ARCHAEOLEG CAMBRIA ARCHAEOLOGY
FIELD OPERATIONS

BOLTONHILL QUARRY
ARCHAEOLOGICAL ASSESSMENT
&
FIELD EVALUATION

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by

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ARCHAEOLOGICAL DESK-BASED ASSESSMENT AND FIELD EVALUATION BOLTON HILL QUARRY WASTE REPOSITORY HAUL ROAD

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SUMMARY

A proposal to create a new waste repository for the Boltonhill Quarry, Tiers Cross, Pembrokeshire, requires the construction of a haul road to link the two sites. The road runs across farmland for 1.1km and passes through an area of known archaeological sensitivity. Therefore, it was recommended that an evaluation of the route be carried out to try to identify the archaeological interests that may be affected by construction of the road. F H Gilman & Co. commissioned Archaeoleg Cambria Archaeology Field operations to carry out the evaluation.

The evaluation was a two-stage programme: Stage I was a rapid desk-based assessment and walkover of the route to identify from documentary sources any sites or features along the route; Stage II consisted of the excavation of nine trial trenches to investigate the potential of the buried deposits. Four burnt mounds of Bronze Age date had been recorded in the early 20th century close to the haul road line. However, a recent survey of burnt mounds in southwest Wales failed to locate them and there was no trace of them during this project. The stage I assessment showed that the road line would cross a landscape established by the mid-18th century. The Stage II trial trenching revealed a possible old boundary line and some deposits which may contain environmental evidence. Samples taken form these deposits are currently being examined and a revised report will be prepared to include the results of that examination in due course.

Overall the evaluation revealed little of archaeological interest on the road line and the impact of the scheme on the archaeological resource is considered to be small.

1. INTRODUCTION

1.1 PROJECT PROPOSALS AND COMMISSION

F. H. Gilman & Co. are proposing to create a repository for quarry waste on land close to their existing quarry at Bolton Hill, Tiers Cross, Haverfordwest. The new waste repository lies some 1.1km to the southeast of the quarry and the proposals include the construction of haul road to link the two sites. It is the haul road that is the subject of this assessment and evaluation. Planning consent was granted for the scheme in December 1998 with an attached archaeological condition for an evaluation to identify the known and potential archaeological resource and to assess the likely impact of the proposals on that resource. Following the preparation of brief for the archaeological works by the advisors to the Mineral Planning Authority, Archaeoleg Cambria Archaeology Field Operations were commissioned to carry out the works. The project brief and specification have been included as Appendix One.

1.2 SCOPE OF THE PROJECT

This project was intended to elucidate the character, date, extent and vulnerability to the proposals of the known sites and features and to identify areas of potential archaeological interest. The project was in two parts: a) documentary research and b) field evaluation. Documentary research was carried out to assess the past landuse and development of the area and to provide information on the range and type of sites and features that may be present. The field evaluation was designed to investigate the physical characteristics of the sites and to identify and investigate any archaeological features or deposits. This report has been prepared based on the evidence collected through the assessment and evaluation stages.

1.3 REPORT OUTLINE

This report describes the physical environment of the study area (Section 2) before summarising the archaeological resource identified through the desk-based assessment (Section 3) and the results of the field evaluation (Section 4). The likely impact of the proposals based on the results of Sections 3 and 4 are discussed in Section 5. Detailed supporting data are presented in a series of appendices.

1.4 ABBREVIATIONS USED IN THIS REPORT

All sites recorded on the county Sites and Monuments Record are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Any new sites will be assigned a PRN and located by their NGR. References to primary cartographic and documentary evidence and published sources will be given in brackets, full details will be found in the bibliography.

2. THE STUDY AREA

2.1 LOCATION

Bolton Hill Quarry is located at NGR SM91901140, approximately 1.5km west of Johnston village, Pembrokeshire. The proposed haul road is intended to link the quarry with a new waste repository some 1.1km to the east at NGR SM93001110. The field evaluation centred on a section of the haul road between NGR SM92251762 and NGR SM92181742.

2.2 TOPOGRAPHICAL DESCRIPTION OF THE SITE

From the quarry the haul road runs slightly south of due east for *c.*300m before curving south and then southwest, skirting as it does so the top of a wooded slope to the east. The route then swings back to a southeasterly direction for approximately 600m and then curves back to a course just north of east for the rest of its length. The existing landform has a general slope towards the east, but it dips and rises across a small stream valley that bissects the route at NGR SM92171135. Currently the area is pasture with some rough pasture towards the southeastern end of the route.

3. SUMMARY OF THE ARCHAEOLOGICAL RESOURCE

3.1 DOCUMENTARY SEARCHES

This element of the project involved rapid searches of primary and secondary sources held in local and national repositories for any relevant information on the landscape history and development of the site. The repositories visited and the usefuness of the primary sources consulted are listed below (Appendix Two). All secondary sources are referenced throughout the text with full details given in the bibliography.

3.2 THE ARCHAEOLOGICAL RESOURCE: A DEFINITION

The simple definition of the archaeological resource is the present landscape. The landscape in which we live and work today is the result of thousands of years of natural processes and human actions. Since the end of the last ice age, *c.*10,000 years ago, people have shaped and modified the landscape to suit their needs. The present landscape is the record of how those needs were met.

There are few, if any, areas in Britain left unaffected by human actions and it is true to say that the Welsh landscape looks the way it does today because of peoples' requirements and past decisions. Each feature within the landscape is an integral part of the long and complex history of human endeavour and achievement and cannot be viewed in isolation. Therefore, to fully understand the impact of these proposals it has been necessary to consider how the surrounding landscape developed rather than just the narrow corridor of the haul road.

3.3 LANDSCAPE DEVELOPMENT

3.3.1 PREHISTORIC ACTIVITY

The earliest known features within the area are four possible burnt mounds of Bronze Age date (PRNs 3339, 3340, 3341, 3342): three of the mounds (PRNs 3339, 3340, 3341) are located in the wooded stream valley to the east of the route and the fourth (3342) is in a pasture field just to the west of the route. These were first identified in a survey of 1911 (Cantrill 1911), but a recent survey failed to locate them (Williams 1995, pg 12 - fig 2). During the field visit for this project the area of woodland in which three of the four mounds are located was too overgrown to inspect it thoroughly. The fourth mound (3342) was not visible, although, the grass was long, so low features may have been obscured. Study of aerial photographs of the region failed to locate the mounds, or any other features close to the line of the haul road.

Burnt mounds are a common feature throughout southwest Wales and they are the residues of what is known as 'hot-stone technology'. The term hot-stone technology is applied to the system of heating water using heated stones. Once hot, the water was used for a variety of purposes, ranging from

cooking to providing steam for a sauna. The burnt mounds themselves are made up of the burnt and fire-fractured stones used in the heating process and they are often a surface indication for other, sometimes buried, associated features.

3.3.2 THE FIELD PATTERN

The present layout of fields, roads and tracks had been established by the mid-18th century. The layout is identifiable on maps of the Picton Castle Estate dating from 1773 (NLW ref: Picton Castle Volume I), although it is not known exactly when the field pattern was established, or the sequence of enclosure. The landscape appears to have changed little between the mid-18th century and the tithe maps of the 1840s. It was during the later 19th century that changes began to take place, with fairly significant changes occurring by the time the first edition 1:2500 Ordnance Survey maps were published in the late 19th century. The major differences between the tithe maps and the OS coverage are that some boundaries had been removed to make larger fields, presumably as technology improved allowing more intensive cultivation, and two dwellings had been abandoned. The sites of both dwellings were visited during the field visit. The larger of the two dwellings (PRN 37413) was shown on the tithe map as consisting of two buildings, a house and an outbuilding. The other (PRN 37414) was a small single building alongside a track. There was no visible evidence of PRN 37414 and little remains above ground of PRN 37413.

The survey area was formerly split between two large estates, Picton Castle and Johnston Hall.

3.3.2.1 The field boundaries

The route crosses a number of boundaries along its course, all of them are identifiable on the estate maps, tithe maps and early OS maps.

Boundary 1

A stone wall alongside the track leading to Boltonhill Farm. The wall is now covered in vegetation. There are traces of a roadside ditch in front of the wall.

Boundary 2

Earth bank, *c.*2m wide x 1m high, with a mature hedge. The bank may have a stone core.

Boundary 3

Earth bank, *c.*1.5m wide x 1m high, with a mature hedge which contains some coppiced hazel trees.

Boundary 4

Earth bank, *c.*1m wide x 1m high, with a mature hedge. The bank may have a stone core.

Boundary 5

Earth bank, *c.*1m wide x 1m high, with a mature hedge. The bank is very eroded in places and appears to have a stone core. There is a small stream along either side of the bank making the area very boggy.

Boundary 6

Earth bank, 1.2m high x 2m wide, with mature hedge. Cut through by modern access, which shows that the bank was a single build with no stone core.

Boundary 7

Wide earth bank, up to *c.*3m wide x 1m high, with mature hedge.

Boundary 8

Stone cored bank, *c.*2m wide x 1m high, with mature hedge.

Boundary 9

Earth bank with mature hedge. The bank is *c.*1.5-2m wide x 0.5-1m high, the hedge is 4-5m wide. This boundary is the parish boundary between Johnston and Steynton parishes.

Boundary 10

This is really two boundaries either side of a hollow way. The banks are *c.*1m high x 1.5m wide. The eastern bank has a ditch (0.5-0.6m deep x 1m wide) on its east (non road side) side. Although overgrown the hollow way and banks are in good condition.

4. RESULTS OF FIELD EVALUATION

4.1METHODOLOGY

Nine trial trenches (T1-T9) were opened mechanically to the top of the first identified archaeological features; the bedrock or to the maximum depth allowed under Health and Safety regulations, 1.2m. All deposits and features, whether natural or otherwise were recorded and the stratigraphic sequence in all trenches were drawn. Recording followed standard ACA Field Operations procedures with all deposits and features being allocated a unique identifying number in an open-ended numbering system (e.g. 001; 010; 100; 1000) and significant deposits photographed and drawn in detail. The site drawings were all at either 1:10, 1:20 or 1:50 scale depending on the amount of detail required and the complexity of the deposits.

4.2 TRENCH LOCATIONS

Only the section of the route considered to be the most sensitive was evaluated by trenching. The trenches were positioned to give as comprehensive a coverage of the area as possible. Because no features were identified during the desk-based assessment the trenches were positioned at roughly equal distances along the section of route subjected to evaluation.

4.3 EVALUATION RESULTS

All trenches were 10m x 1.6m and excavated with a toothless ditching bucket to avoid scarring the deposits with the bucket teeth.

4.3.1 TRENCH 1 (fig 1)

Removal of the topsoil revealed the stoney, clayey subsoil. Differences in the subsoil were examined, but found to be geological in origin. Apart from a modern field drain in the extreme northeast corner of the trench no archaeological features were encountered.

4.3.2 TRENCH 2 (fig 1)

The topsoil was directly on top of the very fractured bedrock. There were no intervening deposits and no archaeological features were encountered.

4.3.3 TRENCH 3 (figs 1 and 2)

This trench contained potentially the most interesting deposits with thick clay deposits underlying the topsoil. A sequence of orange/brown very gritty clay layers (*025/027/029*) were intercalated with brown/purple (*024/026*) and black/grey (*028*) clay layers that appeared to contain organic material. Samples have been taken to test whether the possible organic clays (*024, 026, 028*) do in fact contain organic remains.

4.3.4 TRENCH 4 (fig 1)

The sequence in this trench was identical to T2, with the topsoil overlying the fractured bedrock. No archaeoloogical features were encountered.

4.3.5 TRENCH 5 (fis 1, 2 and 3)

Removal of the topsoil revealed a spread of dark brown stoney loamy soil containing some flecks and larger fragments of charcoal(*019*) running north-south across the trench. Excavation revealed that it filled a linear feature, *c.*0.30m deep x 1.2m wide, (*020*) which extended beyond both sides of the trench. Feature *020* was dug into the orange, very stoney subsoil and its sides and bottom were clear and distinct, but irregular. A small body sherd of unglazed pottery was recovered from the base of the feature. The pottery, plus the homogenous nature of the single fill suggest the feature was filled deliberately and in one action. A similar feature (*015*) was also recorded in T6, some 20m to the south.

The pottery sherd was too small to be diagnostic but dates from either the medieval or the post-medieval period, almost certainly the latter.

4.3.6 TRENCH 6 (figs 1, 2 and 3)

The sequence of topsoil overlying the orange, very stoney subsoil recorded in this trench was identical to that in T5. Feature *015* was not seen in plan and only recorded in section. Like *020* in T5 it was aligned roughly north-south, had been dug though the subsoil and extended beyond both sides of the trench. In profile it was narrower than *020* (1m wide), but of a similar depth (*c.*0.35m deep). It contained two fills: the primary fill (*016*) was very loose and stoney and appeared to be material weathered in from the sides of the feature (*015*); the secondary and main fill was a loose brown loamy soil, with a few small stones and very occasional flecks of charcoal (*014*). The fills indicate that the feature was open for a while, which allowed material (*016*) to erode out of the sides and fall into the base, before the feature was deliberately filled (*014*).

Even though features *015* and *020* did not line up exactly, it seems likely that they were part of a single, larger feature, possibly a grubbed-out hedgeline. However, study of the map coverage of this area showed that there were no boundaries marked in this position, so the precise function of the features remains unknown.

4.3.7 TRENCH 7 (fig 1)

The topsoil was removed to reveal that the surface of the bedrock sloped towards both ends of the trench from a high point just east of centre. The hollows formed either side of the high point were filled with very similar material (*010* and *011*). Both were a loose, stoney loamy soil, but the stones in *010* were on average bigger than those in *011*. There was nothing to

indicate whether the filling of the hollows was a natural process, or whether it was done deliberately.

4.3.8 TRENCH 8 (figs 1 and 2)

Below the topsoil the orange stoney subsoil sloped gently towards the east end of the trench, where it was cut by a wide shallow feature (*004*) that was partially filled by a layer of brown/black clayey, silty loam (*003*). Layer *003* contained very occasional flecks of charcoal and may have had an organic content. The topsoil overlay layer *003* and filled the upper portion of *004.*

Feature *004* continued beyond the south and east ends of the trench. The nature of the feature was not established.

4.3.9 TRENCH 9 (fig 1)

The topsoil overlay undisturbed clayey, stoney subsoils. No archaeological features were encountered.

5. IMPACT OF THE PROPOSED SCHEME ON THE ARCHAEOLOGICAL RESOURCE

5.1 IMPACT OF THE PROPOSALS ON THE LANDSCAPE

This evaluation has shown that the proposed haul road will cross a landscape that was already established by at least the mid-18th century. The pattern of boundaries, tracks and roads is clearly identifiable on maps dating back to 1773. Previously recorded prehistoric features, the burnt mounds, were not located.

Construction of the haul road will have a direct impact on a number of the boundaries. A 12m wide section will be removed from each boundary for the road corridor. It is also likely to have an impact on the site of the former dwelling PRN 37414.

5.2 IMPACT OF THE PROPOSALS ON INDIVIDUAL FEATURES

As well as the boundaries construction of the road will impact on the features (*004*, *015* and *020*) identified in T8, T6 and &5 respectively and on the potential organic deposits in T3. The exact amount of damage to each feature or deposits will depend on the final construction techniques used for road construction. But it is reasonable to assume that they will suffer significant damage.

5.3 OVERALL IMPACT OF THE PROPOSALS

The loss of 12m of each boundary crossed by the route is not considered to be significant. Enough of the boundaries will remain to preserve the pattern of the landscape and the damaged sections could be reinstated when the road line is returned to agricultural production, in line with para 3.4 of the planning application. Similarly the loss, or damage to the features (*020*, *015* and *004*) in T5, T6 and T8 is not considered to be significant.

It is not certain whether the possible organic deposits in T3 will be directly affected by construction works as they lay some depth below the surface. It may be necessary to remove the clays from this area if they present problems to the stability of the road. In which case potential environmental data will also be removed. Even if they do remain the deposits will suffer some affects from the road. Changes to the drainage of the area may begin to dry the underlying clays leading to a degradation of any organic material they may contain. Samples taken during the fieldwork are curently being assessed to try to establish; a) whether the clays do contain environmental evidence and b) the nature and condition of that evidence. A revised report including the results of the preliminary environmental assessment will be prepared and submitted as soon as the results are available.

APPENDIX ONE: PROJECT BRIEF AND SPECIFICATION

The project brief and the specification devised to meet that brief are included here assess the effectiveness of the methods used and the results obtained against the stated archaeological objectives and requirements.

PROJECT BRIEF

1.0 Introduction

1.1 Following submission of a planning application to Pembrokeshire County Council for the above scheme Cambria Archaeology - Heritage Management were consulted regarding the potential archaeological implications of the proposed development. Initial appraisal of the site using information readily available from the Regional Sites and Monuments record identified the presence of a number of archaeological sites in the immediate vicinity of the route. The surrounding area is considered to be of high archaeological potential.

2.0 Site description

2.1 The proposed route of the haul road starts at Bolton Hill Quarry which lies approximately 1.5km to the west of Johmston village, Pembrokeshire (NGR SM91901140), and runs east, skirting to the south of wooded stream banks, crossing the stream (NGR SM92171135) and continuing to the proposed waste repository which lies to the west of the railway line at NGR SM93001110.

2.2 Within the woodland adjacent to the stream are the known sites of three burnt mounds (PRN 3340, 3341 and 3342). These lie to the east of the proposed route. A fourth burnt mound site (PRN 3339) lies to the west of the route. The part of the route between these sites is considered likely to contain further buried remains of possible Bronze Age activity relating to these sites and possible other previously unrecognised sites. A study of burnt mounds in Dyfed, commissioned by Cadw, was recently undertaken by A Manning of Archaeoleg Cambria Archaeology and completed in April 1998. However, access to these particular sites was not possible as part of this survey.

3.0 The nature of the proposed development and archaeological requirements

3.1 The development proposal includes the construction of a 12m wide haul road connecting Bolton Hill Quarry with the proposed waste repository site to the east.

3.2 A condition has been attached to the planning consent which requires a scheme of archaeological works to be agreed prior to development commencing. Only part of the haul road is considered to require further

investigation. The initial stage of these works will be to identify the location, extent, nature, date and significance of surviving remains threatened by the proposal. In order to identify the full extent of archaeological remains within the area of high potential initial evaluation of this area is required.

Depending on the results of the evaluation further investigation and recording may be necessary to fully mitigate any impact on identified deposits and features.

This brief outlines the necessary scope of an archaeological evaluation.

3.3 The evaluation will comprise assessment of documentary information already available as well as intrusive investigation.

3.4 **Desk-top assessment** - This research should:

1. Collate and assess relevant information held in the Regional Sites and Monuments Record.
2. Collate and assess all cartographic information relevant to the area.
3. Assess the topography and landuse of the area through maps and site visits.
4. Provide a detailed assessment of areas of archaeological potential and survival based on the above research and identify key locations where intrusive investigation should be undertaken to fully evaluate the archaeological potential of the site.

3.5 **Field evaluation** of areas of high archaeological potential
The evaluation should include a programme of linear trial trenching to adequately sample the threatened area and will excavate sufficient archaeological features to conform with section 4 below.

4.0 Objectives

4.1 The evaluation should aim to determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development. An adequate representative sample of all areas where archaeological remains are potentially threatened should be studied. ACA-HM will be particularly concerned with the evaluation of site formation processes.

4.2 The project manager should arrange, through a suitably qualified expert the assessment of the environmental potential of the site through examination of suitable deposits. The project manager should keep Astrid Caseldine of Lampeter University, Cadw Environmental Specialist, informed of any positive results. The assessment of potential should consider guidelines set out in the following document: Association for Environmental Archaeology, 1995, *Environmental*

Archaeology and archaeological evaluation in England. Working Papers of the Association of Environmental Archaeology 2, 8pp, York: Association of Environmental Archaeology.

4.3 The evaluation should also carefully consider any artefactual or economic information, in particular the survival of faunal evidence, and provide an assessment of the viability, for further study, of such information. It will be particularly important to provide an indication of the relative significance of such material for any subsequent decision making regarding mitigation strategies.

4.4 The evaluation should include a comprehensive assessment of regional context within which the archaeological evidence rests and should aim to highlight any relevant research issues within a national and regional research framework.

4.5 The evaluation should provide a predictive model of surviving archaeological deposits detailing zones of relative importance against known development proposals. An impact assessment should also be provided.

4.6 If any areas of analysis are not considered appropriate the report will detail justification for their exclusion.

5.0 Requirements

5.1 The project must be undertaken by an archaeological team of recognised competence, fully experienced in work of this character and formally acknowledged by ACA-HM, advisors to Pembrokeshire County Council. Details, including the name, qualifications and experience of the project director and all other key project personnel (including specialist staff) will be communicated to ACA-HM as part of a project specification. The contractor will be expected to produce a reasonably detailed project specification although a full programme of works will not be required. This specification must:

1. Be supported by a research design which sets out the site specific objectives of the archaeological works.
2. Detail the proposed works as precisely as is reasonably possible, indicating clearly on plan their location and extent.
3. Provide a timetable for the proposed works including a safety margin in the event of bad weather or any other unforeseen circumstances that may effect the timetabling.

5.2 The archaeological project manager must satisfy themselves that all constraints to groundworks have been identified, including the siting of line services, Tree Preservation Orders and public footpaths. ACA-HM take no responsibility for the inclusion or exclusion of such information within this brief.

5.3 Human remains must be left *in situ*, covered and protected when discovered. No further investigation should normally be permitted and ACA-HM and the local Coroner must be informed immediately. If removal is essential it can only take place under the appropriate Home Office and Environmental Health regulations.

5.4 All aspects of the evaluation shall be conducted in accordance with the Institute of Field Archaeologists *Code of Conduct* and the IFA's *Standards and Guidance for Archaeological Field Evaluations*.

5.5 Arrangements of the long term storage and deposition of all artefacts must be agreed with the landowner and ACA-HM before the commencement of the fieldwork.

5.6 The site archive should conform to the National Monuments record (Wales) agreed structure (guidelines available) and be deposited within an approved store (normally this will be the appropriate museum and/or NMR) on completion of site analysis and report production.

5.7 A full report of the results should be prepared and presented to ACA-HM within 6 weeks of the completion of site works. The report must include the following:-

1. A concise non-technical summary of the projects results.
2. Location plan of trenches and other fieldwork in relation to the proposed development.
3. Where relevant, section and plan drawings showing depth of deposits including present ground level with Ordnance datum, vertical and horizontal scale.
4. Written descriptions of all features and deposits revealed and investigated, and their considered interpretation.
5. Statement of the local and regional context of archaeological remains identified.
6. Full specialist descriptions of artefacts and ecofacts discoveries made during the works.
7. Mapped archaeological potential at a scale of 1;2500 or larger.
8. A model detailing surviving archaeological deposits.

5.8 In addition two copies of the final report should be provided for the Sites and Monuments Record.

5.9 ACA-HM is responsible for monitoring all archaeological work within Pembrokeshire. The contractor must inform ACA-HM in writing detailing proposed start dates for the project. Once notified a Project record Number will be allocated prior to on site work commencing, to be used on all site records.

5.10 Any changes to the specification that the contractor may wish to make after approval should be communicated to ACA-HM and approved on behalf of Pembrokeshire County Council.

5.11 ACA-HM should be kept regularly informed about development both during the site works and subsequent post-excavation work.

PROJECT SPECIFICATION

Introduction

This project specification has been prepared by Archaeoleg Cambria Archaeology Field Operations in response to a brief set by Archaeoleg Cambria Archaeology Heritage Management. It has been prepared in accordance with the relevant Standards issued by the Institute of Field Archaeologists.

Archaeoleg Cambria Archaeology Field Operations has considerable experience of this type of project and always operates to best professional practice. The conclusions will be based on a considered assessment of the collected data. Archaeoleg Cambria Archaeology Field Operations 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.

DESK BASED STUDY AND WALK-OVER SURVEY

1.0 Project objectives

1.1 The examination of existing written, cartographic, pictorial and technical information to assess the character, extent, significance and vulnerability of the archaeological resource within the survey area.

1.2 To identify new archaeological sites, features and deposits within the survey area, and to assess their character, extent, significance and vulnerability.

1.3 The identification of sites, features or deposits that require further archaeological investigation to fully assess their character, extent, significance and vulnerability.

2.0 Documentary and cartographic research

2.1 Search of County Sites and Monuments Record and National Monuments Record for information on known sites within, and around, the survey area.

2.2 Search of cartographic sources held in national and county records offices and other repositories for archaeological information.

2.3 Searches of primary historic documents held in national and county records offices and other repositories for archaeological information.

2.4 Searches of secondary, published sources.

2.5 Searches of available technical data (i.e. borehole logs; geological survey data).

2.6 Examination of available vertical and oblique aerial photographs.

3.0 Field visit

3.1 To review the current state of archaeological sites, features and deposits identified during the documentary research.

3.2 To identify new archaeological sites, features and deposits, or areas that may contain them.

3.3 To carry out rapid recording of archaeological sites, features and deposits by photography, site notes and sketch plans.

3.4 To assess the vulnerability of archaeological sites, features and deposits.

3.5 Preparation of a short report setting out the findings of the desk based study and survey and containing recommendations for the positioning of evaluation trenches (see below). The recommendations will be presented to the archaeological advisor to the Mineral Planning Authority for approval prior to undertaking the archaeological field evaluation.

ARCHAEOLOGICAL FIELD EVALUATION

This part of the work is dependent on the results from the above. The exact number, size and location of the evaluation trenches will depend on the results of the desk based study and walk over survey.

4.0 Objectives

4.1 Evaluation of the archaeological resource identified in the desk based study and walk over survey by the excavation of ten 10m x 1m or 2m wide trenches

4.2 Collation of data collected through the execution of 1.1 and preparation of an archive structured in accordance with guidelines laid out in the *Management of Archaeological Projects*, Appendix 3 (English Heritage 1991).

4.3 Preparation of a report based on the results of 1.1.

5.0 Fieldwork

5..1 Ten trenches each measuring 10m x 1m or 2m wide will be stripped to the top of the surviving archaeological deposits by mechanical excavator using a wide toothless ditching bucket. The trenches will be carefully examined and where considered necessary carefully hand cleaned. All archaeological deposits and features will be hand excavated.

5.2 Deposits with the potential to contain palaeoenvironmental and other evidence will be sampled for subsequent analysis. All samples will be stored in appropriate conditions until analysis.

6.0 Recording

6.1 All archaeological deposits will be recorded by archaeological context record sheet; scale drawing; photography and site notebooks. All deposits will be numbered using the open-ended numbering system in accordance with ACA Field Operations' Recording Manual. All significant deposits will be recorded by scale drawing (scale no less than 1:20); drawn plans will be related to Ordnance Datum and, where possible, known boundaries, and photography (35mm, colour slide and monochrome).

7.0 Finds

7.1 All artefacts and samples will be retained and, where possible, related to the contexts from which they derived. Sensitive material will be stored in appropriately stable conditions and assessments made of their significance and potential for further analysis before being sent for conservation, where appropriate.

7.2 Samples will be taken from deposits with potential for palaeoenvironmental material and an initial assessment of the potential of the deposits carried out in-house.

7.3 Should any human remains be encountered the District Coroner's Office and the Police will be notified immediately. Removal of human remains will only be carried out following the receipt of all statutory permissions.

7.4 A Home Office licence allowing the removal of human remains will be obtained prior to the excavation.

7.5 All finds remain the property of the landowner, except material deemed by the District Coroner to be Treasure Trove.

8.0 Palaeoenvironmental sampling

8.1 Any sampling undertaken will be carried out using the procedures laid out in *A Guide to Sampling Archaeological Deposits for Environmental Analysis* (Murphy P and Wiltshire P, 1994).

8.2 All features liable to contain palaeoenvironmental material will be sampled in the first instance.

8.5 All samples taken will be stored in appropriate conditions prior to the post-excavation assessment and analysis.

9. 0 Other sampling

9.1 Deposits containing materials considered suitable for scientific analysis such as radiocarbon or archaeomagnetic dating, archaeometallurgical analysis, etc., will be sampled.

9.2 All material suitable for scientific analysis will be collected in the first instance. A decision on the final level of analysis will be determined during the post-excavation assessment stage.

9.3 All samples collected will be stored in appropriate conditions prior to the post-excavation assessment and analysis.

10. Post-fieldwork reporting

10.1 Collation and cataloguing of fieldwork data to form a site archive, in accordance with guidelines laid out in the *Management of Archaeological Projects*, Appendix 3 (English Heritage 1991). The archive will be deposited with an appropriate body (to be arranged); it may be temporarily held by ACA Field Operations. Any material held by ACA Field Operations would be available for examination.

10.1 Assessment of the potential of the site archive for further analysis.

10.2 Assessment of the potential of any palaeoenvironmental samples for further analysis.

10.3 Assessment of any samples taken for other reasons for further analysis

10.4 Assessment of the potential of the finds for further analysis. The assessment will include the cleaning and cataloguing of all finds.

10.5 Preparation of a full report describing all the results of the project as outlined in the brief (Section 5.7)

11. Monitoring

11.1 It is expected that the Archaeological Curator will monitor the project. A timetable for the project, including a monitoring visit, will be agreed between the project manager, the regional archaeological curator and the client before commencement.

12. Staff

12.1 The project will be managed by N Page BA AIFA, who has wide-ranging archaeological experience, including this type of project.

12.2 Excavation staff will be drawn from the team of archaeologists regularly employed by ACA Field Operations.

APPENDIX TWO: PRIMARY SOURCES

REGIONAL SITES AND MONUMENTS RECORD

MAPS

Tithe maps

1842 Johnston tithe map and apportionment.
1839 Steynton tithe map.

Ordnance Survey

1891 1st edition 6" sheet Pembrokeshire XXVIISE
1891 1st edition 6" sheet Pembrokeshire XXVIISW
1891 1st edition 6" sheet Pembrokeshire XXXIIINE
1891 1st edition 6" sheet Pembrokeshire XXXIIINW
1891 2nd edition 6" sheet Pembrokeshire XXVIISE
1891 2nd edition 6" sheet Pembrokeshire XXVIISW
1891 2nd edition 6" sheet Pembrokeshire XXXIIINE
1891 2nd edition 6" sheet Pembrokeshire XXXIIINW
1976 1:10000 sheet SM91SW

AERIAL PHOTOGRAPHS

SORTIE	FRAMES	DATE
Meridian Airmaps	17774-17775 23896-23898	1955

PEMBROKESHIRE COUNTY RECORDS OFFICE

MAPS

Ordnance Survey

1874 (revised) 1st edition 1:2500 sheet Pembrokeshire XXXIII.2
1874 (revised) 1st edition 1:2500 sheet Pembrokeshire XXXIII.3
1906 2nd edition 1:2500 sheet Pembrokeshire XXVII.14
1906 2nd edition 1:2500 sheet Pembrokeshire XXVII.15
1906 2nd edition 1:2500 sheet Pembrokeshire XXXIII.2
1906 2nd edition 1:2500 sheet Pembrokeshire XXXIII.3

Estate maps and sale catalogues

1890 Map and sale catalogue for Bullford Farm (CRO ref: D/LJ/36).
1905 Map and sale catalogue of Johnston Hall Estate (CRO ref: D/ER/1/4).
1908 Map and sale catalogue of Picton Castle Estate (CRO ref: D/MER/15).

NATIONAL LIBRARY OF WALES

MAPS

Estate maps

1773 Picton Castle map book Volume I

APPENDIX THREE: CATALOGUE OF RESEARCH ARCHIVE

The project archive has been indexed and catalogued according to National Monument Record (NMR) categories and contains the following:

A. 1. Copy of the report.
4. Report (disk)

B. 1. Context records (paper)
4. research and field notes.

C. 1. Catalogue of site drawings.
2. Site drawings

D. 1. Catalogue of photographs
2. Colour slides
3. B/W negatives and contact sheets.

E. 2. Catalogue of unboxed finds.

F. 1. Environmental sample forms.

G. 1. List of primary references.

I. 4. Draft copies of report.

J. 1. Publication drawings.

There is no material for classes, **H**, **K**, **L**, **M** and **N**.

The project archive is currently held by Archaeoleg Cambria Archaeology Field Operations, Llandeilo, as project number 37412.

BIBLIOGRAPHY

Cantrill T C & Jones O C 1911 Prehistoric Cooking-places Hearths in South Wales. *Archaeologia Cambrensis*, 6th series 11, 253-286.

Williams G 1995 *A Pilot Assessment of the Burnt Mounds in Dyfed*. DAT report 35851. Llandeilo.

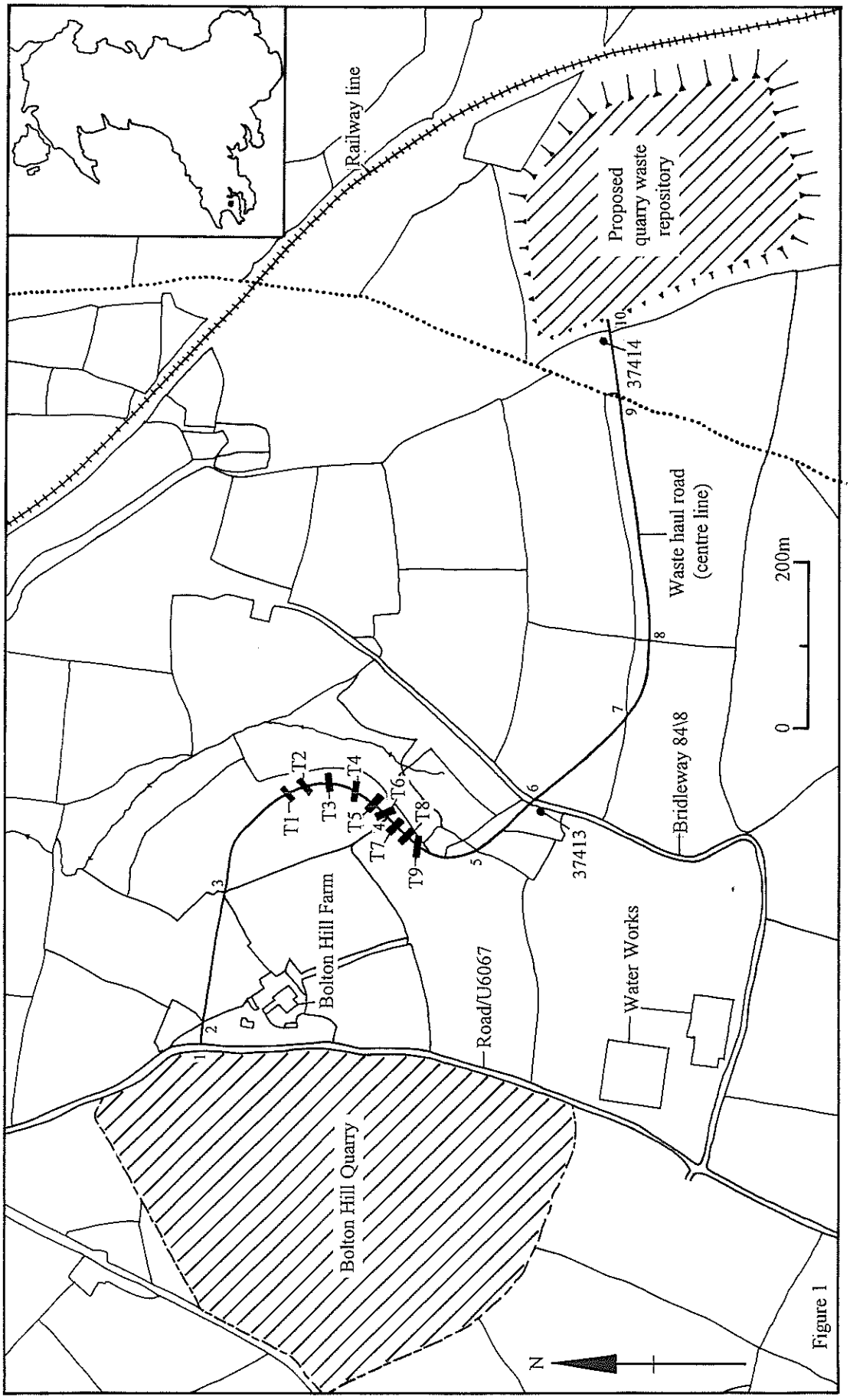
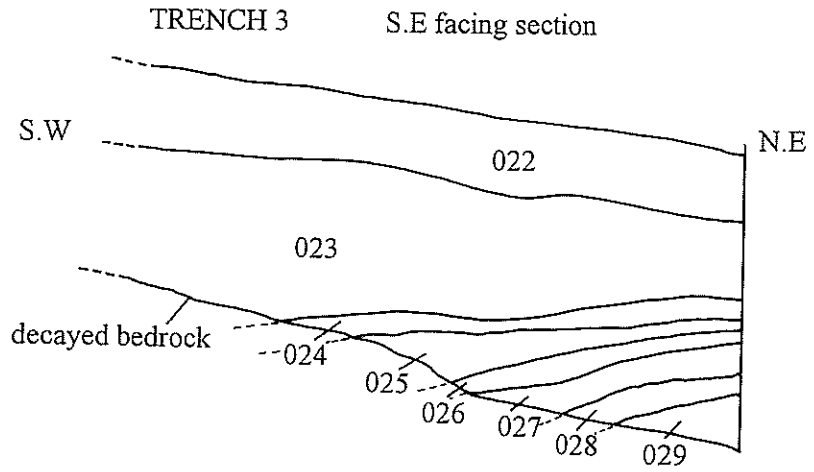
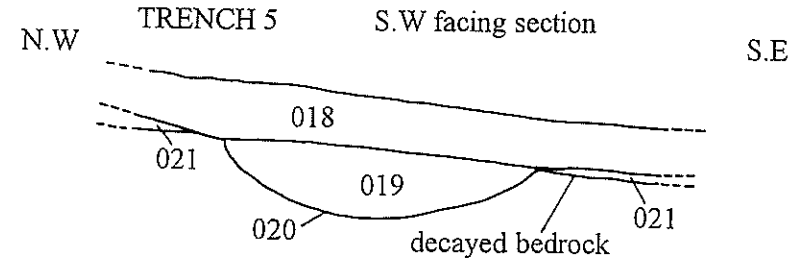
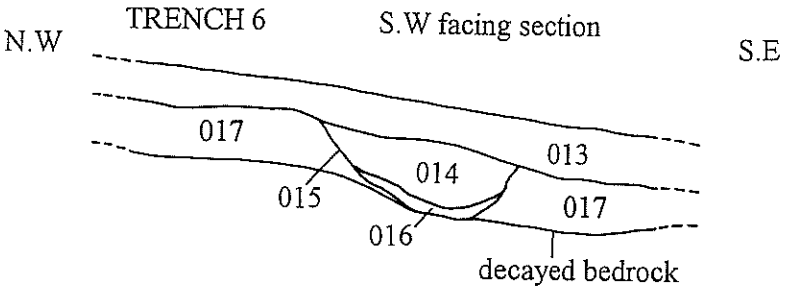

Railway line
Proposed quarry waste repository
37414
Waste haul road (centre line)
200m
0
Bridleway 84\8
37413
Water Works
Road/U6067
Bolton Hill Farm
Bolton Hill Quarry
T1
T2
T3
T4
T5
T6
T7
T8
T9
1
2
3
4
5
6
7
8
9
10
N

Figure 1


TRENCH 3
S.E facing section
S.W
N.E
022
023
decayed bedrock
024
025
026
027
028
029


TRENCH 5
S.W facing section
N.W
S.E
018
021
019
020
021
decayed bedrock


TRENCH 6
S.W facing section
N.W
S.E
017
013
014
015
017
016
decayed bedrock

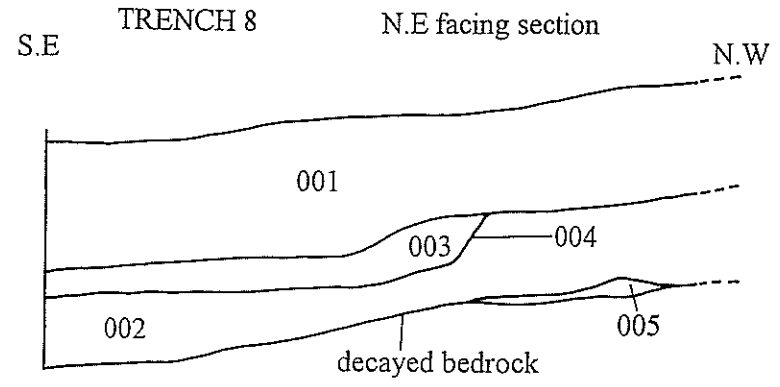

TRENCH 8
N.E facing section
S.E
N.W
001
003
004
002
005
decayed bedrock

Figure 2


0
1m

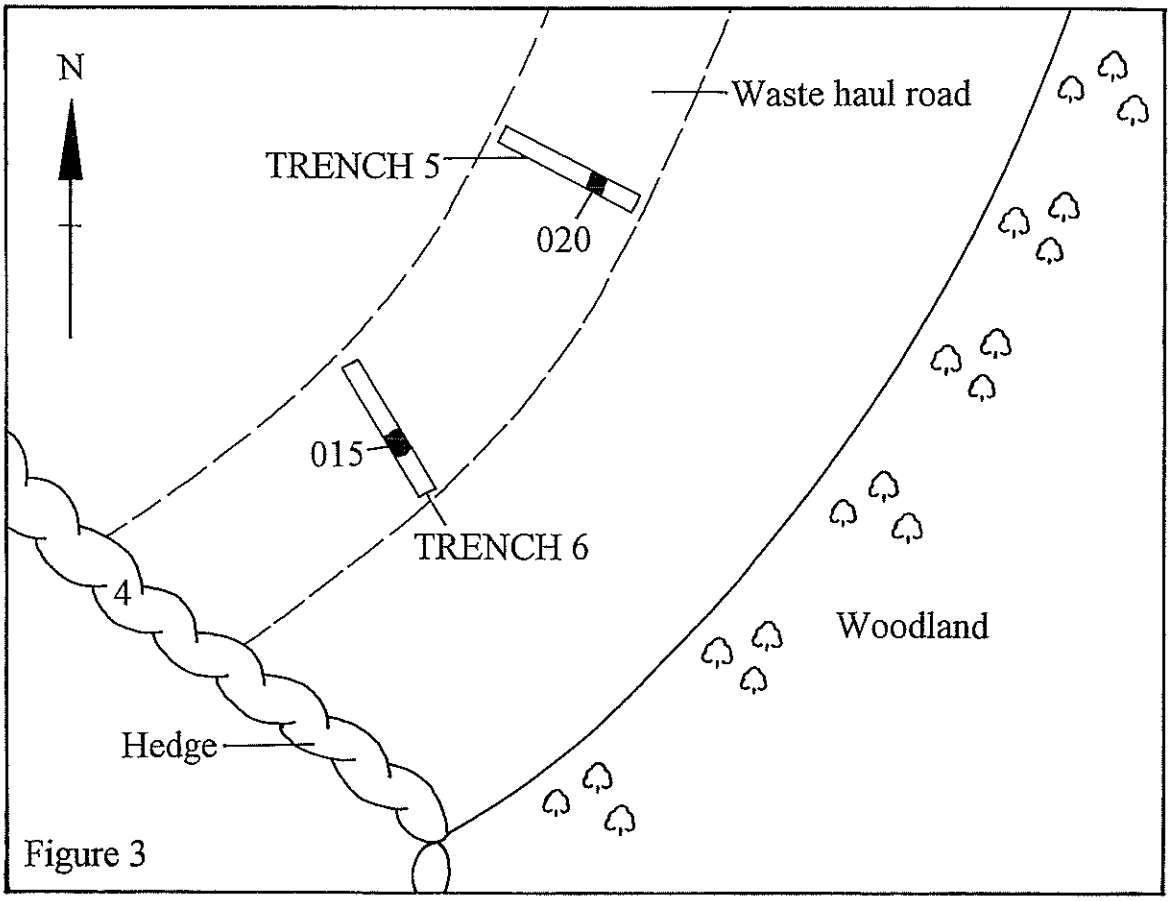


Figure 3

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