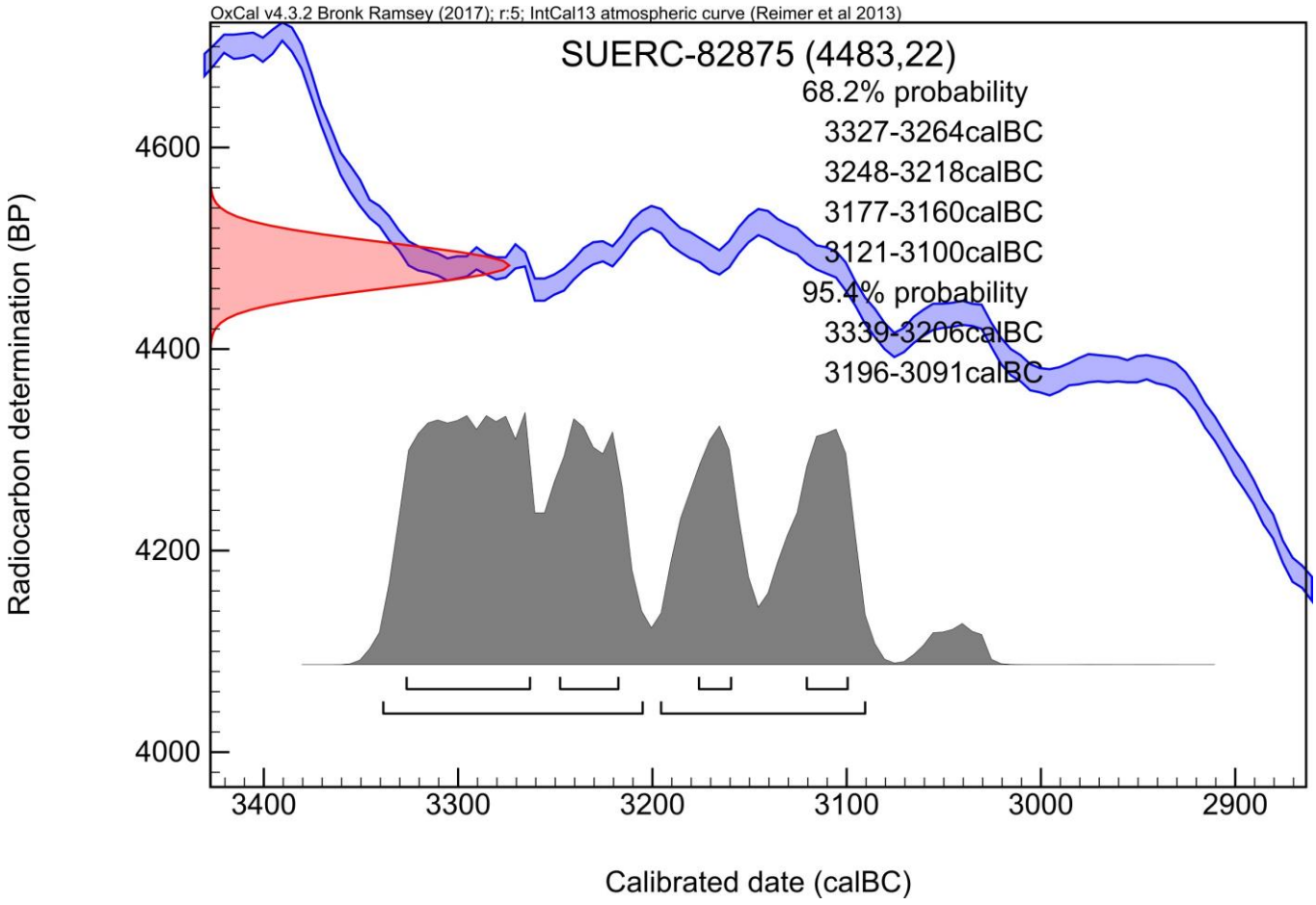

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

Please contact the laboratory if you wish to discuss this further.

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RADIOCARBON DATING CERTIFICATE

20 November 2018

Laboratory Code	SUERC-82879 (GU49334)
Submitter	Fran Murphy Dyfed Archaeological Trust Ltd Corner House 6 Carmarthen Street Llandeilo, Carms SA19 6AE
Site Reference	Plas_Gogerddan_111237
Context Reference	37
Sample Reference	111
Material	nut shell fragments : Corylus avellana L. (hazel)
$\delta^{13}C$ relative to VPDB	-24.8 ‰
Radiocarbon Age BP	4477 ± 20

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, 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.

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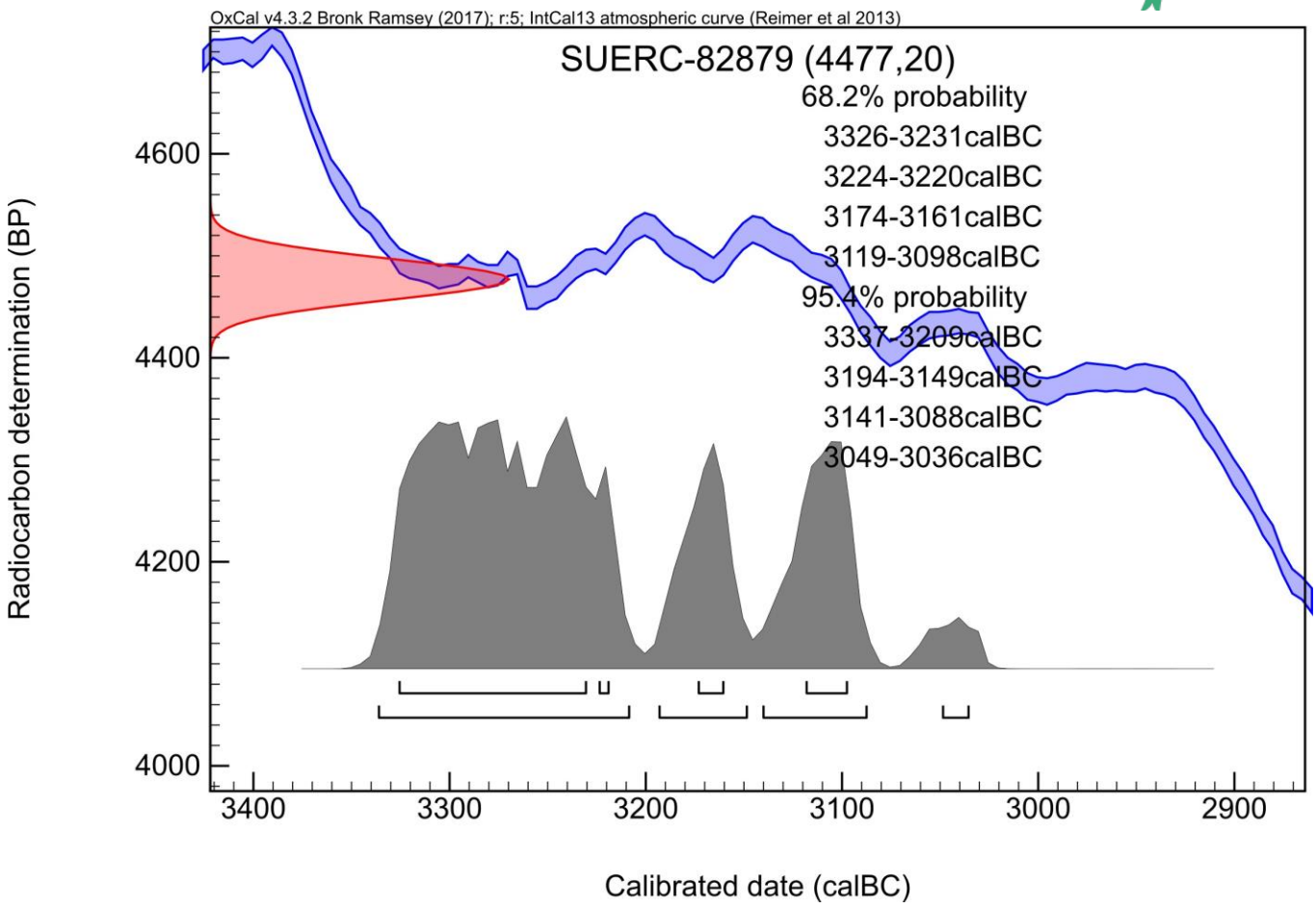

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The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

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RADIOCARBON DATING CERTIFICATE

20 November 2018

Laboratory Code	SUERC-82880 (GU49335)
Submitter	Fran Murphy Dyfed Archaeological Trust Ltd Corner House 6 Carmarthen Street Llandeilo, Carms SA19 6AE
Site Reference	Plas_Gogerddan_111237
Context Reference	41
Sample Reference	112
Material	nut shell fragments : Corylus avellana L. (hazel)
$\delta^{13}C$ relative to VPDB	-26.3 ‰
Radiocarbon Age BP	4441 ± 25

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, 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.

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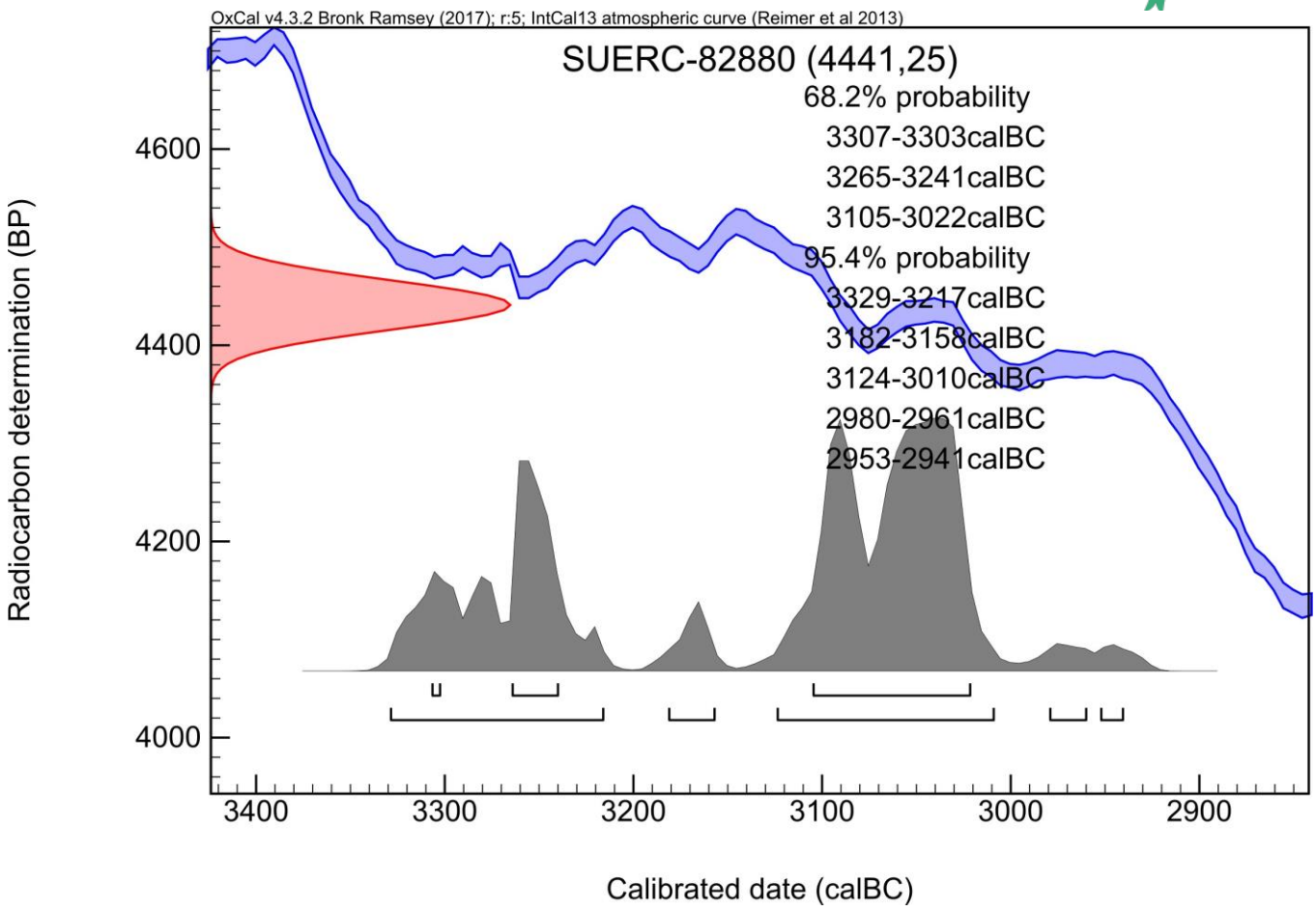

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

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RADIOCARBON DATING CERTIFICATE

20 November 2018

Laboratory Code	SUERC-82881 (GU49336)
Submitter	Fran Murphy Dyfed Archaeological Trust Ltd Corner House 6 Carmarthen Street Llandeilo, Carms SA19 6AE
Site Reference	Plas_Gogerddan_111237
Context Reference	61
Sample Reference	117
Material	charcoal : Corylus avellana L. (hazel)
$\delta^{13}C$ relative to VPDB	-24.5 ‰
Radiocarbon Age BP	3033 ± 21

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, 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.

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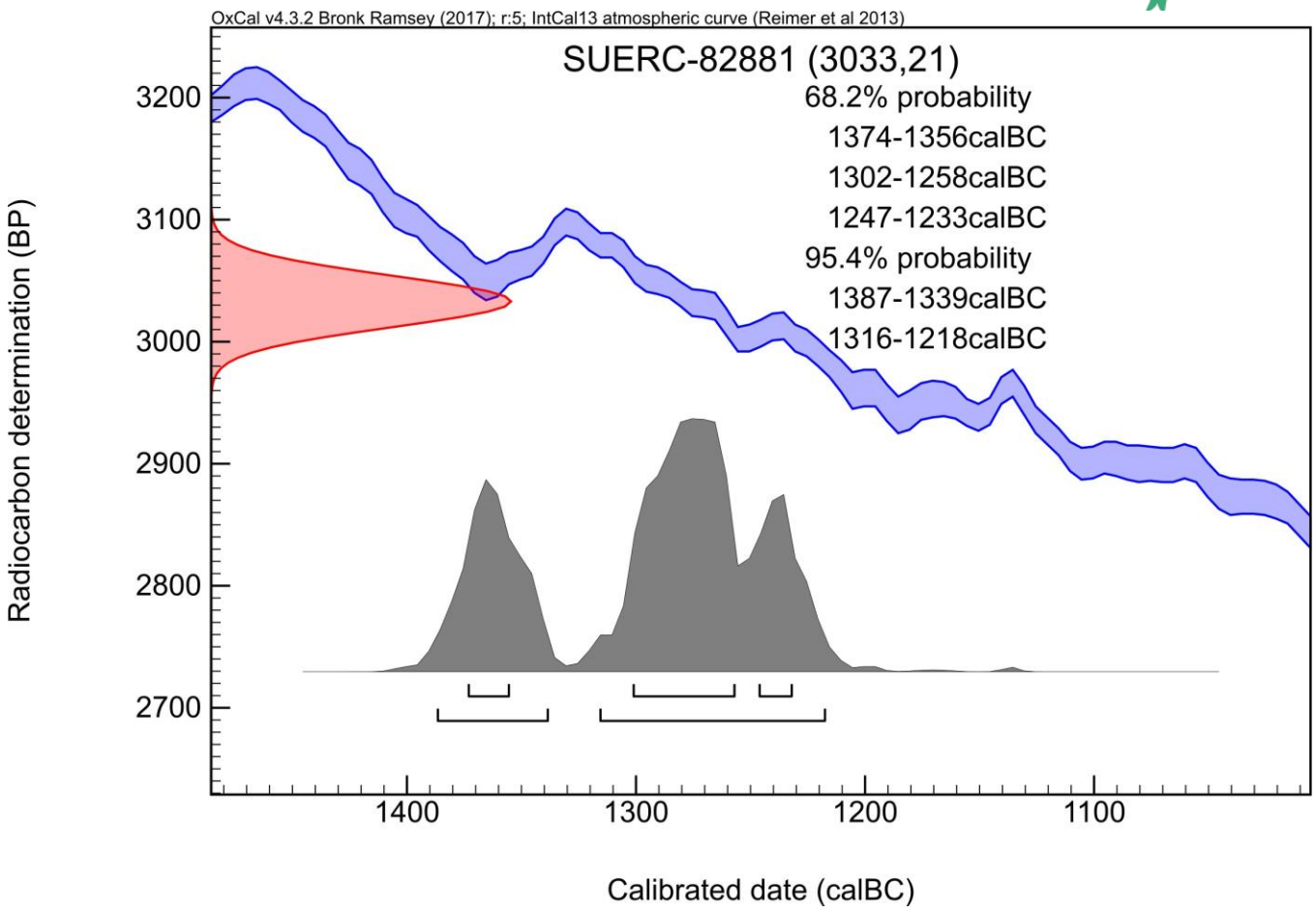

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

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RADIOCARBON DATING CERTIFICATE

20 November 2018

Laboratory Code	SUERC-82882 (GU49337)
Submitter	Fran Murphy Dyfed Archaeological Trust Ltd Corner House 6 Carmarthen Street Llandeilo, Carms SA19 6AE
Site Reference	Plas_Gogerddan_111237
Context Reference	83
Sample Reference	127
Material	charcoal : Corylus avellana L. (hazel)
$\delta^{13}C$ relative to VPDB	-26.4 ‰
Radiocarbon Age BP	2912 ± 20

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, 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.

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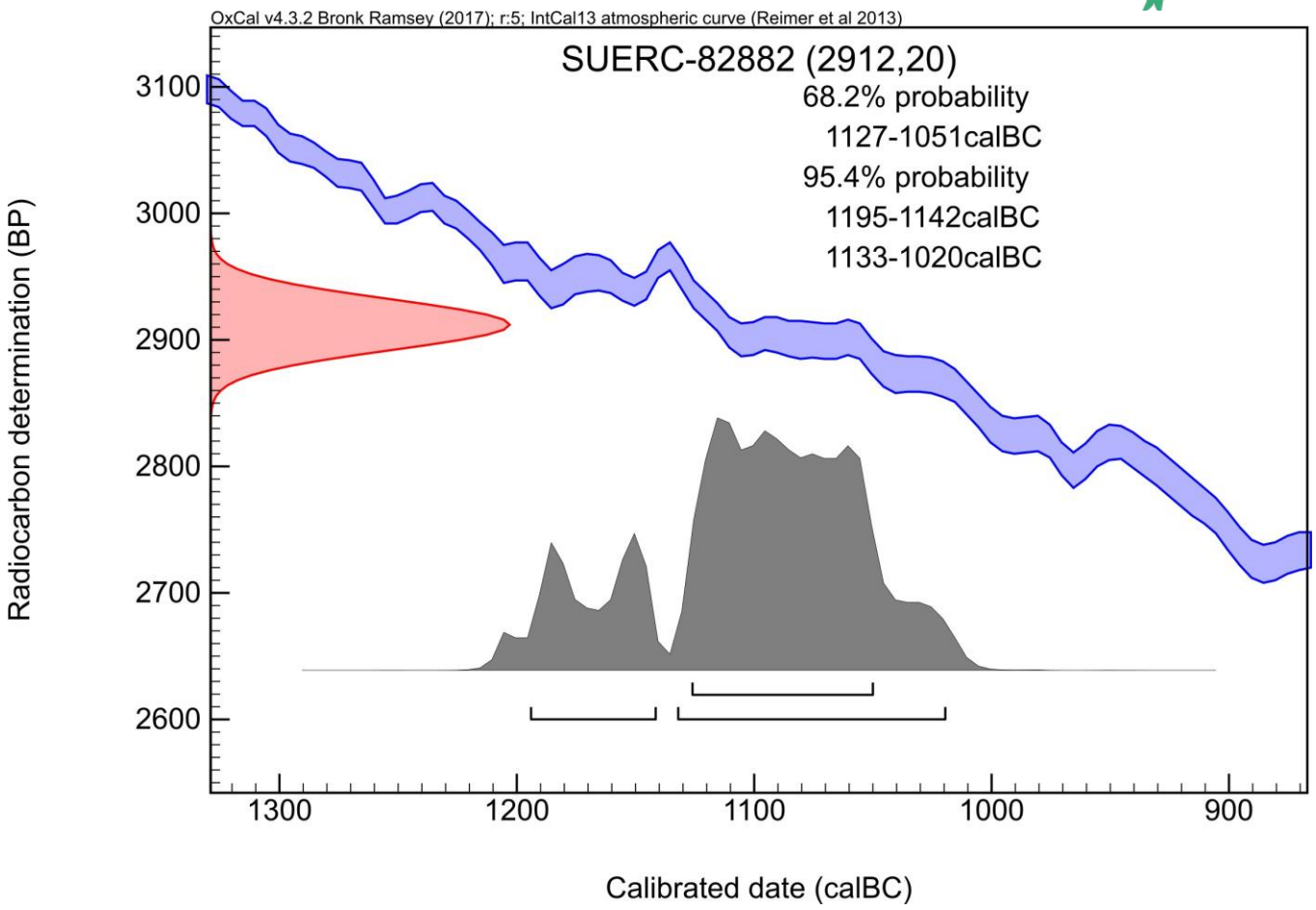

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve.†

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RADIOCARBON DATING CERTIFICATE

20 November 2018

Laboratory Code	SUERC-82883 (GU49338)
Submitter	Fran Murphy Dyfed Archaeological Trust Ltd Corner House 6 Carmarthen Street Llandeilo, Carms SA19 6AE
Site Reference	Plas_Gogerddan_111237
Context Reference	504
Sample Reference	133
Material	charcoal : Corylus avellana L. (hazel)
$\delta^{13}C$ relative to VPDB	-26.4 ‰
Radiocarbon Age BP	4459 ± 21

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, 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.

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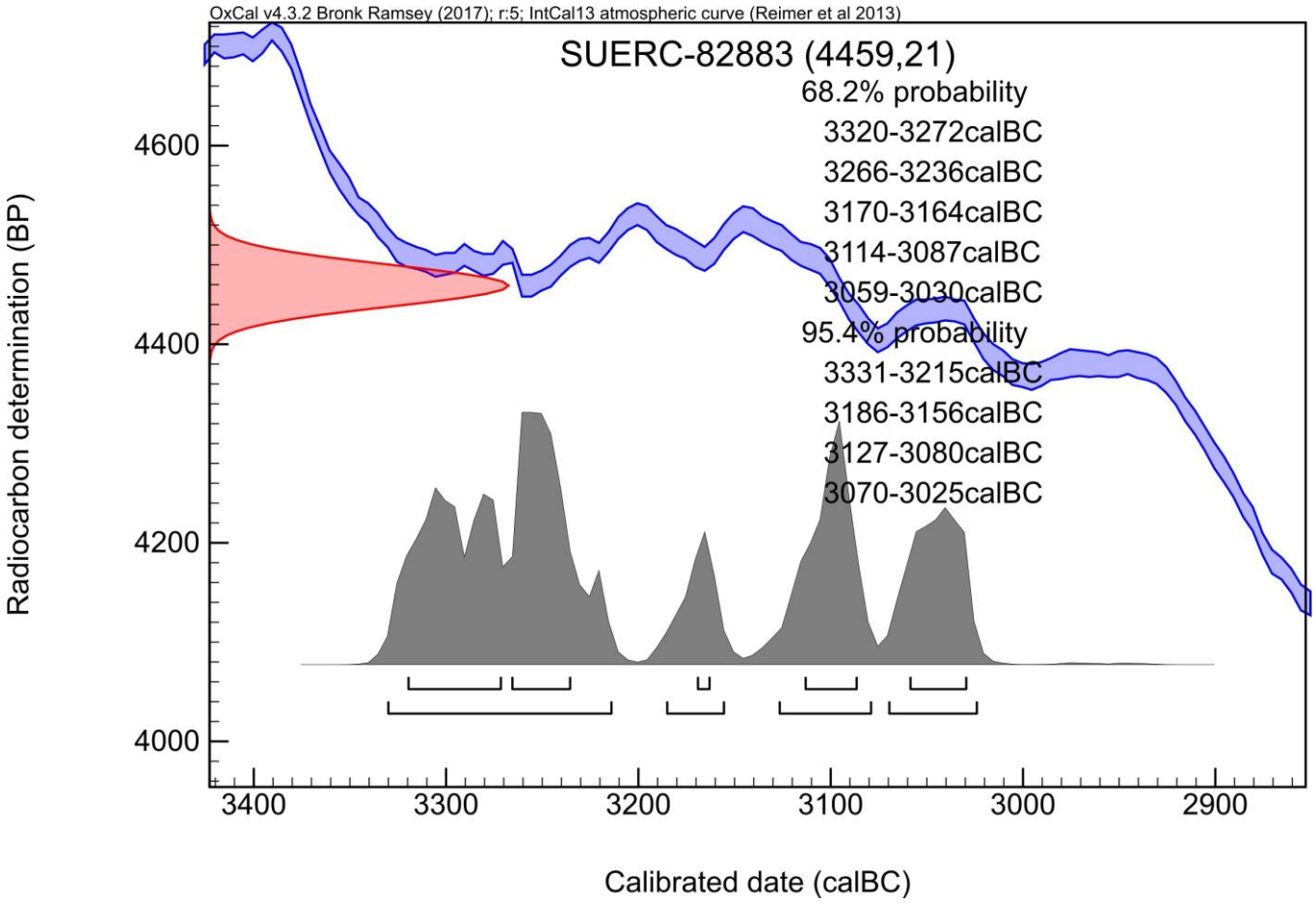


The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric

calibration curve.† Please contact the laboratory if you wish to discuss this further.

C1010 ROAD IMPROVEMENT, PENRHYNCOCH, CEREDIGION: ARCHAEOLOGICAL STRIP, MAP AND RECORD 2018

RHIF YR ADRODDIAD / REPORT NO. 2018-04

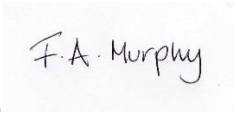
RHIF Y PROSIECT / PROJECT RECORD NO. 111237

Rhagfyr 2018

December 2018

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

Swydd / Position: Archaeologist

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

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