LLETY CEIRO, LANDRE, CEREDIGION: ARCHAEOLOGICAL EVALUATION 2008

Prepared by Dyfed Archaeological Trust
For: Asbri Planning Ltd

REGISTERED • ORGANISATION • IFA

ymddiriedolaeth archaeolegol
DYFED
archaeological trust

DYFED ARCHAEOLOGICAL TRUST

RHIF YR ADRODDIAD / REPORT NO. 2008/71
RHIF Y PROSIECT / PROJECT RECORD NO. 65071

Gorffennaf 2008
July 2008

LLETY CEIRO, LANDRE, CEREDIGION: ARCHAEOLOGICAL EVALUATION 2008

Gan / By

Philip Poucher

Ymddiriedolaeth Archaeolegol Dyfed Cyf
Neuadd y Sir, Stryd Caerfyrddin, Llandeilo, Sir Gaerfyrddin SA19 6AF
Ffon: Ymholiadau Cyffredinol 01558 823121
Adran Rheoli Treftadaeth 01558 823131
Ffacs: 01558 823133
Ebost: info@dyfedarchaeology.org.uk
Gwefan: www.archaeolegdyfed.org.uk

Dyfed Archaeological Trust Limited
The Shire Hall, Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AF
Tel: General Enquiries 01558 823121
Heritage Management Section 01558 823131
Fax: 01558 823133
Email: info@dyfedarchaeology.org.uk
*Website: www.*dyfedarchaeology.*org.uk*

Cwmni cyfyngedig (1198990) ynghyd ag elusen gofrestredig (504616) yw'r Ymddiriedolaeth. The Trust is both a Limited Company (No. 1198990) and a Registered Charity (No. 504616)
CADEIRYDD *CHAIRMAN: C R MUSSON MBE B Arch FSA MIFA.* CYFARWYDDWR *DIRECTOR: K MURPHY BA MIFA*

LLETY CEIRO, LLANDRE, CEREDIGION
ARCHAEOLOGICAL EVALUATION 2008

CONTENTS **PAGE**

LLETY CEIRO, LLANDRE, CEREDIGION
ARCHAEOLOGICAL EVALUATION

SUMMARY

An archaeological evaluation was undertaken by Dyfed Archaeological Trust Field Services on land at Llety Ceiro, Llandre, Ceredigion, to identify and characterise the extent of archaeological features and deposits identified during an archaeological assessment and geophysical survey, and evaluate the potential impact of a proposed housing development.

Eight trenches were machine excavated and then investigated by hand. Two ring ditches were revealed, confirming features visible on aerial photographs and the geophysical survey. Other pits and a possible cremation burial were recorded adjacent to the ring ditches. The internal areas defined by the ring ditches appear to have been heavily eroded and truncated. No archaeological features were recorded in the areas outside the ring ditches. No finds or dateable material was recovered from the archaeological features but the size and layout of the ditches suggests a Bronze Age barrow cemetery.

INTRODUCTION

Project background and commission

Dyfed Archaeological Trust Field Services was contracted by Asbri Planning Ltd. Cardiff, on behalf of the land-owner Tomos Jones, to carry out an archaeological evaluation in June 2008 following on from the findings of a fluxgate gradiometer survey, in advance of a proposed housing development on a plot of land at Llety Ceiro, Llandre, Ceredigion (Planning Application Nos. A061152 and A070989: NGR SN62708616).

As archaeological advisors to Ceredigion County Council, Dyfed Archaeological Trust Heritage Management recommended that, in view of the potential impact of development on the archaeological resource, an archaeological field evaluation would be required prior to the determination of a planning application. This is in line with Government policy as contained in Planning Policy Wales, March 2002, Section 6.5, and Welsh Office Circular 60/96 – *'Planning and the Historic Environment: Archaeology'* paragraphs 11, 12, 13 and 14*.*

The scope and aims of the evaluation

The main aim of the evaluation was to more fully characterise the extent of the below ground archaeological resource, or potential resource, that had been identified previously from aerial photographs and during a geophysical survey as lying within the proposed development area.

The project also aimed at providing enough information on the archaeological resource to enable assessment of the likely impact of the development proposals on that resource, and to help inform future management decisions in areas that may require further archaeological work.

It is important to realise, however, that the trial excavations only represent a small percentage of the whole development area and that even though their choice of location was well informed their scope is somewhat limited.

Report outline

This report briefly describes the physical environment of the area before detailing the results of the evaluation excavations. The likely impacts of the development proposals are discussed and suggestions for further archaeological works are given.

Abbreviations used in this report

Any references to sites mentioned in the text and recorded on the regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). References to cartographic and documentary evidence and published sources are given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

THE EVALUATION AREA

The proposed development site contains part of a "*rare complex of prehistoric funerary and ritual features, which are of national significance*"[1]. These survive as cropmark features, which are visible on aerial photographs. The features consist of five large circular ring ditches (PRN 3058)(Fig. 2), which are probably Bronze Age burial monuments, and a large rectangular enclosure (PRN 3059) possibly of Iron Age or Romano British date. Some of the ring ditches appear to contain features that may be burials. There is another group of smaller ring ditches (PRN 9680) in the field to the south. Given the extent of the archaeological features in the area it is considered that "*the potential for significant archaeological material of national importance to survive* [within the site] *is extremely high*"[2]

The Llety Ceiro development site occupies *c*.0.83ha (*c*.2.05 acres) of farmland and rough ground centred on NGR SN62708616. The plot is defined to the east by the line of the B4353 and to the northeast by a property boundary. The eastern half of the plot is defined by an existing fence-line built to define an earlier area of proposed development, but the western half of the plot extends into the neighbouring field.

Topographically the site occupies a fairly level ridge at the end of a valley before the ground begins to drop off to the south towards Bow Street, giving open views to the southwest and east. A slight slope runs off to the west before dropping dramatically into a railway cutting beyond which lie the steep valley slopes overlooking the site. The ground also rises to a hilltop to the north-east creating a natural amphitheatre within which the site sits.

The field currently lies under pasture but has been ploughed in the past. The eastern part of the plot has been partially developed with an access road and drainage but the remainder is under long grass.

The solid geology is represented by sedimentary rocks from the Llandovery series of the Silurian epoch (c438 to 408 million years ago), overlain in part by poorly sorted gravels deposited by glacial moraines and alluvium along the valley base.

[1] Extract from the project brief supplied by Ceredigion County Council's archaeological advisors (Dyfed Archaeological Trust Heritage Management), page 4 – paragraph 3.1.

[2] [2] Extract from the project brief supplied by Ceredigion County Council's archaeological advisors (Dyfed Archaeological Trust Heritage Management), page 4 – paragraph 3.1.

SITE HISTORY

The complex of archaeological features was identified from aerial photographs but no groundworks had previously taken place on this site and neither have any finds been recovered. In April 2008 Dyfed Archaeological Trust were commissioned to carry out a geophysical (fluxgate gradiometer) survey of the site prior to the determination of a planning application. The geophysical survey confirmed the existence of the features identified from the aerial photographs but could not discern other archaeological features. The following descriptions are taken from the interim report on the geophysical survey (Crane 2008 (Appendix 1)).

The results of the survey clearly showed parts of the five large ring ditches, PRN 3058, but no internal features. Central burial pits are to be expected in ring ditches, but these may not be detectable by geophysics. The rectangular enclosure, PRN 3059, also clearly shows with its internal division at its southern end, but there is no trace of the linear feature (ditch?) plotted by RCAHMW extending south from its southwest corner.

There was no indication of the two or three smaller ring ditches, plotted on a HER base map, possibly part of PRN 9680, that may exist on the eastern half of the site. The northernmost one of these was probably located in the area of the access road.

The former field boundary, running diagonally, NW to SE, bisecting the ring ditches PRN 3058 and the rectangular enclosure PRN 3059, can be seen as three faint lines on the geophysical survey. The route of the modern sewer trench can also be clearly seen, together with manholes, that cut across the rectangular enclosure.

METHODOLOGY

Eight trenches measuring roughly 20m by 2m were excavated by machine using a toothless grading bucket. In all trenches the turf and ploughsoil were removed by machine down to the top of the natural subsoil. Some areas were machined to both a shallower and greater depth in order to test the natural subsoils. Where archaeological features or deposits were revealed they were cleaned by hand, photographed, and then either wholly excavated or test excavated to establish as far as possible their true character. During excavation all revealed deposits and features were described on context record forms and allocated their own individual context number. After excavation, all features were photographed again and then planned using a Trimble TST. Where relevant, sections were drawn to a scale of 1:10.

The brief for the archaeological evaluation produced for the Dyfed Archaeological Trust Heritage Management division, called for eight trenches of 20m x 2m to be located at suggested locations within the proposed development area. In the event the location of two trenches (Trenches 4 and 5) had to be slightly readjusted to avoid fence lines, an electricity pole and a waste-water pipe trench (fig.4).

Standard techniques were used to excavate and record the trench profiles and any archaeological features present. The relative location of the trenches have been tied in to the Ordnance Survey grid and absolute levels were calculated from the Ordnance Survey datum.

RESULTS OF THE EVALUATION

For the exact location of the excavation trenches see Figures 2 and 4.

Trench 1

Trench 1 (fig.5) was orientated east - west and positioned to target a ring ditch identified through aerial photography and the geophysical survey.

The main ditch of the ring ditch (1004) was revealed at the eastern end of the trench, this feature was fully excavated and was found to contain two ditch fills (1003 & 1007) (fig.9). The upper fill was a thick deposit, very similar to the surrounding natural subsoils and therefore initially difficult to distinguish its extent, especially in dry conditions. This deposit was cut by a small animal burrow (1009). Neither of the two ditch fills produced any finds or datable material.

Samples were taken from both deposits but animal disturbance, the dry stony condition of the soil and lack of charcoal means these deposits are unlikely to produce a significant amount of useful information and therefore have not yet been processed. Underlying the lower fill (1007) was an irregular sub-triangular slot (1006) filled by a loose gravely fill (1005), also devoid of any finds or charcoal.

Towards the interior of the ring ditch two features were recorded, a linear (1011) cut and sub-circular pit (1013). The linear feature (1011) was a shallow U-shaped cut that extended 1.44m into the Trench from the south, its shallow nature suggesting its northern continuation had been truncated. This feature was part-excavated at its northern extent, it contained a single fill (1010), no finds or datable material was recovered. The sub-circular pit (1013) was also shallow, containing a single fill (1012) within which were some large stones against the eastern edge. The feature was half excavated but no finds or datable material was recovered.

No other archaeological features could be determined within the Trench, although root action was evident throughout.

Layer 1000: Topsoil
Dark brown silty-clay of moderate compaction containing frequent (20%) small subangular stone, 0.35m thick.

Layer 1001: Natural Subsoil
Mid orange-brown silty-clay of moderate compaction containing 40% small subangular stone.

Layer 1002: Natural
Mid grey sandy-clay of moderate compaction containing 60% small subangular stone.

Fill 1003: Secondary ditch fill.
Upper fill of ditch 1004. Dark orange-brown silty-clay of firm compaction containing frequent (15%) small subangular stone, 0.5m thick. Layer appears to have been deposited by natural silting.

Cut 1004: Ditch cut
Curvilinear cut, 2.16m long, 1.32m wide, 0.64m deep, orientated northeast southwest. Moderately sloping 45º angle sides with concave base. Length noted not full extent of feature as continues into both north and south sections of evaluation trench.

Fill 1005: Stone socket (?) fill.
Fill of 1006. Mid orange-brown sandy-clay of friable compaction, containing 40% small subangular stone.

Cut 1006: Stone socket (?) cut.
Sub-triangular cut, 0.65m long, 0.39m wide, 0.30m deep. Steep, straight sides with an irregular concave base.

Fill 1007: Ditch fill.
Lower fill of ditch 1004. Dark orange-brown silty-clay of friable compaction containing 20% small subangular stone, 0.12m thick.

Fill 1008: Animal burrow fill.
Fill of 1009. Dark greyish-brown silty-clay of friable compaction containing no visible inclusions.

Cut 1009: Animal burrow cut.
Linear cut, 2.16m long, 0.13m wide, 0.13 deep, orientated northeast southwest. Length noted not full extent of feature as continues into both north and south sections of evaluation trench.

Fill 1010: Linear fill.
Fill of 1011. Dark reddish-brown silty-clay of friable compaction containing moderate (10%) small subangular stone.

Cut 1011: Linear cut.
Linear cut, 1.44m long, 0.23m wide, 0.04m deep, orientated southeast northwest. Shallow sloping 30º angle sides with concave base. Length noted not full extent of feature as it continues into south section of evaluation trench. Feature appears to have been heavily truncated.

Fill 1012: Posthole/ Pit (?) fill.
Fill of 1013. Dark reddish-brown silty-clay of friable compaction containing frequent (15%) large subangular stone.

Cut 1013: Posthole/ Pit (?) cut.
Subcircular cut 0.72m long, 0.35m wide, 0.07m deep. Sides moderately sloping 50º angle sides with concave base.

Trench 2
Trench 2 (fig.6) was orientated north - south and positioned to target a ring ditch and a further anomaly identified through aerial photography and the geophysical survey.

The ring ditch (2013) was identified towards the northern end of the Trench, truncated by a modern water-pipe trench (2009). The ditch was fully excavated, revealing four fills (2006, 2007, 2010 & 2011) (fig.10). The upper three fills (2006, 2007 & 2010) were very similar in colour and texture, and also proved initially difficult to distinguish from the surrounding natural subsoils. 2006 and 2007 were both cut by a modern animal burrow (2015), although a sample was taken from 2007, as well as the undisturbed 2010. The lower fill was a loose gravely deposit very similar in character to the lower natural gravels, suggesting it was a primary fill.
On the northern (interior) side of the ditch, 0.08m away, lay a small sub-circular pit (2003), this was fully excavated, contained a single fill (2002) containing a large quantity of stone and quartz but no datable finds.

On the southern (exterior) side of the ditch, 0.07m away, lay a larger sub-circular pit, fully excavated, containing two fills (2004 & 2018), the lower of which contained significant amounts of charcoal and some small fragments of what appeared to be burnt bone (fig.10). A sample was taken of this deposit but it has not yet processed. This may be a cremation.

The only other archaeological features identified within this trench was a small circular pit or posthole (2017) containing a single charcoal-rich fill (2016) cut into the upper fill of the ring ditch 2013.

Layer 2000: Topsoil
Dark grey-brown clay-silt of friable compaction containing 30% small to medium subangular stone and occasional (5%) charcoal flecks, 0.38m thick.

Layer 2001; Natural Subsoil
Mid grey sandy-clay of friable compaction containing 60% small subangular stone.

Fill 2002: Pit/posthole (?) fill.
Fill of 2003. Mid grey-brown clay-silt of friable compaction containing occasional (5%) charcoal flecks, frequent (25%) small to medium subangular stone, and frequent (15%) small to medium quartz fragments.

Cut 2003: Pit/posthole (?) cut.
Subcircular cut with gradual concave sides and a concave base, 0.43m long, 0.40m wide and 0.06m deep.

Fill 2004: Possible cremation pit secondary fill.
Upper fill of 2005. Mid grey-brown silty-clay of friable compaction containing 20% small subangular stone.

Cut 2005: Possible cremation pit cut.
Subcircular cut 0.95m long, 0.78m wide, 0.13m deep. Steep straight sides with a slightly concave base.

Fill 2006: Ditch fill.
Upper fill of ditch 2013. Dark orange-brown clay-silt of friable compaction containing 30% small to medium subangular stone, 0.19m thick. Layer appears to have been deposited by natural silting.

Fill 2007: Ditch fill.
Fill of ditch 2013. Mid orange-brown clay-silt of friable compaction containing 40% small to medium subangular stone, 0.25m thick. Layer appears to have been deposited by natural silting.

Fill 2008: Pipe trench fill.
Fill of 2009. Mid grey-brown sandy-silt of loose compaction containing 40% small angular stone.

Cut 2009: Pipe trench cut.
Linear cut orientated northeast southwest. Vertical sides, not bottomed.

Fill 2010: Secondary ditch fill.
Fill of ditch 2013. Mid brown clay-silt of friable compaction containing 30% small to medium subangular stone, 0.13m thick. Layer appears to have been deposited by natural silting.

Fill 2011: Primary ditch fill.

Lower fill of ditch 2013. Mid grey sandy-clay of loose compaction containing 40% small subangular stone, 0.08m thick. Layer appears to have been deposited by natural silting, possibly a primary fill from collapsed edges.

Context 2012 not used.

Cut 2013: Ditch cut.
Curvilinear cut 2.33m long, 1.48m wide, 0.65m deep and orientated northwest southeast. V-shaped in profile, sides of over 45º with moderate concave base.

Fill 2014: Animal burrow fill.
Fill of 2015. Mid brown clay-silt of friable compaction containing 20% small to medium subangular stone. Modern pottery and plastic fragments noted.

Cut 2015: Animal burrow cut.
Linear cut, 0.90m wide, 0.20m deep and orientated northwest southeast. Irregular sides with irregular base.

Fill 2016: Pit/posthole fill.
Fill of 2017. Dark grey-brown clay-silt of friable compaction containing 20% charcoal fleck and occasional (5%) small to medium subangular stone.

Cut 2017: Pit/posthole (?) cut.
Subcircular cut 0.24m long, 0.18m wide 0.04m deep. Concave base.

Fill 2018: Possible cremation pit primary fill.
Lower fill of 2005. Dark grey silty-clay of friable compaction containing 25% charcoal fleck, 18% medium angular stone and 2% burnt bone (?). 0.11m thick

Trench 3.
Trench 3 was orientated east - west, 20.30m long and 2.30m wide, positioned towards the southern extent of the proposed development area to target an anomaly identified through aerial photography and the geophysical survey.

A linear feature (3003) was identified towards the western end of the trench, which was part-excavated, revealing a single fill (3002) that contained no finds or datable material. The feature was shallow, with an irregular base and ran in a northeast-southwest direction before kinking to the south at its southern extent. It appeared to fade out to the north, possibly truncated by later ploughing or just not distinguishable from the topsoil.

To the east of this feature a small sondage was excavated (0.8m by 0.5m) to investigate possible linear features but these proved to be layers in the natural subsoils, changing from a mid orange-brown silty-clay (3001) to a light-grey gravely layer. These changing natural layers were visible throughout this trench.

Layer 3000: Topsoil
Mid grey-brown silty-clay of friable compaction containing frequent (20%) medium to large angular and subangular stone, occasional (5%) charcoal fleck, and occasional (1%) animal bone fragments, 0.38m thick.

Layer 3001: Natural
Mid orange-brown silty-clay of firm compaction containing 30% small to medium angular and subangular stone, moderate (10%) large subangular stone.

Fill 3002: Animal burrow (?) fill.

Fill of 3003. Mid grey-brown clay-silt of friable compaction containing 20% medium to large subangular stone.

Cut 3003: Animal burrow (?) cut.
Linear cut 1.97m long, 0.53m wide and 0.10m deep and orientated northeast southwest, with a southward kink for the last 0.8m.

Trench 4
Orientated northeast – southwest (fig.7), measuring 19-9m by 2.5m, positioned to investigate an open area outside the ring ditches. This trench was shifted slightly west of its original planned location due to the presence of an electricity pole and a known waste-water pipe trench, which truncated the southwestern end of the Trench.

Two roughly parallel linear features (4003 & 4005) were identified, both filled with material similar in colour and texture to the topsoil (4000). These features ran in an east-west direction, lying c.0.35m apart. No finds or dateable material was recovered from these features, which were recorded in plan but unexcavated.

Roughly midway along this trench was a line of three large sub-angular stones, lying in a short line c.0.9m long and aligned ENE-WSW. These stones presumably lie within the remains of a linear feature but this was not discernible within the natural subsoils at this point, although the natural in this area (an area roughly 4m long and 0.6m wide) appears to contain generally fewer stones than the natural subsoils visible elsewhere within this trench.

Layer 4000: Topsoil
Mid grey-brown silty-clay of friable compaction containing frequent (20%) medium to large angular and subangular stone, occasional (5%) charcoal fleck, 0.30m thick.

Layer 4001: Natural
Mid orange-brown silty-clay of firm compaction containing 30% small to medium angular and subangular stone.

Fill 4002: Plough mark fill
Fill of 4003. Mid grey-brown clay-silt of friable compaction containing 20% small to medium subangular stone.

Cut 4003: Plough mark
Linear cut 3.18m long, 0.22m wide, unexcavated, orientated ENE-WSW.

Fill 4004: Plough mark fill
Fill of 4005. Mid grey-brown clay-silt of friable compaction containing 20% small to medium subangular stone.

Cut 4005: Plough Mark
Linear cut 3.13m long, 0.29m wide, unexcavated, orientated ENE-WSW.

Trench 5
Orientated northwest-southeast, measuring 19.9m by 2.2m. Originally this trench was sited to investigate a ring ditch identified through aerial photography the geophysical survey, and the area external to the ditch. In the event the line of this trench would have taken it through an existing fence line so the position of

the trench was shifted slightly to the west, avoiding the ring ditch (which was investigated within Trench 6) but examining an area between two of ring ditches.

Initial cleaning of this trench revealed a somewhat mottled natural subsoil (5001) underlying the topsoil (5000) but no archaeological features were apparent.

Layer 5000: Topsoil
Mid grey-brown silty-clay of friable compaction containing frequent (20%) medium to large angular and subangular stone, occasional (5%) charcoal fleck, 0.30m thick.

Layer 5001: Natural
Mid orange-brown silty-clay of firm compaction containing 30% small to medium angular and subangular stone.

Trench 6
Orientated east-west (fig.8), measuring 19.26m by 2.33m and positioned to investigate a ring ditch identified through aerial photography and the geophysical survey.

The line of the ring ditch (6006) was identified roughly midway along the trench. It was fully excavated revealing a wide slightly curved ditch with straight sides and a flat base, containing three fills (6003, 6004 & 6005) (fig.9). The lower fills showed signs of tipping in from the west (interior) of the ring ditch and may represent slump from an internal mound. The fills all consisted of similar gravely silty-clays, but no finds or datable material were recovered. Samples were taken from the lower fills but due to the dry gravely nature and lack of charcoal these have not yet been processed.

After initial cleaning several sub-circular darker patches were revealed within the trench, two to the west of the ring ditch, one to the east. All were investigated but proved to be shallow irregular bowls within the natural subsoils containing evidence of root action cutting into the surrounding natural deposits.

A series of small circular soil-filled features were revealed close to the internal edge of the ring ditch after initial cleaning. Superficially these had the appearance of stakeholes although two were investigated and proved to be irregular root holes.

Layer 6000: Topsoil
Dark reddish-brown silty-clay of friable compaction containing frequent (15%) small subangular stone, 0.42m thick.

Layer 6001: Natural Subsoil
Mid orange-brown silty-clay of friable compaction containing 20% small subangular stone.

Layer 6002: Natural
Mid greyish-brown sandy-clay of firm compaction containing 40% small subrounded stone.

Fill 6003: Ditch fill
Upper fill of ditch 6006. Dark reddish-brown silty-clay of friable compaction containing 10% small subangular stone. 0.31m thick. Layer appears to have been deposited by natural silting.

Fill 6004: Ditch fill

Fill of ditch 6006. Dark brown silty-clay of friable compaction containing 15 % small subangular stone and 1% charcoal flecks, 0.21m thick. Layer appears to have been deposited by natural silting, filling up from the west, possibly from an internal mound.

Fill 6005: Ditch fill
Lower fill of ditch 6006. Dark reddish-brown sandy-clay of friable compaction containing 15% small subangular stone, 0.11m thick. Layer appears to have been deposited by natural silting, filling up from the west, possibly from an internal mound.

Trench 7
Orientated northwest - southeast, measuring 19.49m by 2m, positioned to investigate an area outside the ring ditches.

Initial cleaning of this trench revealed a fairly consistent layer of mid orange-brown natural subsoils (7001) underlying the topsoil (7000) across the site. Towards the northwest corner of the trench was a patch c1m by c0.8m of light-grey clayey-gravel, with a greater concentration of stones. This was interpreted as changes in the natural subsoil, as visible and investigated within trench 3.

Layer 7000: Topsoil
Mid grey-brown silty-clay of friable compaction containing frequent (20%) medium subangular stone, 0.35m thick. Increases in depth to the northwest.

Layer 7001: Natural
Mid orange-brown silty-clay of firm compaction containing 25% small to medium subangular stone and 5% large subangular stone. The natural tends to get stonier to the southeast, with a patch of light grey sandy-clay against the north-western edge of the trench.

Trench 8
Orientated NNW - SSE, measuring 19.83m by 2.1m, positioned to investigated the easternmost area of proposed development.

Initial cleaning revealed a greater depth of topsoil (8000) at this end of the site. A large semi-circular area of darker material in the north-western corner of the trench was investigated with two sondages (0.9m by 0.5m, 0.3m deep and 1.1m by 0.5m and 0.2m deep) and proved to be a natural hollow containing a greater depth of topsoil.

Several irregular and sub-circular features were revealed towards the southern end of the trench, all filled with a similar mid grey-brown clayey-silt with a moderate frequency of small stones and the occasional charcoal fleck. Two of these features were investigated and proved to have irregular bases with root holes cutting into the surrounding natural subsoils.

The natural subsoils (8001) gradually changed across the trench from a mid orange-brown clayey-silt with a high percentage of gravel inclusions at the northern end, through to a lighter yellow-brown but otherwise similar material at the southern end. The natural revealed in the southernmost sondage, at a depth of 0.59m below current ground level, was a light green-grey clayey silt with a high percentage of gravel.

Layer 8000: Topsoil

Mid grey-brown silty-clay of friable compaction containing frequent (20%) medium sub-angular stone, 5% charcoal flecks, up to 0.50m thick.

Layer 8001: Natural
Mid orange-brown silty-clay of firm compaction containing 35% small subangular stone. The natural changes to a yellow-brown sandy-clay with 40% small subangular stone roughly 12m to the southeast of the northern edge. Patches of light green-grey clayey-silt with 40% small subangular stone also evident.

DISCUSSION

Archaeologically significant features and deposits were recorded in Trenches 1, 2 and 6. As indicated in the original archaeological brief the occurrence of several ditched circular enclosures of this size is a characteristic of prehistoric funerary and ritual features, specifically Bronze Age burial mounds.

Western Ring Ditch

Trench 1 and 2 were sited to investigate the ring ditch of a single monument, visible on aerial photographs and geophysical survey. The ditch was shown to survive to a depth of 0.61m to 0.65m within both trenches, indicating there is probably good survival for the remainder of the length of this ring ditch. The section of ditch within Trench 1 was U-shaped, 1.4m wide and 0.61m deep, containing two fills. At Trench 2 (c.23m further round) the ditch was beginning to take on a more V-shaped profile although the dimensions remained similar (1.45m wide, 0.65m deep). Three fills were recorded in Trench 2, but all fills in both segments of ditch were similar gravelly silty-clays, with very little charcoal and no finds recovered. These fills were very similar in character to the natural subsoils and gravels through which the ditch cut, which often meant identifying the true edge of feature difficult, especially in dry conditions. The loose compaction and gravelly nature of the subsoils and geological deposits in this area indicate these ditches probably filled up quickly once they had gone out of use.

Within the base of the ditch in Trench 1 an irregular hollow was revealed. Its irregularity and position in the ditch base makes interpretation of this feature difficult. The feature contained a single gravelly fill, distinguishable from the lower fill of the ditch above, which may indicate this was a naturally filled void created by the removal of a large stone, possibly during the construction of the ditch. No similar features were detected in the bases of any of the excavated ditch segments.

Both Trench 1 and 2 were also sited to examine the interior of the ring ditch, with Trench 1 sited to cross the centre of the ring ditch area, in an attempt to pick up any possible central burial features. Several possible archaeological features were revealed after cleaning the trenches but none of these features could confidently be ascribed to burial or related activity. A pit (1013) and linear feature (1011) within Trench 1 both appeared to be heavily truncated, and their fills gave no clue to their function. Indeed their slightly irregular nature may indicate they are part of the root disturbance and animal burrowing that was evidenced elsewhere in both trenches. A shallow stone filled pit (2003) was revealed 0.07m north of the ditch segment within Trench 2. The function of this pit remains unclear, the lack of charcoal would suggest it was not a cremation although the unusually high concentration of quartz within its stony fill may indicate it was associated with the funerary site, as collections of quartz stone is sometimes a feature of prehistoric burial monuments.

The lack of internal features, and the truncated nature of those possible features that were revealed suggests a significant part of the interior of the ring ditch has been truncated through both erosion of the loose gravely natural subsoils and by later ploughing.

A larger pit was recorded on the outer edge of the ring-ditch within Trench 2, bisected by the modern water pipe trench that ran through the site. The lower fill of this pit contained a significant amount of charcoal and the occasional small fragment of possible burnt bone. Such deposits may be characteristic of the remains of a cremation burial, the siting of cremations on the outside edge of Bronze Age burial mounds is also recorded elsewhere, suggesting a later phase of

burial at the monument. A sample was taken of this deposit but as yet this has not been processed so it remains unclear if this will produce dateable material.

No further archaeological features or deposits were recorded within and around this ring ditch within trenches 1 and 2.

Eastern Ring Ditch
Trench 6 was located across the line of the easternmost ring ditch detected on aerial photographs and the geophysical survey to be affected by the proposed development. The presence of the ditch was confirmed, of a similar depth (0.6m) to the western ring ditch but of slightly different construction, being wider (1.75m) with a flat base. The three fills of the ditch were very similar however, consisting of a series of stony silty-clays very similar in character to the natural subsoils through which the ditch cuts. However, the lower two fills showed signs of having filled the ditch from the interior of the ring ditch, possibly from an eroding internal mound. No finds or other datable material were recovered from the fills of the ditch.

As with the other ring ditch several feature were revealed both inside and outside the line of the ring ditch by subsequent cleaning and wetter conditions, but upon investigation they all proved to be either natural soil filled depressions, the result of root action or animal burrowing.

Outside the Ring Ditches
Both Trench 2 and 3 were located to investigate small features identified on aerial photographs, initially thought to represent possible burials. In the event these features were not distinguishable as archaeological features, and neither were they positively identified during the geophysical work. The remaining trenches were located to investigate the open spaces between and beyond the ring ditches, but no associated archaeological features were identified. Evidence of animal burrowing and root disturbance was identified in most of the trenches. Truncation by later ploughing would also appear to have removed possible archaeological features, and evidence of plough marks were identified within Trench 4. The depth of topsoil increased to the east, closer to the road, which may indicate a higher potential for archaeological preservation in this area, although no archaeological features were identified within the easternmost trench 8.

CONCLUSIONS AND SUGGESTIONS

Excavation confirms the presence of ring ditches identified in aerial photographs and the geophysical survey. The size and layout of these features are characteristic of a Bronze Age round barrow cemetery. The ring ditches survive as relatively well-preserved features, typically 0.6m deep, within the proposed development area, although no finds or datable material was recovered from the ditch fills. Truncated features within the area enclosed by the ring ditches would indicate the interior area of the burial mounds is poorly preserved, presumably both eroded and plough-damaged, and no evidence of internal burials was recorded. On the outer edge of the westernmost ring ditch a sub-circular pit contained the remains of a possible cremation, suggesting a period of secondary burial at the site.

The ring ditches and associated archaeological features survive below the topsoil, at a typical depth of around 0.3m, cut into the natural subsoils. Ground-breaking activities associated with proposed development within the areas of these ring ditches would therefore have a significant impact on the archaeological resource. The interiors of the ring ditches appear to have been heavily truncated. No archaeological features were detected outside the ring ditches, although the evaluation trenches have investigated only a small percentage of the whole development area. It should also be noted that the nature of the natural subsoils and evidence of root, animal and plough disturbance makes the identification of genuine archaeological features difficult, especially in dry conditions.

To reduce the impact of development upon potentially significant archaeological deposits consideration should be given to locating house-footprints and other ground-breaking activity away from the ring ditches and their immediate area. If disturbance of the known archaeology in this area is unavoidable it is suggested that the ring ditches and their immediate area be archaeologically investigated prior to development.

Although archaeological features were not detected outside the area of the ring ditches there remains the potential for archaeological remains and therefore it is suggested that any ground-breaking activity in this area should be undertaken under archaeological observation.

REFERENCES

Crane, P 2008 Land at Llety Ceiro, Landre, Ceredigion: Interim report on Archaeological Evaluation Geophysical Survey. DAT Report No. 2008/45.

Figure 1. Location map, based on the Ordnance Survey.

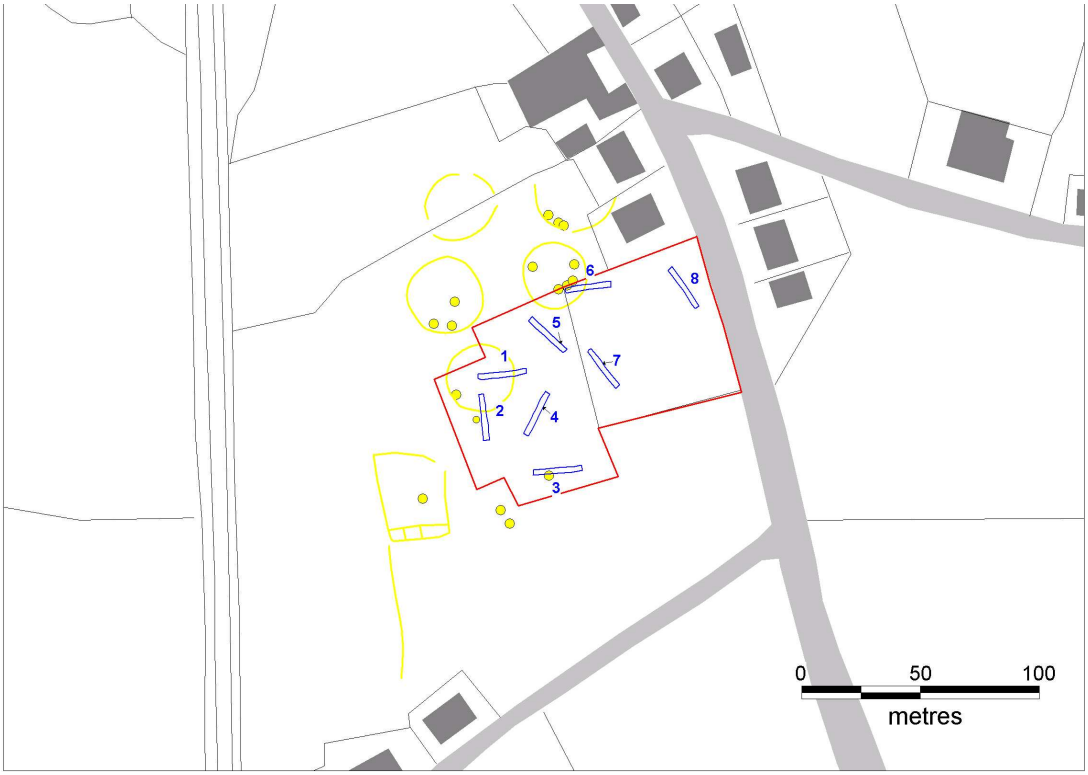

Figure 2: Site plan, showing the location of the proposed development area (in red) within Llandre, and the locations of the trenches (in blue) overlaid on the archaeological features identified from the aerial photographs (in yellow).

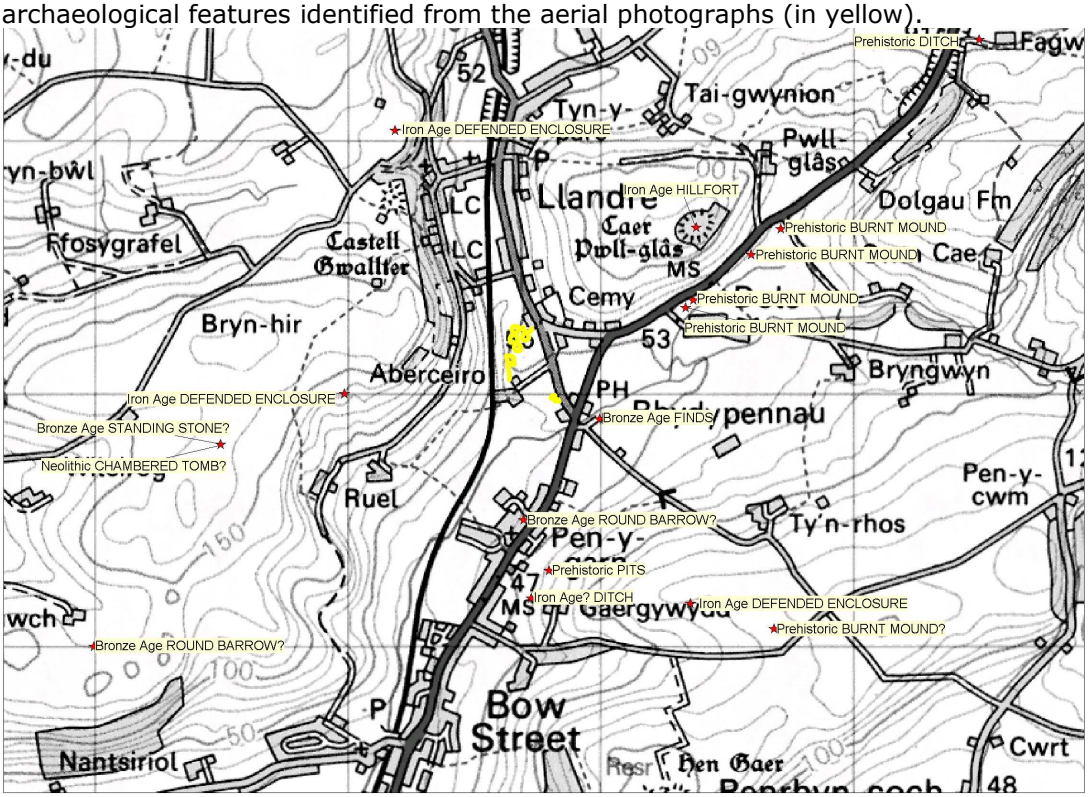

Figure 3: The archaeological features identified from the aerial photographs (in yellow) with the other local Prehistoric sites recorded within the regional Historic Environment Record.

Figure 4: Site plan, showing the location of the trenches and identified archaeological features, overlaid on the readjusted aerial photograph plots (in yellow).

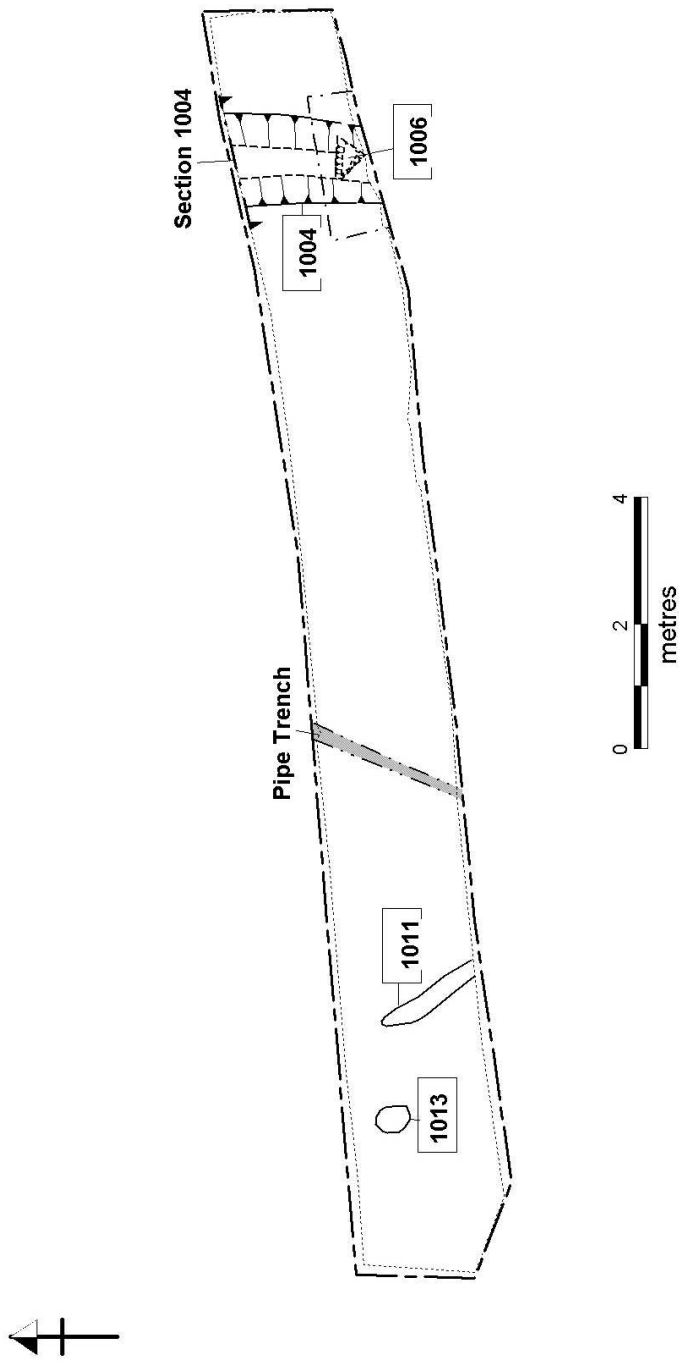

Figure 5: Plan of Trench 1

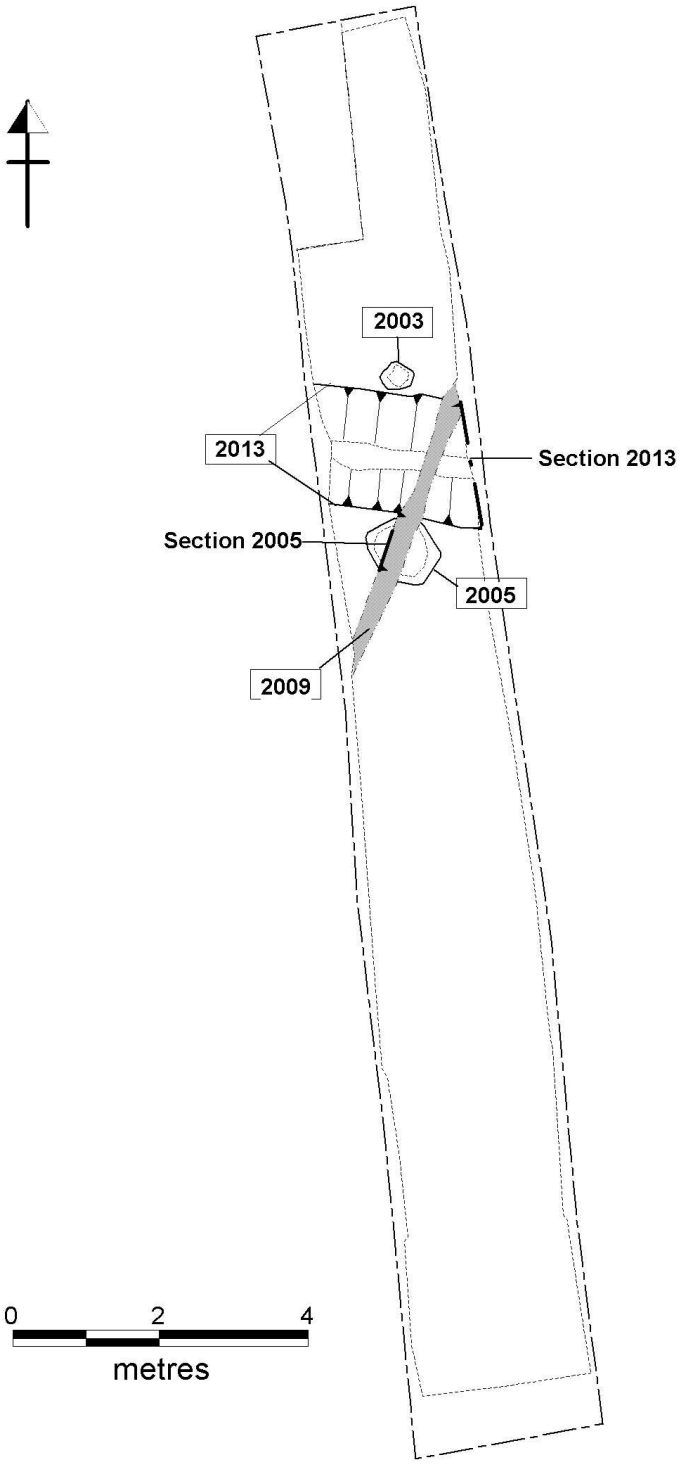

Figure 6: Plan of Trench 2

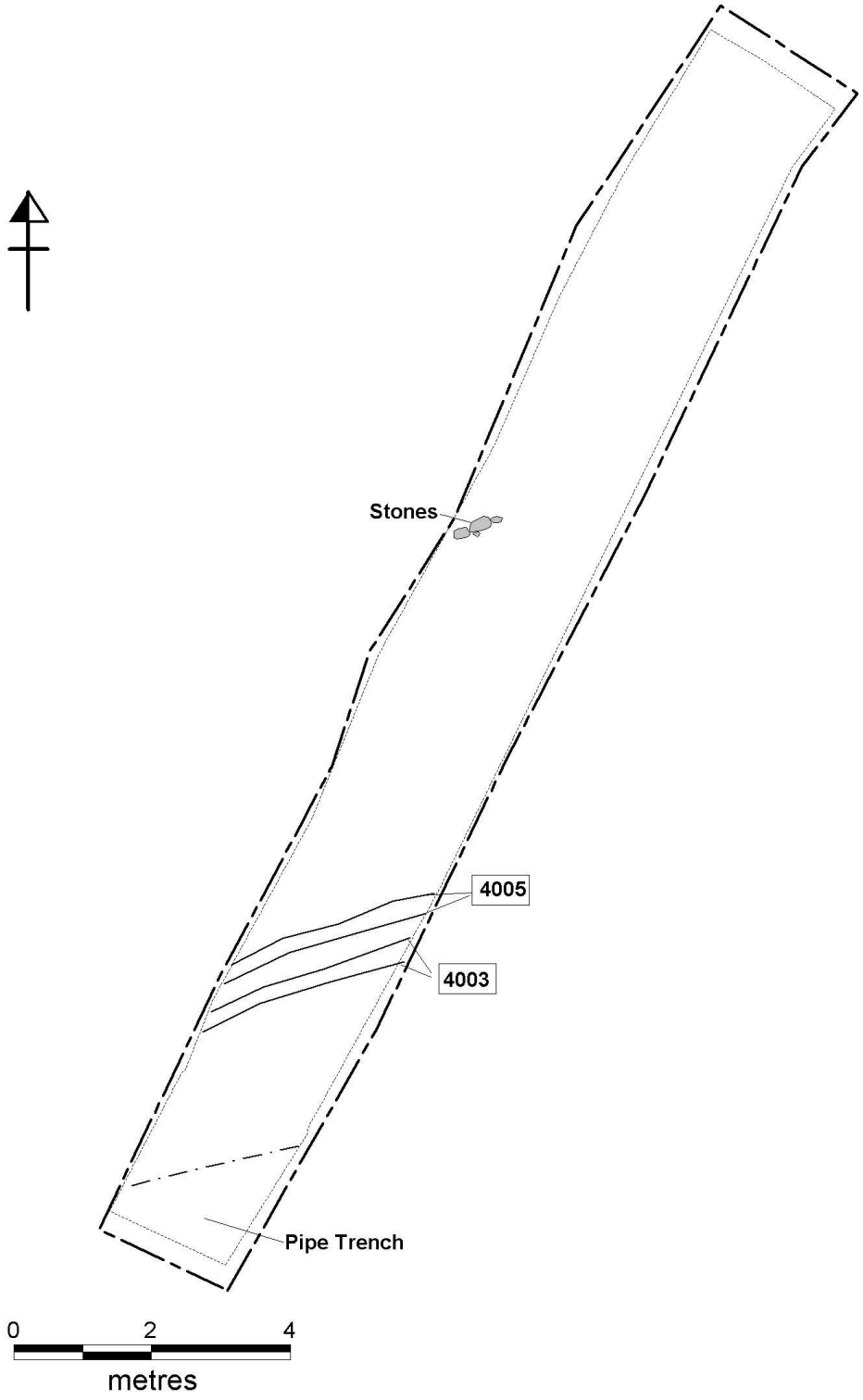

Figure 7: Plan of Trench 4

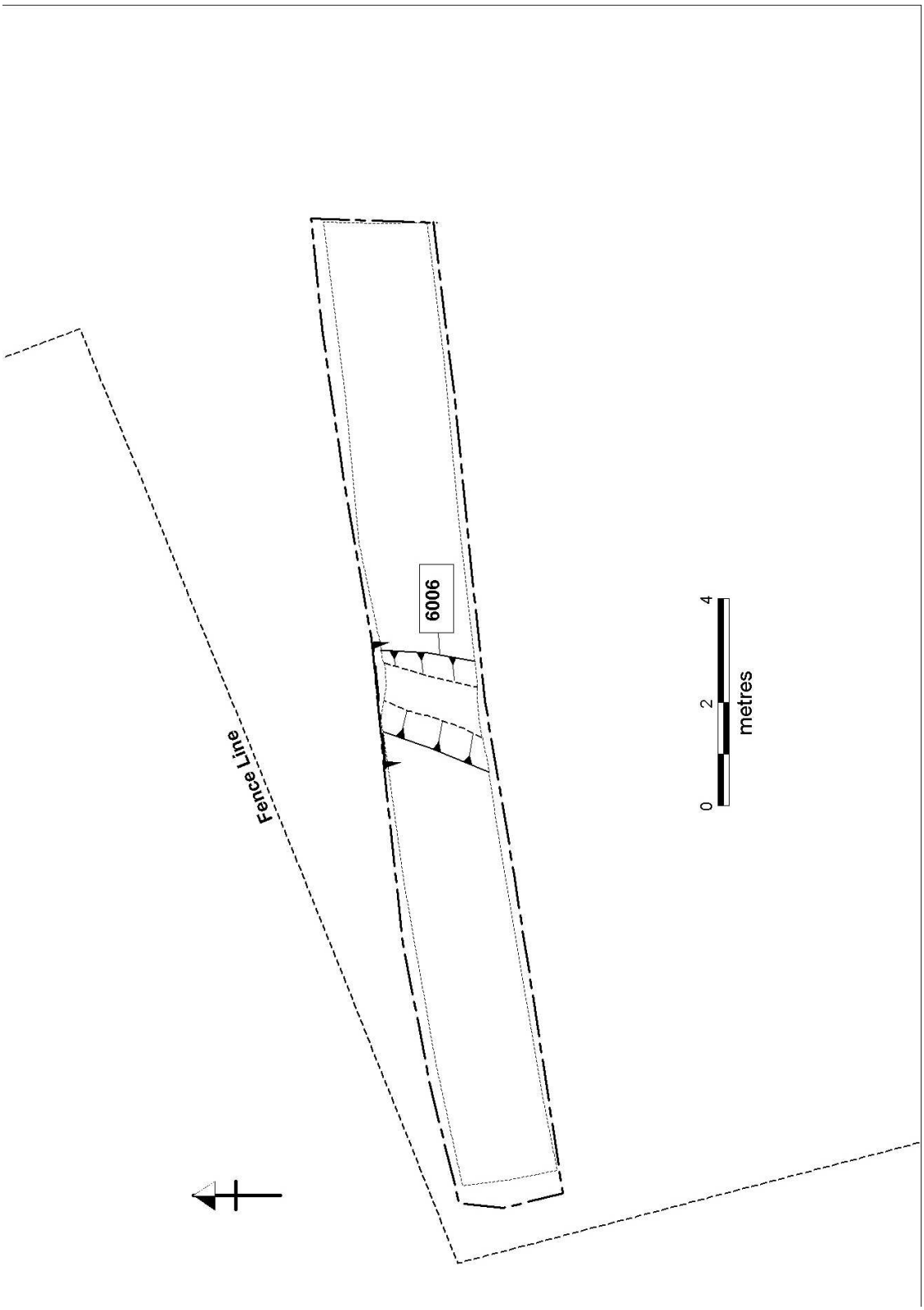

Figure 8: Plan of Trench 6

Figure 9: Sections of the ring ditch in Trench 6 (section 6006) and Trench 1 (1004)

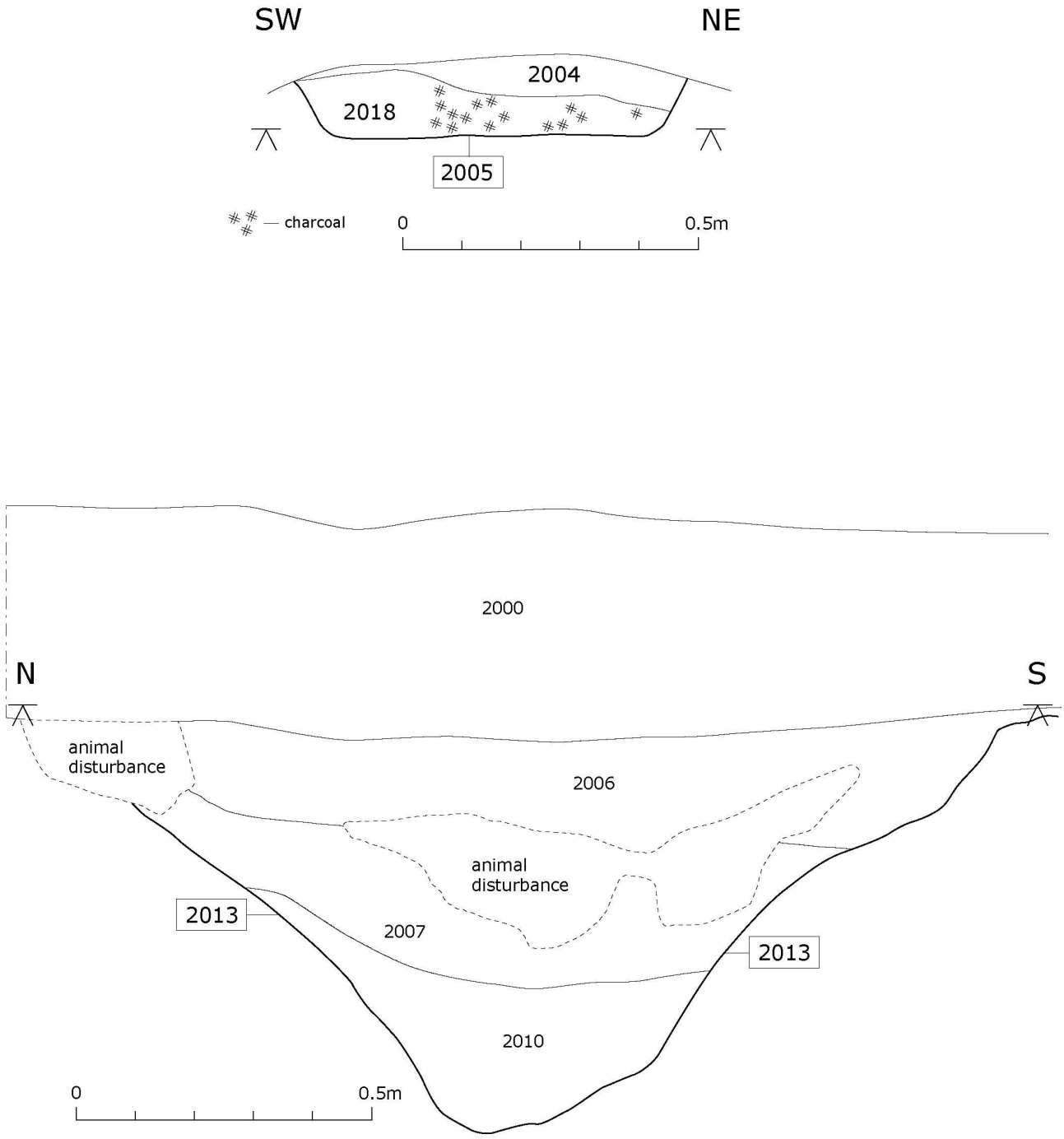

Figure 10: Section of the possible cremation burial 2005 within Trench 2 (top) and a section through the ring ditch 2013 also within Trench 2 (bottom).

Plate 1: North-facing shot of the ring ditch 1004 within Trench 1, pre-excavation. 2 x 1m scale.

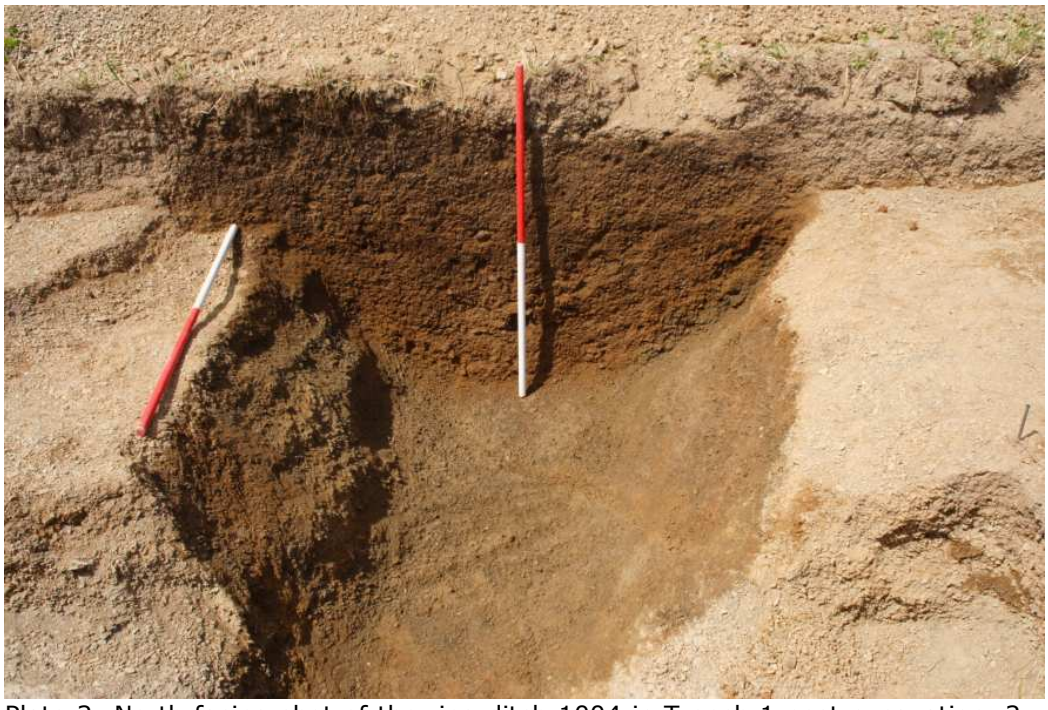

Plate 2: North facing shot of the ring ditch 1004 in Trench 1 post-excavation. 2 x 1m scale.

Plate 3: West-facing pre-excavation shot of ring ditch 2013, stone-filled pit 2003 and modern water-pipe trench 2009 within Trench 2. 2 x 1m scale.

Plate 4: West-facing shot of stone-filled pit 2003. 2 x 1m scale.

Plate 5: North-west facing shot of possible cremation pit 2005 post excavation. Truncated by water-pipe trench 2009. 2 x 1m scale.

Plate 6: South-east facing shot if ring ditch 2013 within Trench 2, post-excavation. Truncated by the modern water-pipe trench 2009, left partially unexcavated. Possible cremation 2005 is visible to the right, and small pit 2003 is visible on the left. 1 x 1m scale.

Plate 7: North-west facing shot of the section of ring ditch 2013 within Trench 2. 1 x 1m scale.

Plate 8: North-east facing shot of feature 3003 within Trench 3. 2 x 1m scale.

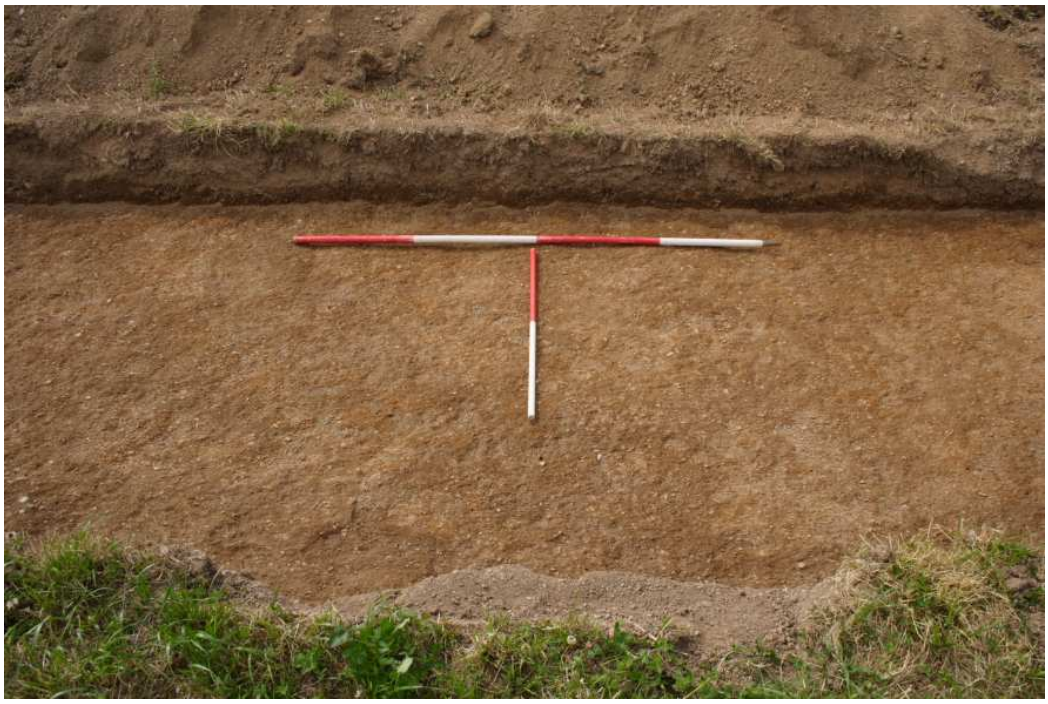

Plate 9: North-west facing shot across Trench 4, the faint traces of the plough marks 4003 and 4005 run from the top left to the bottom centre of the photo. 1 x 2m & 1 x 1m scale.

Plate 10: North facing shot of excavated ring ditch 6006 within Trench 6. 1 x 1m scale.

APPENDIX 1

LAND AT LLETY CEIRO, LLANDRE CEREDIGION ARCHAEOLOGICAL EVALUATION

SUMMARY

A geophysical survey was undertaken on a plot of land at Llety Ceiro, Llandre, Aberystwyth, Ceredigion, as part of an archaeological evaluation in advance of a proposed housing development. Aerial photography had identified five large potential Bronze Age round barrows and a rectangular enclosure covering the northern half of the plot. The existence of these features was confirmed by the geophysical survey, but no other archaeological features could be discerned. However, there was a large amount of background magnetic noise from recent detritus, as well as possibly natural anomalies.

1. INTRODUCTION

1.1 Project commission

Dyfed Archaeological Trust was contracted by Asbri Planning Ltd, Cardiff, on behalf of the landowner Thomos Jones to carry out a fluxgate gradiometer survey as the initial part of an archaeological evaluation in advance of a proposed housing development on a plot of land at Llety Ceiro, Llandre, Aberystwyth, Ceredigion (NGR SN62708616) (Fig 1). Ceredigion County Council identified the requirement for an archaeological evaluation prior to determination of Planning Application Nos. A061152 and A0989.

1.2 Scope of the project

The project was designed to undertake an archaeological evaluation in advance the proposed housing development.

1.3 Report outline

This interim report covers only the geophysical survey and initial interpretation of these results.

1.4 Abbreviations

Sites recorded on the Regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). The Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) hold a collection of aerial photographs of the region.

1.5 ARCHIVE DEPOSITION

Dyfed Archaeological Trust will initially hold the archive. A copy of the report will also be given to the National Library of Wales, Aberystwyth.

2. THE SITE

2.1 ARCHAEOLOGICAL POTENTIAL AND LOCATION

The proposed development site appears to contain a "*rare complex of prehistoric funerary and ritual features, which are of national significance*"[3]. These survive as cropmark features, which are visible on aerial photographs. The features consist of five large circular ring ditches (PRN 3058)(Fig. 2), which are probably Bronze Age burial monuments, and a large rectangular enclosure (3059) possibly of Iron Age or Romano-British date. Some of the ring ditches appear to contain features that may be burials. There is another group of smaller ring ditches (PRN 9680) in the field to the south, but one or more of this group may extend into the plot as an annotated map in the HER shows other possible ring ditches in the east half of the plot. Given the extent of the archaeological features in the area it is considered that "*the potential for significant archaeological material of national importance to survive* (within the site) *is extremely high*"[4]

The site is relatively level, situated on a low ridge at the end of a valley with open views to the southwest and east. The western edge of the site falls steeply to the railway and there is a slight slope from the centre of the field to the south. The field is now under new pasture but has been extensively ploughed in the past. There are, however, very slight undulations in the centre and north part of the site that may be the remains of the ring ditch features. There are a very few lumps of quartz stones on the surface which are sometimes a feature on prehistoric burial monuments.

2.2 HISTORY

No archaeological work had previously taken place on this site and neither have any finds been recovered. It is not intended here to go into the archaeology of the area due to the limited nature of this stage of the evaluation.

[3] Extract form the project brief supplied by Ceredigion County Council's archaeological advisors (Cambria Archaeology Heritage Management), page 4 – paragraph 3.1.

[4] Extract form the project brief supplied by Ceredigion County Council's archaeological advisors (Cambria Archaeology Heritage Management), page 4 – paragraph 3.1.

3. METHODOLOGY

3.1 GEOPHYSICAL SURVEY INSTRUMENTATION

A fluxgate gradiometer survey provides a relatively swift and completely non-invasive method of surveying large areas.
The survey was carried out using a Bartington Grad601-2 dual Fluxgate Gradiometer. This uses a pair of Grad-01-100 sensors. These are high stability fluxgate gradient sensors with a 1.0m separation between the sensing elements, giving a strong response to deeper anomalies.

The instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetised iron oxides, which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials that can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Archaeological features such as hearths or kilns also produce strong readings because fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalised magnetic enhancement around settlement sites.

Not all surveys produce good results as anomalies can be masked by large magnetic variations in the bedrock or soil or high levels of natural background "noise" (interference consisting of random signals produced by material within the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features. It must therefore be stressed that a lack of detectable anomalies cannot be taken to mean that that there are no below ground archaeological features.

The Bartington Grad601 is a hand held instrument and readings can be taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 1.0m apart. Their Mumetal cores are driven in and out of magnetic saturation by an alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output (Clark 1990).

The gradiometer can detect anomalies down to a depth of approximately one metre. The magnetic variations are measured in nanoTeslas (nT). The earth's magnetic field strength is about 48,000 nT; typical archaeological features produce readings of below 15nT although burnt features and iron objects can result in changes of several hundred nT. The instrument is capable of detecting changes as low as 0.1nT.

3.2 GEOPHYSICAL SURVEY DATA COLLECTION

The gradiometer includes an on-board data-logger. Readings in the surveys were taken along parallel traverses of one axis of a grid made up of 20m x 20m squares. The traverse interval was 1m. Readings were logged at intervals of 0.25m along each traverse giving 1600 readings per grid square.

3.3 GEOPHYSICAL SURVEY DATA PRESENTATION

The data was transferred from the data-logger to a computer where it was compiled and processed using ArchaeoSurveyor 2 software. The data is presented as a grey-scale plot where data values are represented by modulation of the intensity of a grey scale within a rectangular area corresponding to the data collection point within the grid. This produces a plan view of the survey and allows subtle changes in the data to be displayed. This is supplemented by an interpretation diagram showing the main features of the survey with reference numbers linking the anomalies to descriptions in the written report. It should be noted that the interpretation is based on the examination of the shape, scale and intensity of the anomaly and comparison to features found in previous surveys and excavations etc. In some cases the shape of an anomaly is sufficient to allow a definite interpretation e.g. a Roman fort. In other cases all that can be provided is the most likely interpretation. The survey will often detect several overlying phases of archaeological remains and it is not usually possible to distinguish between them. Weak and poorly defined anomalies are most susceptible to misinterpretation due to the propensity for the human brain to define shapes and patterns in random background 'noise'. An assessment of the confidence of the interpretation is given in the text.

3.4 GEOPHYSICAL SURVEY DATA PROCESSING

The data is presented with a minimum of processing although corrections are made to compensate for instrument drift and other data collection inconsistencies. High readings caused by stray pieces of iron, fences, etc are usually modified on the grey scale plot as they have a tendency to compress the rest of the data. The data is however carefully examined before this procedure is carried out as kilns and other burnt features can produce similar readings. The data on some noisy or very complex sites can benefit from 'smoothing'. Grey-scale plots are always somewhat pixellated due to the resolution of the survey. This at times makes it difficult to see less obvious anomalies. The readings in the plots can therefore be interpolated thus producing more but smaller pixels and a small amount of low pass filtering can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see. Any further processing is noted in relation to the individual plot.

4. RESULTS

4.1 LIMITATIONS

The survey was undertaken on the 8th, 9th and 10th April 2008 under fair weather conditions. The majority of the site was under short grass, but part of the site on the east side had been partially developed in the past with access roads and drainage installed. This area had subsequently reverted to scrub. The areas of the roads were not geophysically surveyable and therefore were omitted and some of the developing scrub made total survey of this area impossible.

There was a considerable amount of background magnetic noise from recent detritus, as well as possibly natural anomalies. Some of the recent material was cutlery that had gone into the pig swill from Aberystwyth College canteen and which was later spread on the field (pers com Thomos Jones).

4.2 GEOPHYSICAL INTERPRETATION

The results of the survey clearly show parts of the five large ring ditches, PRN 3058, but no internal features (Fig. 3). If these features were burials they may have been backfilled mostly with the same subsoil leaving little magnetic change. The rectangular enclosure, PRN 3059, also clearly shows with its internal division at its southern end, but there is no trace of the linear feature (ditch?) plotted by RCAHMW extending south from its southwest corner.

There was no indication of the two or three smaller ring ditches, shown on the annotated HER map (Fig. 2), which were possibly part of PRN 9680, that may exist in the eastern half of the site. The northernmost one of these was possibly located in the area of the access road.

A former field boundary, running diagonally, northwest-southeast across the plot, between the ring ditches PRN 3058 and the rectangular enclosure PRN 3059, can be seen as three faint lines on the geophysical survey (Fig. 2). The route of the modern sewer trench can also be clearly seen together with manholes that cut across the rectangular enclosure.

5. DISCUSSION

Lack of evidence for internal features in the large ring ditches and no sign of the suggested smaller ring ditches on the east side of the site does not mean that these are not there, simply that they are magnetically un-detectable. Therefore these possible features would be needed to be tested by evaluation to substantiate their existence or otherwise.

However, the geophysical survey does suggest that there is little more on the site than those features indicated by aerial photography.

6. CONCLUSION

The geophysical survey has confirmed the existence of the main features that were identified by aerial photography and this will enable more accurate location of these features should they need further evaluation. There will however be the need to assess the negative areas by trial trenching.

7. ACKNOWLEDGEMENTS

Hubert Wilson, surveyor, for setting out the site grid with the assistance of Gwilym Bere, and Andy Shobbrook for help with the geophysical survey.

Figure 3: Geophysical survey

LLETY CEIRO, LANDRE, CEREDIGION: ARCHAEOLOGICAL EVALUATION 2008

RHIF YR ADRODDIAD / REPORT NUMBER 2008/71

Gorffennaf 2008
July 2008

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

Philip Poucher BA (Hons) PIFA

Swydd / Position: Archaeologist

Llofnod / Signature ..... Dyddiad / Date

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

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

Swydd / Position:

Llofnod / Signature ..... Dyddiad / Date

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

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