GREENLINK INTERC0NNECTOR SCHEME

ARCHAEOLOGICAL MITIGATION

Planning Applications 20/0041/PA and 20/0044/PA

Prepared by Dyfed Archaeological Services for Greenlink Ltd

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Dyfed Archaeology

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Between 2021 and 2023, Dyfed Archaeological Services undertook a suite of archaeological works between Hundlestone and Rhoscrowther on the Angle Peninsula in south Pembrokeshire for the Greenlink Interconnector Scheme. The work was commissioned by Sumitomo Ltd on behalf of Greenlink Ltd. As part of this mitigation several areas were subjected to an archaeological strip, map and record exercise prior to the main development works. This report details the results of this work.

Archaeological remains were identified at the far western part of the scheme in the area surrounding the Devil's Quoit, a Neolithic burial chamber and scheduled monument (SM PE020). The identified remains included a small recumbent stone, now recumbent, erected circa 3630 and 3377 cal. BC (95.4% probability) and sub-rectangular timber framed early Bronze Age house built circa 2100 BC. Both sites produced a small but important assemblage of finds and both sites add significantly to our understanding of the Neolithic and Bronze Age periods in this area.

CRYNODEB GWEITHREDOL

Rhwng 2021 a 2023, ymgymerodd Gwasanaethau Archaeolegol Dyfed â chyfres o waith archaeolegol rhwng Hundlestone a Rhoscrowther ar Phenrhyn Angle yn ne Sir Benfro ar gyfer Cynllun Cydgysylltydd Greenlink. Comisiynwyd y gwaith gan Sumitomo Cyf ar ran Greenlink Cyf. Fel rhan o'r gwaith hwn ymgymerwyd ag ymarfer stripio, mapio a chofnodi archaeolegol a brîff gwylio archaeolegol. Mae'r adroddiad hwn yn manylu ar ganlyniadau'r gwaith hwn.

*Canfuwyd olion archaeolegol yn rhan orllewinol bellaf y cynllun yn yr ardal o amgylch Devil's Quoit, siambr gladdu Neolithig a heneb gofrestredig (SM PE020). Roedd yr olion a nodwyd yn cynnwys maen hir bach, sydd bellach yn gorwedd, a godwyd tua 3630 a 3377 cal. CC (tebygolrwydd o 95.4%) a thy ffrâm bren is-hirsgwar o'r Oes Efydd gynnar a adeiladwyd tua 2100 CC. Cynhyrchodd y ddau safle gasgliad bach ond pwysig o ddarganfyddiadau ac mae'r ddau safle yn ychwanegu'n sylweddol at ein dealltwriaeth o'r cyfnod Neolithig a'r Oes Efydd yn yr ardal hon***.***

GREENLINK INTERCONNECTOR SCHEME

ARCHAEOLOGICAL MITIGATION

1. INTRODUCTION

1.1 Project Background

1.1.1 Dyfed Archaeological Services, a contracting arm of Heneb – the Trust for Welsh Archaeology, was commissioned by Sumitomo Ltd on behalf of Greenlink Ltd to undertake a suite of archaeological works in association with the Greenlink Interconnector Cable scheme.

1.1.2 'The Greenlink' is a subsea and underground electricity interconnector designed to link the power markets in Ireland and Great Britain together. The scheme will run between the existing Pembroke Power station in south Pembrokeshire in Wales and Great Island in Eastern Ireland.

1.1.3 This report pertains to the onshore cable on the Welsh part of the scheme between Hundlestone and Rhoscrowther on the Angle Peninsula in south Pembrokeshire.

1.1.4 The site has been previously subject to the following archaeological investigations:

- an historic environment desk-based assessment (Meek 2018),
- an environmental statement (Arup 2018),
- a geophysical survey (Davies 2019),
- an archaeological watching brief (Jenkins 2021).

1.1.5 Following the geophysical survey and trial trench evaluation the archaeological advisors to the planning authority, Heneb - Development Management (Heneb-DM), requested further archaeological mitigation along the cable route.

1.1.6 Prior to commencement of works, Dyfed Archaeological Services produced a Written Scheme of Investigation (WSI) detailing a process of mitigation to be undertaken ahead of development. This report represents the fulfilment of that WSI which is included in APPENDIX I.

1.1.7 The work described in this report includes an archaeological strip, map and record exercise in the three areas determined to have a high archaeological potential (the Devil's Quoit Area and Areas 8 and 14), and an archaeological watching brief on the remainder of the interconnector scheme. After consultation with Heneb-DM, the archaeological watching brief undertaken on behalf of Sumitomo Ltd along the western part of the scheme was abandoned as it was thought unlikely to yield significant archaeological remains or deposits. The archaeological watching brief undertaken on the eastern part of the scheme on behalf of Siemens Ltd is detailed in a separate report.

1.1.8 The archaeological remains identified during this project were centred around the Devil's Quoit (PRN 3071; SM PE020) a Neolithic chambered tomb (Photo 1). They included a small recumbent stone thought to have been erected between 3630 and 3377 cal. BC (95.4% probability) and sub-rectangular timber framed early Bronze Age house built circa 2100 BC. Both included a small but important assemblage of finds and add significantly to our understanding of the Neolithic period in this area.

1.1.9 All works undertaken were in accordance with the Chartered Institute for Archaeologists' Chartered Institute for Archaeologists (CIfA) Standard and Guidance (CIfA 2014) of which the Trust for Welsh archaeology is a registered organisation.

1.2 Scope of the Project

1.2.1 The overall scope of the project was the implementation of a programme of archaeological strip, map and record exercise and an intermittent watching brief during the works associated with the Welsh onshore component of the Greenlink Interconnector Scheme. The results of the archaeological strip, map and record exercise and archaeological watching brief undertaken at the site in advance of development were to be included in a detailed archaeological report. An archive of the results of all stages of the archaeological works will be prepared.

1.3 Report Outline

1.3.1 This report provides a summary and discussion of the archaeological investigations and their results.

1.4 Abbreviations

- All sites recorded on the regional Historic Environment Record (**HER**) are identified by their Primary Reference Number (**PRN**) and located by their National Grid Reference (**NGR**). The HER is held and managed by the Trust for Welsh Archaeology – Dyfed Region, Corner House, Carmarthen Street, Llandeilo SA19 6AE.
- 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 Reference Number (**NPRN**).
- Altitude is expressed to a height above Ordnance Datum (aOD).
- References to cartographic, 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)	AD 43 – *c.* AD 410	**Historic**
Post-Roman / early medieval	*c.* AD 410 – AD 1086	
Medieval	1086 – 1536	
Post-medieval*	1536 – 1750	
Industrial	1750 – 1899	
Modern	20th century onwards	

*The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust

Photo 1: View north-northeast showing Devil's Quoit (PRN 3071; SM PE020) with oil refinery behind

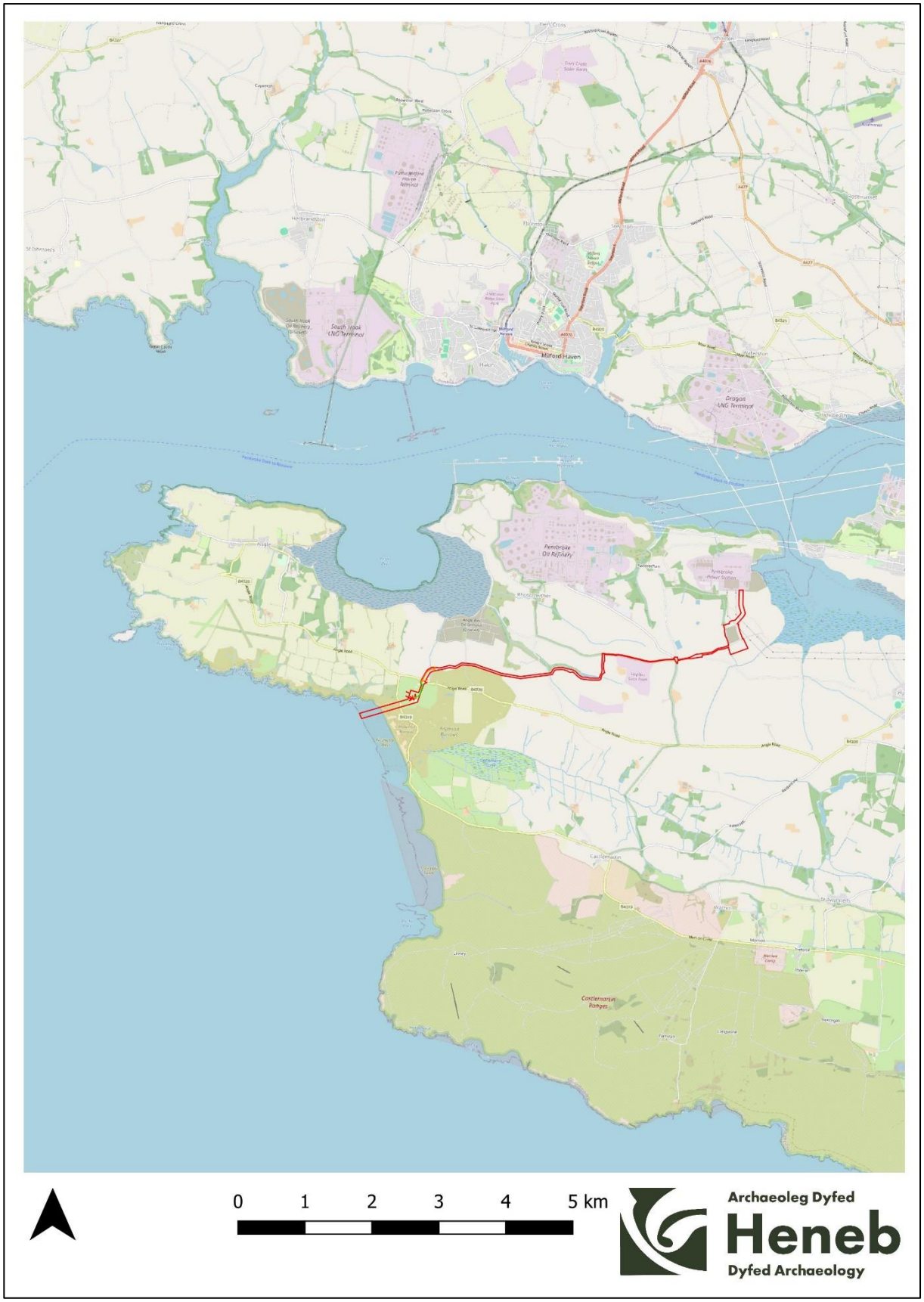

Figure 1: Location map. Showing extent (red) of the Welsh terrestrial part of the Greenlink interconnector Scheme.

Background mapping copyright: Open Street Map 2024.

2. SITE LOCATION AND ARCHAEOLOGICAL BACKGROUND

2.1 Location, Topography and Geology

2.1.1 The Welsh terrestrial part of the Greenlink Interconnector project covers a roughly 6.3km strip through the southwestern part of Pembrokeshire from the landfall site at Freshwater West through to the Pembroke Substation on the Angle peninsula (roughly NGR SM 8783 0039 to SM 9350 0239) (Figure 1).

2.1.2 The site lies within the jurisdiction of both Pembrokeshire County Council and Pembrokeshire Coast National Park Authority with the western part of the scheme falling within the Pembrokeshire Coast National Park. Heneb - Development Management serve as advisors to both and have consulted on the project.

2.1.3 The proposed Greenlink Interconnector Project crosses a number of different geological bedrock types, all of which are sedimentary, including Ludlow Rocks Sandstone, Milford Haven Group interbedded argillaceous rocks and sandstones, Ridgeway Conglomerate Formation, Skrinkle Sandstone Formation, Avon Group limestone and mudstone, and Black Rock Subgroup and Gully Oolite Formation - Limestone (British Geological Survey online).

2.1.4 Superficial geological deposits within the area include Tidal Flat Deposits of sand, silt and clay on the northern edge and Blown Sand (dunes) across the majority of the western and southwestern parts of the scheme (British Geological Survey online).

2.2 Archaeological Potential

2.2.1 A detailed assessment of the archaeological potential and historical background of the development site was undertaken in a desk – based assessment (Meek 2018), a summary of which as follows:

> *The proposed development site lies within an area of archaeological significance and potential, with evidence of known human activity within the site dating back to the Mesolithic period. The majority of assets are from the post-medieval and modern periods, associated with the settlement, industry, agriculture and defence sites. The settlement pattern of the area is likely to have been established during the medieval period, although some farms may have earlier origins.*
>
> *The potential for remains of Palaeolithic date is considered to be negligible, based on the fact that there are no known sites within 1km of the development area and that any remains of that date are unlikely to have survived glaciation.*
>
> *The potential for Mesolithic archaeological remains is considered high due to the amount of flint scatters recorded within the study area around the Greenlink Interconnector Project.*
>
> *The potential for Neolithic archaeological remains is considered very high due to the amount of flint scatters recorded within the study area and the presence of the Devil's Quoit burial chamber in the western part of the proposed development site.*
>
> *The potential for Bronze Age remains is also considered to be high, due to the number of flint finds recovered from the area and the presence of the known round barrow burial mounds at Kilpaison Burrows, Wallaston Green and the Corston Beacon.*

The potential for Iron Age sites to be present is considered to be medium. Most Iron Age archaeology is centred on settlement sites such as the promontory and other forts recorded within the 2km and 1km buffer zones around the site. There are no known Iron Age enclosures within the Greenlink Interconnector Project area, although there is a low potential for unenclosed settlement to be present.

The potential for Roman remains is thought to be low because there are very few Roman sites within the buffer zones.

Early-medieval archaeological sites are scarce in the region and centred on the known church sites at Pwllcrochan and Rhoscrowther. The potential for discovery of remains of this date within the development site is considered to be low to negligible.

There is considered to be a medium to high potential for archaeological remains of medieval date within the proposed development area. Settlement remains would likely be centred on the settlements at Angle, Pwllcrochan, Rhoscrowther and Hundleton or in the areas of the existing farms around the development area. The Greenlink Interconnector Project area runs through land which has been used for agriculture since the medieval period and as such former field boundaries and ridge and furrow is likely to be present.

There is a high potential for remains of post-medieval date to be present within the area, although as with medieval archaeology, it is most likely to be associated with agricultural practices, with settlement focussed on the existing settlement and farm layout.

2.3 Previous Archaeological Works

2.3.1 The development area has been subject to a number of archaeological investigations prior to that detailed in this report.

2.3.2 Early work included the historic-environment desk-based assessment (Meek 2018) referenced in 2.2.1 and a chapter on the archaeology and cultural heritage in an environmental impact assessment (Arup 2018).

2.3.3 Following the initial desk-based assessments, a geophysical survey (magnetometry) was undertaken by Sumo Ltd in 2019 in all areas suitable for such an approach (Davies 2019). The resulting report was limited in its interpretation but did identify several features of possible archaeological origin.

2.3.4 The anomalies identified in the 2019 geophysical survey (Davies 2019) were then targeted in an archaeological trial trench evaluation undertaken by Dyfed Archaeological Services (Wilson and Enright 2019). A summary of the findings is as follows:

The trial trench evaluation revealed a sequence of natural and anthropogenic deposits. A number of the anomalies identified by the geophysical survey were revealed in the trenches, some of which proved to be prehistoric in origin.

The prehistoric features included the remains of two Bronze Age barrow mounds, one of which contained the rim of an inverted pottery vessel whose fabric suggests a Bronze Age collared urn c.1700-1500 BC; typically associated with human burials.

2.3.5 Finally, an archaeological watching brief was undertaken by Dyfed Archaeological Services during the geotechnical works associated with the project in 2021 (Jenkins 2021). No archaeological finds, features or deposits were identified.

2.4 The Neolithic and the Devil's Quoit

2.4.1 The start of the Neolithic in the centuries before 4000 BC is today recognised as a time of great social and economic change. It marks the introduction of farming and the manipulation of the landscape, as well as the adoptions of new identities, beliefs, ideas and practices.

2.4.2 The mechanism of this change is still disputed, however recent ancient DNA (aDNA) studies indicate that the introduction of new genes, and by extension people, into the British Isles was at least partially responsible, with acculturation and the gradual diffusion of ideas likely playing a key role (Thomas 2013, Darvill and Wainwright 2016).

2.4.3 One element of these new practices, beliefs and traditions was the construction of megalithic tombs and structures which spread across much of Atlantic northwest Europe during this time. With more than 80 examples, Pembrokeshire has amongst the most in the British Isles (Darvill and Wainwright 2016).

2.4.4 The Devil's Quoit (Photo 1) is a dolmen, almost certainly the earliest form of megalithic tomb found in West Wales, dating predominantly to the first half of the 4th millennium BC (Whittle 2004). At their most simple, these single-chambered tombs can be defined as a large capstone, usually taken from a pit below and suspended in the air by smaller elongated uprights (Whittle 2004). Pembrokeshire has amongst the most dolmens in the British Isles, the majority being found in the north of the county including type sites such as Pentre Ifan (Grimes 1949), Carreg Samson (Lynch 1975) and Carreg Coetan Arthur (Rees 2012). Although well known, these monuments are poorly understood due to their temporal range being so early and often being the target of antiquarian investigations. Their function and operation is still hotly debated, with few examples of human remains dating to their construction ever found. It is now thought that rather than being tombs in the modern sense, these structures were more symbolic; meeting places or markers in the landscape (Darvill and Wainwright 2016). More recent excavations have also demonstrated that these early megalithic structures often serve as a focus of activity for the wider landscape well beyond the initial use of the area surrounding them, becoming a 'persistent place', sometimes used for millennia after their construction (Corcoran 1972).

2.4.5 Good evidence of settlement in the Neolithic is particularly rare and hard to identify. Consequently, the presence of settlement is often inferred by the diagnostic surface scatters of flint and pottery, of which more than one hundred examples are known in Pembrokeshire (HER-Dyfed 2024). Where archaeological remains are present, settlement can be broken down into several types including open sites, walled enclosures, causewayed camps and cave sites (Darvill and Wainwright 2016). A good example of a Neolithic settlement is Clegyr Boia near St Davids which includes two confirmed Neolithic houses, a midden and a firepit (Williams 1953). It is thought of as one of the best-preserved settlements in Wales, likely because of its later reoccupation in the Iron Age protecting the Neolithic remains. The houses here were sub-rectangular and timber framed, one measuring 6.7m x 3m (House 1) and the second (House 2) measuring 4.6 x3m. The assemblage of both pottery and stone from this site was substantial, with the pottery mostly being of the carinated bowl tradition indicating a date in the early fourth millennium BC.

2.4.6 The archaeological record changes significantly in the later Neolithic (3400-2500BC), representing big changes in society, beliefs, and traditions which were mostly influenced by new connections to the south and east (Baillie 1999). In West Wales, megalithic tombs are abandoned and, in some cases,

blocked up, giving way to new forms of ceremonial monuments such as henges, stone circles and standing stones (Darvill and Wainwright 2016). This change is also seen in the material culture with new forms of pottery such as Grooved Ware emerging and some lithics such as axes becoming perforated (Gibson 1995). Evidence of settlement remains scarce, with no good direct proof ever identified in Pembrokeshire. The best evidence of settlement from this time is at Stackpole Warren (Site A) with the later Neolithic occupation represented by a soil horizon and a possible post built round structure (Benson et al 1990). Across wider Wales and Britain we see a more mixed picture with both square rounded and round houses which are mostly smaller and more suitable for housing immediate family groups, often with a central hearth located alone in a landscape as individual farmsteads (Burrow 2020).

2.5 The Earliest Bronze Age (The Beaker culture)

2.5.1 The early Bronze Age (2500-1600 BC) marks another clear moment of change in the archaeological record (Darvill and Wainwright 2016). A major factor of this change is climate, with a period where it was significantly warmer and dryer. The climactic changes coincide with significant forest clearance and much more extensive agriculturalism, particularly in upland areas which become more suitable for farming.

2.5.2 This period also sees the introduction of new technologies and materials, although stone is still highly valued (Needham 2020). Copper, gold, and later on, bronze, allow for new forms of tools such as daggers, swords, palstaves and richly decorated personal ornaments, all initially mimicking forms of stone before evolving into their own more elaborate styles. No doubt, the fact that southwest Wales is rich in ores of both gold and copper would have impacted the communities of the time significantly.

2.5.3 Perhaps the most fundamental change during this period is the introduction of a distinctive new set of traditions in the years surrounding 2500 BC. Known as the 'Beaker period', it was likely caused by greater levels of migration as well as the diffusion of ideas with evidence suggesting that people are much more mobile during this period both within the British Ilses and abroad (Parker-Pearson et al 2016). As well as its bronze, copper and gold artefacts, the Beaker period is most famous for its distinctive 'Beakers'; well-formed decorated pottery vessels thought mostly to be used for drink, but also appearing important in identifying membership of a cultural group, partly with their inclusion within burial rites of the time (Needham 2005).

2.5.4 Ceremonial monuments during this period seem to build on what had gone before, often enhancing and elaborating upon older ceremonial landscapes and monuments of the Neolithic (Darvill and Wainwright 2016). Most ceremonial monuments during this period involve the erection of stones or posts in circles, pairs or individually, often forming complexes of monuments spread across the landscape. We also see the proliferation of individual burials, both within barrows (burial mounds) and in different forms of flat cemetery (Cook 2006). These forms of burial include both cremations and inhumations, all of which often exhibit evidence of hierarchy both in their placement and the inclusion of grave goods.

2.5.5 Settlement across the British Ilses during this period remains scarce. It is mostly thought to involve small-scale farmsteads spread sparsely across the landscape which are notoriously difficult to detect archaeologically (Parker-Pearson et al 2016). Pembrokeshire has one good example of a well-preserved settlement, again at Stackpole Warren (site A) in which one if not

two well preserved and well-built roundhouses dating to this period were identified (Benson et al 1990).

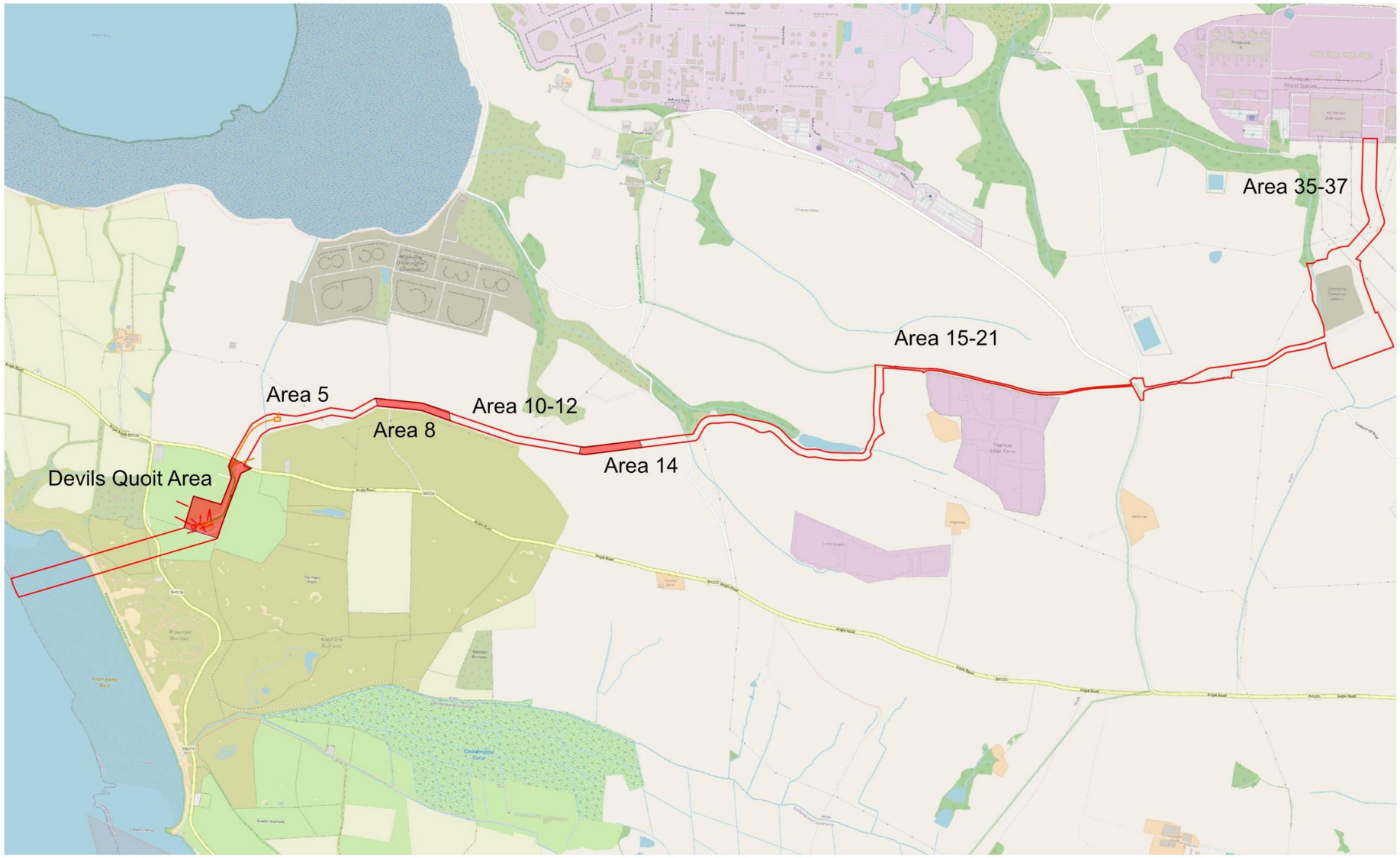

Figure 2: Defined areas of archaeological mitigation: strip, map and record exercise (shaded red) and archaeological watching brief (outlined red).

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Figure 3: Showing extract of geophysical survey at the Devil's Quoit area (Davies 2019). Circular anomalies outlined in red.

3 AIMS AND METHODOLOGY

3.1 The WSI (Appendix 1) which was approved by Heneb-DM, the archaeological advisors to both Pembrokeshire County Council and Pembrokeshire Coast National Park (under whose jurisdiction the scheme falls), considered the findings of the archaeological evaluation undertaken by the Dyfed Archaeological Trust in 2020 before recommending eight areas of further archaeological mitigation along the proposed cable route:

- **Devil's Quoit Area:** Archaeological strip, map and record exercise
- **Area 8:** Archaeological strip, map and record exercise
- **Area 10 – 12:** Archaeological watching brief
- **Area 14:** Archaeological strip, map and record exercise
- **Area 15 – 21:** Archaeological watching brief/strip, map and record exercise
- **Area 25 – 32:** Archaeological watching brief
- **Area 35 – 37:** Archaeological watching brief

3.2 The areas where strip, map and record were proposed were determined to have a high potential for surviving archaeology following previous archaeological investigations. The areas where an archaeological watching brief was proposed was thought to have a lower archaeological potential.

3.3 Following further discussions between the archaeological advisors to the LPAs and the client it was decided that the areas where an archaeological watching brief were proposed were neither practical or likely to yield significant results, and it was agreed that efforts should be concentrated on the strip, map and record exercise, and the watching brief element was removed. The archaeological watching brief undertaken on the eastern part of the scheme on behalf of Siemens Ltd is detailed in a separate report. (Domiczew et al 2024 forthcoming).

3.4 The archaeological mitigation detailed in this report therefore comprised three areas in which an archaeological strip, map and record exercise was to be undertaken. These included:

The Devil's Quoit Area

3.5 The Devil's Quoit (PRN 3071; SM PE020) is described on the HER as:

> *A fine burial chamber, standing in the centre of a field of wind-blown sand burrows. The monument comprises of a large capstone, 2.75m x 2m, resting on an upright slab, 1m x 1.5m, with two further uprights measuring 1.5m x 1.5m, and 1m x 1.8m. The capstone also rests on a large recumbent slab. The deep cattle trampling hollow mentioned in the AM107 report by Cadw in 1999 is clearly visible all-round the monument and is denuded of grass. This chambered tomb lies c.400m NW of round barrow PRN 3079. Fenton, writing in c.1810, recorded 'a low circular agger of earth raised around it [the burial chamber] of no inconsiderable area' (Historical Tour Through Pembrokeshire, 1811), but no trace of this remains today. N Cook PFRS 2004*

3.6 The cable route passed within c.60m of the scheduled monument and therefore had the potential to disturb associated archaeological remains.

3.7 In addition, the geophysical survey undertaken by Sumo identified four circular anomalies to the south of the Devil's Quoit (Fig 3). These anomalies were not previously evaluated and their recorded response during the geophysical survey was consistent with that of probable Bronze Age barrows recorded in the 2019 archaeological evaluation (Meek 2019).

Area 8

3.8 Area 8 was evaluated by Dyfed Archaeological Services in 2019 and the remains of a probable Bronze Age round barrow were recorded. The cable route was rerouted to avoid the identified archaeological remains, however, it is still possible that the cable route will disturb unknown archaeological remains associated with the barrow.

Area 14

3.9 Area 14 was also evaluated during the 2019 archaeological evaluation (Dyfed Archaeological Services 2019). Here, the remains of a further probable Bronze Age round barrow were recorded. Although the cable has again been re-routed to avoid known archaeological remains there is some potential that the proposed cable route will disturb archaeological remains associated with the barrow.

3.10 The aims of the strip, map and record exercise were:

- To establish the state of preservation, character, extent and date range for any archaeological deposits or remains identified;
- To preserve through record all archaeological remains within the defined area to mitigate against the destruction of the remains that would occur during the works. All remains were appropriately investigated and recorded;
- The production of a report and an archive of the results, finds, records, photos and plans created; and
- Following the results of the strip, map and record exercise, to decide whether further mitigation was required.

3.11 All excavation of non-archaeological overlying deposits (topsoil and subsoil) was carried out using a 13 tonne Komatsu 360 degree tracked excavator with a 1.2m grading bucket under the supervision of one of Dyfed Archaeological Services' experienced field archaeologists. In some places an additional deposit of modern windblown sand up to 1.2m in depth was present. Where required the trench edges were stepped due to health and safety concerns.

3.12 All archaeological deposits and features were recorded by context record sheet, scale drawing/detailed survey, photography and site notebooks. Significant deposits were recorded by scale drawing or survey; drawn plans were related to Ordnance Datum and, where possible, known boundaries.

3.13 All artefacts recovered during the exercise were retained and returned to the Dyfed Archaeological Services offices, where they were washed and dried. The artefacts were then identified, quantified and, where appropriate, sent to relevant specialists for analysis.

4 RESULTS

4.1 General

4.1.1 Numbers in the text which are displayed within brackets [], () or {} refer to the unique context number given to all individual deposits using the open-ended numbering system in accordance with the Dyfed Archaeological Services' Recording Manual (based on the one developed by English Heritage Centre for Archaeology, a copy is always available on site for inspection). A context register is provided for each area investigated in the pages after its description. Square brackets [] refer to a cut feature, rounded brackets () to a deposit and curly brackets {} to a structure.

4.1.2 In total, three areas were subject to a strip, map and record exercise, as described in Section 4 (Fig 2):

- The Devil's Quoit Area
- Area 8
- Area 14

Areas 8 and 14 did not yield any further archaeological remains, deposits or finds. The Devil's Quoit Area was the only area in which archaeological remains were identified.

4.1.3 All areas where intrusive groundworks were to be undertaken in line with development proposals were stripped using a grading bucket under archaeological supervision. These areas were then cleaned, photographed and recorded. Where archaeological deposits or remains were not present, after inspection by the archaeological advisors to Pembrokeshire County Council and Pembrokeshire Coast National Park, they were immediately backfilled to prevent edge collapse.

4.1.4 The observations largely agreed with the British Geological Society's understanding of both the bedrock and superficial geologies, with the bedrock across the site being siltstone, mudstones and shale, often capped by a modern, sometimes thick layer of fine windblown sand.

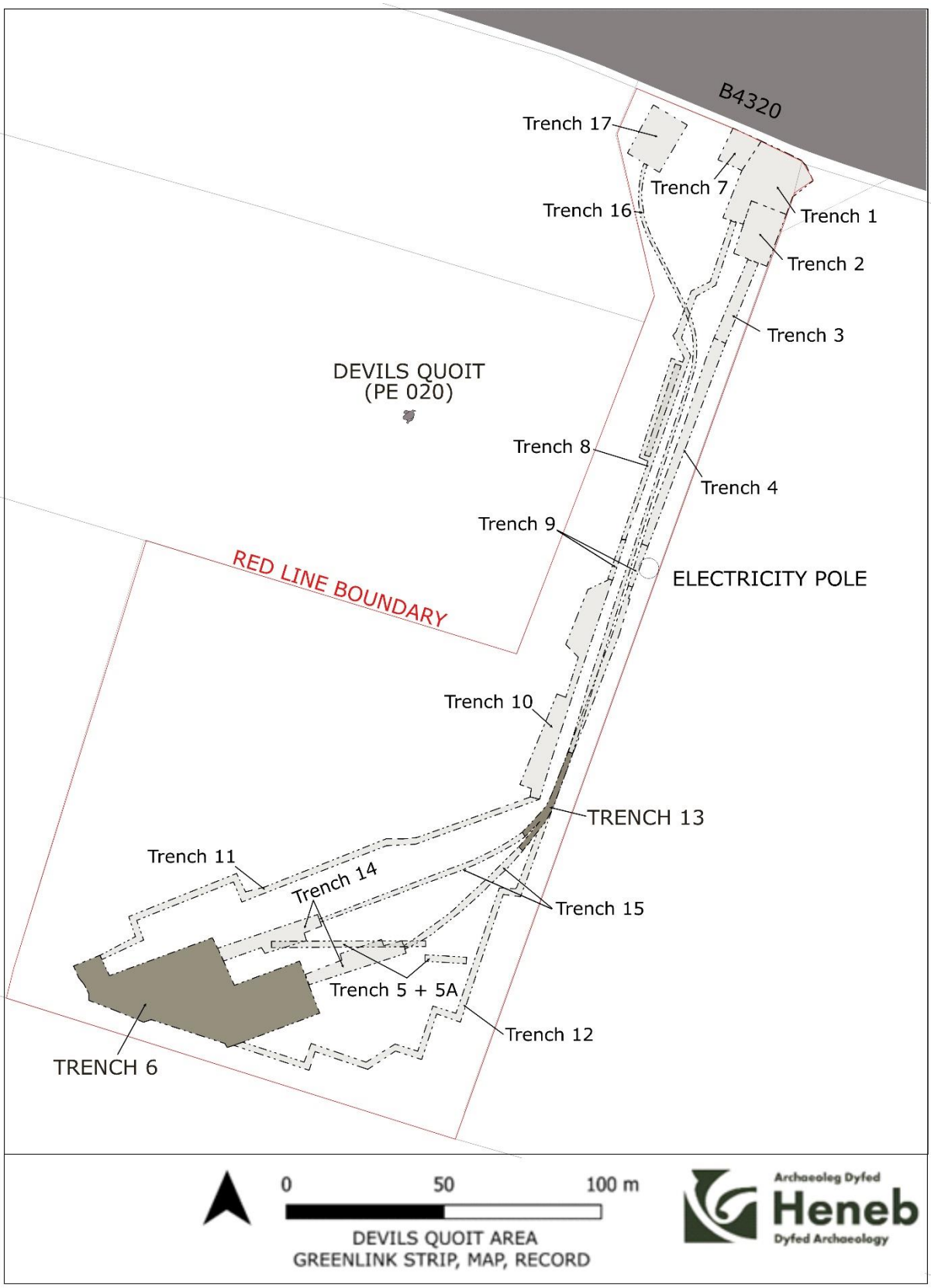

Figure 4: Trench plan for excavations at the Devil's Quoit Area**.**

4.2 Devil's Quoit Area

4.2.1 The Devil's Quoit Area is located at the western end of the cable route overlooking Freshwater West. Works here included the horizontal direct drilling pits where the cable will launch out to sea and the associated temporary enabling works required for this work (Fig 4).

4.2.2 The cable route passes within 60m of the Devil's Quoit scheduled monument (PE 020) (Photo 2). In addition, four circular anomalies were also identified during the geophysical survey which were thought to possibly be of archaeological origin (Fig 3). These anomalies were not evaluated in the 2019 trial evaluation.

Photo 2: Neolithic burial chamber, the Devil's Quoit (PE 020) located close to the east of the development area. Looking south, 1m scale.

4.2.3 This area was therefore highlighted as one of high archaeological potential and an archaeological strip, map and record exercise prior to any intrusive groundworks was recommended. This included the excavation of horizontal directional drilling (HDD) pads at the extreme south and extreme north of the site, the excavation of two cable runs running northeast/southwest approximately 60m to the east of Devil's Quoit, and the works for the temporary compound including land surrounding the site and a road bell mouth at the north of the site.

4.2.4 The resultant approach was a series of trenches excavated in line with the development proposals to facilitate both the temporary enabling works for the drilling compound and the permanent works for the cable route (Fig 4, Photo 3). All trenches were excavated ahead of construction to either the maximum depth of dig required for the intrusive groundworks or to the natural bedrock geology, whichever came first.

4.2.5 For archaeological recording purposes the excavations were divided into logical sub-divisions on site (Trenches 1-17 - Fig 4). Where archaeological results were positive, they are described in this chapter, where negative they are included in tabular form in Appendix II. All recording numbers allocated within the Devil's Quoit Area were prefaced by their respective trench number (e.g. Trench 13, context 1 = (13 001)).

4.2.6 Two evaluation trenches (Trenches 5 and 5A) were excavated separately to the strip, map and record exercise in the area of the circular anomalies detected in the geophysical survey described above (Figs 3 and 4). No archaeological remains or deposits were found in these trenches, so they are also recorded in tabular form in APPENDIX II

4.2.7 Significant archaeological remains were recorded in Trenches 6 and 13 (Fig 4). Firstly, in the HDD drilling pads at the southern end of the site (Trench 6) where a small recumbent stone and associated pits were recorded, and secondly in the mid part of the site at the intersection of the two cable trenches, where what is thought to be the remains of a Bronze Age building was recorded (Trench 13). This section details those findings.

Photo 3: View of groundworks at the Devil's Quoit Area. The haul road and cable trench can be seen running along the right side of the photo, the Devil's Quoit is highlighted in red in the centre and the drilling compound is in the foreground.

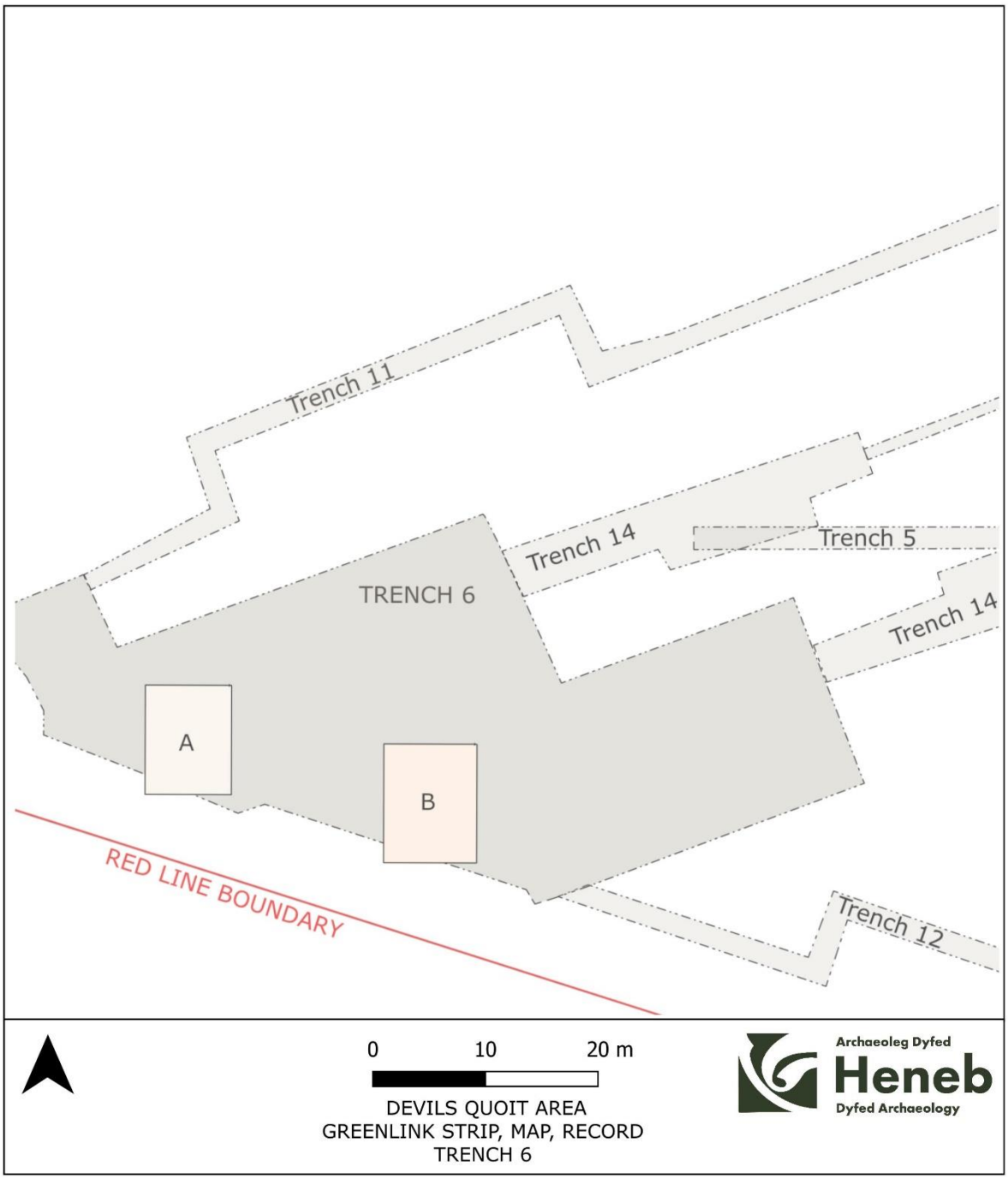

Figure 5: Overview plan of Trench 6 showing location of recumbent stone (6033) (A) and stone outcrop (6028) (B).

4.3 Trench 6

4.3.1 Trench 6 was located at the southern edge of the Devil's Quoit area (Fig 4). The excavation in this area was required for the horizontal direct drilling pits and adjoining drainage run and sump (Fig 5).

4.3.2 Trench 6 gradually sloped towards the south (Photos 4, 5 and 6). Beyond the trench edge the slope increased substantially down towards the dunes and Freshwater West beyond (Photos 4 and 5). The overlying deposits in this area consisted of a thin layer of mid brown, sandy topsoil (6001) measuring an average of 0.04m in depth. As with many parts of the site a layer of windblown sand was present beneath the topsoil (6002), the result of levelling the sand dunes in the area in the 1970's. In this trench the windblown sand was no more than 0.15m at the southern end of the trench and 0.27m at the northern part. The bedrock geology consisted of a pinkish brown variable silt/mudstone (6003).

4.3.3 The archaeological remains in Trench 6 were in the southwestern part of the trench (Fig 3 (A), Photos 4, 5 and 6). The remains were centred around a standing stone, now recumbent (6033), around which were arranged three small pits. A stone outcrop (6028) (Fig 3 (B)) lay approximately 13m to the east which produced a small lithics assemblage.

4.3.4 The small finds and context register for Trench 6, together with any carbon-14 dates for those contexts, are attached at the end of this section. A copy of the lithics report is included in APPENDIX III, the ecofact analysis is in APPENDIX V and the results of the programme of carbon-14 dating can be found in APPENDIX VI.

Photo 4: Pre-excavation shot of recumbent stone (6033) in Trench 6. Looking southeast, 1m scale.

Photo 5: Showing southwest corner of Trench 6 looking out over Freshwater West to the south as the ground site drops away to the south.

Photo 6: Looking across Trench 6 from southwest corner of the trench. Recumbent stone (6033) in foreground. Looking northeast, 1m scale.

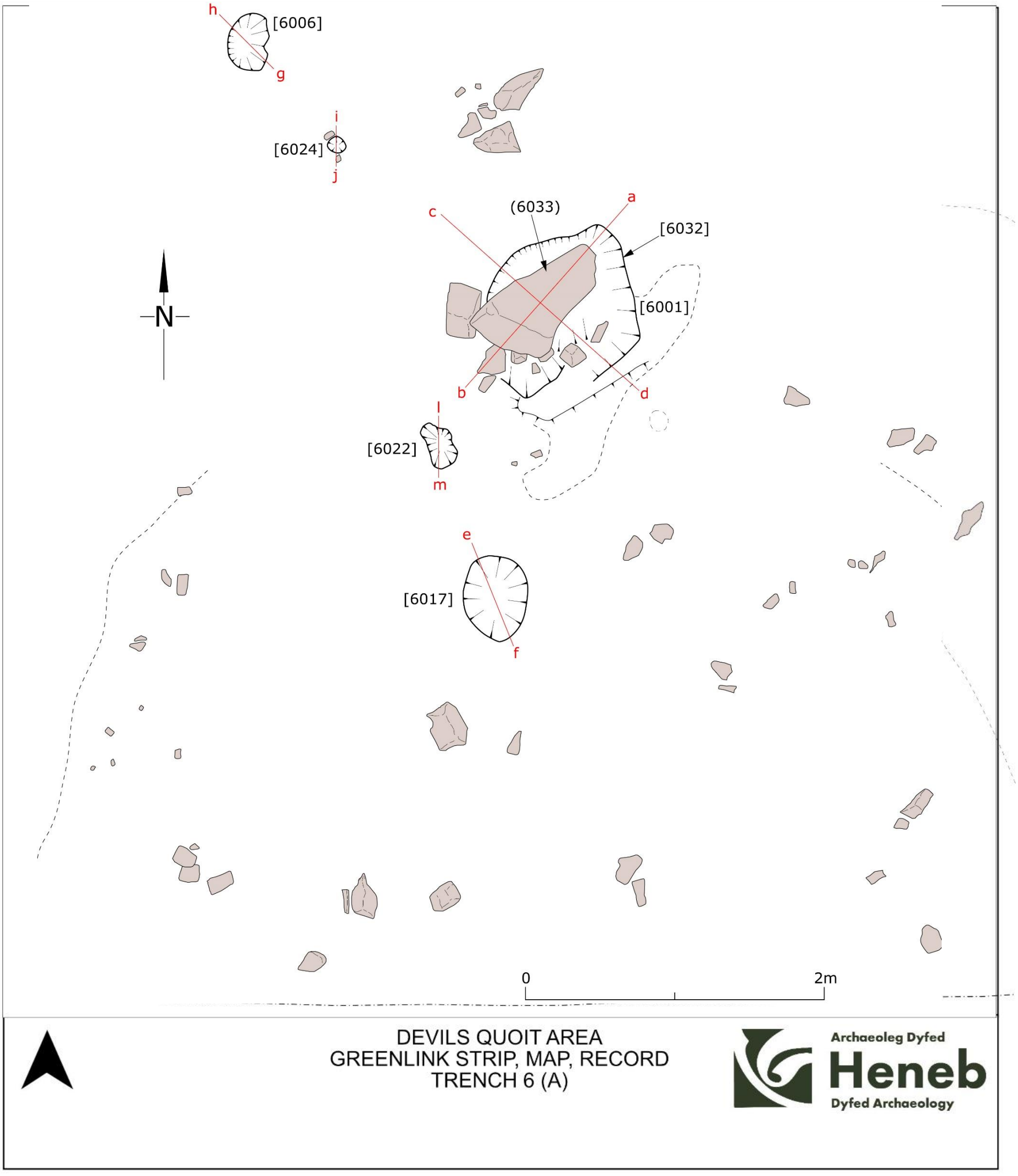

Figure 6: Plan of area surrounding recumbent stone (6033) in Trench 6 labelled as A in Figure 4. Section drawings are shown in Figure 8.

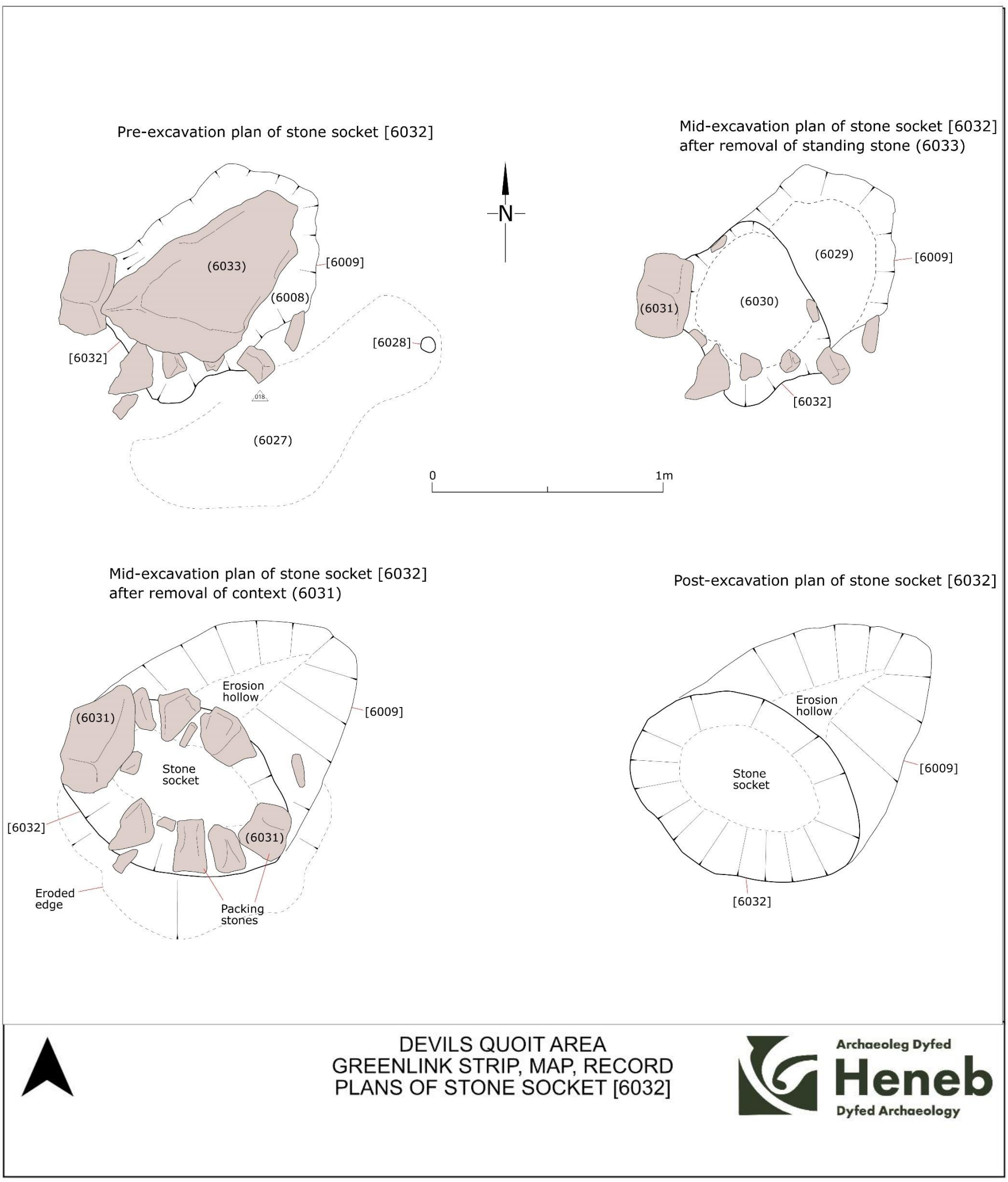

Figure 7: Plan showing stages of excavation of recumbent stone (6033) and stone socket [6032].

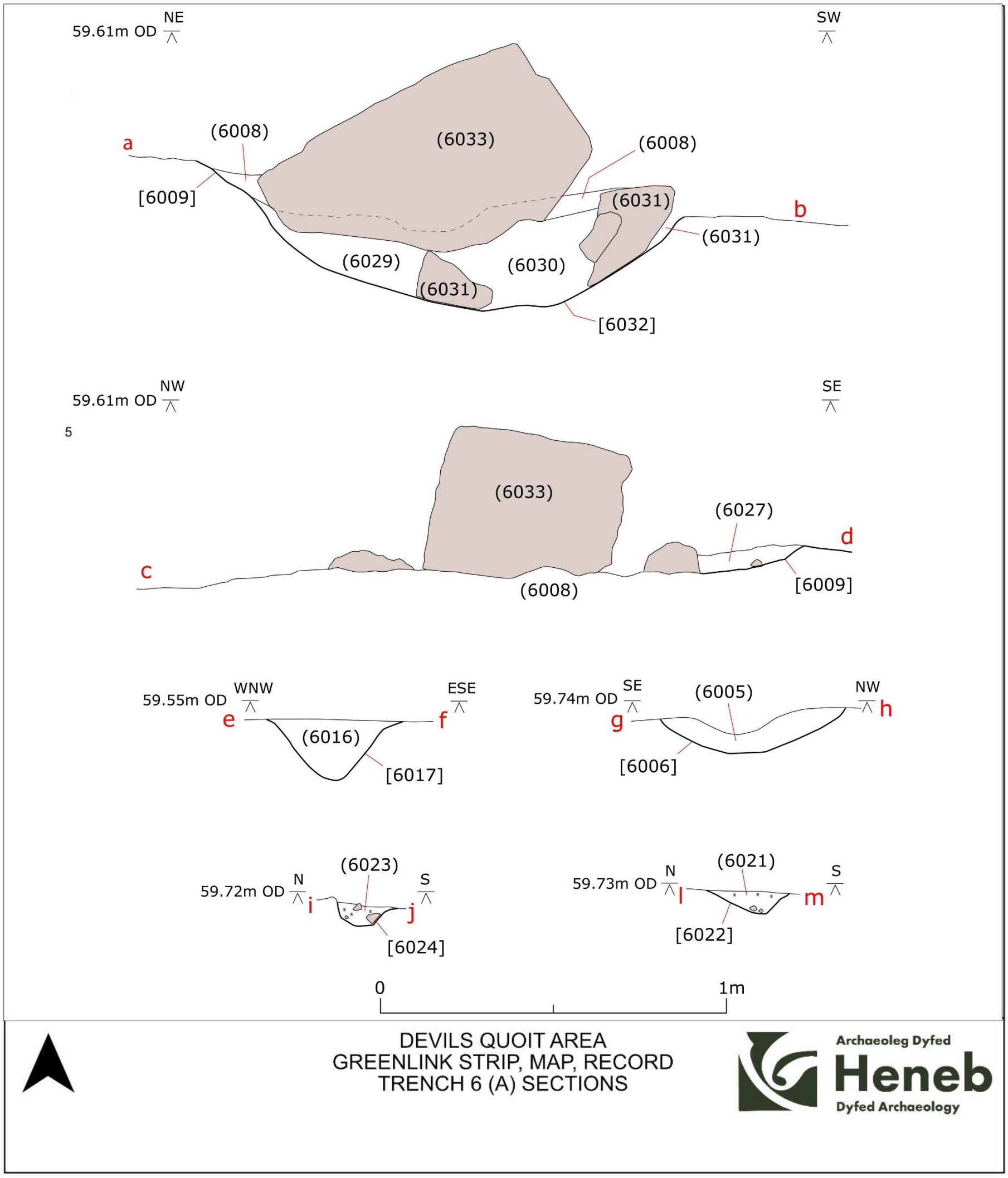

Figure 8: Section drawings of recumbent stone (6033) and surrounding features.
Locations of sections are shown in Figure 6.

Recumbent stone (6033)

4.3.5 Recumbent stone (6033) measured 0.97m in length and 0.52m in width and was roughly pyramidal in shape, lying with its long axis northeast by southwest (Figs 6, 7 and 8, Photo 7). The stone was formed of a green sandstone with quartz inclusions.

4.3.6 It was found lying in a shallow hollow [6009] measuring 1.28m northeast/southwest by 0.67m southeast/northwest and 0.09m in depth (Figs 6 and 7, Photo 7). The hollow was most likely caused by puddling around the stone after it had fallen. Filled with a loose, light yellow, windblown sand with occasional flecks of charcoal (6008), the deposit in not thought to be archaeologically significant.

Photo 7: Showing recumbent stone (6033) in hollow [6009], looking northwest. 1m scale.

4.3.7 Confirmation that the now recumbent stone once stood came after its removal (Photo 8). Sitting beneath the stone, in the southwestern part of the erosion hollow, was a well-formed stone socket [6032] (Figs 7 and 8, Photos 9, 10 and 11). The stone socket measured 0.61m northeast/southwest by 0.89m northwest/southeast and a maximum of 0.39m in depth. It had steep curving sides, a gently curving base and an abrupt break of slope towards the southwest where its profile was not affected by the later erosion hollow.

4.3.8 Sitting around the edge of the stone socket was a mostly uninterrupted ring of packing stones (6031) (Figs 7 and 8, Photos 9 and 10). In total there were 12 of these stones which varied in length between 0.10 and 0.34m. Almost all were wedge shaped and standing along their longest edge. They had clearly been hammered into place to form a secure mounting.

Photo 8: Showing recumbent stone (6033) being removed using a telehandler. Looking west.

4.3.9 Surrounding the packing stones was a fine compact layer of mid-brown silt which was rich in flecks of charcoal (Figs 7 and 8, Photos 9 and 10). This deposit is thought to be of the same event/date as the packing stones so has been included within the context description (6030).

4.3.10 In the centre of the stone socket, stratigraphically above (6030) was a deposit of clearly differing origin (6031) (Figs 6 and 7, Photo 12). This deposit consisted of a light brown uncompact silt with occasional charcoal flecks. It is considered likely that this deposit filled the void left by the stone after it fell or was toppled, with the edge of the fill clearly defined against the inner edge of packing stone deposit (6030). The upper reaches of fill (6031) contained a small flake (SF003) of pebble flint but was undiagnostic in date.

4.3.11 After removal of (6030), the resultant cavity measured 0.54m in width and 0.21m in depth, roughly equivalent to the flattened end of stone (6033). This supported the idea that recumbent stone (6033) had fallen towards the northeast from its original position and had not been significantly disturbed since.

4.3.12 Immediately to the southeast of the stone socket was a charcoal rich deposit (6027) of firmly packed reddish brown silty clay measuring 1.14m northeast/southwest by 0.48m northwest/southeast (Figs 6 and 7, Photo 13). This layer contained a small flint flake (SF018) and abutted packing stone layer (6031) and was therefore thought to be later than the erection of stone (6033). A carbon-14 date of between 3636 and 3386 cal. BC (95.4% probability) for this deposit was obtained from a piece of hazel nutshell. A provisional interpretation is that of a remnant surface, protected by its proximity to the probable standing stone although this cannot be confirmed stratigraphically.

4.3.13 A small circular hollow was found 0.40m to the southeast of recumbent stone (6033) (Fig 6). Initially thought to be a stake hole, after excavation it was found to be an extremely shallow, curved depression and more likely to be natural variation in ground level. This feature is considered unlikely to be archaeological but is nonetheless preserved in plan.

4.3.14 Environmental analysis was undertaken on context (6030) and (6027) (Roberston 2022). As described above, deposit (6030) surrounded the packing stones once thought to have held stone (6033) in place and is thought to be contemporary with its erection. (6027), was a layer of charcoal rich silty clay surrounding the socket of (6033) and is thought mostly likely a remnant surface associated with its use lifetime.

4.3.15 The environmental analysis found fragments of hazelnut shell as well as charcoal from a mix of hazel, oak and apple/pear/hawthorn/rowan tree, all of which were thought to be from food and fuel refuse in both samples. A full copy of the ecofact analysis reporting undertaken in this area is included in APPENDIX V. Following the environmental analysis, material was isolated from the samples for carbon-14 dating. A summary of their results was as follows:

6030 A piece of apple/pear/hawthorn/rowan charcoal was selected from (6030) for carbon-14 dating and gave a date for the erection of the probable standing stone of between 3630 and 3377 cal. BC (95.4% probability) suggesting an early Neolithic date. Full details of the carbon-14 analysis, undertaken by SUERC, has been included in Appendix VI.

6027 Context (6027) sampled a hazel nutshell to give a date of between 3636 and 3386 cal. BC (95.4% probability). This is roughly contemporary with the date associated with the erection of stone (6033) (above).

Photo 9: Showing well-formed stone socket after removal of recumbent stone (6033). Looking south, 0.5m scale.

Photo 10: Stone socket mid-excavation, looking west. 0.2m scale.

Photo 11: Stone socket post-excavation after removal of packing stones, looking south. 0.5m scale.

Photo 12: Showing deposit (6030), thought to have filled the void between the stone socket and the recumbent stone (6033) after it fell. 0.5m scale

Photo 13: Showing extent of possible remnant surface (6027) outlined in red, looking west. 1m scale.

Pits and Surrounding Features'

4.3.17 Surrounding recumbent stone (6033) were four small pit like features [6006, 6017, 6022, 6024] (Figs 5 and 7).

4.3.18 Three of these pits were thought to be of anthropogenic origin [6006, 6022, 6024] with a coherent form and fills (Figs 6 and 8). Pits [6006, 6022 and 6024] comprised shallow scoops in the ground with a maximum depth of 0.09m (Fig 8). The break of slope of the pits was very gradual and they have probably been truncated by ploughing. [6022] and [6024] were roughly circular in shape measuring 0.44m and 0.17m in diameter respectively. Pit [6006] differed slightly, being kidney shaped with a maximum width of 0.38m (Photos 14-16).

Photo 14: Showing shallow pit [6006] (circled in red) near recumbent stone (6033). Looking south, 1m scale.

4.3.19 All three pits were filled with a similar fill (6005, 6021, 6023), formed of compact blackish brown silty clay. The fills included frequent large flecks of charcoal with white flecks of what was thought to be cremated bone, though this could not be confirmed in the environmental sampling. A small flint blade was recovered from the bottom of pit [6006] (Photo 17).

4.3.20 Pit [6017] was less definitely anthropogenic in nature. It measured 0.44m east/west and 0.59m north/south and was 0.20m in depth. It was located 1.40m to the south of recumbent stone (6033) (Fig 5). It was filled with clean windblown sand with no inclusions, and it is therefore thought if archaeological to significantly postdate the other features.

4.3.21 Environmental samples were taken from two of the pits thought to be archaeological [6022 and 6024]. The two fills (6021 and 6023) contained

charcoal, with species including ash, oak and hazel. A full copy of the ecofact analysis reporting undertaken in this area is included in APPENDIX V.

4.3.22 Following the environmental analysis, material was isolated from the two pit samples for carbon-14 dating. A summary of their results was as follows:

[6024] Context (6023) sampled hazel charcoal to give a date of between 3089 and 2912 cal. BC (95.4% probability). This is still within the early part of the Neolithic period a few centuries later than the dates described above (Section 4.3.16).

[6022] Context (6021) used ash roundwood charcoal to produce a date of between 382 and 204 cal. BC (95.4% probability). This date is an outlier from the group dating to the Iron Age between (750 BC- 43 AD) with the other three dates indicating activity in the Neolithic period. It is unclear whether this date represents later activity or contamination.

4.3.23 Full details of the carbon-14 analysis undertaken by SUERC has been included in Appendix VI.

Photo 15: Showing shallow pit [6006] mid excavation. Facing east, 0.20m scale

Photo 16: Showing shallow pit [6006]. Facing roughly north, 0.30m scale.

Photo 17: Showing flint blade (SF001) at base of shallow pit [6006]. 0.30m scale

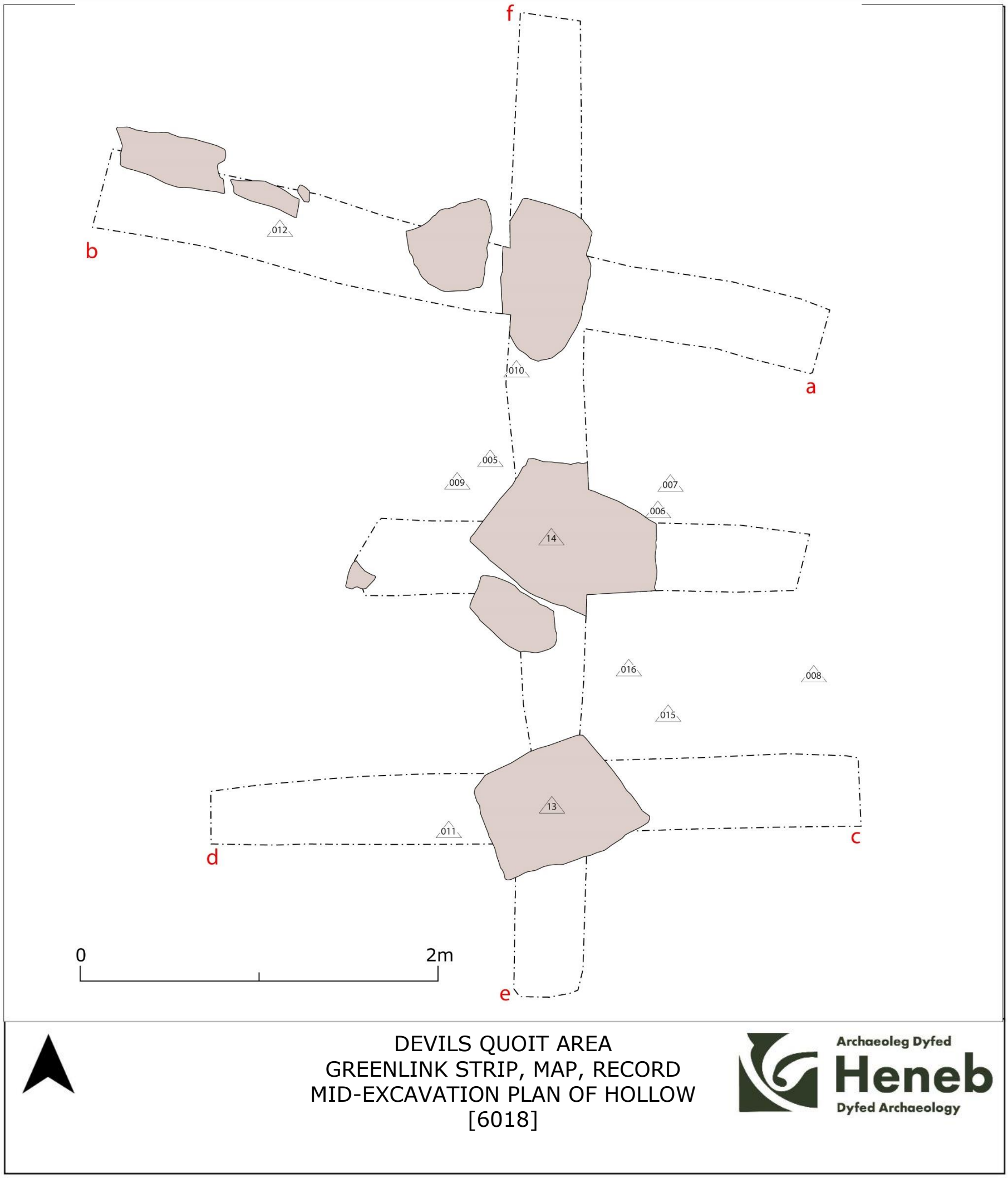

Figure 9: Mid excavation plan of stone hollow [6018]. Shown as Area B in Figure 4.
Section drawings are shown in Figure 11.

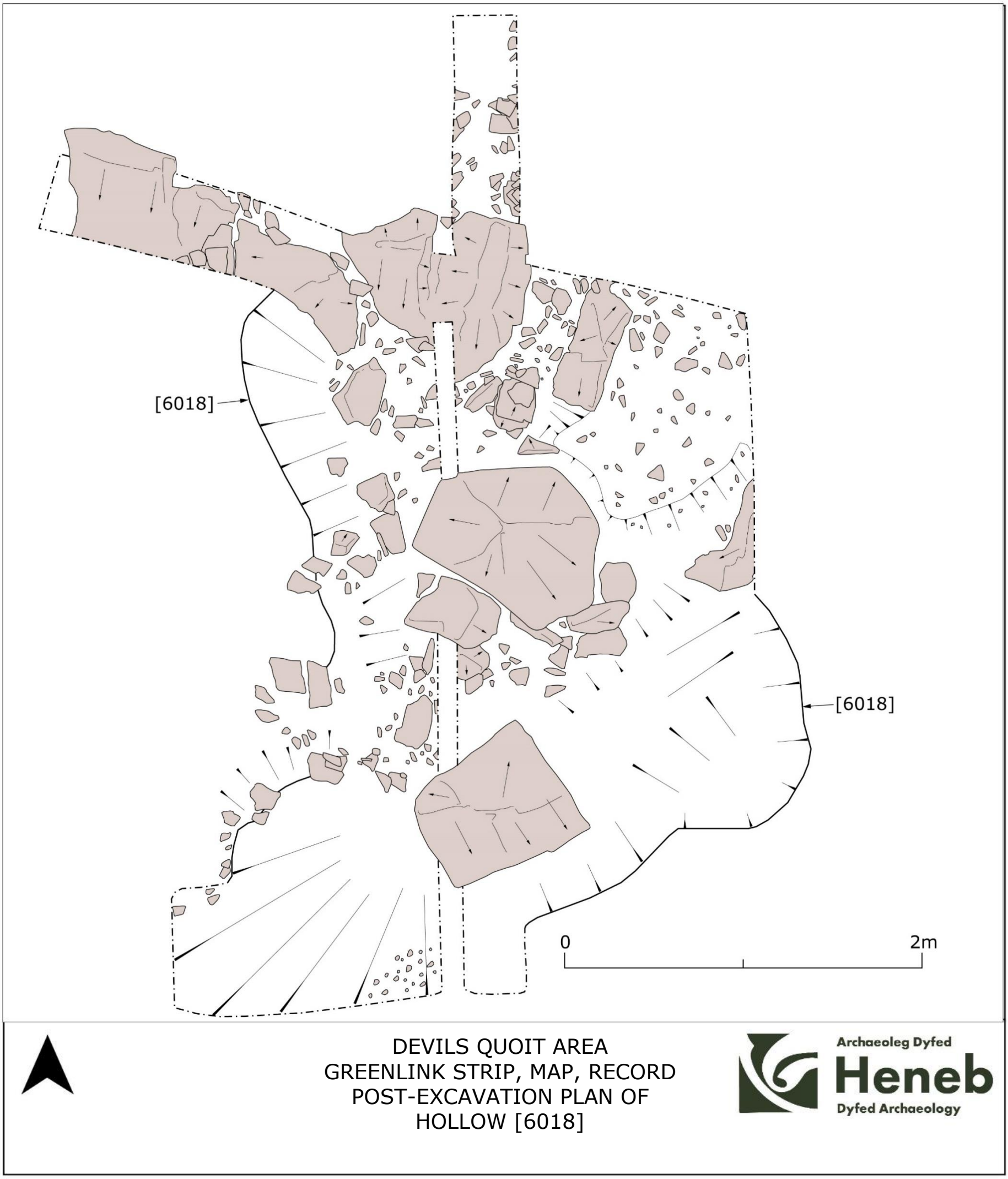

Figure 10: Post-excavation plan of hollow [6018], Shown as Area B in Figure 4.

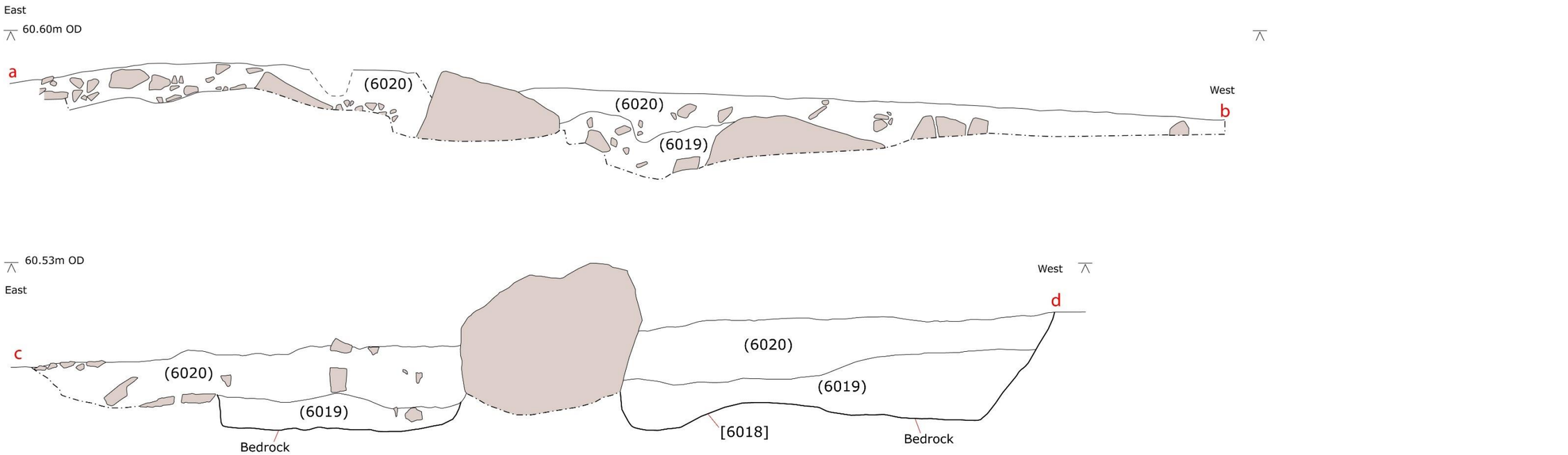

Figure 11: Section drawings of hollow [6018]. Locations of sections shown in Figure 9.

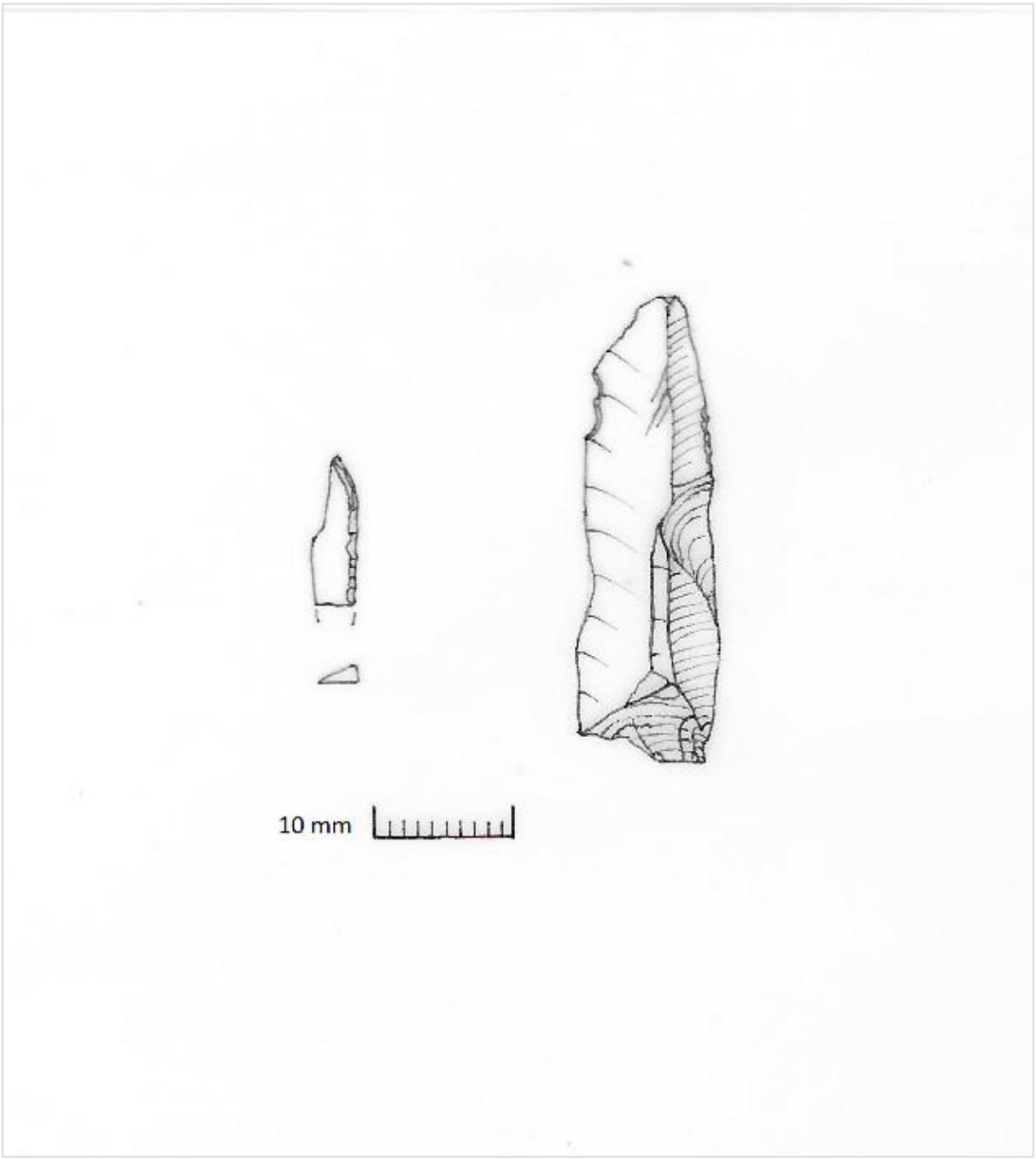

Figure 12: Line drawing of broken microlith (left) (SF009) and Neolithic bladelet (right) (SF016)

Stone Outcrop

4.3.23 Approximately 13m to the east of recumbent stone (6033) was a large hollow [6018] (Figs 5 and 10, Photo 18). It was initially visible as three large boulders of similar stone to that of recumbent stone (6033), in a rough line running approximately north/south that sat in a poorly defined hollow [6018] measuring 4.16m north/south by 2.7m north/east.

4.3.24 Four sondages were excavated (Figs 9 and 11, Photo 18), followed by the 100% excavation of the hollow (Photo 19) to determine whether the feature was anthropogenic or natural, with mixed results. The profile of the hollow was extremely variable with frequent changes of geology and a depth varying between 0.07 and 0.49m (Figs 9-11). The three boulders visible at the surface were bedrock protrusions, supporting the idea that this was a natural hollow.

4.3.25 The hollow however contained two fills. The lower of the two fills (6019) was a compact greenish silt with occasional charcoal flecks. The upper fill (6020) was of similar composition but with a purplish hue (Fig 11). Both deposits were thought to represent very low energy depositions over a very long period. These fills yielded 10 pieces of flint distributed throughout their matrix including a utilized bladelet with some evidence of wear (SF016), likely dating to the Neolithic and a microlith (SF009) likely dating to the Mesolithic (Fig 12).

4.3.26 It is likely that the hollow is natural in origin, the finds within its fills the result of background activity known to occur in prehistoric landscapes. It would however be worth considering as a possible extraction point for recumbent stone (6033).

Photo 18: Showing mid-excavation shot of stone outcrop. Looking southeast towards recumbent stone (6033), 1m scale.

Photo 19: Post excavation view of outcrop after excavation. 1m scale. Looking southeast.

Table 2: *Context and small find register for Trench 6.*

Context Number	Type	Description/Interpretation	Small Find Number	Small Find Description	C-14 Date cal BC (95.4% probability)
6001	Deposit	Topsoil: Mid-brown sandy topsoil.	004	Possible hammerstone	
6002	Deposit	Whiteish yellow windblown sand deposit, originating from truncated dunes.			
6003	Deposit	Bedrock geology consisting of a pinkish brown variable silt/mudstone			
6004	Deposit	Purplish fragmented siltstone/sand bedrock			
6005	Deposit	Fill of pit [6006]	001	Flint blade	
6006	Cut	Cut of pit			
6007	Deposit	Geological banding			
6008	Deposit	Fill of hollow the recumbent stone was lying in			
6009	Cut	The hollow which recumbent stone (6033) was lying in			
6010	Deposit	Fill of stake hole [6011]			
6011	Cut	Cut of stake hole			
6012	Deposit	Fill of pit [6013]			
6013	Cut	Cut of possible pit			
6014	Deposit	Fill of pit [6015]			
6015	Cut	Cut of possible pit			
6016	Deposit	Fill of pit [6017]			
6017	Cut	Cut of possible pit			
6018	Cut	A possible pit or natural hollow with fills and finds as a result of background activity			

6019	Deposit	Lower fill of pit/hollow [6018]	010	Secondary flint flake	
			011	Tertiary flint flake fragments	
			015	Tertiary flint flake	
6020	Deposit	Upper fill pit/hollow [6018]	005	Primary flint flake/ fragment	
			006	Flint bladelet fragment	
			007	Flint flake/ bladelet fragment	
			008	Flint blade	
			009	Flint microlith fragment	
			012	Pebble flint flake	
			015	Flint bladelet?	
			016	Utilised flint bladelet	
6021	Deposit	Fill of pit [6022]			382-204 cal. BC
6022	Cut	Cut of pit			
6023	Deposit	Fill of pit [6024]			3089-2912 cal. BC
6024	Cut	Cut of pit			
6025	Deposit	Stone filled hollows (void)			
6026	Deposit	Fill of natural hollows	017	Tertiary flint flake fragment	
6027	Deposit	Possible surface; charcoal rich deposit of firmly packed silty clay, later than erection of recumbent stone (6033)	018	Primary flint flake fragment	3636-3386 cal. BC
6029	Deposit	Fill of stone hollow			
6030	Deposit	Packing stone deposit in stone socket [6032] and associated silty fill	003	Flint debitage	3630-3377 cal. BC
6031	Deposit	Fill of stone socket [6032] above (6030) which filled the void left by stone (6033) when toppled.			
6032	Cut	Cut of stone socket			
6033	Deposit	Probable former standing stone	002		

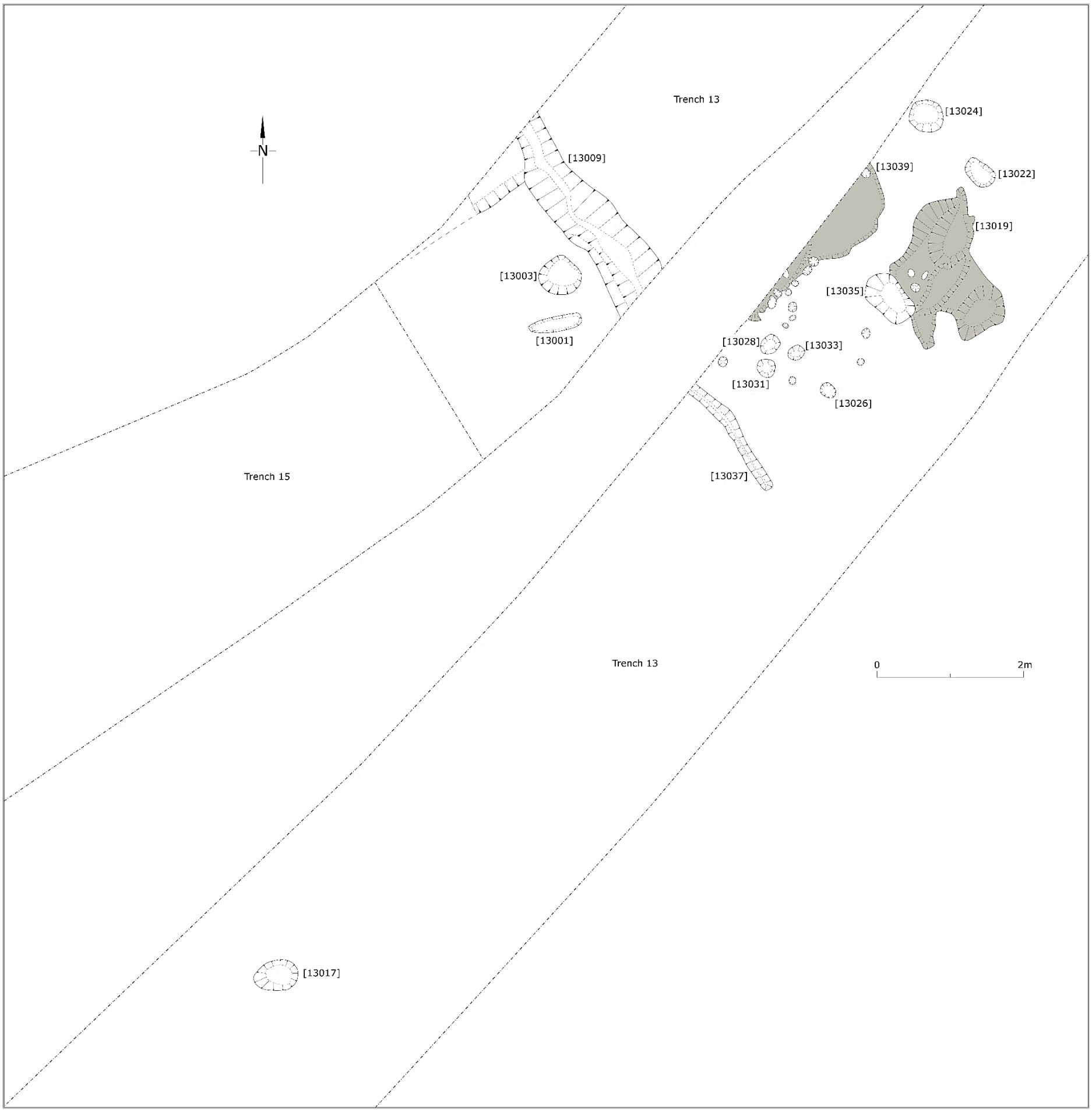

Figure 13: Post excavation plan of Trench 13.

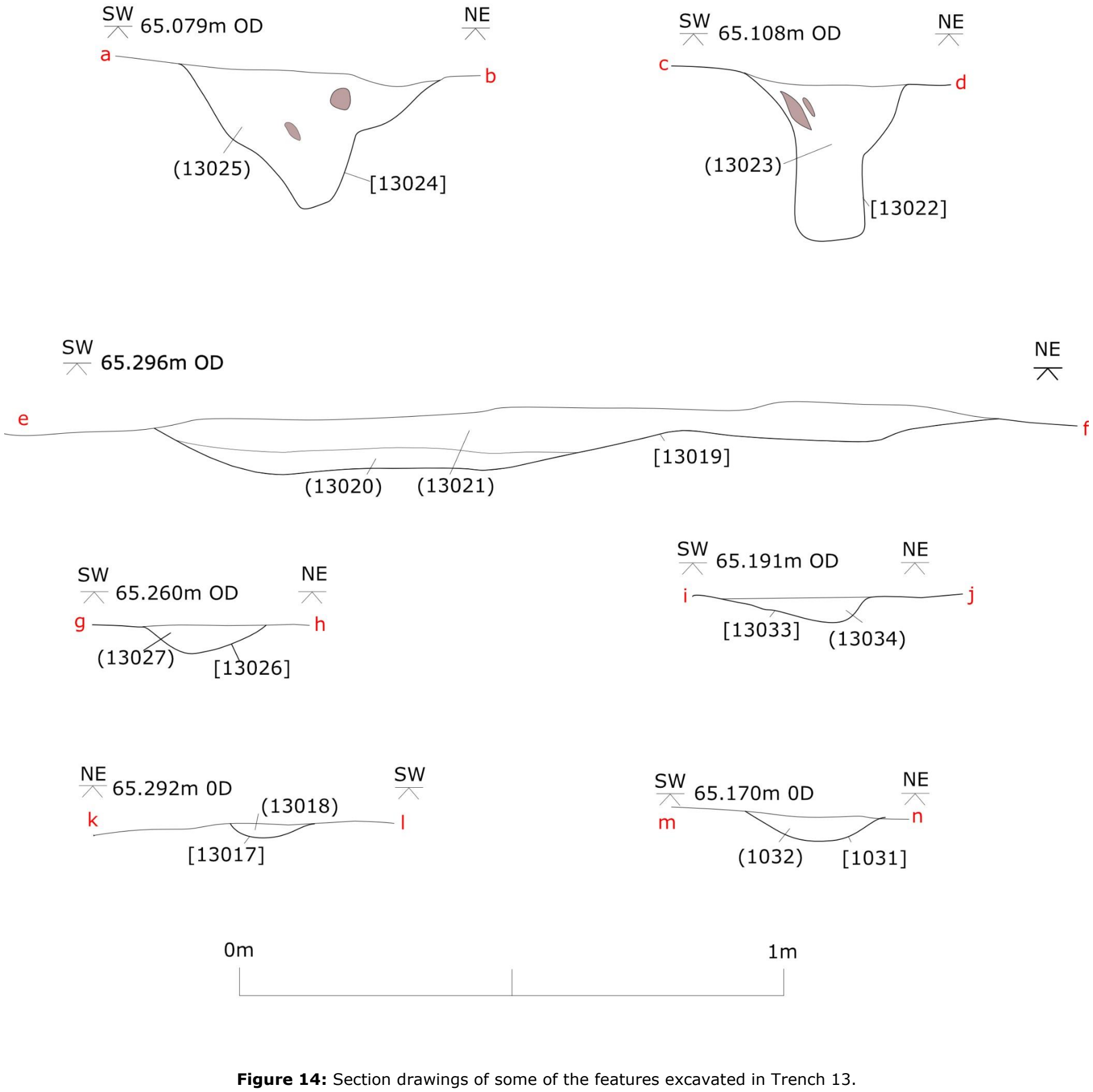

Figure 14: Section drawings of some of the features excavated in Trench 13.

5.3 Trench 13

5.3.1 In 2021 the route of the cable trench along the haul road was excavated as part of the archaeological strip, map and record exercise, the excavations recorded as Trenches 3 and 4 (Appendix II). Construction factors later dictated the cable be realigned and the trenches were re-excavated in 2023. The new cable trenches ran from the horizontal direct drilling pits (Trench 6) at the southern end of the site and joined at the northern tip of the compound before continuing along the haul road to the northern horizontal direct drilling pit (Trench 17). They included Trenches 13, 14, 15 and 16 (Fig 4).

5.3.2 Trench 13 lay at the point where the two cable trenches joined, roughly where the compound and haul road meet (Figs 4 and 13). The archaeological remains were seen in both arms and so are recorded here together (Fig 13).

5.3.3 The superficial layers in this trench were consistent with those found elsewhere on site, consisting of a brownish silty sand topsoil (13005), which here was an average of 0.12m in depth. The greyish subsoil seen in other parts of the site was not visible in this area (Photo 20).

5.3.4 Beneath the topsoil was the thick layer of windblown sand seen elsewhere on the site (13006) which measured a maximum of 0.50m deep (Fig 13 and Photo 20) and is known to date from the 1970's when the area of former sand dunes were levelled for agricultural land. The superficial sand layer covered a buried topsoil (13007) which was composed in the main of sand but with a humic element from which early Neolithic pottery (SF019) was recovered , confirming its antiquity. The bedrock geology sloped gently towards the north and comprised pinkish sandstone [13008] seen across the site. All features described below were cut into this layer.

5.3.5 The archaeological remains in this trench formed a discrete, small structure aligned roughly northeast/southwest, spanning the two trenches (Fig 13, Photos 21-23).

5.3.6 The northeast side of the structure was defined by two very similar and well-constructed post holes [13022 and 13024] (Fig 13, Photos 24-25). Both were sub-circular with a slightly concave profile, steep slope and flat base. Post hole [13022] measured 0.26m in diameter and was 0.30m in depth. Post hole [13024] had very similar dimensions with a diameter of 0.46m in width and depth of 0.23m.

5.3.7 Both contained dark brown silty sand fills (13023 and 13025) with frequent flecks of charcoal. Fill (13023) contained a very small piece of prehistoric pottery whilst fill (13025) contained a stone post pad at its base, confirming both features to be anthropogenic in origin.

5.3.8 The southeast side of the structure was defined by a large post hole [13035] (Fig 13, Photos 26-27). This shallow post hole was sub-rectangular in shape with a gently concave profile. It was the largest seen in the structure, measuring 0.80m in length and 0.40m in width with a maximum depth of 0.21m. It contained a single fill (13036) which consisted of a blackish brown sandy silt with frequent flecks and occasional large pieces of charcoal. Within the fill was a large wedge-shaped packing stone sat vertically against its edge.

5.3.9 Lapping up against post hole [13035] was a large shallow irregular hollow [13019] measuring 2.20m north south and 1.41m east/west with a maximum depth of 0.13m (Figs 13-14, Photos 28-29). One interpretation of this feature is the gradual erosion caused by human traffic, suggesting

that the entrance to the structure may be towards the northeast, with the possibility of post hole [13035] serving as a doorpost, explaining its large size.

5.3.10 Hollow [13019] contained two fills, the basal fill (13020) was composed of a compact, dark brown sandy silt with frequent small flecks and occasional larger pieces of charcoal. It contained pottery, water smoothed pebbles, flint, and a possible fragment of stone axe head. The upper fill (13021) had a similar composition but was more mixed.

5.3.11 On the southwest side of the possible structure four small, very shallow post holes [13026, 13028, 13031 and 13033] were recorded which appeared more randomly placed than the larger post holes [13022, 13024] (Photos 30-31). They measured between 0.24m and 0.26m in diameter with an average depth of 0.07m and were circular and concave in profile with a gentle slope. [13028] contained fill (13029) which itself contained a stone post pad. It is thought unlikely these post holes were all contemporary with at least some serving to replace others.

5.3.12 Defining the southwestern side of the putative structure was a narrow gully [13037] (Photo 32). It had steep sides and a V-shaped base and measured 0.17m wide and 0.15m deep. The gully was most likely intended for drainage, being located slightly upslope of the structure.

5.3.13 The full extent of the possible structure was not visible within the area of the trench. However, enclosed within the structural remains described above was a hollow [13039], very similar in character to the one at the possible entrance (Fig 13, Photo 33). The hollow measured 2.14m north/south, with 0.26m of its east/west dimension visible within the trench area and was a maximum of 0.05m in depth. It was filled with a possible occupation layer (13030) which was composed of a compact, dark brown, silty sand with frequent flecks of charcoal. Finds from this deposit included two pieces of worked flint (SF029).

5.3.14 Scattered throughout the interior of the structure were 16 small stake holes (Fig 13, Photo 34). They were all consistent, with vertical sides with a V-shaped base. All contained fills consistent with that of the other features forming the structure; a dark brown, sandy silt with frequent flecks and occasional pieces of charcoal.

5.3.15 Gully [13037] may be a continuation of the gully [13009] recorded in the earlier manifestation to the north of Trench 13 (Fig 13) before it was recut, although no signs of the potential structure were visible in this trench. However, this earlier branch of Trench 13 was backfilled very quickly due to subsidence of the trench sides and could not be re-investigated.

5.3.16 Although little evidence of the potential structure, other than gully [13009] was recorded in the earlier manifestation of Trench 13, at least one post hole [13003] was recorded to the west of gully [13009] (Fig 13, Photo 35). The fill of the gully (13004) contained one flint flake (SF029).

5.3.17 Located approximately 8.5m to the southwest in Trench 13 was a small shallow pit [13017] with gently curving sides and base. It measured 0.36m in diameter and 0.09m in depth. It had a single fill (13018) composed of a mid-brown silty sand with frequent flecks and occasional larger pieces of charcoal. This pit contained 6 small sherds (SF020) of Neolithic pottery and several water-smoothed pebbles.

5.3.18 Five environmental samples were taken from the fill of the large post holes [13022] [13024], two from the hollows thought to represent evidence of occupation [13019] and [13039] and one from the small pit which produced 16 sherds of pottery 8.5m to the southwest of the structure [13017]. All five samples produced charcoal, mostly of oak. Additionally, context (13020) from hollow [13019] contained a fragment of cherry charcoal, while context (13018) from small pit [13017] contained apple/pear/hawthorn/rowan and hazel. A full copy of the ecofact analysis reporting undertaken in this area is included in APPENDIX V

5.3.19 Following the environmental analysis, material was isolated from four of the samples for carbon-14 dating. The sample from (13030) did not have sufficient material to ensure an accurate date. A summary of the results of the carbon – 14 dating is as follows:

Pit [13017] Fill (13018) of the small pit 8.5m southwest of the structure used hazel to produce a date of 3617-3372 cal. BC, which corresponds with the Middle Neolithic period. The pit lay outside and a short distance from the rectangular structure/building.

Hollow [13019] Fill (13020) of a hollow thought likely to lay in the entrance to the rectangular structure/building used cherry charcoal to produce a date of between 2136 and 1945 cal. BC (95.4% probability), corresponding with the Early Bronze Age period.

Post hole [13022] Fill (13023) of one of the post holes delimiting the northern extent of the rectangular structure/building sampled a fragment of oak charcoal to produce a date of between 2141 and 1959 cal. BC (95.4% probability), corresponding with the Early Bronze Age period.

Post hole [13024] Fill (13025) of another post hole along the northern delimitation of the rectangular structure/building sampled oak charcoal to give a date of between 2336 and 2137 cal. BC (95.4% probability) corresponding to the Late Neolithic-Early bronze Age period.

5.3.20 Full details of the carbon-14 analysis undertaken by SUERC has been included in Appendix VI.

5.3.21 Three of the carbon-14 dates from the structure in Trench 13 suggest it was built and occupied in the years surrounding 2100BC, their overlap confirming that this is indeed a coherent structure. The fourth carbon-14 date acquired for pit [13017] suggests that this feature is not associated with the other remains seen in the trench but rather with an earlier Neolithic phase of activity as seen in Trench 6.

5.3.22 The carbon-14 dating also helps us to understand the finds from this trench. Neolithic pottery, tending towards the earlier Neolithic was found in both the topsoil (13007) and stratified in pit [13017] (13018) which had a carbon-14 date of 3617-3586 cal. BC (95.4 % probability). Later Neolithic/early Bronze Age pottery, possibly of the Grooved Ware tradition, was found in hollow [13019] (13020) which produced a carbon-14 date of 2136 and 1945 cal. BC (95.4 % probability). The lithics also mainly suggested an early Bronze Age date, although some may indeed be residual material from earlier periods.

Photo 20: Representative section of superficial layers in Trench 13. 1m scale

Photo 21: Showing area of potential prehistoric structure pre-excavation. Looking northeast, 1m scale.

Photo 22: Showing post-excavation shot of potential prehistoric structure in Trench 13. Looking northeast, 1m scale.

Photo 23: Showing post holes [13022, 13024] defining the northeast side of the potential prehistoric structure. Looking northwest, 1m scale

Photo 24: Post excavation shot of post hole [13022]. Looking northwest, 0.5m scale.

Photo 25: Post excavation shot of post hole [13024]. Looking south, 0.5m scale.

Photo 26: Showing shallow post hole [13035] with packing stone still *in situ* at edge of half sectioned hollow [13019]. Looking northwest, 1m scale.

Photo 27: Showing packing stone within post hole [13035] and stake hole after removal of deposit (13021). Looking northeast, 0.5 scale.

Photo 28: Mid excavation shot of hollow [13019]. Looking southwest, 1m scale.

Photo 29: Showing mid-excavation shot of hollow [13019]. Looking northwest, 1m scale.

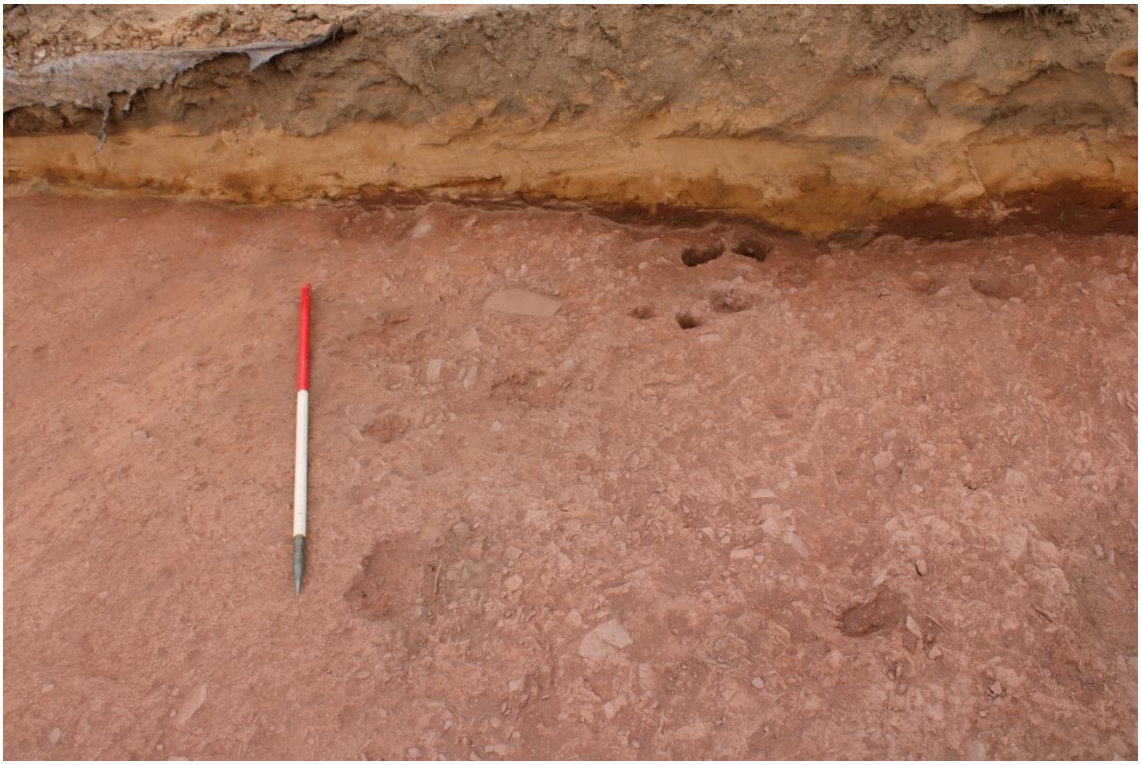

Photo 30: Showing very shallow post holes [13026, 13028 13031, 13033] just to right of 1m scale. Looking northwest, 1m scale.

Photo 31: Post excavation photo of very shallow post holes [13026, 13028 13031, 13033] in foreground. Looking northeast, 1m scale.

Photo 32: Showing gully [13037] in foreground that defined the southwestern edge of the potential prehistoric structure. Looking northeast, 1m scale

Photo 33: Pre-excavation shot of deposit (13030) (red dotted line). Looking north.

Photo 34: Showing a sample of small stake holes recorded within the possible structure. Looking northwest, 1m scale.

Photo 35: Showing fully excavated post hole [13003} and excavated gully [13009]. Looking southwest, 1m scale.

Table 3: *Context and small find register for Trench 13*

Context Number	Type	Description	Small Find Number	Small Find Description	C-14 Date cal. BC (95.4% probability)
13001		Cut of probable linear modern plough furrow.			
13002		Fill of [13002].			
13003	Cut	Circular post hole cut located west of gully [13009].			
13004	Fill	Fill of post hole [13003]. Light reddish brown silty clay with frequent charcoal flecks.	029	One flint flake	
13005	Deposit	Humic mid-brown sandy topsoil			
13006	Deposit	Windblown sand deposit found across site in place more than 1m deep			
13007	Deposit	Buried soil composed of sand with a humic element	019	11 undecorated pottery sherds of possible Early Neolithic date, thumbnail scrapers, and other flaked material	
13008	Deposit	Natural pinkish sandstone/mudstone bedrock	021	2 flint flakes	
13009	Cut	Cut of linear gully running NW/SE across first excavated run of Trench13.	022	1 flint flake & 1 flint spall	
13010	Fill	Light brown silty sand fill of gully [13009]			
13015	Cut	Tree bowl			
13016	Fill	Fill of tree bowl [13015]	027	3 flint flakes & 1 spall of quartz	
13017	Cut	Cut of small pit/post hole located 8.5m to the southwest of potential structure evidence.			
13018	Fill	Fill of small pit/post hole [13017]. Mid brown silty clay with charcoal flecks. Containing 6 sherds of pottery	020	6 pottery sherds, some decorated of probable Middle Neolithic date	3617 - 3372

13019	Cut	Cut of shallow hollow in possible entrance to structure, lapping up against packing stone of post hole [13035]. Sealed by deposit (13021).			
13020	Fill	Lower fill of hollow [13019]. Blackish brown sandy silt with flecks and larger pieces of charcoal – basal fill of hollow [13019]. Below deposit (13021).	023	Possible fragment of stone axe	2136 - 1945
			024	1 pottery sherd of probable Late Neolithic date	
			025	1 convex flint scraper	
13021	Deposit	Deposit that seals some of the cut features in this area including fill of hollow [13019]. Trampled floor layer?	026	16 pottery sherds, some decorated, of probable Later Neolithic date (Grooved Ware?), 3 convex scrapers, 1 end scraper & other flint debitage.	
13022	Cut	Cut of large post hole on northeastern side of structure			
13023	Fill	Firm dark brown silty sand with flecks of charcoal - fill of post hole [13022]			2141 - 1959
13024	Cut	Cut of large post hole on northeast side of potential structure.			
13025	Fill	Firm dark brown silty sand with flecks of charcoal - fill of post hole [13024]; stone post pad at its base	028	1 pottery sherd of probable prehistoric date	2336 - 2137
13026	Cut	Cut of shallow post hole in southwestern corner of structure			

13027	Fill	Firm dark brown silty sand fill of post hole [13026]			
13028	Cut	Cut for stone post hole on southern side of potential structure. Sealed by deposit (13030)			
13029	Fill	Firm dark brown silty sand fill of post hole [13028], containing stone post pad at base.			
13030	Deposit	Possible occupation deposit filling hollow [13039]. Consisting of a blackish brown sandy silt.	029	1 convex flint scraper & 1 flint debitage	
13031	Cut	Cut of shallow post hole on southwest side of potential structure			
13032	Fill	Firm dark brown silty sand fill of post hole [13031]	030	2 flint debitage	
13033	Cut	Cut of shallow post hole on southwest side of structure. Sealed by deposit (13030).			
13034	Fill	Firm dark brown silty sand fill of post hole [13033]. Below deposit (13030).	031	2 flint debitage	
13035	Cut	Cut of shallow post hole on southwest side of potential structure; possible doorpost?			
13036	Fill	Firm dark brown silty sand with flecks and larger pieces of charcoal - fill of post hole [13035]. Contained a large packing stone.			
13037	Cut	Cut of gully running along southwest side of potential structure. Possible continuation of gully [13009]?			
13038	Fill	Light brown silty sand fill of gully [13037].			
13039	Cut	Cut of broad shallow hollow in central area of structure. Likely caused by repeated use.			

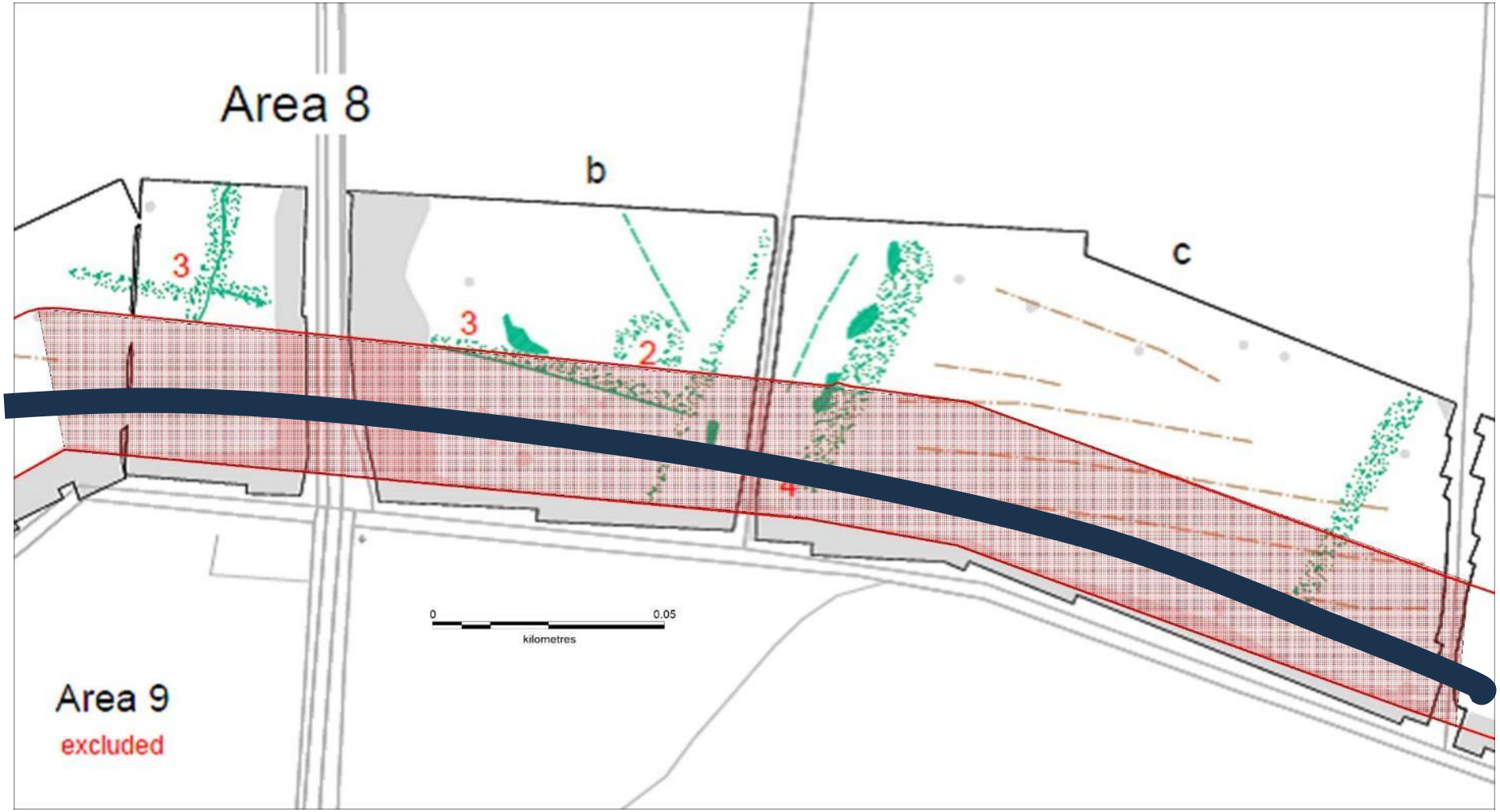

Figure 15: Area 8: Anomalies seen in the 2019 geophysical survey (Arup 2019) shown in green. The archaeological strip map record area is shown in blue. Anomaly 2 represents the remains of a probable Bronze Age barrow which was evaluated during the 2019 archaeological investigation.

5.4 Area 8

5.4.1 Area 8 consisted of a 620m east/west stretch towards the western part of the Greenlink Scheme (Fig 2). The archaeological strip, map and record area measured at least 1.6m wide, the width of a standard grading bucket on a 360° excavator. At both the west and east ends of the area the stripped area measured 3.2m wide (two bucket widths) due to construction considerations.

5.4.2 Area 8 was subject to an archaeological strip, map and record condition after the archaeological trial trench evaluation (Meek 2019) identified the remains of a probable Bronze Age round barrow (Fig 15 - geophysical anomaly no. 2). Though the cable route was amended to avoid these archaeological remains there was still the potential for it to disturb unknown archaeological remains associated with the barrow.

5.4.3 The topsoil in Area 8 (8001) comprised sandy soil measuring a maximum of 0.16m in depth; it is known to be relatively modern in origin.

5.4.4 The natural geology was overlain with superficial deposits of windblown sand up to 1.4m in depth (8002). The sand was whiteish yellow and of a particularly small particle size. The sand is known to be the remains of former sand dunes which were truncated when the land was improved for agricultural purposes in the latter part of the 20th century.

5.4.5 Lying beneath the windblown sand deposit (8003) was a thin layer (0.14m max) of a buried sandy soil which was mid-brown in colour. This deposit must pre-date the dunes in the area and is therefore thought to be of some antiquity. Similar deposits were identified in the 2019 evaluation covering the identified archaeological remains supporting this conclusion.

5.4.6 Deposit (8003) lay above a purplish fragmented siltstone/sand bedrock geology typical of southern Pembrokeshire (8004) and is in accordance with the British Geological Society's understanding of the geology of the area.

5.4.7 Due to the depth of the overlying superficial deposits of windblown sand the trench was stepped due to safety concerns. The step was kept minimal to prevent any impact upon archaeological remains.

5.4.8 No significant archaeological finds, remains or deposits were recorded during the strip, map and record exercise in this area.

Table 4: *Deposits recorded in Area 8*

Context Number	Thickness (max)	Description/interpretation
8001	0.16m	Topsoil: Mid-brown sandy topsoil.
8002	1.40m	Whiteish yellow windblown sand deposit, originating from truncated dunes.
8003	0.14m	Remnant of buried soil layer – sandy silt.
8004	N/A	Purple fragmented siltstone/sand bedrock.

Photo 36: Showing west end of Area 8. Looking west, 1m scale.

Photo 37: Mid-section of Area 8. Looking east, 1m scale.

Photo 38: Eastern section of Area 8. Looking northwest, 1m scale.

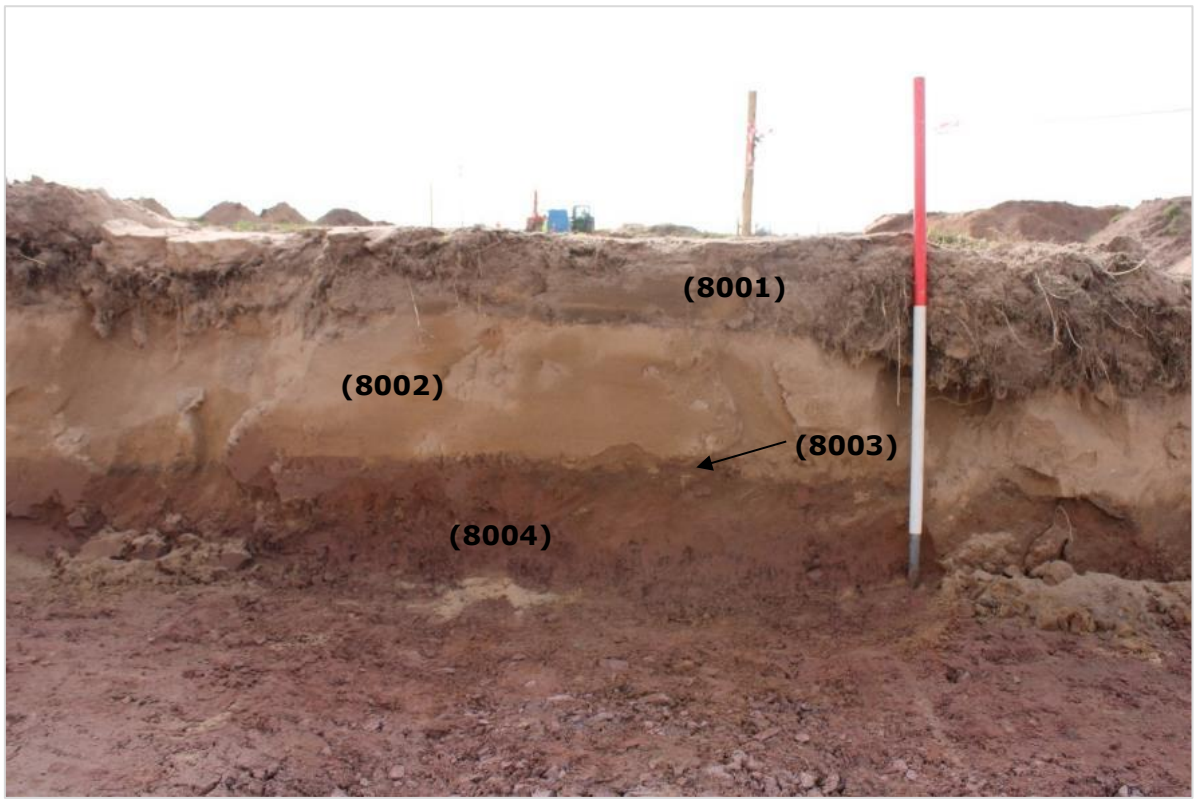

Photo 39: Representative section of deposits recorded in Area 8.

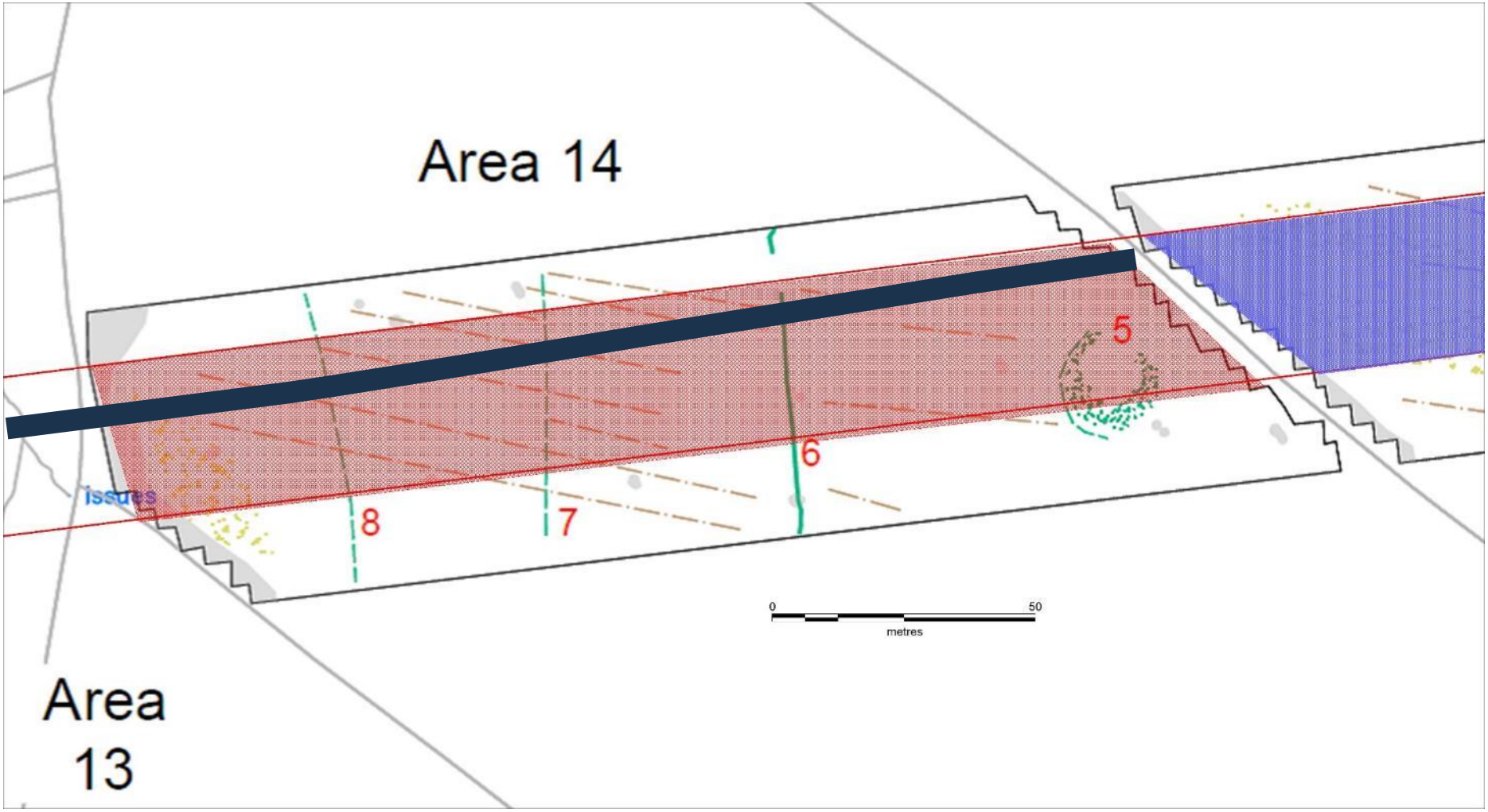

Figure 16: Area 14: Anomalies seen in the 2019 geophysical survey (Arup 2019) shown in green. The archaeological strip map and record area is shown in blue. Anomaly 5 represent the remains of a probable Bronze Age barrow evaluated during the 2019.

5.5 Area 14

5.5.1 Area 14 was located in the fields to the south of Neath Farm (Fig 2). This area ran approximately east/west and measured 200m length (Photo 40).

5.5.2 Area 14 had previously been evaluated (Meek 2019) and the remains of a probable Bronze Age round barrow were recorded near the eastern edge of the field (Fig 16, anomaly 5). Although the cable had been re-routed slightly to the north to avoid these archaeological remains there was some potential that the proposed cable route would disturb remains associated with the barrow.

5.5.3 The topsoil in Area 14 (14001) consisted of a sandy soil measuring a maximum of 0.21m in depth (Photo 41). The topsoil here was more enriched than had been found in Area 8, likely because it had been subjected to more intensive agriculture over a longer period.

5.5.4 The deposits of windblown sand were not as deep as that recorded in Area 8. Those present at the western part of Area 14 (14002) measured between 0.30 and 0.40m in depth but there were no deposits of windblown sand at the eastern end of the area.

5.5.5 Similarly to Area 8 the sand is known to be the remains of former sand dunes which were truncated when the land was improved for agricultural purposes in the latter part of the 20th century. However, this area is thought to be beyond the original dune area and the sand here is the product of migration of the sand over time due to agricultural practices. This is supported by the fact that no evidence for a buried soil was recorded in this area.

5.5.6 The bedrock in this area consisted of pink-ish fragmented siltstone/sand bedrock geology typical of southern Pembrokeshire (14003) very similar to that recorded in Area 8 (14003). This agrees with the British Geological Societies understanding of the geology of the area.

5.5.7 No significant archaeological finds, remains or deposits were recorded during the strip, map and record exercise in this area.

Table 5: *Deposits recorded in Area 14*

Context Number	Thickness (max)	Description/interpretation
14001	0.20m	Topsoil: Mid-brown sandy topsoil.
14002	0.40m	Whiteish yellow windblown sand deposit, originating from truncated dunes.
14003	N/A	Purple fragmented siltstone/sand bedrock

Photo 40: Area 8 Looking west. 1m scale.

Photo 41: Representative section of deposits recorded in Area 14.

6. DISCUSSION

6.1 General

6.1.1 Archaeological remains were recorded only in the Devil's Quoit Area (Fig 2) and therefore the discussion will be restricted to the investigations carried out in this area.

6.1.2 The Devil's Quoit area was considered to have high archaeological potential for prehistoric remains, particularly those dating to the Neolithic (c.4400 – 2300 BC), due to earlier investigations and the presence of the Devil's Quoit itself, a Neolithic burial chamber.

6.1.3 The archaeological investigations at the Devil's Quoit confirmed this theory recording previously unknown archaeological remains dating to the Neolithic in Trench 6 and remains dating to the Neolithic and Early Bronze Age in Trench 13.

6.2 Trench 6

Recumbent stone (6033)

6.2.1 The archaeological remains in Trench 6 at the far south of the site appear consistent with that of a standing stone (6033), now recumbent.

6.2.2 Standing stones are a common form of prehistoric monument with more than 100 examples recorded in Pembrokeshire. Typically, they are thought to date to the Bronze Age (2300 – 700 BC) though like many monument types from the period they are known to have their origins in the Neolithic (c.4400 – 2300 BC).

6.2.3 Most standing stones are large, measuring between 2 and 2.5m in height and are often deliberately shaped, though to what extent this is the result of preservation bias is unclear, with bigger stones more likely to survive or be incorporated into larger monuments (Darvill and Wainright 2016).

6.2.4 Like many prehistoric monuments the function of standing stones is still debated. Whilst they served as markers in the landscape, often erected in prominent locations, it is probable they had further uses. Where excavated under modern conditions they are frequently found to be much more complex monuments than previously imagined, with secondary features such as pits, cremations, burials, post holes and hearths arranged around their base (Cook 2006).

6.2.5 When compared to the other examples from Pembrokeshire, stone (6033) is extremely early in the sequence with a carbon-14 date (context 6030) indicating its erection between 3630 and 3377 cal. BC (95.4% probability). It was also relatively small, measuring 0.97m in length. It was however well shaped for use as a standing stone with a roughly pyramidal form, erected in a prominent location overlooking Fresh Water West beach. The presence of the well-formed, well packed stone hole supports the supposition that the stone was deliberately placed here. That it survived as a relatively small standing stone may be due to the covering of wind-blown sand that occurred in modern times, making its survival when compared to other smaller standing stones more likely.

6.2.6 As with other examples, when excavated under modern conditions, evidence of activity in the area surrounding the stone in the time after its erection was identified. Here, it was seen as a charcoal rich deposit (6027), interpretated as a remnant surface concentrated around the edge of the stone socket which produced a date of between 3636 and 3386 cal. BC (95.4 % probability), and three small pits with a charcoal rich fill. Whilst it is

possible these pits may have held cremations; this could not be confirmed in the environmental analysis. One of the pits produced material dating to the Neolithic; pit [6022] with fill (6023) suggesting a date of between 3089 and 2912 cal. BC (95.4% probability). The third pit [6022] (6021) produced a date of between 382 and 204 cal. BC (95.4% probability). This suggests that the site may have been revisited or reused later in time in the Iron Age (*c*.700 BC – AD 43) or the possibility of more modern contamination.

6.2.7 There are two well recorded early examples of probable Neolithic standing stones in Pembrokeshire. The first, an early phase of Pentre Ifan (Stone IV), appears to be pre-date the main dolmen construction, placing it firmly in the earliest part of the Neolithic (Grimes 1936, Lynch 1975, Darvill and Wainright 2016). The second is the Trefael Stone, again in the Nevern valley, whose finds and associations with other features appear to suggest an early Neolithic date (Nash 2006). Neither of these two examples however have secure dating to confirm these dates.

6.2.8 Both examples are accompanied by secondary features, with Pentre Ifan (Stone IV) constructed adjacent to a fire and possible post holes. The Trefael Stone included a low stone platform with white quartz pebbles concentrated around its base and two large shale beads similar to those found at Nab Head dating to the Mesolithic (Nash 2006). The stone itself is decorated with more than 75 cup and ring marks, with some interpretating this stone as the capstone of a lost dolmen, though evidence for this is not forthcoming (Nash 2006).

Stone Outcrop [6018]

6.2.9 Located 13m to the east of stone (6033) was a small stone outcrop/hollow that had also been covered with sand in modern times. Whilst not thought to be anthropogenic, it did produce a small assemblage of struck flint including evidence of earlier activity in the form of a microlith (SF006), a form of stone tool typically dating to the Mesolithic (*c*.10,000 – 4400 BC) and a Neolithic bladelet (SF016) suggesting a level of background activity; perhaps utilisation of the outcrop for shelter or rest. One suggestion is that this stone outcrop was where recumbent stone (6033) was extracted, being composed of very similar stone. The presence of the lithic assemblage suggests that that the outcrop was certainly visible if not a prominent feature during the earlier part of the Neolithic.

6.3 Trench 13

Pit [13017]

6.3.1 The earliest remains seen in Trench 13 comprise a small shallow pit [13017] located at the southernmost part of the trench. Carbon-14 analysis indicates that it dates to between 3617 – 3586 cal. BC (95.4% probability). It contained six sherds of pottery typically attributed to the middle of the Neolithic period.

6.3.2 The carbon-14 date of pit [13017] is remarkably similar to that of fill (6030) containing the packing stones for stone (6033) seen in Trench 6 which had a carbon–14 date suggesting it was erected between 3630 and 3377 cal. BC (95.4% probability). The ecofact report shows very similar results to those seen in Trench 6, being composed primarily of oak, then hazel and apple/pear/ hawthorn/rowan.

Structure

6.3.3 The remains in the central part of the trench are consistent with that of a domestic building or structure with its assemblages of small pieces of degraded pottery and lithics suggesting it is most likely associated with domestic activity. Carbon-14 dating has shown that this structure was built in the centuries surrounding 2100 BC.

6.3.4 The example here is most probably a form of open settlement due to the extensive geophysical survey giving no indication of enclosure (Davies 2019). It should also be noted that the narrow confines of the trench restricted interpretation. We do not know whether the structure identified represents a single dwelling or is part of a much wider pattern of settlement, with further remains unlikely to be identified through geophysical survey.

6.3.5 There is ephemeral evidence of activity of this period evidenced by finds dotted around the southern part of the county. The only site which offers good evidence is the three structures identified at Stackpole Warren (Sites A and B), another coastal site in south Pembrokeshire, 11km from the excavations at the Devil's Quoit (Benson et al 1990).

6.3.6 Some of the earliest remains at Stackpole Warren were of a sub-circular, post-built structure with a central hearth contained within a soil horizon containing Grooved Ware pottery, though it is possible that this pottery is residual. Unfortunately, this structure is poorly understood and there was no absolute dating evidence from this phase of activity. The most impressive of the three structures at Stackpole Warren was roundhouse 146 which was built of substantial timbers and was 5m in diameter with a long porch extending from its northeastern side. It is thought to have burnt down between 1800 and 1600 cal. BC. A third structure (roundhouse 491) which was smaller, measuring 4m across and sunken may also date to this period, though there is no secure dating to confirm this.

6.5.7 The house in Trench 13 is sub-rectangular in form, orientated roughly northwest/southeast and approximately 3.8m in width and a minimum of 4m in length. It was of timber frame construction with its northern and eastern edges delimited by large secure post holes and its southern edge delimited by a range of smaller, somewhat more random post holes which appear to have been replaced several times. Its western end was not visible within the trench area, again limiting interpretation.

6.5.8 It is considered likely that the two large post holes [13035] and [13022], between which was a worn hollow [13019] on the northeastern edge of the structure represent an entrance. Contained within the walls of the structure was a second hollow [13030] which is thought to be the result of wear and use of the structure over time.

6.5.9 The houses at Stackpole Warren differ from the one in Trench 13 in that they are round; this may be because the houses which have been securely dated are slightly later than the structure in Trench 13 and thought to be associated with the Beaker Culture. Within Wales as a whole, houses change significantly during the Neolithic and early Bronze Age, starting as larger rectangular houses often capable of housing entire communities in the earlier Neolithic, growing smaller and more rounded towards the later Neolithic before becoming entirely round by the middle Bronze Age (Burrow 2020). This is part of wider changes, with Wales drawn into new cultural spheres in the later Neolithic and early Bronze Age.

6.5.10 Better comparisons for the structure seen in Trench 13 are found when looking at buildings across wider Wales and the British Isles in settlements

of Later Neolithic date (circa. 2500BC) associated with Grooved Ware pottery. This comparison is helped by the tentative identification of sherds of Grooved Ware from context (13021) (Appendix VI). A good example of a Grooved Ware settlement is Trelystan (A and B) in Powys, where two stake built sub-rectangular houses were found with central hearths measuring approximately 4m across (Britnell 1982). West Wales has no definite examples settlement associated with Grooved ware, with the best understood examples being located outside of Wales, including Skara Brae in Orkney and Durrington Walls in Wiltshire (Burrow 2020).

6.5.11 When Trench 13 is considered with the remains from Stackpole Warren it paints the picture of two sites which are relatively geographically (11km) close sitting at either side of a cultural transition, Trench 13 representing the last breaths of the Grooved Ware traditions seen in the Later Neolithic and Stackpole Warren adopting the practices seen in the early Bronze Age and the Beaker Culture. Both are however similar in many ways, presenting as small farmsteads typical of low-level settlement activity seen across the British Isles during this time and likely representative of very similar ways of living.

6.5.12 Although the carbon-14 dates obtained from the structure in trench 13 clearly puts its construction in the Early Bronze Age, the fragments of pottery recovered from the same contexts have been identified as Neolithic in date, and all the sherds of pottery from the remnant of buried soil recorded within the trench were Neolithic. This amount of residual domestic material, as well as the dated pit [13017], and the surrounding funerary and ritual monuments suggest a depth of widespread activity in the Neolithic period in this area.

7. CONCLUSIONS

7.1 This report details the results of the final phase of archaeological mitigation carried out by Dyfed Archaeological Services on the Greenlink Interconnector Scheme.

7.2 'The Greenlink' is a subsea and underground electricity interconnector designed to link the power markets in Ireland and Great Britain. The scheme will run between the existing Pembroke Power Station in South Pembrokeshire in Wales and Great Island in eastern Ireland. The works described in this report pertain to the onshore cable of the Welsh part of the scheme between Hundlestone and Rhoscrowther on the Angle Peninsula in south Pembrokeshire.

7.3 Archaeological remains were found at the Devil's Quoit Area at the western end of the scheme, in the area surrounding the Devil's Quoit; a Neolithic burial chamber. A large amount of trenching was undertaken in this area aligning with development plans; archaeological remains were present in Trenches 6 and 13.

7.4 The remains in Trench 6 dated to the Neolithic (circa. 4400-2300BC) and included a Neolithic standing stone, now recumbent, and three small pits. Trench 13 contained a small pit dating to a similar period and a house/structure dating to the early Bronze Age in the centuries surrounding 2100 BC.

7.5 Trench 6 was located at the extreme south of the Devil's Quoit Area. The remains here were centred around recumbent stone (6033). The stone itself was smaller than most examples of this type, measuring 0.97m in length with a roughly pyramidal shape, formerly set in a well packed stone hole. It is an extremely early example with carbon-14 dating suggesting its erection occurred between 3630 and 3377 cal. (95.4% probability). A charcoal rich layer thought most likely to be a remnant surface surrounding the stone socket also produced a carbon-14 date of between 3636 and 3386 cal. BC (95.4% probability), long before the typical temporal range of many such stones in the Bronze Age (2500 – 700 BC). Surrounding the recumbent stone were three small pits with a charcoal rich fill. Two were carbon dated with one suggesting activity surrounding the stone in the centuries following its erection ((context 6023) between 3089 and 2912 cal. BC (95.4% probability) and a further pit possibly dating to the Iron age ((context 6021) between 382 and 204 cal. BC (95.4% probability)). A possible source for the stone was evidenced 13 km to the east; an outcrop and hollow [6018] with evidence of background activity in the Mesolithic and Neolithic within its lithic assemblage. The recumbent stone is amongst the earliest examples in Pembrokeshire of a probable standing stone excavated under modern conditions. Furthermore, the pits surrounding it illustrate continued use in the centuries after its erection.

7.6 Within Trench 13 was a sub-rectangular timber framed Early Bronze Age house, orientated northwest/southeast with a width of about 3.8m and a length of at least 4m. Carbon-14 dating revealed that it was likely built in the centuries around 2100 BC. Two hollows were found within the house, one at its northeastern corner in a possible entrance way, the second roughly central to the structure. Both were filled with what is thought to be the debris of occupation and included a small assemblage of lithics and pottery. The structure is a rare example of Early Bronze Age settlement amongst only a handful of well-documented examples known in Wales and is a rare example settlement associated with Grooved Ware in West Wales. It also offers a

helpful comparison to the nearby site of Stackpole Warren, built in the following centuries but of a significantly different character.

7.7 The archaeological remains found at the Devil's Quoit Area and their respective assemblages add significantly to our understanding of the Neolithic and Early Bronze Age in south Pembrokeshire. When considered together, these remains also substantiate the idea that often, chambered tombs such as the Devil's Quoit were part of a persistent place, acting as a centre for a wider body of activity within a landscape well beyond the use of the monument itself.

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APPENDIX I

Written Scheme of Investigation

GREENLINK INTERCONNECTOR:

PLANNING APPLICATIONS 20/0041/PA AND 20/0044/PA

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL MITIGATION

1 INTRODUCTION

1.1 This Written Scheme of Investigation (WSI) has been prepared by DAT Archaeological Services (the contracting arm of Dyfed Archaeological Trust) to provide a methodology for archaeological mitigation along the line of the proposed Greenlink Interconnector cable scheme on land between Freshwater West and the Pembroke Power Station in southwest Pembrokeshire (Figure 1). The WSI has been commissioned by Greenlink Interconnector Limited.

1.2 The site area has been subject to a historic environment desk-based assessment (Meek 2018), Archaeology and Cultural Heritage chapter for an Environmental Impact Assessment (Arup), geophysical survey along the proposed cable route and associated infrastructure sites (Sumo Services 2019), and a trial trench evaluation (Enright & Wilson 2019). Following the results of the geophysical survey and trial trench evaluation the archaeological advisors to the planning authority, Dyfed Archaeological Trust-Development Management (DAT-DM), have requested further archaeological mitigation along the proposed cable route.

1.3 This WSI proposes a methodology for a combination of archaeological strip, map and record exercise and archaeological watching brief along defined area of the proposed cable route. The areas where strip, map and record is proposed have been defined as having potential for surviving archaeology following previous archaeological investigations, and it is envisaged that this work would be undertaken prior to the main construction works commencing.

1.4 This WSI describes what is judged to be the best approach to the archaeological mitigation but final decisions on the finer details of the mitigation will be decided through ongoing discussions between DAT Archaeological Services, the archaeological advisors to the planning authorities, the main site contractor, and Greenlink Interconnector Ltd.

1.5 As the archaeological mitigation progresses the results or lack of results will be used to refine how further archaeological investigation will be carried out, following consultation with all parties.

1.6 The installation of the high voltage cable will be undertaken through a combination of directional drilling and cut and fill method. No archaeological monitoring is required where the cable will be installed by directional drilling. However, most of the cable will be inserted into the ground using a cut and fill method, and it is proposed that where this method is used across agricultural land, that an archaeological watching brief will be undertaken during the excavation of the cable trench.

1.7 No watching brief will be undertaken in areas where previous archaeological investigations have only recorded modern features or where the cable route runs along existing carriageways.

1.8 It is envisaged that the excavated cable trench across agricultural land will measure approximately 1175mm deep and 650mm wide (Figure 3). Although the cable route shown in Figure 2 shows quite a wide corridor of

1.9 approximately 30m, the required cable trench is fairly narrow (650mm), although within the corridor a working area and easement are included.

1.10 Within the corridor area it is proposed that there is the flexibility to avoid direct impact on previously identified archaeological features (particularly those identified in Areas 8 and 14) by the marking out and fencing of sensitive areas. The wording in the EIA was:

'Given the potential value of these features the construction of the cable route and the topsoil strip required for the working area will exclude them, using fencing to mark out their location'.

1.11 This approach preserves recorded significant archaeological features in situ.

1.12 It is recommended that the fencing of sensitive areas is carried out in conjunction with DAT Archaeological Services prior to works commencing.

1.13 If there is a risk that significant archaeological features will be adversely impacted upon by the installation of the cable, the features should be preserved through record and excavated.

1.14 The results may be used to inform further design of the proposed development so that it will not impact upon any archaeological remains or that mitigation can be implemented before such remains are disturbed.

1.15 This written scheme of investigation (WSI) details the methodology of the archaeological mitigation which will be undertaken by DAT Archaeological Services and has been prepared in accordance with the Chartered Institute for Archaeologists (CIfA) Standard and Guidance (CIfA 2014). A copy will be sent to the archaeological advisors to the local planning authority for their approval[1].

1.16 DAT Archaeological Services has considerable experience of this type of project and always operates to best professional practice. DAT Archaeological Services has its own Health and Safety Policy, and all works are covered by appropriate Employer's Liability and Public Liability Insurances. Copies of all are available on request.

1.17 ***Dyfed Archaeological Trust is a CIFA Registered Archaeological Organisation***.

1.18 ***All permanent DAT Archaeological Services staff are CSCS[2] certified to work on construction sites.***

[1] Dyfed Archaeological Trust – Development Management.

[2] Construction Skills Certification Scheme.

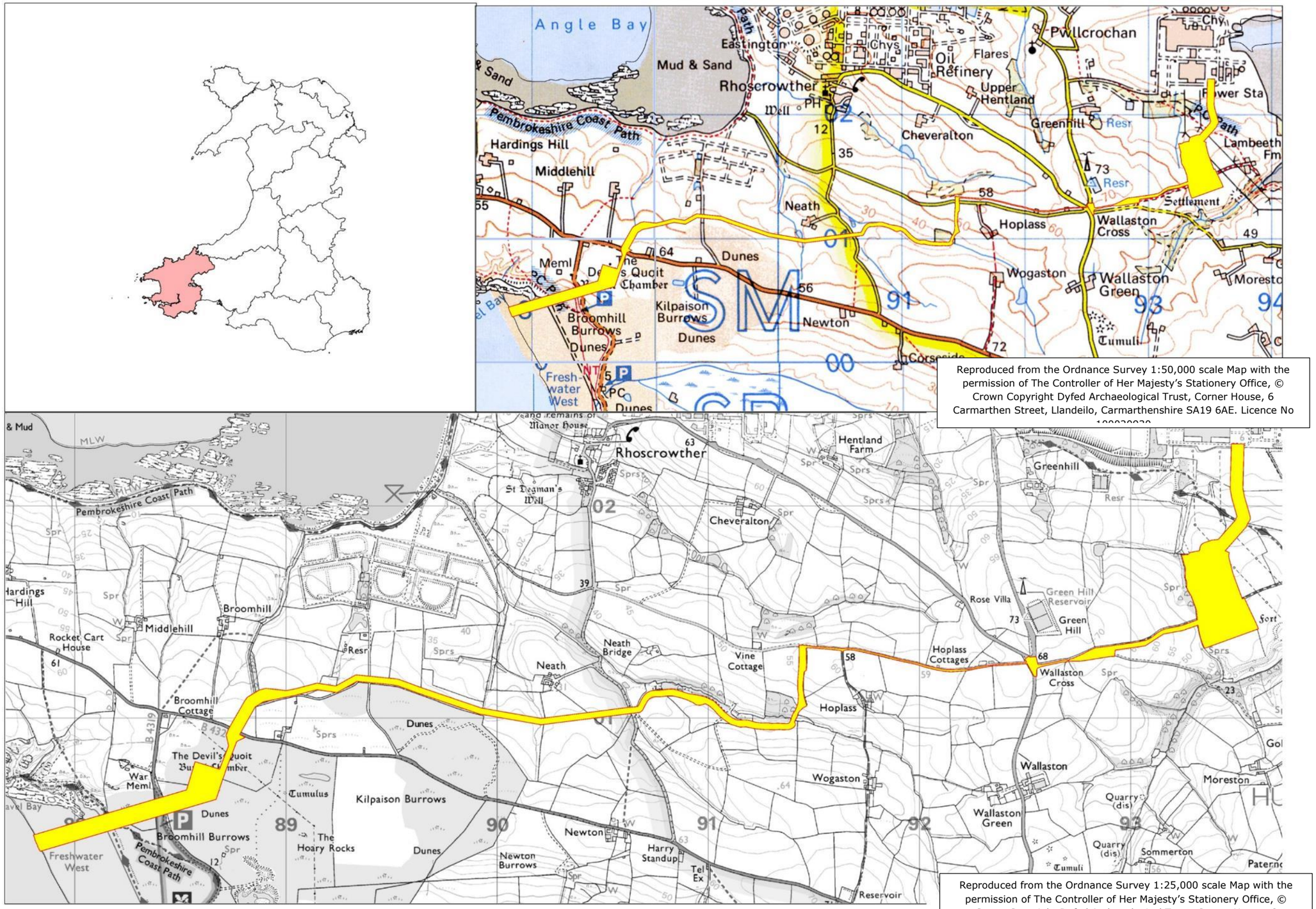


Figure 1: Location map for the proposed Greenlink Interconnector project site, Pembroke

2 AIM AND OBJECTIVES OF THE PROJECT

2.1 This document provides a scheme of works for:

The implementation of a scheme of archaeological mitigation comprising targeted strip, map and record exercise (in advance of groundworks) and watching brief (during groundworks). This scheme of mitigation will target areas identified through previous assessments (geophysics and trial trench evaluation). Further mitigation may be required where significant remains are identified, the scope of which will be determined following the results of the investigations. A report shall be prepared on the results of the archaeological work and an archive created of all finds, records, photographs, and plans created by this mitigation strategy.

2.2 The following tasks will be completed:

- Provision of a written scheme of investigation to outline the methodology for archaeological mitigation, including targeted strip, map and record exercise (in advance of groundworks) and archaeological watching brief (during groundworks) which DAT Archaeological Services will undertake (this document).
- To establish the state of preservation, character, extent and date range for any archaeological deposits identified during the archaeological investigations.
- To use the information if necessary to design future mitigation at the site which will enable any identified remains to be appropriately investigated and recorded where they will be affected by the proposed development.
- Production of a report on and an archive of the results.

3 PROPOSED ARCHAEOLOGICAL MITIGATION SCHEME

3.1 It is proposed that 8 areas are subjected to archaeological mitigation along the proposed cable route (Figure 2).

Devil's Quoit Area - Strip, map, and record exercise.

Area 8 – Strip, map, and record exercise in vicinity of probable Bronze Age round barrow (geophysical anomaly no.2).

Area 10 – 12 – Archaeological watching brief.

Area 14 – Strip, map, and record exercise in area of bronze age barrow (geophysical anomaly no. 9).

Area 15 – 21 – Archaeological watching brief – to include possible strip, map, and record exercise in vicinity of geophysical anomaly no. 9 in Area 18 if there is a risk it will be impacted upon.

Area 25 – 32 – Archaeological watching brief.

Area 35 – 37 – Archaeological watching brief

3.2 **Devils Quoit Area** (Figure 4, Photograph 1)

Devils Quoit (PRN 3071; SM PE020) is described as:

A fine burial chamber, standing in the centre of a field of wind-blown sand burrows. The monument comprises of a large capstone, 2.75m x 2m, resting on an upright slab, 1m x 1.5m, with two further uprights measuring 1.5m x 1.5m, and 1m x 1.8m. The capstone also rests on a large recumbent slab.

The deep cattle trampling hollow mentioned in the AM107 report by Cadw in 1999 is clearly visible all round the monument and is denuded of grass. This chambered tomb lies c.400m NW of round barrow PRN 3079. Fenton, writing in c.1810, recorded 'a low circular agger of earth raised around it [the burial chamber] of no inconsiderable area' (Historical Tour Through Pembrokeshire, 1811), but no trace of this remains today. N Cook PFRS 2004

Photograph 1: View north-northeast showing Devil's Quoit (PRN 3071; SM PE020) with oil refinery behind © DAT

3.3 The proposed cable route passes within c.60m of the scheduled monument and therefore has the potential to disturb associated archaeological remains. It is recommended that a strip, map and record exercise is undertaken in the area of the proposed cable route around Devils Quoit prior to the start of construction.

3.4 To the south of Devils Quoit the geophysical survey undertaken by Sumo has identified four circular anomalies. These anomalies have not previously been evaluated and their recorded response during the geophysical survey was consistent with that of the probable Bronze Age barrows that were evaluated. They lie within the area proposed for the PCNPA Construction Compound and it is therefore, recommended that the area of the future compound is subjected to a strip, map and record exercise prior to the start of construction.

3.5 **Area 8** (Figure 5)

Area 8 was evaluated by DAT Archaeological Services in 2019 (Meek 2019) and the remains of a probable Bronze Age round barrow (anomaly no. 2) were recorded. There is some potential that the proposed cable route will

disturb archaeological remains associated with the barrow and therefore a strip, map and record exercise in this area has been recommended.

3.6 **Area 10 – 12** (Figure 6)

It is recommended that a watching brief is undertaken along this section of the proposed cable route.

3.7 **Area 14** (Figure 7)

Area 14 has previously been evaluated (Meek 2019) and the remains of a probable Bronze Age round barrow were recorded near the eastern edge of the field. There is some potential that the proposed cable route will disturb archaeological remains associated with the barrow and therefore a strip, map and record exercise in this area has been recommended.

3.8 **Area 15 – 21** (Figure 8)

It is recommended that a watching brief is undertaken along this section of the proposed cable route.

This section includes **Area 18** where it is recommended that a strip, map and record exercise is undertaken within the vicinity of geophysical survey anomaly no. 9 if there is a possibility that this area will be impacted upon.

3.9 **Area 25 – 32** (Figures 9 and 10)

It is recommended that a watching brief is undertaken along this section of the proposed cable route in the area of anomalies indicating potential archaeology recorded during geophysical survey. These include a curvilinear anomaly (12) and linear feature (13) within or near the proposed access upgrade in Area 25 that were not evaluated in 2019 due to their proximity to services.

At the time of preparing this WSI curvilinear anomaly 12 is preserved in situ through exclusion from the scheme. This anomaly potentially indicates a prehistoric site. If it will be impacted, then it should be preserved through record and excavated.

3.10 **Area 35 – 37** (Figure 11)

It is recommended that a watching brief is undertaken along this section of the proposed cable route.

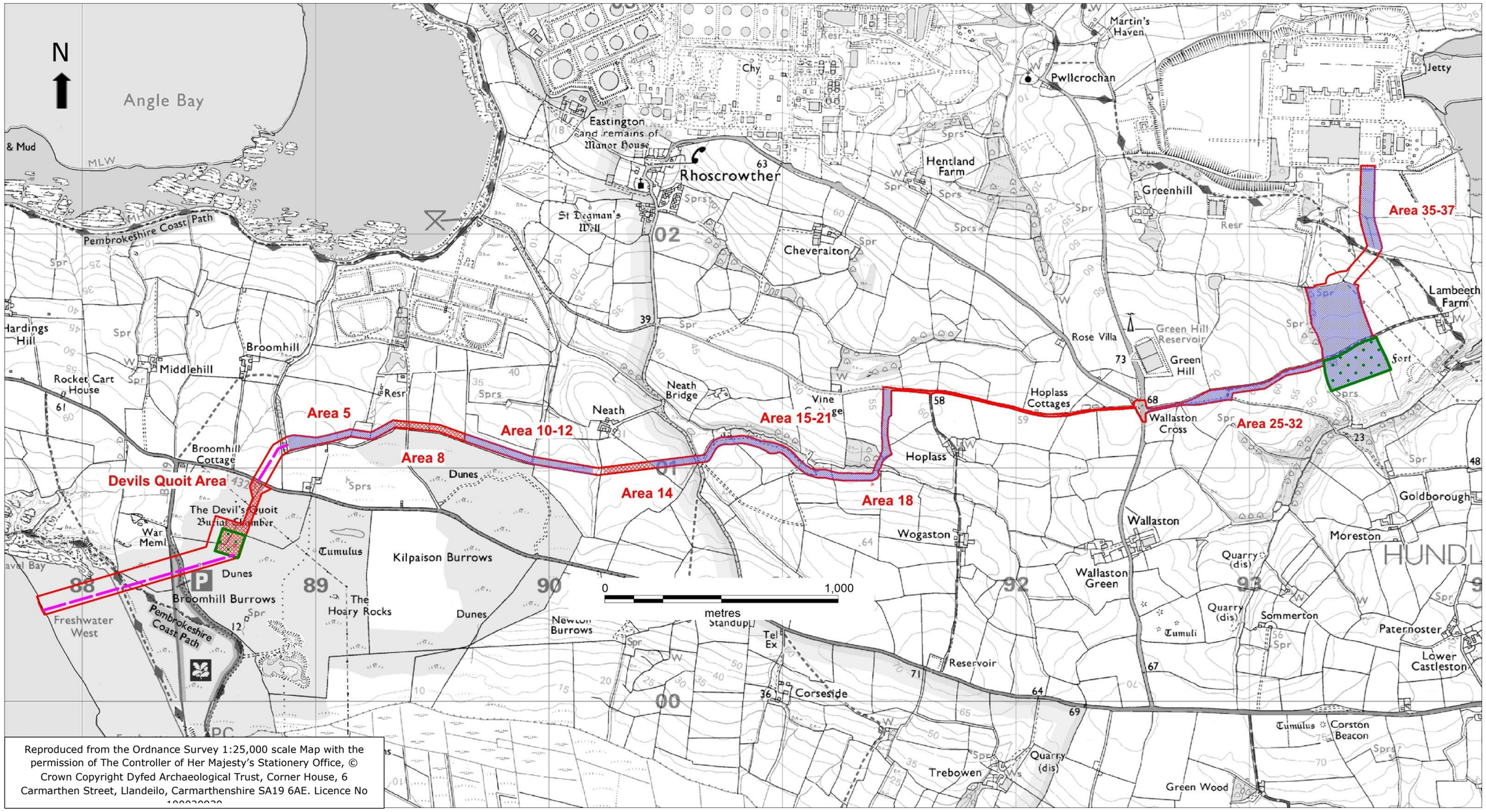


Figure 2: Defined areas of archaeological mitigation: strip, map and record exercise (shaded red) and archaeological watching brief (shaded blue). Temporary construction compounds outlined in green. Directional drilling shown as dashed pink line.

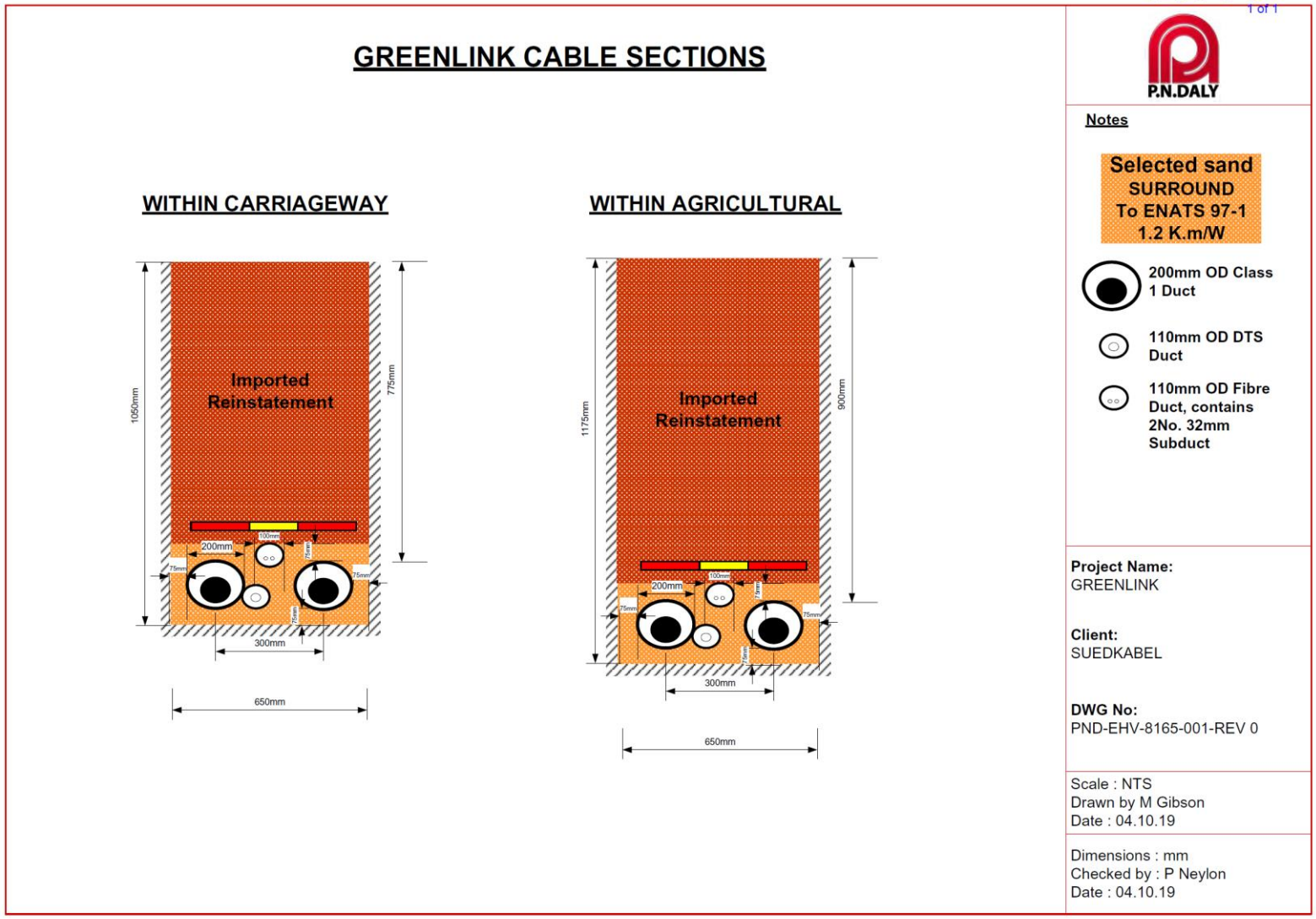


Figure 3: Details of dimensions of proposed cable trench

Figure 4: Devils Quoit area: a strip map and record exercise is proposed within the red shaded areas. Cable corridor outlined in red. Direction drilling shown as dashed pink line.

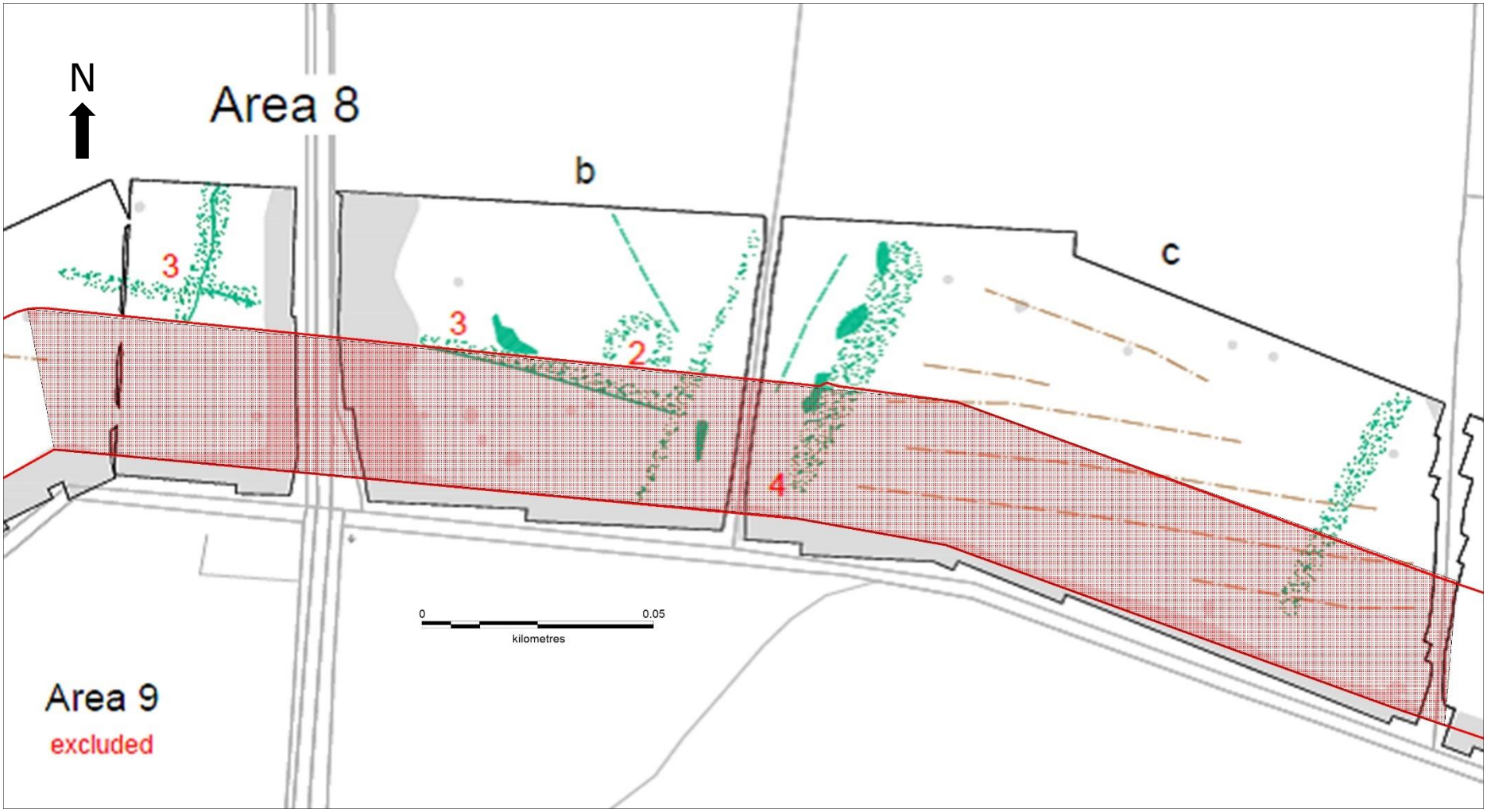


Figure 5: Area 8: a strip map and record exercise is proposed within red shaded area. Cable corridor outlined in red.

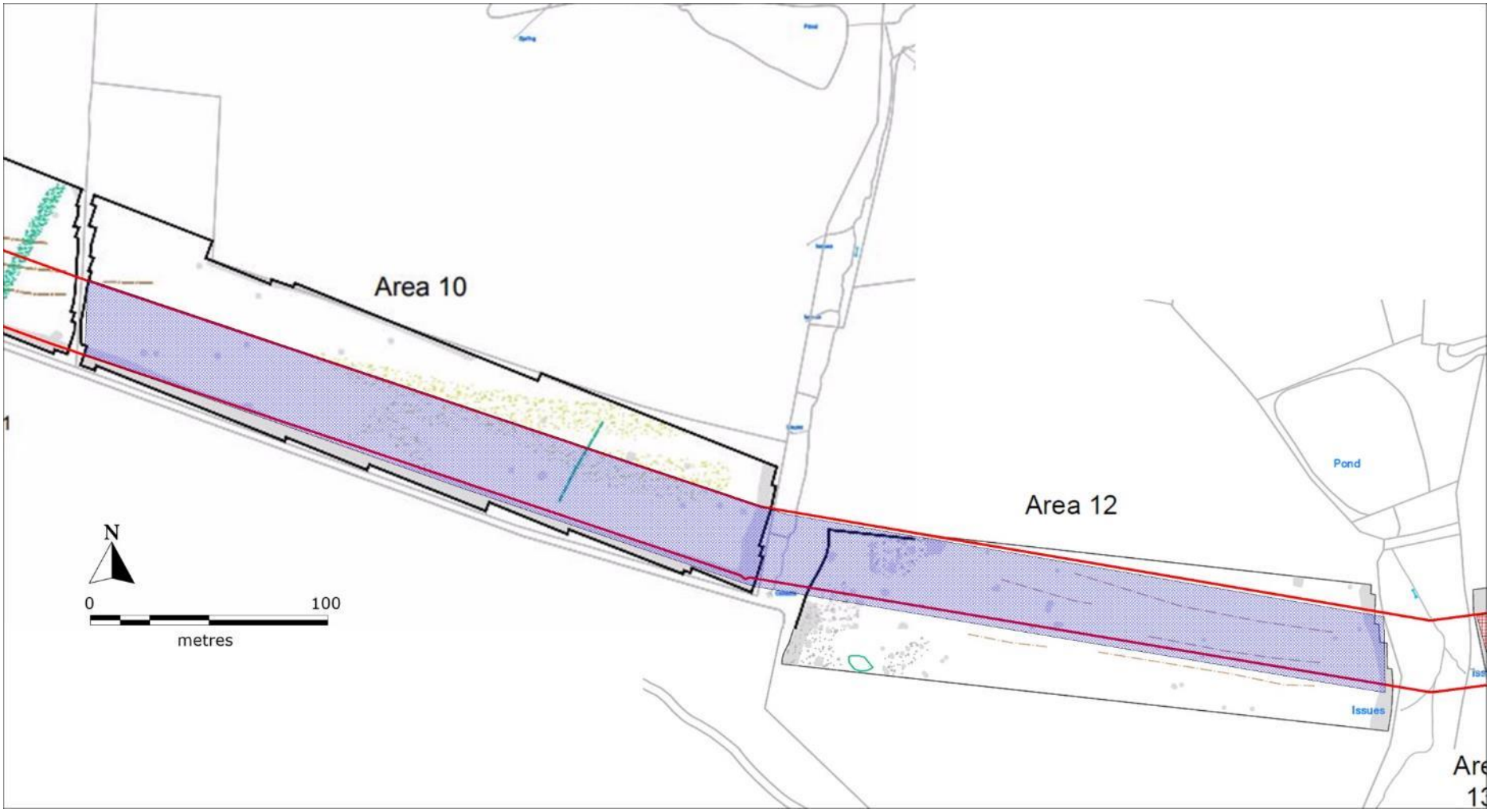
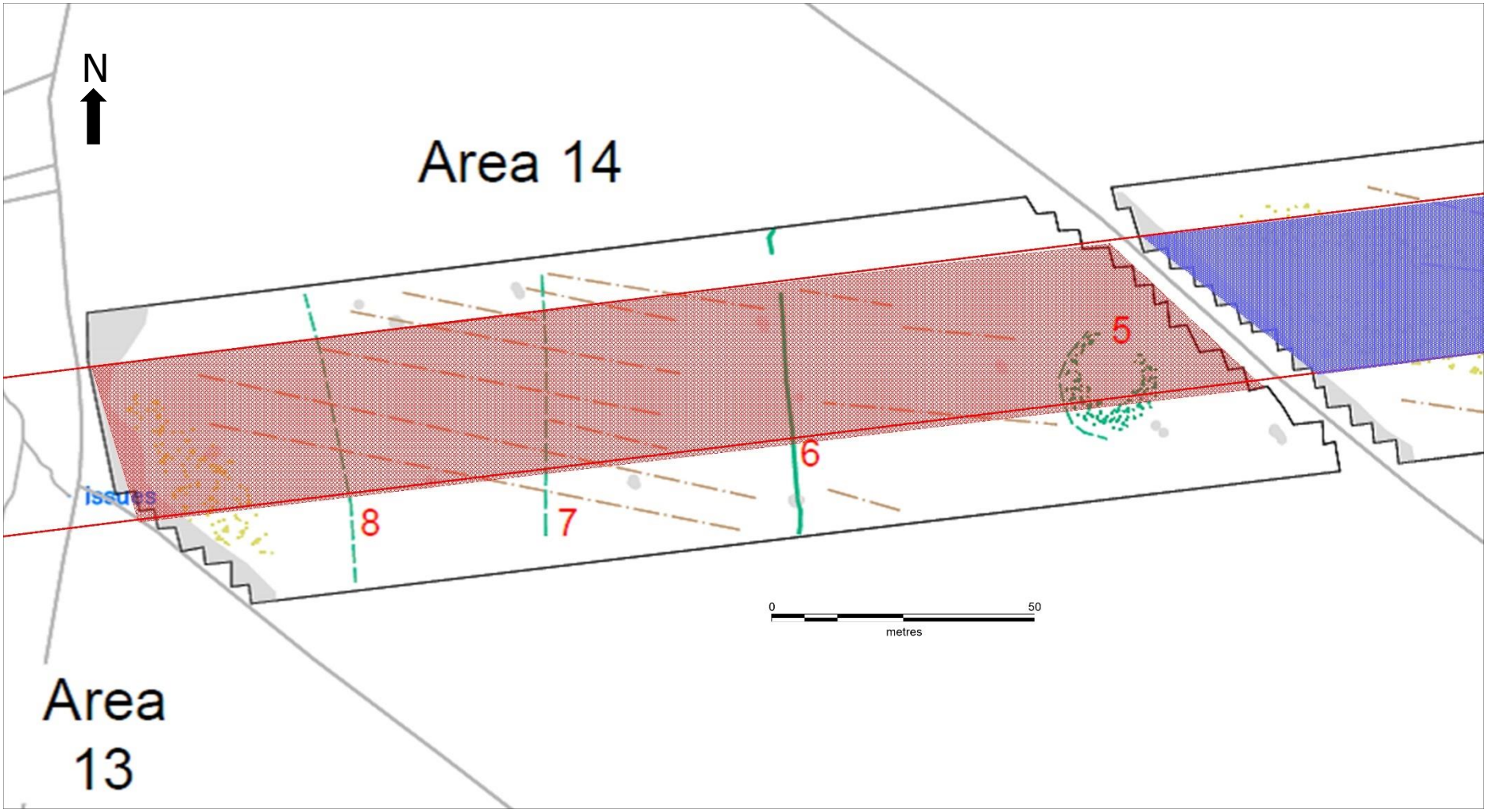


Figure 6: Area 10 – 12: an archaeological watching brief is proposed in these areas. Cable corridor outlined in red.



Area 7: Area 14**:** a strip, map and record exercise is proposed within red shaded area. Cable corridor outlined in red.

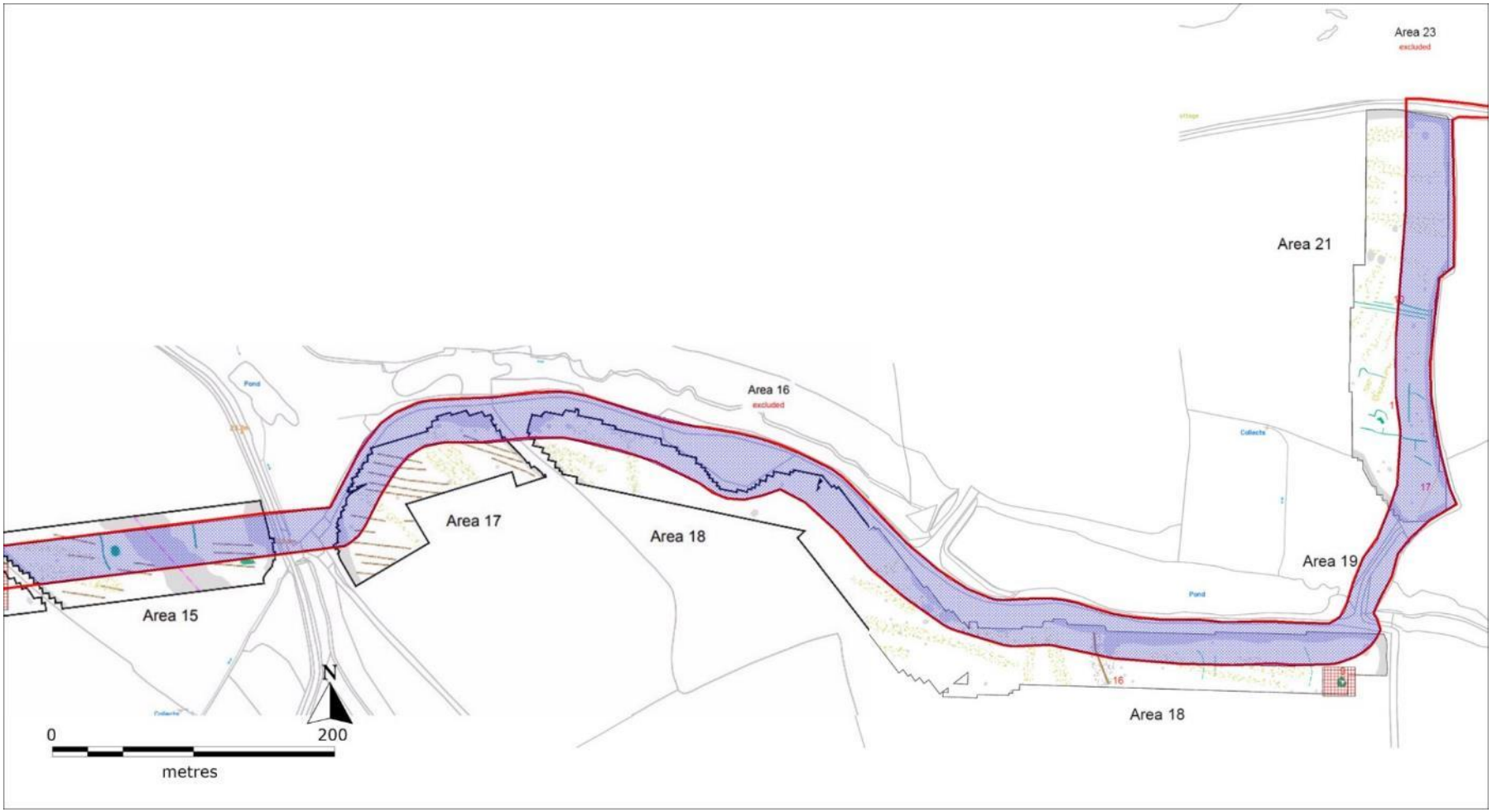


Figure 8: Areas 15 – 21: an archaeological watching brief is proposed in these areas. Cable corridor outlined in red.

This section includes **Area 18** where it is recommended that a strip, map and record exercise is undertaken within the vicinity of geophysical survey anomaly no. 9 if there is a possibility that this area will be impacted upon.

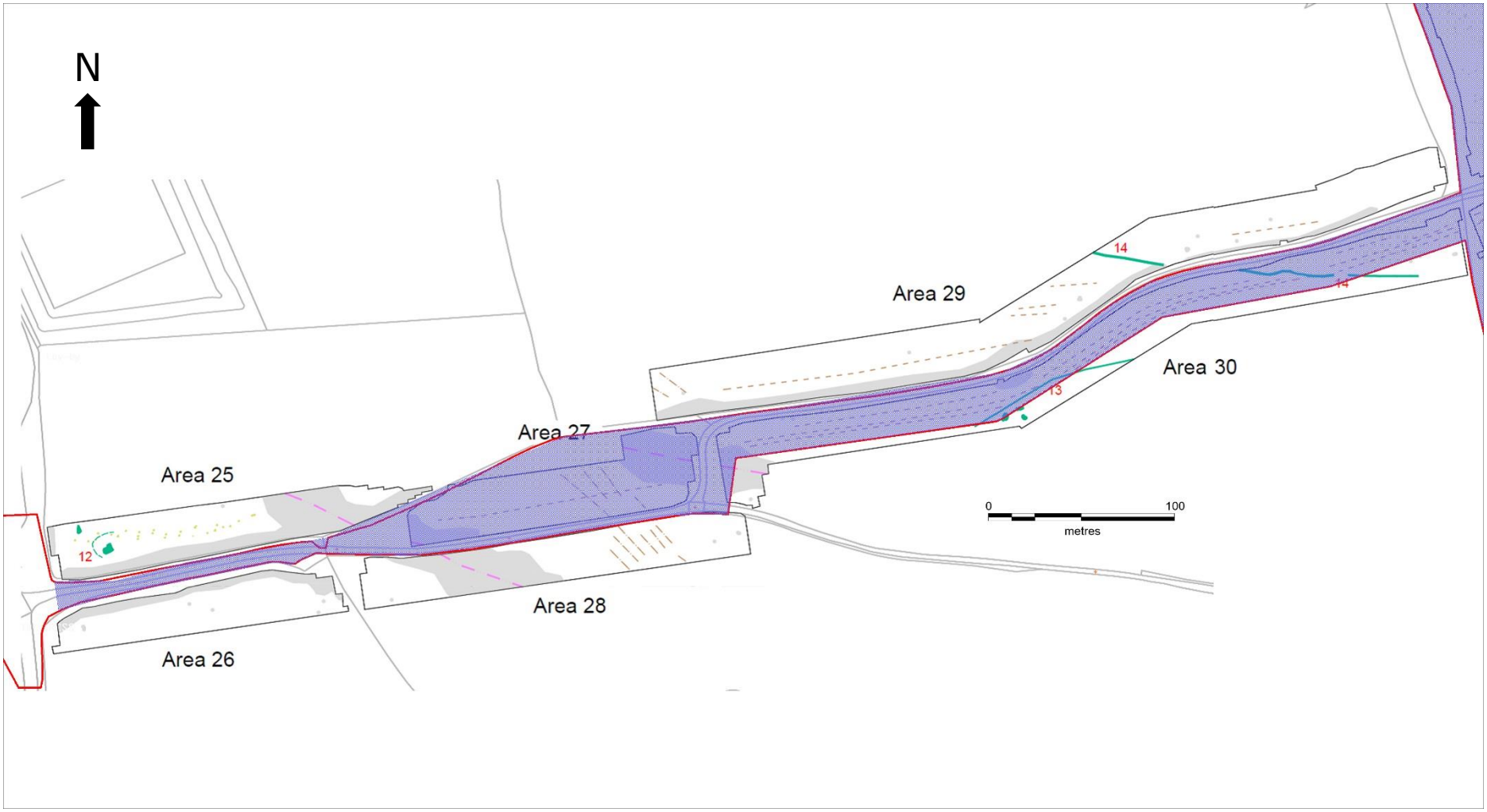


Figure 9: Area 25 – 30: an archaeological watching brief is proposed in these areas. Cable corridor outlined in red.

Figure 10: Area 30 – 32: an archaeological watching brief is proposed in these areas. Cable corridor outlined in red.

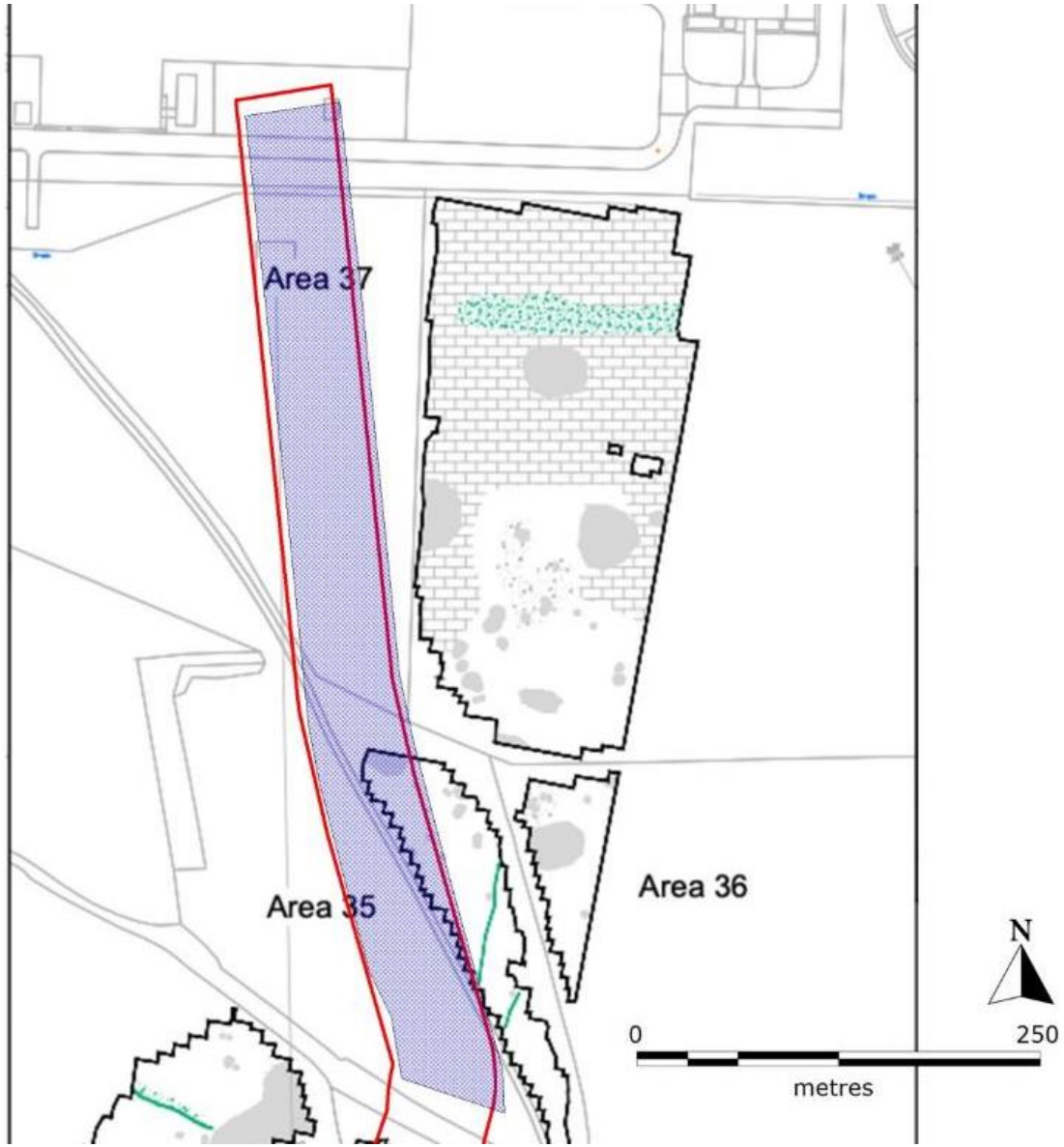


Figure 11: Area 35 – 37: an archaeological watching brief is proposed in these areas. Cable corridor outlined in red.

4. METHODOLOGY

4.1 Strip, Map and Record

4.1.1 The strip, map and record exercise will be implemented across the defined areas of the proposed cable route.

4.1.2 The topsoil and any non-archaeologically significant subsoil, across this area will be carefully removed using a mechanical excavator fitted with a flat bladed bucket under permanent archaeological supervision.

4.1.3 Any archaeological features identified within this area will be defined and surveyed using either accurate GPS or a Total Station Theodolite.

4.1.4 Sample areas of the site strip will be hand cleaned to further define the presence, or absence, of archaeological features and to determine their significance. A sample of these features will then be archaeologically excavated and recorded. The sample size will be determined by the significance of the exposed archaeology and in consultation with the archaeological advisors to the planning authority at Dyfed Archaeological Trust – Development Management.

4.1.5 The excavation of the minimum number of identified archaeological features needed to elucidate the character, distribution, extent, date and importance of the archaeological remains will be undertaken.

4.1.6 All deposits will be recorded by archaeological context record sheet, scale drawing (no less than 1:20), photography, and site notebooks, and will conform to best current professional practice and be carried out in accordance with the Recording Manual[3] used by DAT Archaeological Services.

4.1.7 A digital photographic record will be maintained as a minimum, using a high-resolution camera, with photographic information recorded for all photographs taken.

4.2 Watching Brief

4.2.1 The watching brief will entail an archaeologist being present during all ground works where there is a potential for archaeological remains to be exposed, damaged or destroyed.

4.2.2 It is essential that coordination between the site contractors and archaeologist is established at the outset to avoid any potential disturbance to the site without an archaeologist being present, or unnecessary visits to the site when works are being carried out that do not require the presence of an archaeologist.

4.2.3 Adequate time must be made available to the visiting archaeologist to ensure that appropriate recording can be undertaken of any archaeological features or deposits exposed during ground works.

4.2.4 Recording of all archaeological features or deposits will conform to best current professional practice. Significant archaeological features or deposits will be drawn at a suitable scale (no less than 1:20) and photographed in an appropriate format, and will conform to best current professional practice and be carried out in accordance with the Recording Manual used by DAT Archaeological Services.

[3] DAT Archaeological Services have adopted the Recording Manual developed by English Heritage Centre for Archaeology. A copy will be available on-site for inspection if required.

4.3 Archaeologically Significant Artefacts, Ecofacts and Samples

4.3.1 All archaeologically significant artefacts, ecofacts and samples will be retained and, where possible, related to the contexts from which they derived. Sensitive materials will be stored in appropriately stable conditions. Finds will be temporarily stored by DAT Archaeological Services in stable conditions. All finds, except those deemed to be Treasure[4], will remain the property of the landowner, but it is assumed that permission will be 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).

4.3.2 Under the 1996 Treasure Act, "treasure" can be summarised as:

- Any object other than a coin containing at least 10% gold or silver and at least 300 years old;
- Any prehistoric assemblage of base metal;
- Coins found together which contain 10% gold or silver (but no single coins) and groups of at least 10 coins of other metals, provided they are at least 300 years old;
- Any object found associated with treasure except unworked natural objects; and
- Any object which would have been Treasure Trove before the 1996 Act but not covered above.

4.3.3 In the unlikely event of the discovery of archaeological human remains they will, if possible, be left in situ. If removal is necessary, it will only take place following the granting of all permissions in writing by the relevant authorities and at a later stage of any necessary archaeological works (the Coroner must be informed and a burial licence granted from the Ministry of Justice).

4.3.4 In the event that unforeseen archaeological discoveries are made during the development, or that archaeological remains of high significance are exposed, DAT Archaeological Services will have the power to halt any ground works and shall inform the client and Planning Services at GGAT, and prepare a written statement with plan detailing the archaeological evidence. Following assessment of the archaeological remains by all parties, if required, a contingency scheme for salvage excavation of affected archaeological features may need to be implemented. This event may need to be covered by contingency financial arrangements within the project budgets. This contingency will also be implemented in the event that the strip, map and record exercise identifies significant remains extending beyond the 30m wide strip, map and record zone.

5 POST-FIELDWORK REPORTING AND ARCHIVING

5.1 An archive will be prepared if it meets the requirements of the Dyfed Archaeological Trust archive retention policy (2018). If it does, then data recovered during the watching brief will be collated into a site archive structured in accordance with the specifications in Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation (Brown 2011), and the procedures recommended by the National Monuments Record, Aberystwyth. The National Standards for Wales for Collecting and Depositing Archaeological Archives produced by the Federation of Museums and Art Galleries of Wales will also be adhered to. Digital archives will be collated using the Royal Commission on the Ancient and Historical Monuments of Wales systems (2015) and deposited with the RCAHMW.

5.2 The results of the archaeological work will be assessed in local, regional and wider contexts.

[4] If any material deemed to be Treasure is found, the Coroner must be informed

5.3 The report will include a summary desk-based assessment element to place the site into its wider context within the area.

5.4 The project archive, including all significant artefacts and ecofacts, excepting those which may be deemed to be Treasure will be deposited with an appropriate body following agreement with the landowner. Finds recovered from the site will be retained or discarded in line with the Dyfed Archaeological Trust Archive Disposal Policy.

5.5 DAT Archaeological Services will arrange for the deposition of finds, and ascertain the costs of storage and deposition, with an approved body before the project commences and inform the curator of the arrangement which has been made. It is likely that any digital archive will be deposited with the Royal Commission on the Ancient and Historical Monuments of Wales and any retained finds with Carmarthen Museum.

5.6 A summary of the project results, excluding any confidential information, may be prepared for wider dissemination (e.g. Archaeology in Wales and special interest and period-specific journals).

5.7 The report will be prepared to follow the *Standard and Guidance for Archaeological Field Evaluation* (CIfA 2014).

5.8 Digital copies in pdf format will be supplied to the client and also supplied to Dyfed Archaeological Trust Development Management section and Historic Environment Record.

5.9 Appropriate specialists to be used by DAT Archaeological Services include:

- **Industrial Archaeology** –Jennifer Protheroe-Jones, Principal Curator – Industry, National Waterfront Museum, Swansea
- **Post-medieval / medieval pottery** – Dee Brennan (local independent specialist)
- **Prehistoric Pottery** – Dr Alex Gibson (formerly of University of Bradford / now Independent pottery specialist)
- **Prehistoric Flint** – Dr Andrew David (formerly of English Heritage, now independent lithics specialist)
- **Radiocarbon dating** - Beta Analytic
- **Animal Bones** – Worcester Archaeology
- **Fish bones –** Jennifer Browning (University of Leicester Archaeological Services
- **Environmental / Pollen analysis** – Worcester Archaeology

6 STAFF

6.1 The project will be managed by Fran Murphy, Head of DAT Archaeological Services.

6.2 The on-site works will be undertaken by experienced members of DAT Archaeological Services staff.

7 MONITORING

7.1 The fieldwork may need to be monitored by Dyfed Archaeological Trust-Development Management in their capacity as archaeological advisors to the planning authority, who should be provided access to the site at any time during the archaeological works. It may be necessary to arrange monitoring visits, and

this should be confirmed prior to the start of any fieldwork. The Head of DAT Archaeological Services may also monitor the on-site works intermittently.

8 HEALTH AND SAFETY

8.1 All permanent members of DAT Archaeological Services staff are CSCS registered.

8.2 DAT Archaeological Services will carry out a health and safety risk assessment to ensure that all potential risks are minimised.

8.3 The site staff will go through the health and safety risk assessment prior to works commencing and all site staff must sign the document to confirm that they have read, understood and will comply with the document.

8.4 All site inductions, H&S procedures, H&S constraints and site rules of the client or any on-site contractor should be made known to the archaeological staff at the start of the works.

8.5 All relevant health and safety regulations must be followed, including compliance with Welsh Government guidelines on working practices during the current Covid-19 Pandemic, and guidance issued by CIfA.

8.6 CIfA recommends that Registered Organisations should ensure that their own risk assessments and local site operating procedures take account of Prospect's COVID-19 site working advice (updated 4 May).. If the site cannot operate in line with this guidance it must not open or continue to stay open.

8.7 The project risk assessment should detail the precautions put in place to reduce the spread of Covid-19 coronavirus during fieldwork.

8.8 Trenches will be fenced whilst they are open with a mix of orange Netlon fencing and hazard tape to create a visible barrier between the trenches and surrounding land. This will avoid accidental egress into the trenches preventing trips or falls. The archaeological trenches area unlikely to be of any significant depth.

8.9 Arisings from the trenches will be stored adjacent to the trenches at a safe distance to avoid material dropping back into the trenches. The spoil heaps are unlikely to exceed 1m in height. If there is any issue regarding rainwater causing silt water run-off into adjacent streams then the spoil heaps will be tamped down and secured, tarpaulins may be used to cover the heaps if this occurs.

8.10 Safety helmets, high visibility vests and boots are to be used by all site personnel as necessary. The developer will make all site staff aware of any other PPE that may be required.

8.11 Working with machinery: DAT Archaeological Services staff must ensure that their presence on site is communicated to all relevant site staff, especially the machine operator. The archaeologist observing the excavation of trenches by machine will establish a safe working procedure with the machine operator at the start of work. This will include explaining the purpose of the works itself and the method by which the trenches shall be machined. This will include ensuring that the machine driver is aware that topsoil is stripped carefully to avoid disturbing archaeology. This will also include discussing the methodology for safe working, ensuring that no machining is done without an archaeologist being present.

8.12 Typically two archaeologists would observe the topsoil strip, one observing the machine and the other checking for archaeology being exposed in the trenches. All site staff will be made aware to not stand in close proximity to the machine or walk by it unless the machine is turned off or the operator has specifically indicated that it is safe to pass.

9 ARBITRATION

9.1 Any dispute or disagreement arising out of a contract in relation to this work shall be referred for a decision to the Chartered Institute of Archaeologist's arbitration scheme.

10 SOURCES

10.1 Enright, C & Wilson, H 2019 *Greenlink Interconnector Project, Pembrokeshire: Archaeological Evaluation*, Unpublished DAT Report No 2019-39

Meek, J 2018 *Greenlink Interconnector, Pembrokeshire: Historic Environment Desk Based Assessment Update,* Unpublished DAT Report No 2018/44

Sumo 2019 *Geophysical Survey Report Greenlink [Onshore Wales], Pembrokeshire,* Survey Report No 13980

APPENDIX II

Negative Archaeological Strip, Map and Record Results at the Devil's Quoit Area

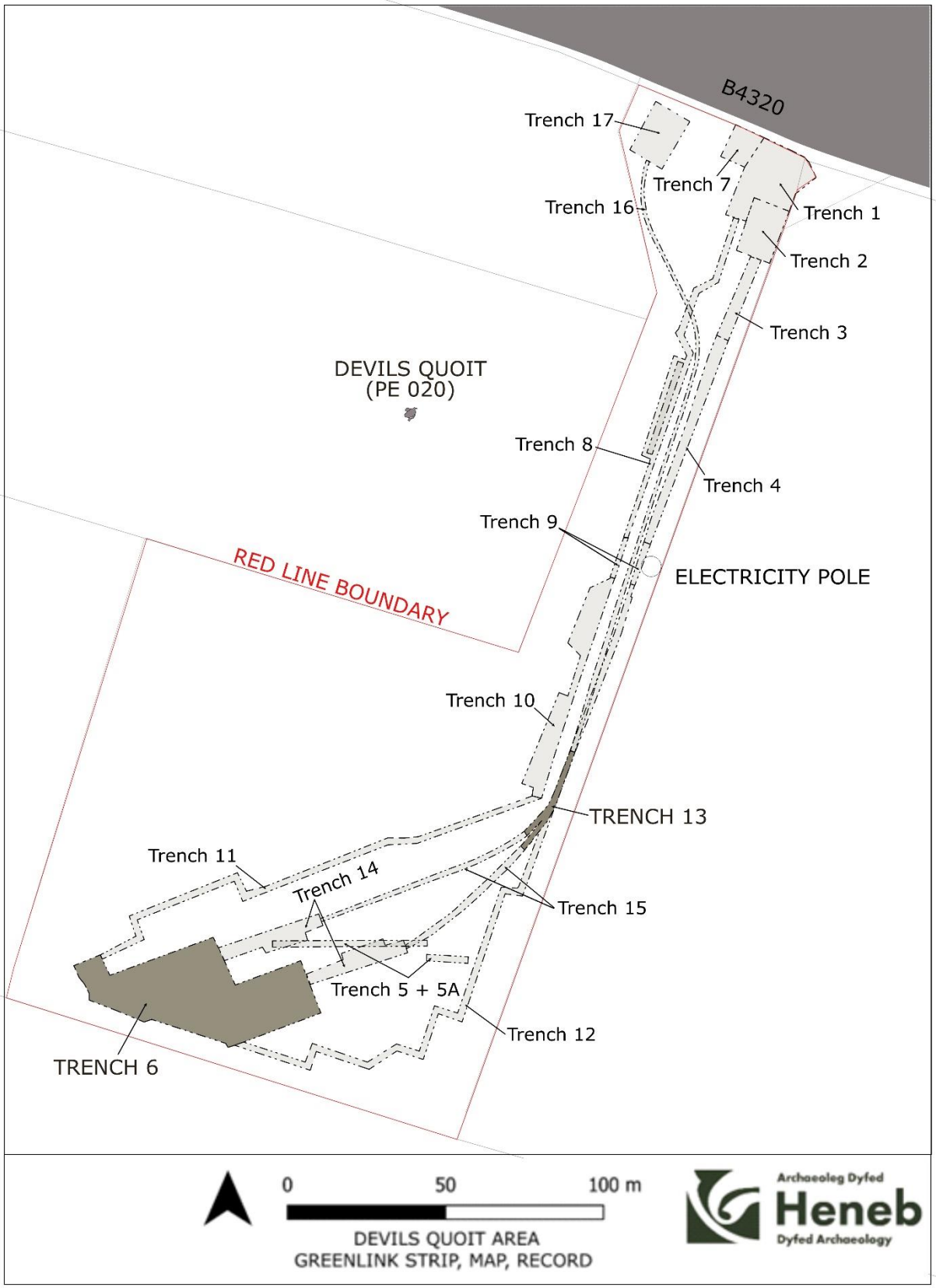


Figure 17: Trench plan at Devil's Quoit.

Record of negative strip, map, record areas	
Trench:	Devils Quoit
Trench	1
Date of excavation	23/09/2023
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:

Trench 1 represents the bell mouth at the entrance of the site which was installed to allow lorries to enter. This was the first trench excavated at the Devil's Quoit Site and measured 31m north/south by 17m east/west forming the northern delimitation of the site.

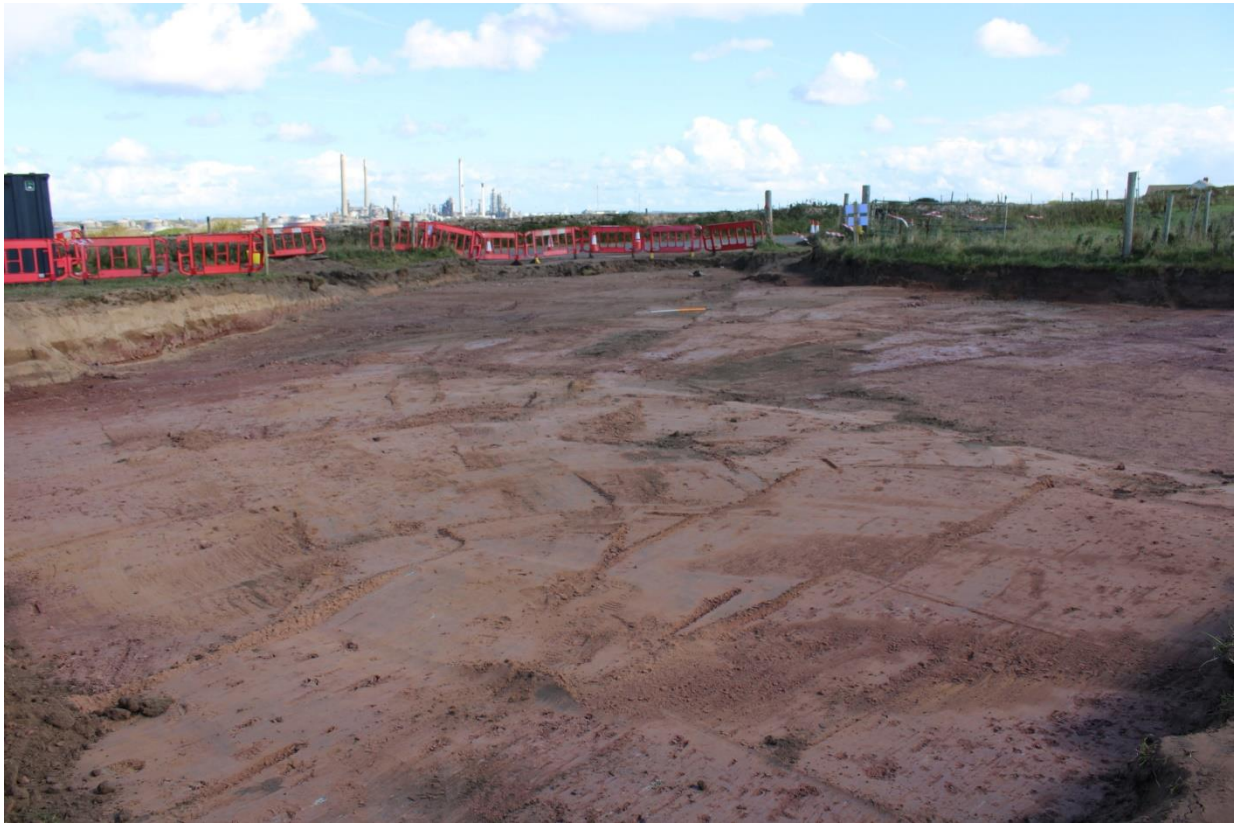
The trench was covered in a thin layer of loose sandy humic topsoil measuring a maximum of 0.24m in depth (1001). Beneath the topsoil was sporadic layer of subsoil (1002) measuring a maximum of 0.08m in depth.

As was found elsewhere on the site, a thick layer of superficial light white sand covered the trench. This likely dates to the levelling of the dunes which once covered the area in the 1970's. The sand in this trench measured a maximum of 0.33m in depth tapered to almost nothing towards the south of the site.

Beneath the superficial sand deposit was a layer of sandy mid-brown buried topsoil which measured 0.20m in depth. This is presumed to predate the superficial sand deposit and therefore be of some antiquity.

The bedrock in Trench 1 consisted of a pinky purple sandstone bedrock like that found elsewhere on site.

Context	Thickness (m)	Description
(1001)	0.23	Sandy humic topsoil
(1003)	0.11	Greyish subsoil
(1004)	0.41	Superficial geology of windblown/dune sand
(1004)	N/A	Pinkish purple bedrock geology
(1005)	0.20	Buried sandy topsoil.



Photograph 42: Trench 1- Looking north, 1m scale.

Photograph 43: Trench 1 **-** Showing representative area of section. Looking east, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	2
Date of excavation	14/09/2022
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:

Trench 2 was a roughly rectangular area which was proposed location of the horizontal direction drilling set up which was to project the cable to the north of the road (this was later moved). It directly adjoined trench 1 to the northwest and trench 3 to the south. The trench measured 16.60m north/south by 11.30m east/west.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.23m in depth (2001). Beneath the topsoil was a layer of greyish sandy subsoil (2002) measuring a maximum of 0.11m in depth.

A thick layer of superficial light white sand covered the trench (2003). This is known to date to the levelling of the dunes which once covered the area in the 1970's. The sand in this trench measured a maximum of 0.41m in depth increasing in depth towards the northern part of the trench.

Beneath the superficial sand deposit was a layer of sandy mid-brown buried topsoil which here measured 0.26m in depth. This buried topsoil is presumed to predate the superficial sand deposit and therefore be of some antiquity.

The bedrock in Trench 2 consisted of a pinky purple sandstone bedrock like that found elsewhere on site. In the southern part of the area there was a lightly sandier looser band of geology.

Context	Thickness (m)	Description
(2001)	0.23	Sandy humic topsoil
(2003)	0.11	Greyish subsoil
(2004)	0.41	Superficial geology of windblown/dune sand
(2004)	N/A	Pinkish purple bedrock geology
(2005)	0.20	Buried sandy topsoil.

Photograph 44: Trench 2 - Looking north, 1m scale.

Photograph 45: Trench 2 - Showing representative section. Looking east, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	3
Date of excavation	14/09/2022
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 3 constituted the northern most part of the cable route seen at Devils Quoit. The trench measured 43.8m in length and 1.6m in width (standard 360 excavator bucket width). It was delimited to the north by the extent of Trench 2, the site of the proposed HDD drilling pit, and to the south by a modern fence line. Neither division was of archaeological significance but a logical subdivision on site.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.26m in depth (3001). Beneath the topsoil was a layer of greyish sandy subsoil (3002) measuring a maximum of 0.17m in depth. A thick layer of superficial light white sand covered the area (3003). This is known to date to the levelling of the dunes which once covered the area in the 1970's. The sand in this trench measured a maximum of 0.36m in depth, again increasing in depth towards the northern part of the trench. Beneath the superficial sand deposit (3004) was a layer of sandy mid-brown buried topsoil which here measured 0.36m in depth. The bedrock in Trench 3 consisted of a pinky purple sandstone bedrock like that found elsewhere on site, here it was gradually sloping towards the south.

There were two small gullies with a broad U-shaped profile (3006/3008) crossed the trench east/west broadly in line with the modern fence lines. [3006] was at the northern most part of Trench 3 [3008] was in the mid part of the trench. Both were filled with a mid-brown sandy fill (3007/3009 respectively) similar to deposit (3005). It is thought that both gullies date to a similar period to buried topsoil (3005). Both predated the superficial sand deposit before the relandscaping of the site in the 1970's but are thought almost certainly to be post-Medieval/modern in date.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(3001)	0.26	Sandy humic topsoil
(3002)	0.17	Greyish subsoil
(3003)	0.36	Superficial geology of windblown/dune sand
(3004)	N/A	Pinkish purple bedrock geology
(3005)	0.21	Buried sandy topsoil.
[3006]	W0.60 x D0.90	Cut of small U-shaped gully in northern part of trench 3
(3007)	0.09m	Sandy fill of gully [3006], similar to (3005).
[3008]	W0.62 x D0.06m	Cut of small U-shaped gully in mid part of trench 3.
(3009)	0.06m	Sandy fill of gully [3006], similar to (3005).

Photograph 46: Trench 3 - Showing Trench 3 during excavation running south from Trench 2. Looking southeast, 1m scale.

Photograph 47: Trench 3 **-** Looking north towards Trench 2. 1m scale.

Photograph 48: Trench 3 - Showing gully [3006] after excavation running east west across the northern part of trench 3. Looking south, 1m scale.

Photograph 49: Trench 3**:** Showing gully [3008] running east/west across the mid part of trench 3.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	4
Date of excavation	15/09/2022
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 4 constituted the middle part of the north/south cable route. The trench measured 58.1m in length and 1.6m in width (standard 360 excavator bucket width). It was delimited a modern fence line to the north, and to the south electricity pylons. Neither division was of archaeological significance but a logical subdivision on site.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.28m in depth (4001). However here, no subsoil was visible. A thick layer of superficial light white sand covered the area (4003). This is known to date to the levelling of the dunes which once covered the area in the 1970's. The sand in this trench measured a maximum of 0.33m in depth, again increasing in depth towards the southern part of the trench. Beneath the superficial sand deposit (4005) was a layer of sandy mid-brown buried topsoil which here measured 0.36m in depth. The bedrock in Trench 4 consisted of a pinky purple sandstone bedrock (4004) like that found elsewhere on site, here it was gradually sloping towards the south.

In the southern part of the trench was a small gully [4006] like those found in Trench 3. It had a U-shaped profile and crossed the trench east/west broadly in line with the modern fence lines. Gully [4006] was filled with a mid-brown sandy fill similar to deposit (3005). It is thought that both gullies date to a similar period to buried topsoil (3005), predating the superficial sand deposit before the relandscaping of the site in the 1970's but are thought almost certainly to be post-Medieval/modern in date.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(4001)	0.28	Sandy humic topsoil
(4003)	0.33	Superficial geology of windblown/dune sand
(4004)	N/A	Pinkish purple bedrock geology
(3005)	0.21	Buried sandy topsoil.
[4006]	W0.35 x D0.04	Cut of small U-shaped gully in northern part of trench 3
(4007)	0.04m	Sandy fill of gully [3006], similar to (3005).

Photograph 50: Trench 4 -Showing Trench 4. Looking north, 1m scale.

Photograph 51: Trench 4 - Showing gully [4006]. Looking north, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	5 and 5A
Date of excavation	04/10/2022
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 5 and 5 A were in the central part of the Devil Quoit compound area. Both were targeted evaluation trenches which aimed to access the archaeological potential of four circular anomalies seen in the geophysical survey undertaken by SUMO in 2019.

Trench 5 measured 46m in length and whilst trench 5 A measured 13m in length. Both measured 1.8m in width and were orientated east/west. Both trenches were cleaned by hand after excavation.

Across both trenches the topsoil measured 0.16m in depth and was composed a mid-brown sandy silt with a stoney inclusions. A thin layer of subsoil measuring 0.05m in depth on average was also present. This was similar in composition to the topsoil but significantly less humic and grey in colour. The bedrock was a pinkish sandstone seen elsewhere. There was no superficial covering of windblown sand in this area. Here it had mostly been stripped away by the wind down the hill.

No archaeological remains were detected in either trench. It is thought that the anomalies seen in the geophysical survey were therefore most likely caused slight variations in the sandstone bedrock geology caused by the movement of water.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(5001)	0.16	Sandy humic topsoil
(5002)	0.05	Sandy subsoil
(5003)	N/A	Pinkish purple bedrock geology

Photograph 52: Trench 5 -Showing Trench 5 after cleaning. Looking west, 1m scale.

Photograph 53: Trench 5A - Showing Trench 5A after cleaning. Looking east, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	7
Date of excavation	3/10/2022
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Archaeological evaluation

Description of results:
Trench 7 was located at the northern most part of the site adjacent to the B4320 which ran along its northern edge. It was a roughly rectangular area which was to serve as the soak away for the drainage system being installed around the site. The trench measured 6m east/west and 7m north/south. It was moved south from its original location by circa 1m due to a BT cable which ran along the side of the road.

The topsoil in Trench 3 measured 0.16m in depth and was composed of a dark brown sandy silt (7001). The subsoil was extremely thin but present consisting of a greyish sandy silt measuring 0.04m in depth (7002). As with elsewhere a thick layer of windblown sandy, whose present form is known to date to the 1970s when the dunes in the area were cleared here measured 0.34m in depth and was at its deepest again the northern edge of the trench (7003).

The buried topsoil found across the site was present here (7005). Again, being composed of a buried sandy topsoil measuring 0.16m in depth.

The bedrock was the purple/pink sandstone seen across the site.

Context	Thickness (m)	Description
(7001)	0.16	Sandy humic topsoil
(7002)	0.04	Greyish sandy subsoil
(7003)	0.34	Superficial geology of windblown/dune sand
(7004)	N/A	Pinkish purple bedrock geology
(7005)	0.16	Buried sandy topsoil.

Photograph 54: Trench 7 - Showing Trench 7 after cleaning. Looking south, 1m scale.

Photograph 55: Trench 7: Representative section in Trench 7. Looking east, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	8
Date of excavation	30/09/2022
On Site Supervisor **Project Manager**	Luke Jenkins Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 8 constituted the western drainage channel along the haul road. It was delimited by Trench 11 at its northern end and trench 9 at its southern end. The trench measured 1.14m in length and 1.8m in length. It had a trapezoidal bend in its mid-section a passing bay for the haul road.

As this trench was only for a temporary drainage system for the drilling compound excavation was undertaken to the maximum depth of dig 0.50m or to bedrock, which ever came first.

The superficial layers in this trench varied significantly across its length as would be expected given its length. The topsoil (8001) was similar to that seen elsewhere measuring 0.11m in depth and being composed of brownish sandy silt. The layer of subsoil (8002) also varied in depth being between 0.05m and 0.10m in depth being composed of the greyish sandy silty seen across the site.

The superficial fine sand layer was present throughout the trench (8003). Its depth is only known at the northern end of the trench where it was 0.36m in depth. From the mid part of the trench southwards the sand was not penetrated by was a minimum of 0.40 m in depth appearing to climb towards the south.

Bedrock was only seen at the very northern part of the trench (8004). Here it consisted of the typical pinkish/purple sandstone seen across the site.

The buried topsoil seen in other trenches was not seen in this trench.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(8001)	0.11	Sandy humic topsoil
(8002)	0.05-0.10	Greyish sandy subsoil
(8003)	0.36m +	Superficial geology of windblown/dune sand
(8004)	N/A	Pinkish purple bedrock geology

Photograph 56: Trench 8: showing northern end of Trench 8 after excavation. Looking south, 1m scale.

Photograph 57: Trench 8: showing southern end of Trench 9 after excavation. Looking north, 1m scale

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	9
Date of excavation	17/10/2022
On Site Supervisor **Project Manager**	Hubert Wilson Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 9 consisted of two short stretches of drainage channel running under the electricity pylons. These sections were excavated separated from the rest of the drainage as a small excavator had to be used for health and safety reasons. Both sections measured 13m in length and 1m in width and were excavated to the maximum depth of dig 0.50m or to geology whichever came first.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.14m in depth (9001). The sand here (9002) was not penetrated by was a minimum of 0.40 m in depth. Accordingly, the bedrock geology was also not seen.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(9001)	0.14	Sandy humic topsoil
(9002)	0.40	Superficial geology of windblown/dune sand

Photograph 58: Trench 9 -Western part of Trench 9. Looking north 1m scale.

Photograph 59: Trench 9 Eastern part of Trench 9. Looking north, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	10 and 11
Date of excavation	30/09/2022
On Site Supervisor **Project Manager**	Hubert Wilson Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 10 and 11 consisted of the northwestern leg of the drainage for drilling compound. Along its length it had several changes of direction but was overall a rectangular trench running northeast by southwest measuring 219m in length and 1.8m (one bucket width) wide. The trench was excavated to the maximum depth of dig 0.50m or to geology whichever came first.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.21m in depth (10001). The sand here (10002) was not as deep as elsewhere measuring a maximum of 0.26m in depth. The superficial sand layer was not present in the southern half of the trench.

Bedrock was only seen in the southern part of the trench due to the superficial sand layers in the northern areas. Here, it consisted of the pinkish sandstone stone seen across the site.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(10001)	0.21	Sandy humic topsoil
(10002)	0.26	Superficial geology of windblown/dune sand
(10003)	N/A	Pinkish sandstone bedrock

Photograph 60: Northern part of Trench 11. Looking northeast, 1m scale.

Photograph 61: Southern end of Trench 11. Looking northeast, 1m scale.
Note the sandy deposit starting in mid-part of trench.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	Trench 12
Date of excavation	30/09/2022
On Site Supervisor **Project Manager**	Hubert Wilson Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 12 constitutes the eastern drainage channel for the drilling compound in southeastern part of the site. The trench measured 213m in length by 1.6m wide (standard bucket width) with many changes in direction along its length.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.13m in depth (11,001). The sand here (11,002) was not as deep as elsewhere measuring a maximum of 0.22m in depth. The superficial sand layer was not present in the southern half of the trench similar to Areas 11, 12 and 6.

Bedrock was only seen in the southern part of the trench due to the superficial sand layers in the northern areas. Here, it consisted of the pinkish sandstone stone seen across the site.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(12001)	0.21	Sandy humic topsoil
(12002)	0.26	Superficial geology of windblown/dune sand
(12003)	N/A	Pinkish sandstone bedrock

Photograph 62: Trench 12 - north/south section of Trench 12. Looking south, 1m scale.

Photograph 63: Trench 12 - east west section of Trench 12 along southern border of site. Looking east, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	Trench 14
Date of excavation	13/04/2023
On Site Supervisor **Project Manager**	Andrew Shobbrook Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 14 Constitutes the area required for the two transitional joint bays on site. When complete the Transitional joint bays will connect the offshore cable with its onshore counterpart. The two trench areas are identical, both being slightly over dug to allow for future groundworks. Both areas were rectangular measuring 30m northeast/southwest by 6m southeast/northwest.

The overlying layers in this trench are similar to those described elsewhere. They consist of a loose sandy humic topsoil measuring a maximum of 0.14m in depth (14,001). The superficial sand layer was seen across both trenches though not particularly thickly measuring between 0.04m and 0.09m in depth increasing in depth towards the north.

Bedrock in this trench consisted of the pinkish sandstone stone seen across the site.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(14001)	0.14	Sandy humic topsoil
(14002)	0.26	Superficial geology of windblown/dune sand
(14003)	0.04-0.09m	Windblown superficial sand
(14004)	N/A	Pinkish sandstone bedrock

Photograph 64: Trench 14- Western transitional joint bay. Looking northeast, 1m scale.

Photograph 65: Trench 14 **-** Eastern transitional joint bay. northeast, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	Trench 15
Date of excavation	17/04/2023
On Site Supervisor **Project Manager**	Andrew Shobbrook Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:
Trench 15 constitutes the ark from the two transitional joint bays (Trench 14) of the two cable trenches through the compound until the converge at the start of the haul road. Both trenches measured approximately 70m in length and 1.6m in width.

The overlying layers consist of a loose sandy humic topsoil measuring a maximum of 0.17m in depth (15,001). The superficial sand layer was seen across both trenches though not particularly growing in depth to a maximum 0.47m at the northern end of the trenches.

Bedrock in this trench consisted of the pinkish sandstone stone seen across the site.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(15001)	0.14	Sandy humic topsoil
(15002)	0.26	Superficial geology of windblown/dune sand
(15003)	0.47m	Windblown superficial sand
(15004)	N/A	Pinkish sandstone bedrock

Photograph 66: Trench 15 - Showing eastern leg of Trench 15. Looking southwest, 1m scale.

Photograph 67: Trench 15 - Western leg of trench 15. Looking northeast, 1m scale

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	Trench 16
Date of excavation	13/04/2023
On Site Supervisor **Project Manager**	Andrew Shobbrook Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:

In 2022 the route of the cable trench along the haul road was excavated under strip, map, record conditions, these excavations were recorded as trenches 3 and 4. After the excavation of these trenches, construction factors dictated that the cable be realigned and the trenches re excavated. This new cable run along the haul road is recorded as Trench 16.
Trench 16 measured 88m in length the distance from where the two cable trenches converge at the southern part of the haul road and Horizontal direct drilling pit at the northern edge of the site, the northern part of this trench curving towards it. The trench measured 1.6m in width, the width of standard grading bucket.

The overlying layers consist of a loose sandy humic topsoil measuring an average of 0.10m in depth (16,001). The superficial sand layer was seen across the trench being deepest at its southern extent. 0.measuring a maximum of 0.49m in depth.

Bedrock in this trench consisted of the pinkish sandstone (16002) seen across the site.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(16001)	0.14	Sandy humic topsoil
(16002)	0.26	Superficial geology of windblown/dune sand
(16003)	N/A	Pinkish sandstone bedrock

Photograph 68: Trench 16 - Showing southern part of trench 16. Looking north, 1m scale.

Photograph 69: Trench 16 Representative section of Trench 16. Looking east, 1m scale.

Record of negative strip, map, record areas	
Area:	Devils Quoit
Trench	Trench 17
Date of excavation	15/03/2023
On Site Supervisor **Project Manager**	Andrew Shobbrook Fran Murphy
Work Objective	Strip, Map and Record Exercise as described in the Written Scheme of Investigation (Murphy 2021)

Description of results:

Trench 17 represents the area of the horizontal direct drilling pit from where the Greenlink cable will go beneath the road. The trench area measured 7.5m north/south by 3m east/west.

The overlying layers consist of a loose sandy humic topsoil measuring an average of 0.15m in depth (17,001). The superficial sand layer (17, 002) was seen across the trench here being between 0.10m and 0.20m in depth.

Bedrock in this trench consisted of the pinkish sandstone (16002) seen across the site. No subsoil or buried topsoil were detected in this trench despite its proximity to Trench 1 where it was very visible.

No significant archaeological remains, deposits or finds were recorded in this trench.

Context	Thickness (m)	Description
(17001)	0.15	Sandy humic topsoil
(17002)	0.10-0.20	Superficial geology of windblown/dune sand
(17003)	N/A	Pinkish sandstone bedrock

Photograph 70: Trench 17 - During excavation. Looking southeast.

Photograph 71: Trench 17 - After excavation. Looking east, 1m scale.

APPENDIX III

Lithics Analysis

Lithic material from Trench 6 Devil's Quoits, Angle, Pembrokeshire.
DAT Greenlink project. SMR 22. GKN 118082.

By Andrew David

There are 14 flints, almost all debitage that is undiagnostic of period (Table 1). One bladelet has evidence of light use, and there is one fragment of a small microlith – too incomplete to classify but 'narrow blade' and likely to be Middle-Late Mesolithic, c 8100-4000, (Figure 1). One piece is unworked natural flint.

Judging by the surviving elements with cortex, the raw material is likely to be drift flint, as is usual for the area and can therefore be presumed to be more or less local. It is mostly patinated (or seems to be - it can be difficult to tell) and, again, this is typical for flints in the soils in this part of south Pembrokeshire. One piece has been burnt.

Technological features are limited to some evidence for hard hammer reduction, but there are no cores, and debitage is otherwise unspecific. The microlith and bladelet presumably derive from platform core technology. There is no certain evidence for the bipolar reduction that predominates nearby at Freshwater West (Wainwright 1959; David 2017).

The microlith fragment is the end of a very small example – perhaps the tail of a narrow scalene triangle, or part of a convex-backed or lanceolate piece. The likelihood is that it is late in the chronological range offered above, probably dating from c 7200 Cal BC. This is of course unlikely to be related to the later prehistoric megalithic settings nearby and may instead simply be part of a generalised background distribution of lithic debris accumulated in an area otherwise rich in activity from the Mesolithic onwards (Leach 1913; Wainwright, 1961; Meek 2018). In such circumstances it is unclear, and perhaps doubtful, that there is a significant relationship with the former standing stone and apparently associated cremations.

References:

David, A., 2017-18, Between a rock and a hard place: bipolar flint working in west Wales, Archaeology in Wales, 57-58, 71-89.

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Table 1: summary finds description.

SFN	Context	L x B (mm)	ID	Notes
001	(6027) [6006]	29.6 x 16	Broken tertiary flake	Pat?
003	(6030) [6009]	28 x 19	Secondary flake	Pat? Pebble cortex
005	(6020)	25.5 x 17.7	Primary flake/frag	Pat
006	(6020)	11.2 x 2.8	Bladelet frag	Pat
007	(6020)	15 x 9.4	Flake/bladelet frag	Pat; sand polish
008	(6020)	27.9 x 12.5	blade	pat
009	(6020)	10 x 2.7	Microlith frag	Unpat? Late Meso tip/tail
010	(6019) [6018]	17.4 x 8.6	Secondary flake	Pat?
011	(6019) [6018]	11.4 x 6.7	Tertiary flakes frag	Pat
012	(6020)	23 x 24	Natural flint flake	worn
015	(6020)	33.5 x20.8	Tertiary flake	
016	(6020)	32.8 x 9.8	Utilised bladelet	Pat; utilised? Gloss on dorsal RHS
017	(6026)	27.5 x 23	Tertiary flake frag	Pat and burnt
018	(6005) [6006]	16.1 x 18.1	Primary flake frag	pat

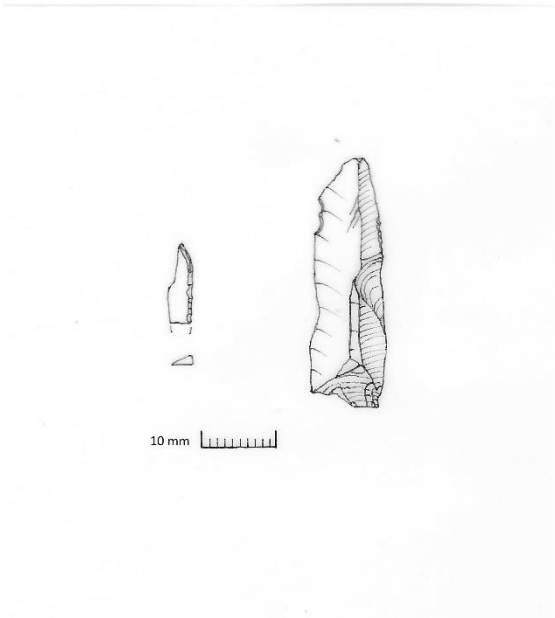

Figure 1: left = microlith fragment; right = utilised bladelet

Lithic material Trench 13 the Devil's Quoit Area, Angle, Pembrokeshire.
DAT Greenlink Project. SMR 22. ERN 118082.

By Andrew David

The flaked lithic material from the 2023 excavations comprises 58 struck flints and one tiny spall of quartz (Table 1), almost all from Trench 13, situated approximately 128m SSW of the Devil's Quoits (SAM PE020); a flake from a post-hole and another from a modern gulley (contexts [13002] and [13004]) were found to the north of Trench 13.

Lithic finds from Trench 13 also included 27 pebble items, and stone fragments (Table 2).

Flaked lithic material:

The spall of quartz (from context [13016]) is only 5mm long - too small to be certain that it is even artefactual. The remainer of the material is larger, of flint, and derives from small pebbles with a smoothed cortex, likely to have been collected from local superficial deposits. Most of it (85%) is debitage, comprising primary, secondary and tertiary flakes. At least 12 ('scalar') flakes provide clear evidence for bipolar technology, when flint pebbles are split and splintered between and anvil and hammer – a practical response to the need to obtain flakes from very small-sized flint pebbles. There are no platform cores, although a couple of bladelets suggests their use; detachment was mostly by hard hammers. At least 32 pieces (63%) are patinated, and 9 (15%) are burnt.

The only formal tools are six small sub-rounded convex scrapers, typical of the 'thumbnail' and 'button' types, and a seventh example with retouch on the end of a small flake/blade which can otherwise be included with the others in a group suggestive of the early Bronze Age. The only other possible tools are a couple of flakes with edge damage perhaps resulting from cutting/scraping activities.

Half of the flaked material, including all the scrapers, comes either from the buried soil (21%: [13007]), or from the fills of the two hollows (33%: [13020], [13021], [13030]); see Table 1. Other finds came from a gulley [13037], the fill of a tree bowl [13016] and a couple of post-holes [13031] and [13033]. The hollows and post-holes are considered to be part of a Neolithic structure, based on preliminary identification of pottery sherds (Gibson, 2023).

Pebble material:

The 27 pebbles and fragments weigh approximately 880 gms in total. Most are small, well under the maximum dimension of 104 mm. 13 pieces came from the fill of the hollow [13019] and 7 from the buried soil [13007], the remainder are from or near, other features (see Table 2). At least 9 of the pieces are of local Devonian (ORS) sandstone, the remainder are of unidentified rock types except for a single pebble of flint and a pebble and fragment of quartz.

Only one item is probably part of a modified stone tool, from the fill of hollow [13019]: a flake of a medium-grained crystalline igneous rock the convex dorsal surface of which is smoothed to a fine finish. Microscopic examination (x 12.5) shows areas of striation and incised scratches as well as a more widespread lustrous polish - all of which suggest that this is the preserved surface of part of a former polished tool such as an axehead, rather than part of a naturally polished cobble. Formal petrological identification might support the former suggestion, especially if a grouped rock-type is represented.

The only other pebble that may also be artefactual is a flattened elongated oval pebble of ORS sandstone (104.2 mm x 41.6 mm x 16.0 mm) found near [30016]. Its surface appears natural although there are small flake removals from each end which may result from deliberate impacts, but there is otherwise no evidence for bevelling, pecking or grinding. In

addition, an ovoidal pebble of ORS from [13020] is of an appropriate shape and size to be a small hammerstone for knapping but bears no obvious signs of such use.

The remaining pebbles and fragments are all apparently unmodified. The smallest pieces could be part of the natural soil population, but the larger rounded pebbles seem likely to have been introduced onto the site, perhaps collected from local beaches, or carried onto site incidentally with other materials such as seaweed. Pebbles from the fills of hollows [13030] and [13019] perhaps occupation deposits, include examples with appear to have been burnt (and nearly half the flints from [13021] also show signs of burning).

Some of the pebbles with water-smoothed surfaces may also have been appreciated for their textural and visual qualities, notably one each from the fills of post-holes [13022] and [13024].

Conclusions

The lithic material from Trench 13 is clearly a sample, as are the features uncovered, of a larger site with evidence for structural and occupation activity. The struck flint assemblage is characterised by use of small-sized local raw material and bipolar core reduction, by the emphatic presence of several typical convex scrapers, and by the absence of other diagnostic types (with the exception of the probable axehead flake). The scrapers and bipolar technique have been argued elsewhere to indicate a Neolithic or early Bronze Age date (David 2017-18) the latter typified for example by the assemblage associated with a roundhouse at Stackpole Warren some 11km to the south-east (Benson et al 1990, 226). Much closer still, only 1.4km to the south-south-east, is the very large assemblage of predominantly bipolar debitage and scrapers excavated at Freshwater West (Wainwright 1959; David 2017-18, 78-9). Flint densities there exceeded 700/sq m in places, and tools were dominated by 141 short scrapers of which 117 were described as 'pigmy thumb scrapers' - just such as those recovered from Trench 13 at the Greenlink site. Small though the latter sample is, it is tempting therefore to link it with equivalent activity - whilst noting that at Freshwater West, despite its prolific flint, pebble and shell debris, there was no evidence for hearths, pits or structures – nor any radiocarbon dating. Finds of bipolar technology and small convex scrapers are known from around much of Pembrokeshire, especially near the coast, although a still wider distribution is probable.

The flint and stone assemblage from Trench 13 adds to the considerable but poorly documented record for lithic finds in the sandy areas south of Milford Haven (eg Leach 1913; Wainwright 1961; Meek 2018). Whilst much of the recently excavated assemblage may at this stage be speculated to be early Bronze Age it remains a possibility that some may be Neolithic, or even earlier. The technology of Neolithic flint-working in west Wales is still poorly characterised and may well include bipolar work and certainly scrapers. The fragment from a probable polished stone axehead from hollow [13019], together with sherds of possible late Neolithic (or EBA) pottery is suggestive but both could be residual. Some residual Mesolithic input cannot be discounted either, in that a fragment of a microlith was found in the 2022 excavations near the Quoit, and microburins were found amongst the Freshwater West assemblage – and so at least a 'background noise' of late Mesolithic activity seems likely.

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Table 1: Lithics assemblage Greenlink summary table.

Greenlink 2022-33 flaked lithics: summary table																	
		2022 contexts (prefixed by 6)				**2023 contexts** (prefixed by 13)											
		006	009	018	?	002	004	007	008	009	016	020	021	030	032	034	u/s
Debitage	Flakes	1	1	1	6		1	2	2	1	3		6		1		9
	Scalar flakes					1		3					3	1	1	1	2
	Blades				1												
	Bladelets				1			2									
	Spalls									1			2				1
	Fragments							1					1			1	
	Bi-polar cores							1									
	Quartz spall										1						
Tools	Utilised flakes							1									1
	Utilised sc. flake																
	Utilised bladelet			1													
	Microlith frag.				1												
	Convex scrapers							2				1	3	1			
	End scraper												1				
TOTALS		**1**	**1**	**2**	**9**	**1**	**1**	**12**	**2**	**2**	**4**	**1**	**16**	**2**	**2**	**2**	**13**

Table 2: Lithic assemblage 2023.

SF	Cont	L	B	W	Wt	Notes
17	13021	44.0	22.8	6.5	2	?ORS frag
	13001	58.4	14.9	6.6	6	Misc frag; eroded flattened oval section of pebble
	13021	17.4	14.9	6.1	0.5	Quartz pebble frag
	13021	45.7	38.4	7.6	16	Fragment from surface of smoothed pebble, or possible axehead; igneous
24	SF012	28.2	12.4	6.7	2	Small ORS pebble frag
26	13007	30.0	19.6	14.3	10	Flint pebble
	13007	30.2	28.3	19.6	24	Pebble (quartz)
	13007	39.7	32.5	27.0	48	Pebble
	13007	39.7	26.7	18.6	24	Pebble (igneous?)
	13007	46.0	42.0	22.3	64	Pebble
27	13007	42.3	41.2	16.9	40	?ORS cobble frag
28	13006	104.2	41.6	16.0	130	Elongated and flattened ORS pebble; not bevelled, but both ends are damaged by small flake removals. Would make a good BP, but not demonstrably an artefact.
29	13020	70.0	47.5	26.2	102	?ORS flattened oval pebble, suitable as a small hammerstone but not demonstrably used.
30	13021	24.3	17.5	12.0	6	Small water-smoothed pebble
	13021	21.8	22.3	12.5	6	Small water-smoothed pebble
	13021	24.4	34.8	13.2	16	Small water-smoothed ORS pebble
	13021	40.6	25.7	18.9	22	Small water-smoothed pebble (largest of 4)
	13021	28.3	38.8	16.0	20	Small pebble fragment (quartz veining)
	13021	43.8	24.2	22.0	24	Small pebble fragment (2 joining pieces)
	13021	48.0	38.5	23.1	50	Larger water-smoothed pebble (2 pieces), burnt?
	13021	54.6	42.4	25.4	82	Larger water-smoothed pebble, broken; burnt?
	13021	48.7	48.4	31.0	118	Larger water-smoothed pebble, broken; burnt?
31	13023	41.4	26.6	13.0	20	Water-smoothed oval pebble in mottled ?igneous rock; attractive
32	13025	38.9	27.5	11.2	16	Water-smoothed oval pebble, different rock type (flint/igneous?) to 31
33	13030	38.4	33.1	13.1	18	?ORS pebble fragment, burnt?
	13030	41.9	23.2	9.7	8	?ORS pebble fragment, burnt?
	13030	19.9	19.3	9	2	Small flattened oval pebble
					876.5	Total weight (gms)

APPENDIX IV

Pottery Assemblage

ASSESSMENT OF THE NEOLITHIC POTTERY FROM GREENLINK (ERN118082)

REPORT No. 169

16th October 2023

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Report prepared for Dyfed Archaeological Trust Archaeological Services

ASSESSMENT OF THE NEOLITHIC POTTERY FROM GREENLINK (ERN118082)

ALEX GIBSON

Introduction

In October 2023, the pottery from Greenlink, Pembrokeshire (ERN118082) was sent to the writer for assessment. The pottery was unpacked onto plastic finds trays and examined for distinguishing fabric, formal and decorative traits. The pottery is fragmentary and was received in a dry but uncleaned state which hampers positive identification and definitive description.

The pottery was retrieved from contexts 13007, 13018, 13020, 13021 and 13025 which are believed to have been associated with a possible domestic structure in Trench 13..

Catalogue

13007 Eleven undecorated sherds weighing 31g. The fabric has a brown outer surface, grey inner surface and core and the largest sherd averages 10mm thick. The uncleaned nature of the sherds makes inclusions in the fabric difficult to identify but some quartz inclusions are identifiable. There is one simple, slightly everted and internally thinned rim sherd in what appears to be a finer and darker fabric. The rim sherd is possibly Early Neolithic and the body sherds may also be of this date by association.

13018 Six sherds weighing 16g. The fabric is a brown throughout and the largest sherd has a maximum thickness of 11mm. The uncleaned nature of the sherds makes inclusions in the fabric difficult to identify but some quartz inclusions are identifiable. Rim sherds reveal a strongly everted and thinned rim decorated with at least one row of close-set oval impressions. Possibly Middle Neolithic.

13020 Single sherd weighing 1g. The fabric is quite soft and has a corky texture from leached out soluble or organic inclusions. The outer surface is grey but the inner surface is missing. The sherd has traces of a broad groove on the outer surface. Probably Later Neolithic

13021 Sixteen sherds weighing 68g. The fabric has a grey outer surface and black inner surface and core. The largest sherd averages some 10mm thick. Inclusions are difficult to identify but there are hints of a corky texture as with 1020. There are traces on the outer surface of broad horizontal grooves and also some rounded impressions. One sherd appears to be from a base angle from a flat base. Possibly Later Neolithic.

13025 Two featureless undecorated sherds weighing 5g.

Assessment

This small, fragmentary assemblage comprises sherds that span the Neolithic in Wales from simple rimmed bowls, perhaps carinated, to bowls with decorated rim forms. These early decorated vessels have been found at Carreg Coetan Arthur (Gibson in Rees 2012) where thickened rim forms have been found decorated with radial or oblique incisions and have an associated C14 date of 3620-3020 cal BC and suggest a contemporaneity with Impressed Ware and early decorated forms such as Mildenhall, from southern and eastern England.

The Late Neolithic element may be represented by fragments of Grooved Ware from 13021. The identification is tentative, however, as the sherds also bear comparison to Food Vessel of the Early

Bronze Age. Given the context of the sherds, however, Grooved Ware may be the more likely identification. A similar vessel with broad grooves and rounded impressions, although from Kintore, Aberdeenshire, has been dated to the 30th to 27th C BC (Copper *et al.* 2021).

Given the general paucity of early Decorated Bowls and Grooved Ware in Wales, this assemblage clearly has local significance.

Recommendations

1 The pottery should be cleaned.
2 C14 dating of the contexts would enhance the regional importance of the assemblage.
3 The sherds should be consolidated and joining sherds reconstructed using a suitable reversible adhesive to enhance vessel profiles.
4 A specialist report should be prepared identifying fabric groups, ceramic traditions and the minimum number of vessels. The report should also place the assemblage in its local and national setting. The report should be published in a local or national journal.

References

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APPENDIX V

Ecofact Reports

The macroplant and charcoal from the cable scheme, West Wales (AOC 26877): an assessment

Jackaline Robertson

Introduction

Four bulk samples collected from the excavation undertaken at cable scheme, West Wales were submitted for environmental assessment in March 2023. The samples were collected from a stone socket and three cremations associated with a prehistoric standing stone. A small assemblage of carbonised macroplants and charcoal were recovered and the main aim of this assessment was to identify the ecofacts to species and give recommendations for further work and radiocarbon dating.

Methodology

The bulk samples were processed in their entirety in laboratory conditions using a floatation method designed to retrieve both ecofacts and artefacts (Kenward *et al*. 1980). The wash-overs were scanned using a high-powered microscope at x10-x450 magnification. The residue was separated using a stack system of 4mm, 2mm and 1mm sieves and each fraction was scanned by eye and with a magnet.

All plant macrofossils were examined at magnifications of x10 and up to x450. Macroplant identifications were confirmed using modern reference material and seed atlases (Cappers *et al.* 2006). Taxonomy and nomenclature for plants follow Stace (2010).

Charcoal fragments larger than 4mm were selected for assessment. Identifications were confirmed by analysing the transverse, tangential and radial sections at x70-x450 magnification and using keys and texts (Hather 2000; Schweingruber 1990). When assessing how the charcoal assemblage formed, those samples which contained two or more species were typically designated as fuel waste whereas larger concentrations of a single species were interpreted as possible evidence of structural or artefactual burning.

The assemblage

The macroplant

The macroplant assemblage (Table 1) was formed of 28 hazelnut shell (*Corylus avellana* L.) fragments scattered among two deposits; (6027) and (6030). Preservation of the shell was recorded as good.

The charcoal assemblage

Charcoal (12.1g) was present in all four deposits and 32 fragments were identified as apple/pear/hawthorn/rowan (*Amygdaloideae* sp.), hazel (*Corylus avellana* L.), ash (*Fraxinus* sp.) and oak (*Quercus* sp.) (Table 2). The dominant species was oak (50%) followed by hazel (41%), apple/pear/hawthorn/rowan (6%) and ash (3%). Both ash (3%) and oak (3%) roundwood were noted within the assemblage. Preservation of the charcoal ranged from adequate to good.

Other finds

Two pieces of abraded pottery were recovered from deposit (6030). This material should be repatriated alongside any hand recovered artefacts and examined by the appropriate specialist.

Modern contamination

Infrequent inclusions of roots were noted in deposits (6021) and (6023). There is no evidence to indicate the archaeological security of any of these four contexts has been undermined by later activity.

Detais by context

Context (6021) Deposit [6022]

Macroplant: There was no macroplant in this deposit.

Charcoal: There was one piece of ash roundwood and one fragment of oak (0.1g).

Synthesis: The charcoal is redeposited fuel debris. The ash roundwood is suitable for radiocarbon dating.

Context (6023)

Macroplant: No macroplant was present.

Charcoal: The charcoal (6.1g) was oak (60%) and hazel (60%).

Synthesis: The charcoal is fuel waste. The hazel charcoal is recommended for dating.

Context (6027)

Macroplant: There were six fragments of hazelnut shell.

Charcoal: The charcoal (2.8) was oak (60%) and hazel (40%). Oak roundwood (10%) was noted within the deposit.

Synthesis: The hazelnut shell and charcoal is a small mix of food and fuel debris. Both the hazelnut shell and hazel charcoal are suggested for dating.

Context (6030)

Macroplant: There were 22 fragments of hazelnut shell.

Charcoal: The charcoal (3.1g) was a mix of hazel (50%), oak (30%) and apple/pear/hawthorn/rowan (20%).

Synthesis: The hazelnut shell and charcoal have derived from food and fuel refuse. The hazelnut shell along with the apple/pear/hawthorn/rowan and hazel charcoal are suitable for radiocarbon dating.

Discussion and statement of significance

Nuts

Hazelnut is a common find at most archaeological sites as the nuts are both nutritious and seasonally available in many landscapes. The shells are often deliberately exposed to heat during roasting and are sometimes recycled as a kindling material or disposed of in fires during cleaning (Bishop *et al* 2009). However as only a small number were recovered it is not possible to establish how significant this resource was at this site.

The charcoal

The tree species identified are all native and would have grown in the surrounding landscape. Apple/pear/hawthorn/rowan, hazel and ash tend to grow in hedgerows, scrub and more open woods whereas oak is adaptable to a variety of growing conditions (Stace 2010, Linford 2009). The charcoal fragments have derived from the reworking of fuel debris. There is no evidence for the burning of any

structural or artefactual remains within any of the deposits. Given the small size of the charcoal assemblage its archaeological potential for providing further information on the role of woodland is limited.

Conclusion

The macroplant and charcoal have been identified in full and no further species identifications are required. Given the small size of the ecofact assemblage no further analysis is recommended as its potential for answering questions concerning the role of plants and woodland at this site is limited. The ecofacts represent a small accumulation of domestic food and fuel waste. The hazelnut shell along with the apple/pear/hawthorn, hazel and ash charcoal are suitable for radiocarbon dating. Where possible oak should be avoided for dating as it is a slow growing species and may prove unreliable. The macroplant and charcoal are stored in a dry and stable condition and are suitable for long term storage.

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Table 1. Carbonised macroplant

Sample			6	10	11	12
Feature			6022	Deposit	Deposit	Deposit
Context			6021	6023	6027	6030
Sample vol(l)			8	10	8	5
% Analysed			100	100	100	100
Species	**Name**	**Part**				
Corylus avellana L.	Hazel	Shell frag(s)			6	22

Table 2. Charcoal

Sample	**Feature**	**Context**	**Species**	**Name**	**Frag**	**RW**	**Weight**
6	6022	6021	*Fraxinus* sp.	Ash		1	
6	6022	6021	*Quercus* sp.	Oak	1		0.1
10	Deposit	6023	*Corylus avellana* L.	Hazel	4		
10	Deposit	6023	*Quercus* sp.	Oak	6		6.1
11	Deposit	6027	*Corylus avellana* L.	Hazel	4		
11	Deposit	6027	*Quercus* sp.	Oak	5	1	2.8
12	Deposit	6030	*Amygdaloideae* sp.	Apple/pear/hawthorn/rowan	2		
12	Deposit	6030	*Corylus avellana* L.	Hazel	5		
12	Deposit	6030	*Quercus* sp.	Oak	3		3.1

Key: Frag=fragment, RW=roundwood, weight given in grams

The charcoal from the Greenlink Cable Scheme, West Wales, Phase 2 (AOC 26877): an assessment

Jackaline Robertson

Introduction

The six bulk samples collected from phase 2 of the archaeological works undertaken as part of the Greenlink cable scheme project, West Wales were submitted for environmental assessment in November 2023. This assessment is a continuation of the earlier phase 1 work of the samples collected from a stone socket and three cremations associated with a prehistoric standing stone. The six bulk samples from phase 2 were recovered from a possible Neolithic house and associated features. The ecofacts were composed of charcoal. The main aim of this report was to identify the charcoal to species, give recommendations for further work and radiocarbon dating.

Methodology

The bulk samples were processed in their entirety in laboratory conditions using a floatation method designed to retrieve both ecofacts and artefacts (Kenward *et al*. 1980). The wash-overs were scanned using a high-powered microscope at x10-x450 magnification. The residue was separated using a stack system of 4mm, 2mm and 1mm sieves and each fraction was scanned by eye and with a magnet.

Charcoal fragments larger than 4mm were selected for assessment. Species identifications were confirmed by analysing the transverse, tangential and radial sections at x70-x450 magnification and using keys and texts (Hather 2000; Schweingruber 1990). When assessing how the charcoal assemblage formed, those samples which contained two or more species were typically designated as fuel waste whereas larger concentrations of a single species were interpreted as possible evidence of structural or artefactual burning. Taxonomy and nomenclature for plants follow Stace (2010).

The assemblage

Charcoal was noted in all six samples but fragments suitable for assessment were present only in five contexts. The charcoal in deposit (13010) was too small to be identified to species so was not collected. A total of 24 fragments (3.6g) were identified as apple/pear/hawthorn/rowan (*Amygdaloideae*/*Sorbus* sp.), hazel (*Corylus avellana* L.), cherry (*Prunus* sp.) and oak (*Quercus* sp.). The dominant species was oak (79%) followed by apple/pear/hawthorn/rowan (13%), hazel (4%) and cherry (4%). Preservation of the charcoal ranged from adequate to good.

Other finds

One fragment of abraded pottery was noted in context (13018) and this should be examined by the appropriate specialist.

Modern contamination

Traces of modern roots, insects and snails were dispersed among the samples but there is no evidence that the archaeological security of the charcoal assemblage has been undermined.

Summary of the contextual units

Context (13018) Sample <6>
The charcoal (0.9g) was a mix of apple/pear/hawthorn/rowan (50%), oak (33%) and hazel (17%). These fragments are redeposited fuel debris. Both the apple/pear/hawthorn/rowan and hazel are suitable for dating.

Context (13023) Sample <8>
There were four fragments of oak charcoal (1.6g) which if needed could be dated.

Context (13020) Sample <9>

There was one fragment of cherry and two of oak (0.5g) which are redeposited fuel debris. The cherry fragment is suitable for radiocarbon dating.

Context (13025) Sample <10>

The ten fragments of charcoal (0.4g) were all oak. These if needed could be dated.

Context (13030) Sample <11>
There was one piece of oak (0.1g) which may be suitable for radiocarbon dating.

Discussion and statement of significance

The charcoal

The charcoal species are all native and would have grown in the surrounding landscape. Apple/pear/hawthorn/rowan, hazel and cherry tend to grow in hedgerows, scrub and more open woods whereas oak is adaptable to a variety of growing conditions (Stace 2010, Linford 2009). The charcoal fragments have probably derived from the reworking of fuel debris. There is no evidence for the burning of structural or artefactual remains within any of the features.

Conclusions

The charcoal assemblage has been identified in full and no further species identifications are required. While the charcoal assemblage is small and its potential for further analysis is limited it is recommended that the results from phases 1 and 2 are combined with any future work, as this may provide a greater understanding of the role of plants and woodland within this prehistoric landscape. The apple/pear/hawthorn/rowan, hazel and cherry charcoal fragments are suitable for radiocarbon dating. Oak as a slow growing wood species is not normally recommended for dating, but as this is such a small assemblage there may be no other option. The charcoal is stored in a dry and stable condition and is suitable for long term storage.

References

Hather, J. G. (2000). *The Identification of the Northern European Woods: a guide for archaeologists and conservators*. London: Routledge.

Kenward, H. K., Hall, A.R. & Jones, A.K.G. (1980). 'A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits', *Science and Archaeology,* 22, 3-15.

Linford, J. (2009). *A Concise Guide to Trees*. Bicester: Baker and Taylor (UK) Ltd.

Stace, C. (2010). *New Flora of the British Isles* (3rd ed). Cambridge: Cambridge University Press.

Schweingruber, F H. (1990). *Microscopic wood anatomy*. Birmensdorf: Verlag Kessel.

Table 1. The charcoal species

Sample	Feature	Context	Species	Name	Frag	Weight
6	Deposit	13018	*Amygdaloideae*/*Sorbus* sp.	Apple/pear/hawthorn/rowan	3	
6	Deposit	13018	*Corylus avellana* L.	Hazel	1	
6	Deposit	13018	*Quercus* sp.	Oak	2	0.9
8	Deposit	13023	*Quercus* sp.	Oak	4	1.6
9	Deposit	13020	*Prunus* sp.	Cherry	1	
9	Deposit	13020	*Quercus* sp.	Oak	2	0.5
10	Deposit	13025	*Quercus* sp.	Oak	10	0.4
11	Deposit	13030	*Quercus* sp.	Oak	1	0.1

Key: Frag=fragment, weight given in grams

APPENDIX VI

Carbon-14 Analysis

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RADIOCARBON DATING CERTIFICATE
01 December 2023

Laboratory Code	SUERC-123615 (GU65856)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	6021
Sample Reference	6
Material	Charcoal roundwood : Ash
$\delta^{13}C$ relative to VPDB	-25.8 ‰
Radiocarbon Age BP	2231 ± 23

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.*

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Conventional age and calibration age ranges calculated by : E. Dunbar

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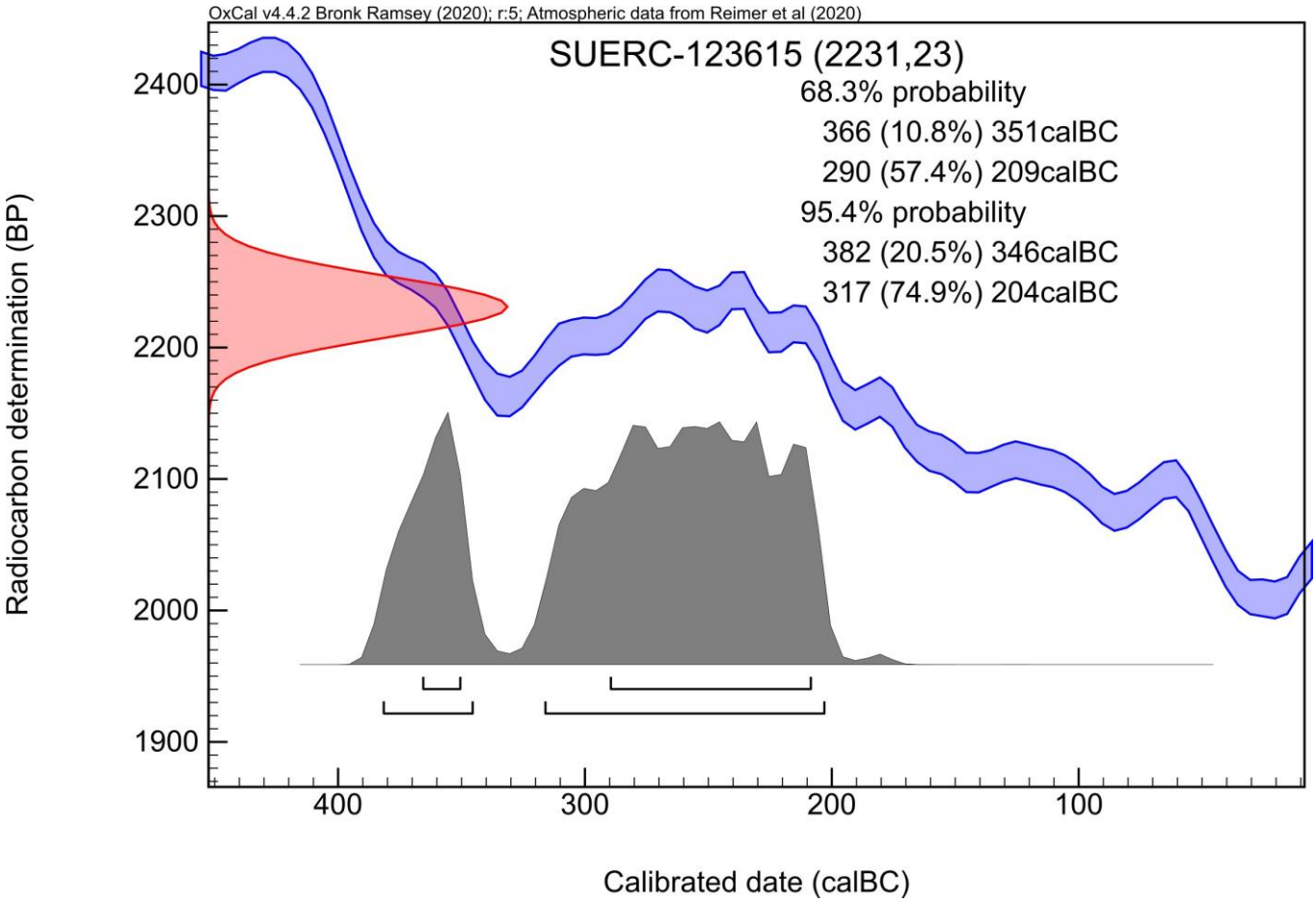

The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve.†

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

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01 December 2023

Laboratory Code	SUERC-123616 (GU65857)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	6023
Sample Reference	10
Material	Charcoal : Hazel
$\delta^{13}C$ relative to VPDB	-26.6 ‰
Radiocarbon Age BP	4378 ± 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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Conventional age and calibration age ranges calculated by : E. Dunbar

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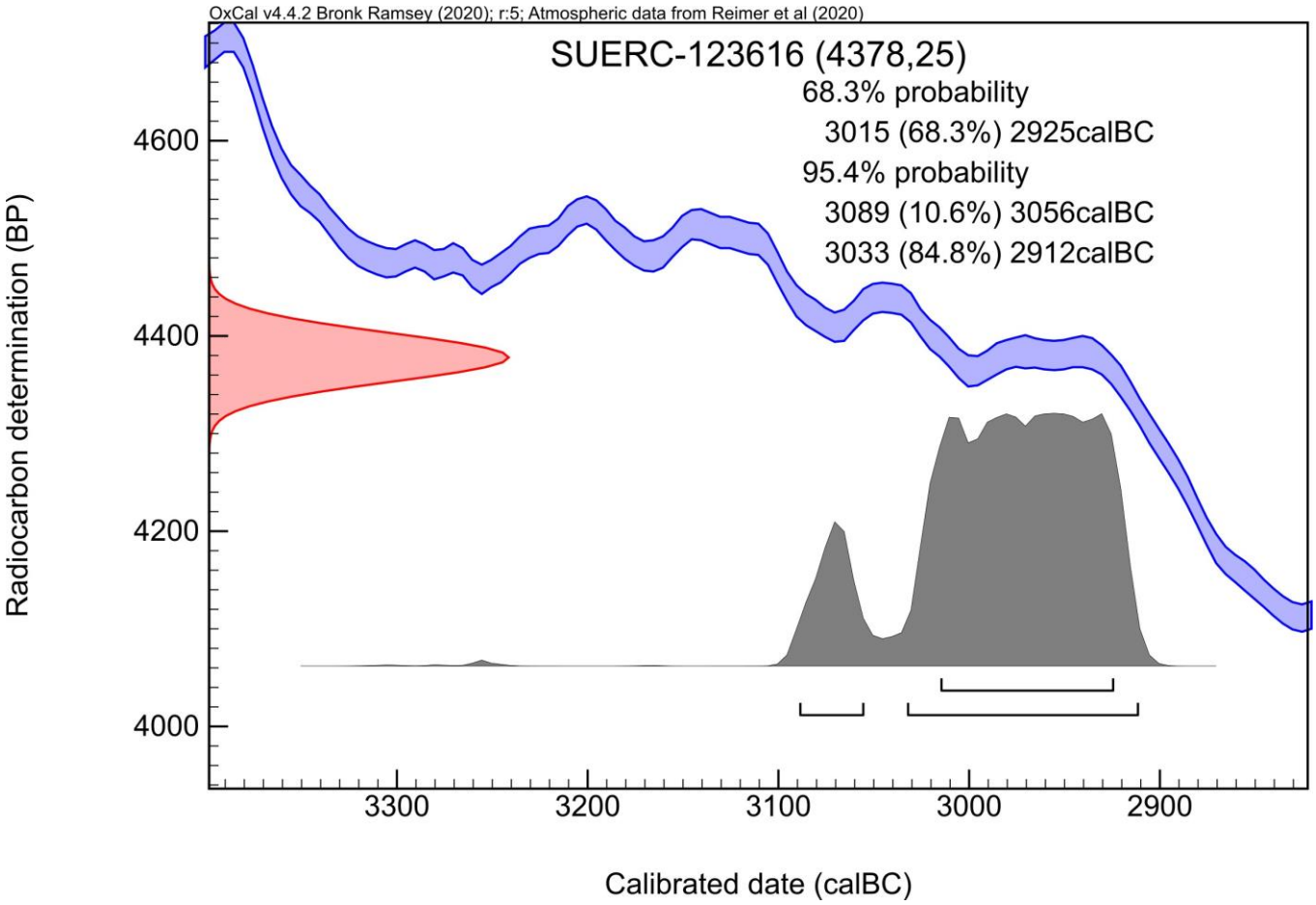

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Laboratory Code	SUERC-123617 (GU65858)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	6027
Sample Reference	11
Material	Nut shell : Hazel
$\delta^{13}C$ relative to VPDB	-26.1 ‰
Radiocarbon Age BP	4765 ± 23

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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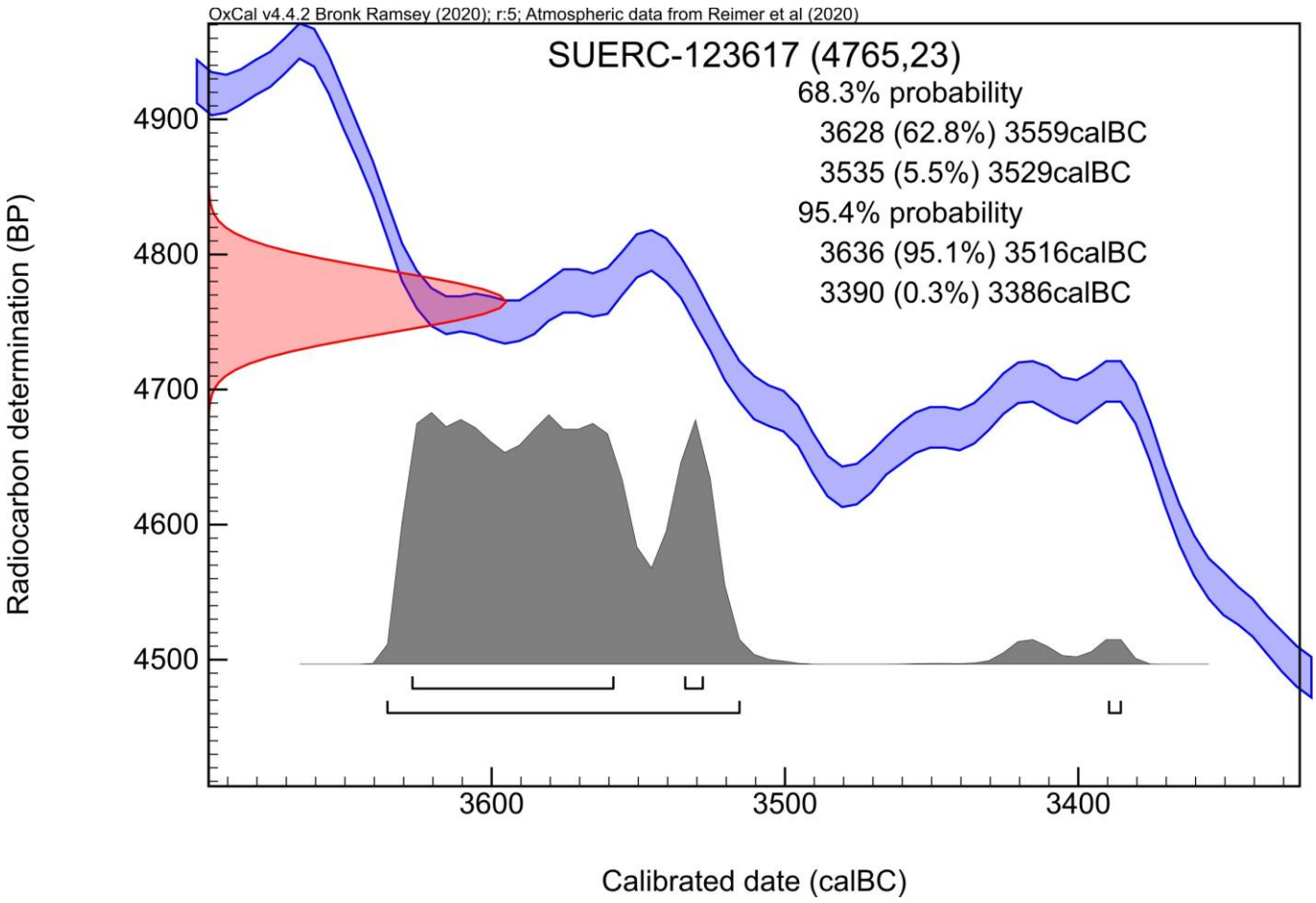

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The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve.†

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01 December 2023

Laboratory Code	SUERC-123618 (GU65859)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	6030
Sample Reference	12
Material	Charcoal : Apple/pear/hawthorn/rowan
$\delta^{13}C$ relative to VPDB	-26.2 ‰
Radiocarbon Age BP	4729 ± 23

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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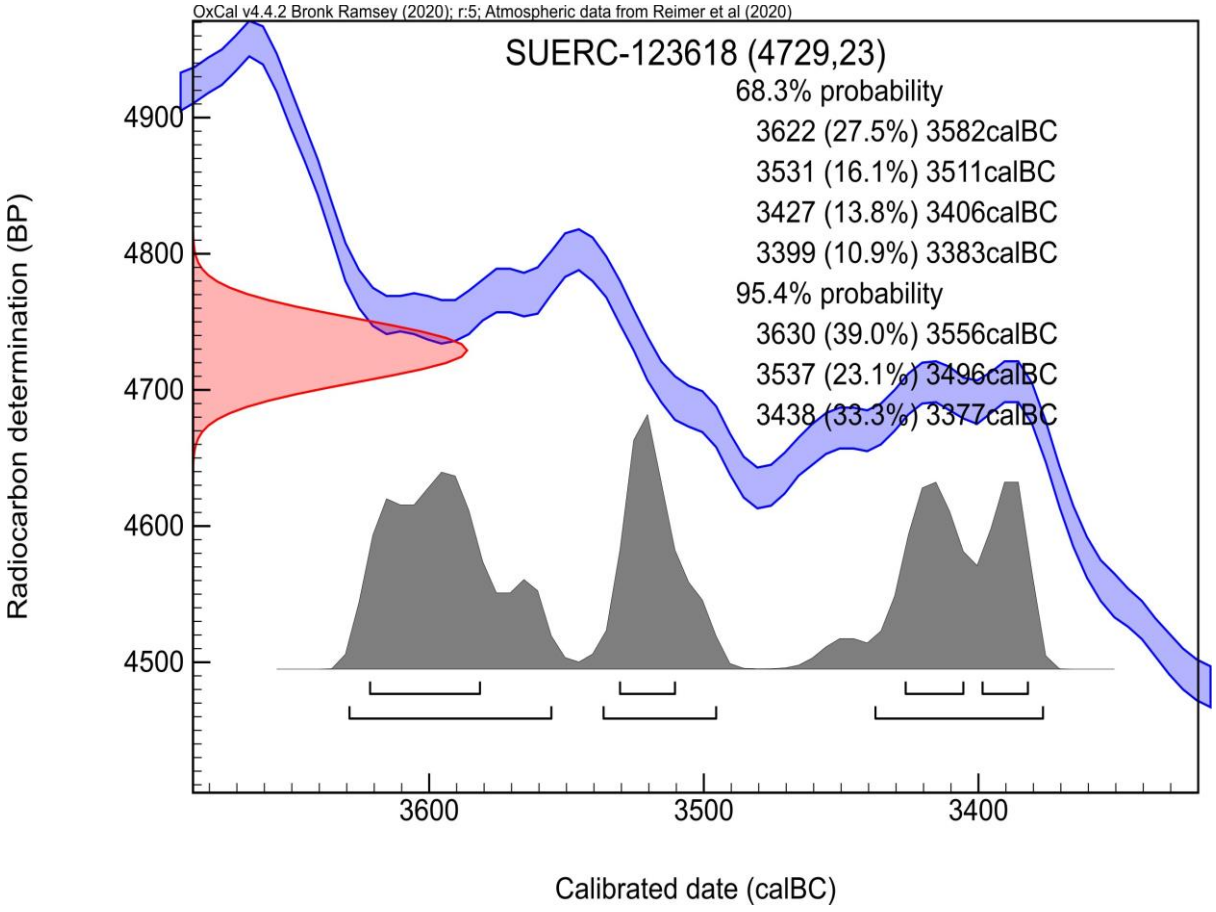

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The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve.†

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RADIOCARBON DATING CERTIFICATE
04 June 2024

Laboratory Code	SUERC-126233 (GU67323)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	13018
Sample Reference	6
Material	Charcoal : Hazel
$\delta^{13}C$ relative to VPDB	-25.4 ‰
Radiocarbon Age BP	4697 ± 26

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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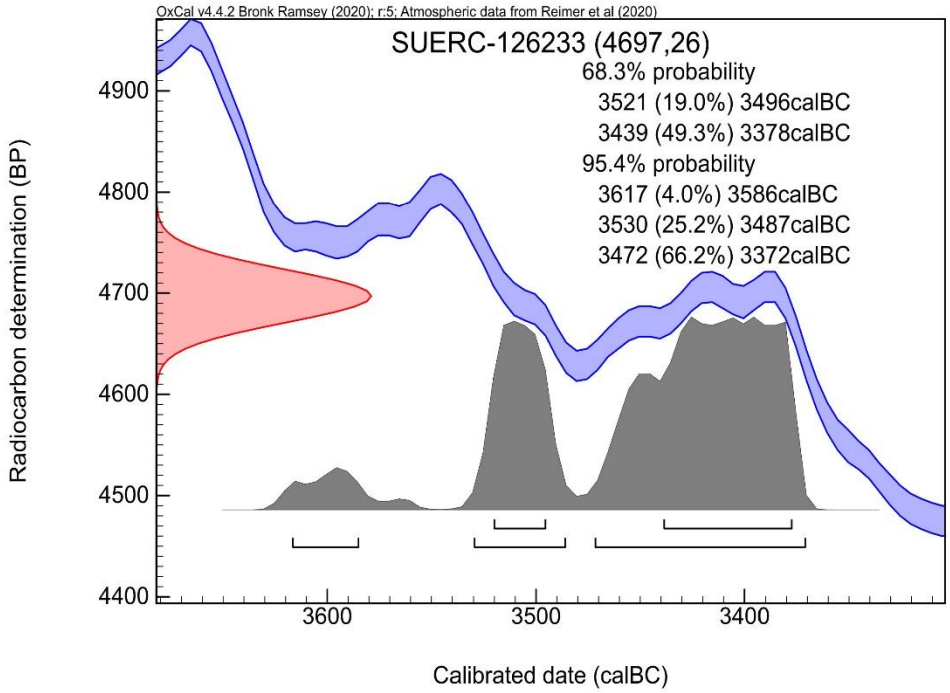

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The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

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* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

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04 June 2024

Laboratory Code	SUERC-126234 (GU67324)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	13023
Sample Reference	8
Material	Charcoal : Oak
$\delta^{13}C$ relative to VPDB	-25.4 ‰
Radiocarbon Age BP	3676 ± 26

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 SUERC 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.*

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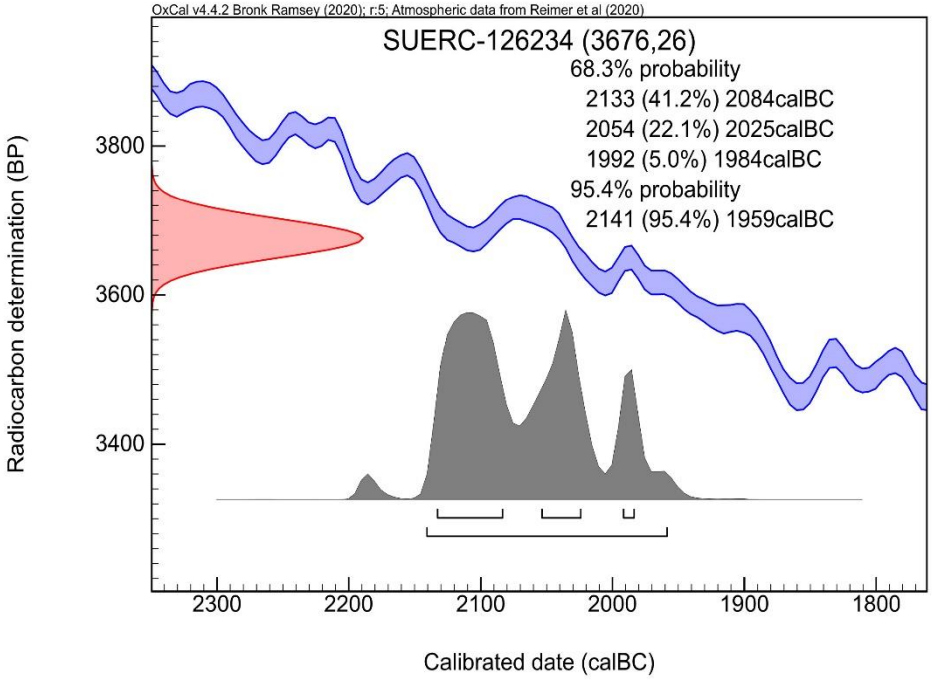

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* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

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RADIOCARBON DATING CERTIFICATE
04 June 2024

Laboratory Code	SUERC-126235 (GU67325)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	13020
Sample Reference	9
Material	Charcoal : Cherry
$\delta^{13}C$ relative to VPDB	-26.7 ‰
Radiocarbon Age BP	3655 ± 26

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 SUERC 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.*

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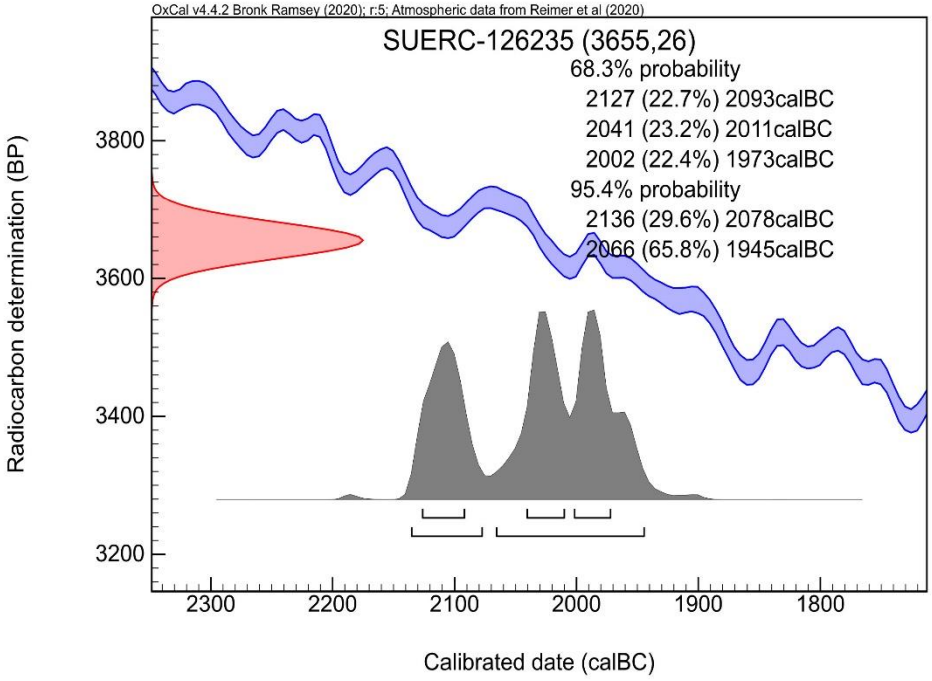

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The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

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* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

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RADIOCARBON DATING CERTIFICATE
04 June 2024

Laboratory Code	SUERC-126236 (GU67326)
Submitter	Jackaline Robertson AOC Holdings Ltd Unit A7 Edgefield Road Industrial Estate Loanhead EH20 9SY
Site Reference	26877
Context Reference	13025
Sample Reference	10
Material	Charcoal : Oak
$\delta^{13}C$ relative to VPDB	-27.0 ‰
Radiocarbon Age BP	3791 ± 26

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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Conventional age and calibration age ranges calculated by :

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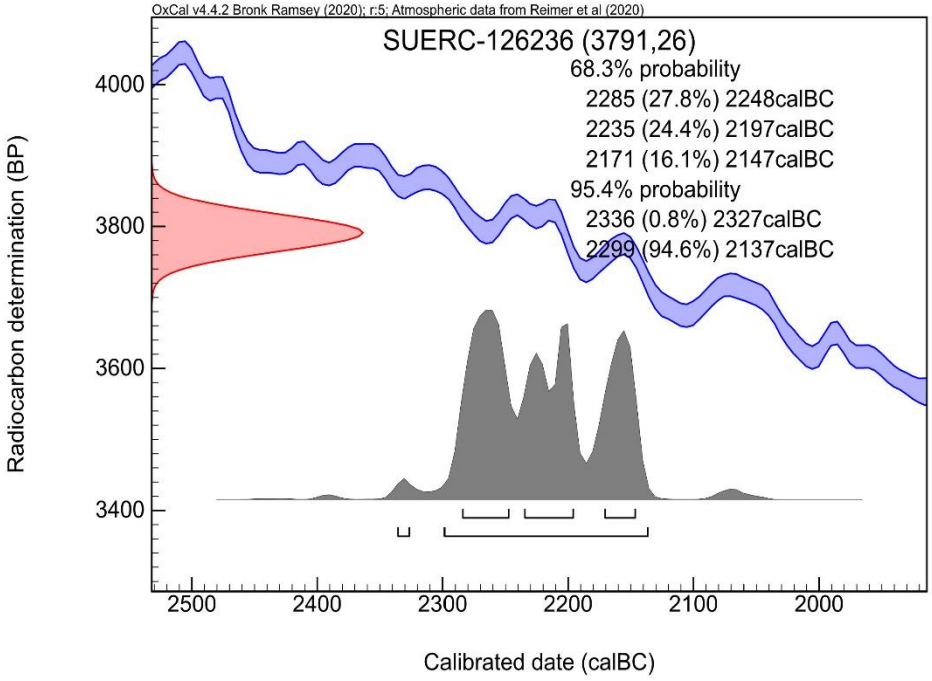

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The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

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* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*


Heneb