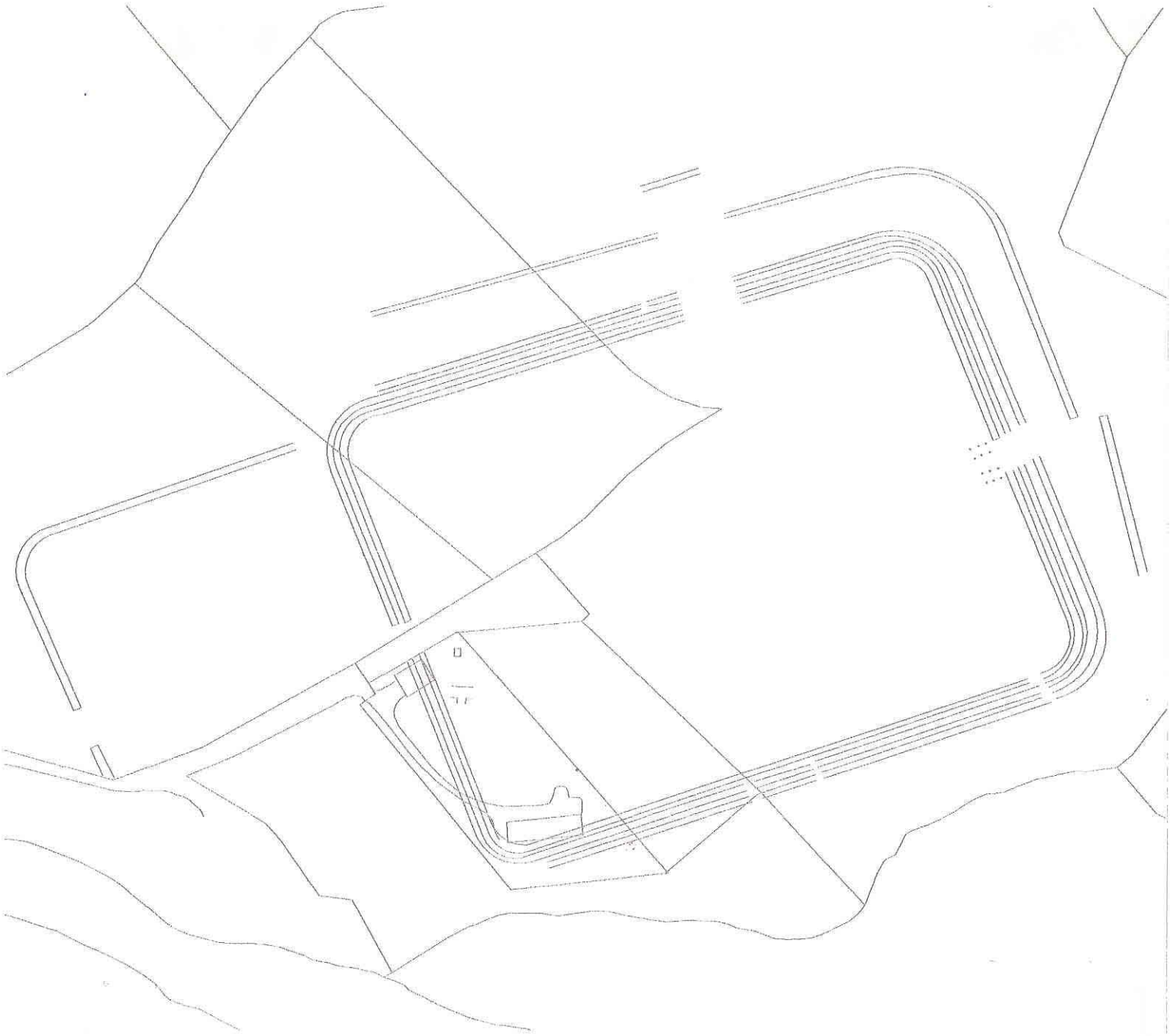
THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Caersws Sewage Treatment Works

ARCHAEOLOGICAL ASSESSMENT



CPAT Report No 200

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Caersws Sewage Treatment Works

ARCHAEOLOGICAL ASSESSMENT

N.W.Jones
October 1996

Report for Severn Trent Water Ltd.

The Clwyd-Powys Archaeological Trust
7a Church Street, Welshpool,Powys, SY21 7DL
tel (01938) 553670, fax (01938) 552179

CPAT Report Record

Report and status

CPAT Report Title	CAERSWS SEWAGE TREATMENT WORKS, POWYS: ARCHAEOLOGICAL ASSESSMENT		
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tel (01938) 553670, fax 552179

CONTENTS

1 INTRODUCTION

1.1 Proposals by Severn Trent Engineering to decommission the existing Sewage Treatment Works at Llwyn y Brain, Caersws, Powys (SO 03709248), and construct a new works on land to the west (SO 03709265), affectS an area considered to be of generally high archaeological sensitivity (fig. 1). Accordingly, the Curatorial Section of the Clwyd-Powys Archaeological Trust (CPAT), acting in their capacity as archaeological advisors to the Local Planning Authority, prepared a Brief (INV 181, dated 18th July 1996) which detailed a scheme of works for an Archaeological Investigation of both sites.

1.2 The Brief recommended a two stage investigation with the addition of a watching brief during all topsoiling and trenching associated with the new works as well as during demolition works on the existing site. Stage 1 of the investigation would involve a rapid desk-top appraisal of all readily available primary and secondary documentary, cartographic, photographic, pictorial and oral sources. Stage 2 would consist of a trial trench 90 x 20 x 2m within the area of the new works, together with six hand excavated trial pits (each 1 x 1m) within the existing works.

1.3 The Contracting Section of CPAT was invited to submit a tender and specification for the investigation, which was subsequently accepted.

2 LOCATION, TOPOGRAPHY AND SOILS

2.1 Llwyn y Brain lies *c.* 1 km east-north-east of Caersws, overlooking the River Severn at approximately 144m OD. The site of the proposed new works lies 0.4km to the north-west in an area of agricultural pasture at approximately 126 m OD.

2.2 The solid geology and soils of the two areas varies considerably. The existing Sewage Treatment Works is in an area of slowly permeable fine silty and clayey drift over Palaeozic slaty mudstones and siltstones. The new site lies on river terrace gravels overlain by generally well drained fine loamy soils (Rudeforth *et al.* 1984).

3 DESK-TOP STUDY

3.1 The desk-top study involved an appraisal of all readily available sources at the following repositories: National Library of Wales (NLW), Aberystwyth; County SMR, Curatorial Section, CPAT, Welshpool; Royal Commission on Ancient and Historic Monuments in Wales (RCAHMW), Aberystwyth; County Records Office, Llandrindod Wells.

Documentary Sources

3.2 Caersws has two of the largest auxiliary forts in Wales, the earlier of which, Caersws I (PRN 1575), was discovered by aerial photography by Dr J.S.K. St Joseph in the 1950s at Llwyn y Brain (SO 04109248). The fort remains unexcavated although it has been attributed to the pre-Flavian campaigns to control central and northern Wales (Jarrett 1969, 66). It has been assumed that the fort had a relatively short lifespan, being superseded by a slightly smaller fort, Caersws II, which was constructed on the flood plain 1km to the south-west sometime around AD 75. Caersws I is partly protected as a Scheduled Ancient Monument (Mg 161, fig. 2).

3.3 The Roman archaeology within the Caersws area has been the subject of a review already published by the present writer (Jones 1993) which details archaeological evidence, mostly in association with Caersws II and its civilian settlement, or *vicus*. The majority of archaeological interest has centred on the later fort and *vicus*, with little examination of the earlier fort and its environs.

3.4 As part of a general programme of assessment work undertaken by CPAT in 1991, funded by Cadw: Welsh Historic Monuments, a series of geophysical surveys were conducted in the Caersws area (Barker 1991). These included two 20m wide transects (1a and 1b) adjacent to the study area, one 260m long and the other 300m in length, which were located to attempt to identify the position of the Roman Road leading eastwards from Caersws. The investigation included magnetometer and resistivity surveys which identified corresponding linear anomalies in both transects which suggested a possible line for the Roman road (see fig. 2). The only anomalies identified within the study area

were a series of parallel magnetic anomalies thought to be ploughmarks. Further anomalies were identified in transect 1b, including a possible curving ditch at the northern end and a series of features at the southern end.

Cartographic Sources

3.5 Cartographic sources held by the NLW provided limited information relating to the study area. Those held by the County Record Office, Llandrindod Wells, proved to be the same as those at NLW.

3.6 The Llanwnog Tithe Map of 1846 shows the study area to be within the Castle Township, but provides no indication of sites of archaeological significance. The Apportionment indicates that the whole area is agricultural with either arable or pasture fields. The pattern of field boundaries shows little change to the present day, with the exception of the existing Sewage Treatment Works and the Electricity Substation.

3.7 The 1st edition Ordnance Survey (Montgomeryshire 35.16) of 1885 shows a situation much the same as that depicted on the Tithe Map, with no features of archaeological significance and most of the area apparently agricultural.

3.8 A contour plan provided by Severn Trent Water plc (fig. 3) shows the topography of the existing Sewage Treatment Works before its construction, together with the proposed location of various structures associated with the Works. It is interesting to note that the contours (at 1ft intervals) appear to follow the corner of the fort, suggesting that some slight upstanding earthworks relating to the defences may have been visible at that time. Subsequent levelling of the area has removed any visible trace of the fort defences.

Photographic Sources (figs 2, 7 and 8)

3.9 The most useful photographic sources proved to be those held by CPAT and the NMR.

3.10 Caersws I, which lies in a good strategic position overlooking the River Severn, has no surviving earthworks but is clearly visible on a range of more recent aerial photographs (see section 9). These have been rectified and plotted using AutoCAD12 to produce the plan in fig. 2. This shows a triple ditched fort *c.* 250 x 195m externally, encompassing an area of 3.5ha. An annex extends for 10m at the western end, defended by a single ditch. Cropmarks in the eastern gateway show three pairs of post pits on either side of the entrance indicating a timber gate tower. The fort itself is additionally defended by a series of outworks visible on the north and east side, consisting of a single ditch. The eastern entrance is protected by a slight splaying of the southern section of the outer ditch, while the northern entrance is defended by a short section of ditch, or *titulum*. Whilst the latter feature is commonly associated with temporary camps, the ditches echo the plan of the fort so accurately that they must be contemporary with it and not part of an earlier temporary fort (Wilson 1984, 51).

3.8 The present Sewage Treatment Works lies across the south-west corner of the main fort and annex, so that no aerial photographic evidence exists for this area. However, the existing evidence allows a projection of the ditches to show their likely position with respect to existing structures within the area.

3.9 Evidence from vertical aerial photographs taken by the Ordnance Survey in 1972 indicated a number of possible features in the vicinity of the proposed new Treatment Works. These include a linear feature in the field to the west which coincides with an anomaly identified by the geophysical survey (Barker 1993), which was interpreted as the Roman road. In the field to the north-east where the geophysics identified a possible continuation of the road, a cropmark is also visible although it is rather more curvilinear than might be expected. Other features visible in this field are likely to be former field boundaries.

4 TRIAL EXCAVATIONS

Trench A (85 X 20 X 2m, fig. 4)

4.1 A single L-shaped trial trench was excavated within the area of the proposed new works. Modern ploughsoil was removed by machine to a maximum depth of 0.45m. This lay directly on top of the natural fluvial deposits, which varied from large gravels to deposits of silty clay.

4.2 The base of the trench was cleaned by hand and thoroughly investigated for the presence of any archaeological features. Only two features were identified, a stone-filled field drain (103) and a

shallow gully (101). The latter was a maximum of 0.63m wide and up to 0.15m deep, cut directly into the natural and sealed by the modern ploughsoil. No dating evidence was recovered from the excavated section. However, the alignment of the feature does not respect modern field boundaries, and may therefore predate them.

4.3 The only artefacts recovered consisted of five sherds of post-medieval pottery from the modern ploughsoil, which were not retained.

5 TRIAL PITS WITHIN EXISTING TREATMENT WORKS

5.1 Six hand dug trial pits were specified in the Brief, each 1 x 1m and 0.6m deep, within the area of the existing Sewage Treatment Works. However, the suggested location of three pits made their excavation either impossible or undesirable. Following a meeting with the Curator it was agreed that these should be abandoned and the position of the remaining trial pits slightly amended to avoid services and other obstacles (fig. 5).

Pit A (1.0 x 1.0 x 0.6m, fig. 6A)

5.2 Following the removal of up to 0.14m of topsoil (1), a layer of light yellow-brown stiff clay (2) was revealed. This layer, which was up to 0.22m thick, was removed onto a layer of yellow-brown, stiff clay with small stones (3). Layer 3 (0.15m thick) was removed directly onto a layer of yellow-grey, stiff clay (4), which may represent the natural subsoil. No artefacts were recovered from any of the layers excavated.

5.3 It is likely that layers 2 and 3 are composed of redeposited natural clay, and the location of the trial pit would suggest that they may represent the basal deposits of the rampart.

Pit B (1.0 x 1.0 x 0.6m, fig. 6B)

5.4 Removal of up to 0.1m of topsoil (5) revealed a layer of yellow-brown, stiff silty-clay (6) containing stone and concrete fragments, probably resulting from levelling during the construction of the Sewage Treatment Works. Removal of this layer revealed a compact layer of smithing slag (7), which was partly embedded within the surface of the underlying layer of stiff yellow clay (8). No dating evidence was recovered for either layer. The nature of the slag spread might suggest that it had been deposited whilst still in a partly molten state since it was mostly fused together to form a compact layer. There was no evidence for burning associated with the deposit. Beneath layer 8 was a layer of yellow-brown, stiff silty-clay (9) up to 0.3m thick, lying directly above a layer of stiff yellow clay (10), which may be the natural subsoil.

5.5 Based on projections from the aerial photographic evidence it would seem likely that Trial Pit B is located close to the interior tail of the rampart. This may have some implication for the significance of the slag deposit since it was not uncommon to position smithing hearths in such a location (Jones 1993, 30 and 82).

Pit C (1.0 x 1.0 x 0.6m, fig. 6C)

5.6 Beneath up to 0.12m of topsoil (11) was a thin layer of yellow-brown silty-clay (12). This was removed to reveal a layer of compacted hardcore (13) up to 0.16m thick, presumably associated with the construction of the Sewage Treatment Works. This overlay a layer of yellow-brown, stiff clay with charcoal flecks (14), up to 0.3m thick, laying directly above a yellow-grey, stiff clay (15), which may be the natural subsoil.

5.7 No artefacts were recovered from any of the layers excavated.

6 CONCLUSIONS

6.1 The Desk-top assessment revealed no new evidence for archaeological sites in the area of either the existing Sewage Treatment works or the site of its proposed replacement.

6.2 Aerial photographic evidence has revealed significant information concerning the size and construction of the fort at Llwyn y Brain (fig. 2). From this it is clear that the existing Sewage Treatment Works lies across the south-west corner of the main fort defences and extends into the western fort annex. The location of gateways in the western defences of both the fort and annex indicate the existence of a road leading west from the fort. It is possible that this road may be identified in section during the pipelaying operations.

6.3 The Trial Pits within the existing Sewage Treatment Works revealed limited information regarding the underlying archaeology. By interpolating the position of the fort defences from aerial photographic evidence it is possible to suggest an interpretation for some of the evidence revealed within the Trial Pits.

6.4 The two layers of redeposited natural (2 and 3) in Trial Pit A may represent remnant rampart material, which would typically be composed of material upcast from the defensive ditches. The deposit of slag in Trial Pit B, although undated, may be associated with smithing activity within the fort although further work would be needed to properly assess its significance and interpretation. The deposits of yellow-brown clay and silty clay (9 and 14) in the base of Trial Pits B and C remain unexplained although a possible interpretation would be that they represent a levelling of the area in association with the construction of the fort.

6.5 Regarding the likely impact of groundworks within the areas investigated it is clear that for Trial Pits A and B, respectively located across the rampart and its interior tail, any excavation to depths in excess of 0.15-0.20m below present ground level (BPGL) would be likely to disturb archaeological deposits. The area surrounding Trial Pit C, located in the vicinity of the defensive ditches, would appear to have been levelled during the construction of the Sewage Treatment Works so that potential archaeological deposits lie *c.* 0.30m BPGL. The removal of any subsurface structures associated with the Sewage Treatment Works is likely to disturb archaeological deposits and may present an opportunity to record exposed sections, particularly those relating to the defences.

6.6 The evaluation trench on the site of the new Sewage Treatment Works revealed no evidence for significant archaeological remains within the area investigated. The only features revealed consisted of a shallow undated gully and a land drain.

7 ACKNOWLEDGEMENTS

I would like to thank the following for their assistance and co-operation during this project: Meirion Turner and Dave Clark, Severn Trent Water Ltd.; Malcolm Coates; Mr Bound, Ty Gwyn; the staff at RCAHMW and NLW, Aberystwyth; Richard Hankinson and Jonathan Dempsey.

8 BIBLIOGRAPHY

Barker, P., 1991. *Geophysical Survey of Five Areas in and around Caersws, Powys,* Stratascan Report.

Jarrett, M.G., 1969. *The Roman Frontier in Wales*, Cardiff: Univ. Wales Press.

Jones, N.W., 1993. Caersws Roman Fort and Vicus, Montgomeryshire, Powys, 1984-92, *Montgomeryshire Collect.* 81, 15-96.

Rudeforth, C.C., Hartnup, R., Lea, J.W., Thompson, T.R.E., and Wright, P.C., 1984, *Soils and their Use in Wales*, Bulletin No 11. Harpenden: Soil Survey of England and Wales.

Wilson, D.R., 1984. Defensive Outworks of Roman Forts in Britain, *Britannia* 15, 51-62.

9 AERIAL PHOTOGRAPHIC SOURCES

CPAT Black and White Oblique photographs:
77-18-0023-4
83-08-0015-6, and 0019
84-MB-215-6
85-23-0017
86-MB-964-70, 974-7 and 986
89-MB-629-631, 1128-1130, 1147, and 1282-3
90-MB-1171-3
94-09-0034

CPAT Colour Slide Oblique Photographs
83-C-0197
89-C-0159-0160, 0246, and 0278-9
90-C-0439
94-C-0275

RAF Verticals at RCAHMW
541/59 4040-41 (1948)
CPE/UK/2474 3001 (1948)

Ordnance Survey verticals at RCAHMW
72 332 645-7 (1972)
72 331 934-5 (1972)

Verticals at Powys County Council, Welshpool
0584/043/070-2 (1984)

APPENDIX 1

SITE ARCHIVE

20 Context record forms, nos 1-15, 100-104
1 A4 Site Plan
1 B/W negative films, contact sheets and archive prints
1 Colour Slide film

EDM Surveys
694SURV1 - Trial pit location
694SURV2 - Evaluation trench location and plan

AUTOCAD Drawings
694SURV1.DWG
694SURV2.DWG
GEOPHYS.DWG
LLWYNOS.DWG
LLWYNYBR.DWG

Finds: 5 sherds of post-medieval pottery from ploughsoil in Trench A, not retained.
1.47kg of smithing slag from context 7, Trial Pit B.

APPENDIX 2

CAERSWS SEWAGE TREATMENT WORKS: SPECIFICATION FOR AN ARCHAEOLOGICAL INVESTIGATION BY CLWYD-POWYS ARCHAEOLOGICAL TRUST

1 Introduction

1.1 The proposed development of a block of land in the vicinity of Caersws Sewage Treatment Works near Llwyn y Brain (SO 04109248) involves the demolition of the existing works and the construction of a new works at SO 03709265 involving excavated areas up to 7m deep.

1.2 The site of the proposed development lies in an area of high archaeological sensitivity related to the Roman fort at Llwyn y Brain which is a Scheduled Ancient Monument (SAM Mg144 A & B).

1.3 The Curatorial Section of the Clwyd-Powys Archaeological Trust (hereafter CPAT Curatorial) in their capacity as archaeological curators for the county have determined that an archaeological investigation is necessary to assess the implications of the proposed development on the archaeological resource. Accordingly a brief (NoINV 181 dated 18th July 1996) has been prepared by CPAT Curatorial which describes the scheme of archaeological works required.

2 Objectives

2.1 The objectives of the evaluation are:

2.1.1 to reveal by means of a combination of desk-based assessment and evaluation trenches, the nature, condition, significance and, where possible, the chronology of the archaeology within the area of the proposed development in so far as these aims are possible;

2.1.2 to record any archaeology revealed in the evaluation trenches;

2.1.3 to prepare a report outlining the results of the field evaluation and incorporating sufficient information on the archaeological resource for a reasonable planning decision to be taken regarding the archaeological provision for the area affected by the proposed development;

2.1.4 to identify and make broad recommendations for the management of the archaeological resource, including any further provision for that resource where it is considered necessary.

3 Methods

3.1 Stage I of the evaluation will involve the examination of all the readily available primary and secondary records relating to this area, including documentary and cartographic sources. Archives and repositories will include the County Sites and Monuments Record, the County Record Office, The National Library of Wales and the National Monuments Record held by the RCAHMW, Aberystwyth. In particular, the SMR and NMR aerial photographs will be consulted and rectified where appropriate.

3.2 Stage II.1 will take the form of an L-shaped excavation trench 90m x 20m x 2m wide. Where required this will be taken to a maximum depth of 1.2m below the existing ground surface. Consultation with the client and the curator will be necessary before this depth is exceeded.

3.3 Stage II.2 will comprise the manual excavation of six 1m x 1m trial pits within the present sewage treatment works as located within the Curatorial Brief.

3.4 The evaluation will be undertaken using standard evaluation procedures:

3.4.1 removal of modern overburden by machine;

3.4.2 evaluation of the archaeological deposits by hand trowelling to establish their importance and integrity, but avoiding any unnecessary disturbance of the deposits. All features encountered will be examined as fully as appropriate to fulfil the requirements of the evaluation and within the constraints imposed by time and safety considerations.

3.4.3 all archaeological contexts recorded using the standard numbered context system employed by CPAT. All significant contexts to be planned and/or drawn in section at appropriate scales (as defined in the Curatorial Brief), and photographed in monochrome and colour. All drawn records will be related to control points depicted on modern maps.

3.4.4 all archaeological artefacts and environmental samples recorded and processed in a manner appropriate to the material involved. Those requiring conservation or other specialist treatment will be stored in a stable environment until such times as they can examined by a specialist. All finds, except those deemed to be Treasure Trove, are the property of the landowner. It is anticipated that they will be donated to the appropriate local or regional museum, subject to agreement being reached with the landowner and the museum curator.

3.5 Stage III will involve a contracted watching brief to be maintained during the demolition of the existing Sewage Treatment Works, minor works to the existing rising main, and excavation along the line of the new inlet and outlet rising main route along the B4569 road.

3.6 Following the on-site work an illustrated and bound report will be prepared according to the principles laid out in the Curatorial Brief (p4). This will be in A4 format and contain conventional sections on: Site location, Topography and Geology; Historic Background; Excavation; Conclusions and Recommendations and References, together with appropriate appendices on archives and finds.

3.5 The site archive will be prepared to specifications laid out in Appendix 3 in the Management of Archaeological Projects (English Heritage, 1991).

4 Resources and Programming

4.1 The evaluation will be undertaken by a small team of 3 skilled archaeologists under the direct supervision of an experienced field archaeologist, who will also be responsible for undertaking the desk-based assessment. Overall supervision will be by Dr A Gibson, a senior member of CPAT's staff who is also a member of the Institute of Field Archaeologists.

4.2 All report preparation will be completed by the same field archaeologist who conducted the evaluation.

4.3 It is anticipated that the assessment and evaluation will take no more than 10 days in all and that the subsequent report would be prepared immediately thereafter, dependent on the client's instructions and the arrangement of a suitable timetable. The date of commencement, at the time of writing, has yet to be agreed with the client, and will be dependent on the state of the site. The archaeological curator will be informed of the detailed timetable and staffing levels when agreement has been reached with the client.

4.4 Requirements relating to Health and Safety regulations will be adhered to by CPAT and its staff.

4.5 CPAT is covered by appropriate Public and Employer's Liability insurance.

A.M. Gibson
31st July 1996

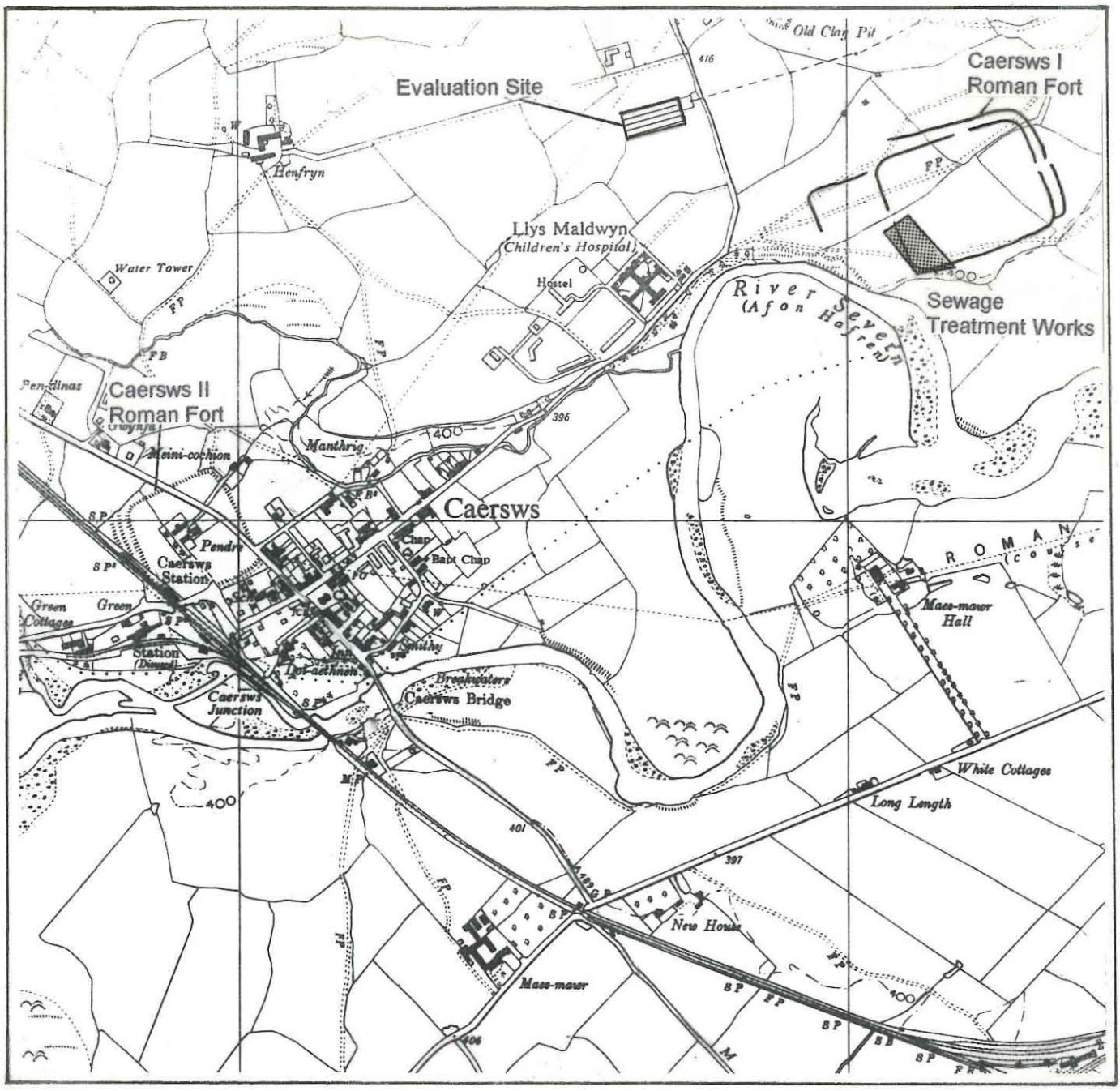

Fig. 1 Location, scale 1:10,000

Fig. 2 Rectified Aerial Photographs and Geophysics

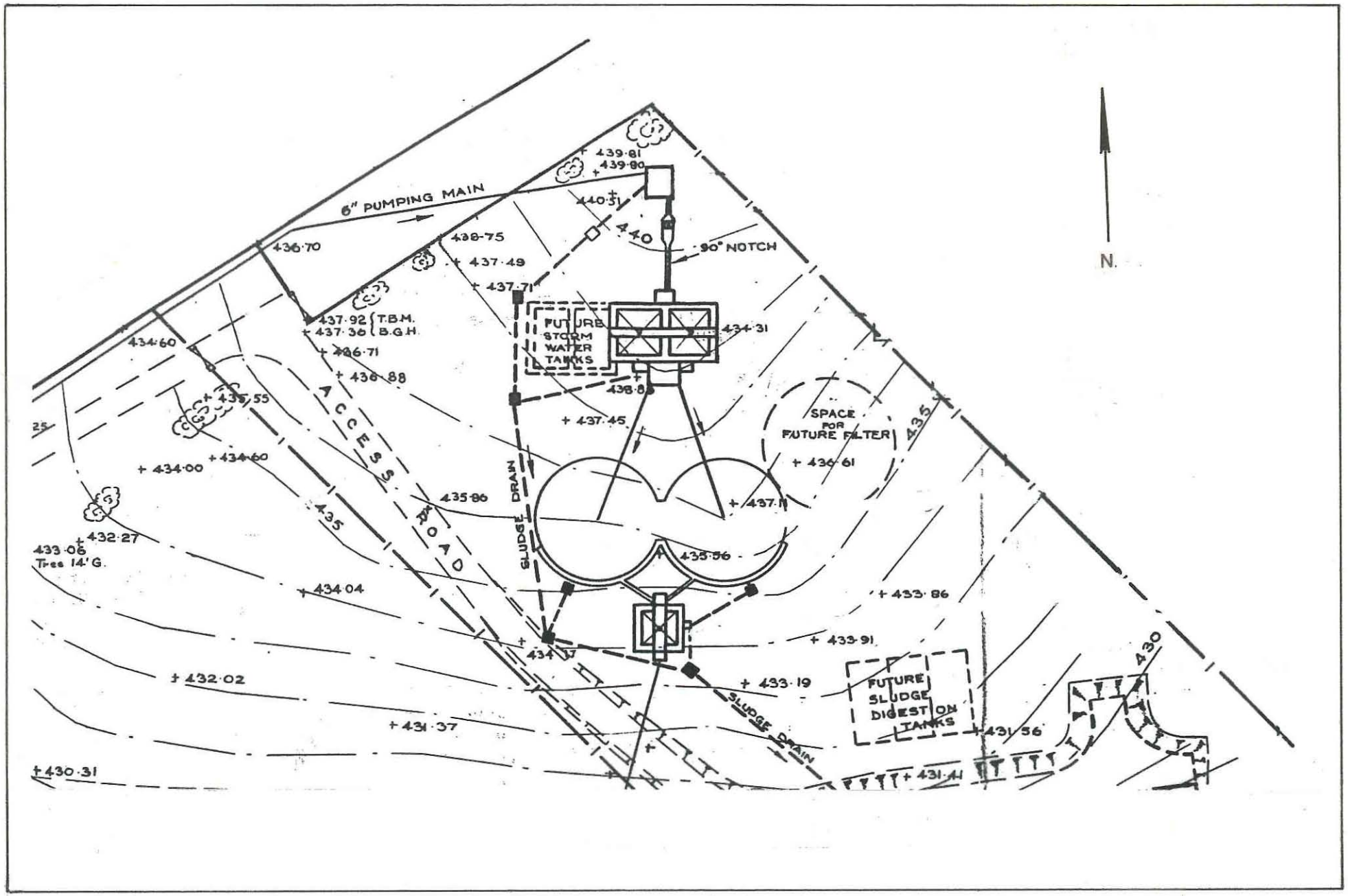

Fig. 3 Existing Sewage Treatment Works: Contour survey prior to construction, scale 1:500

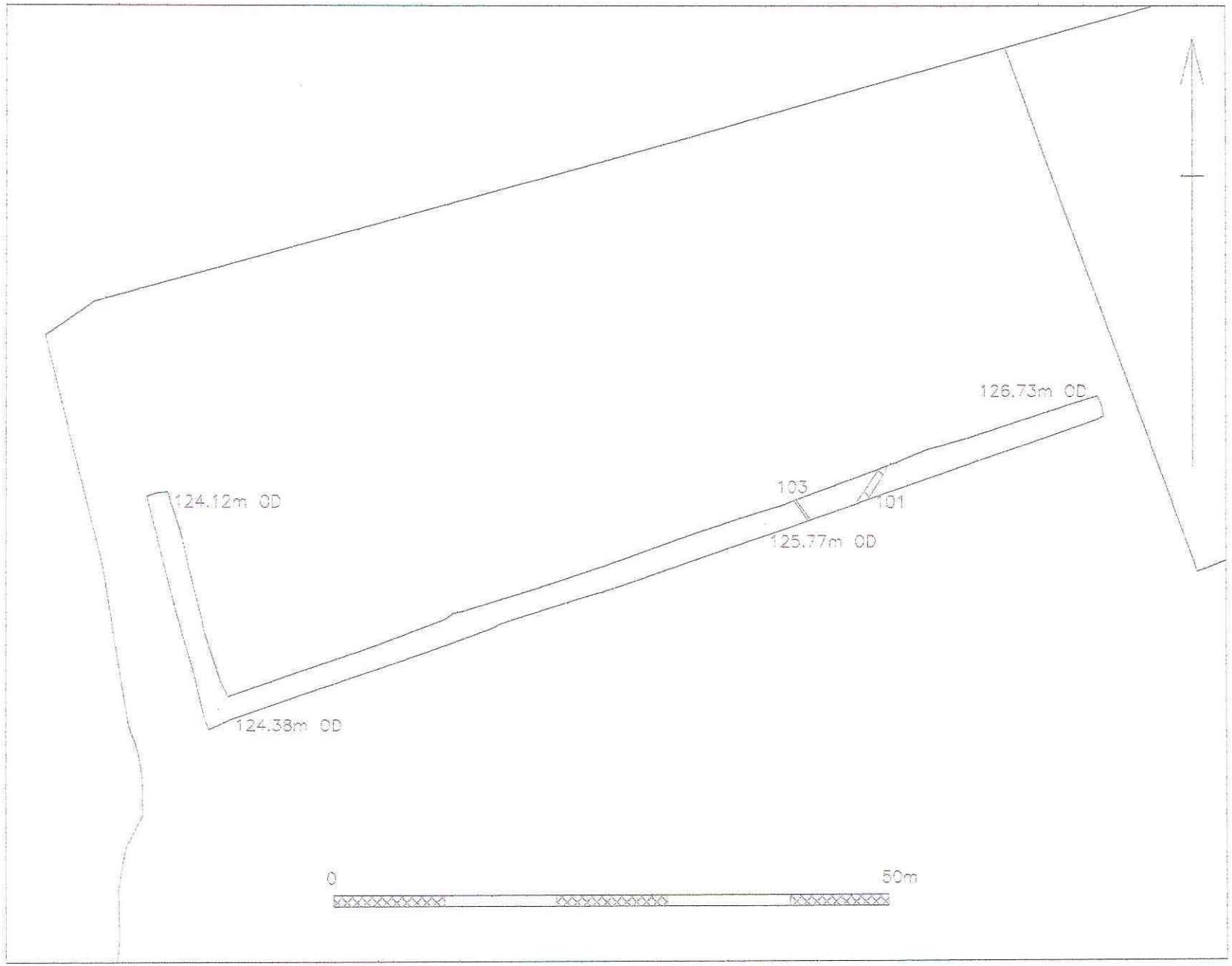

Fig. 4 Trench A, scale 1:500

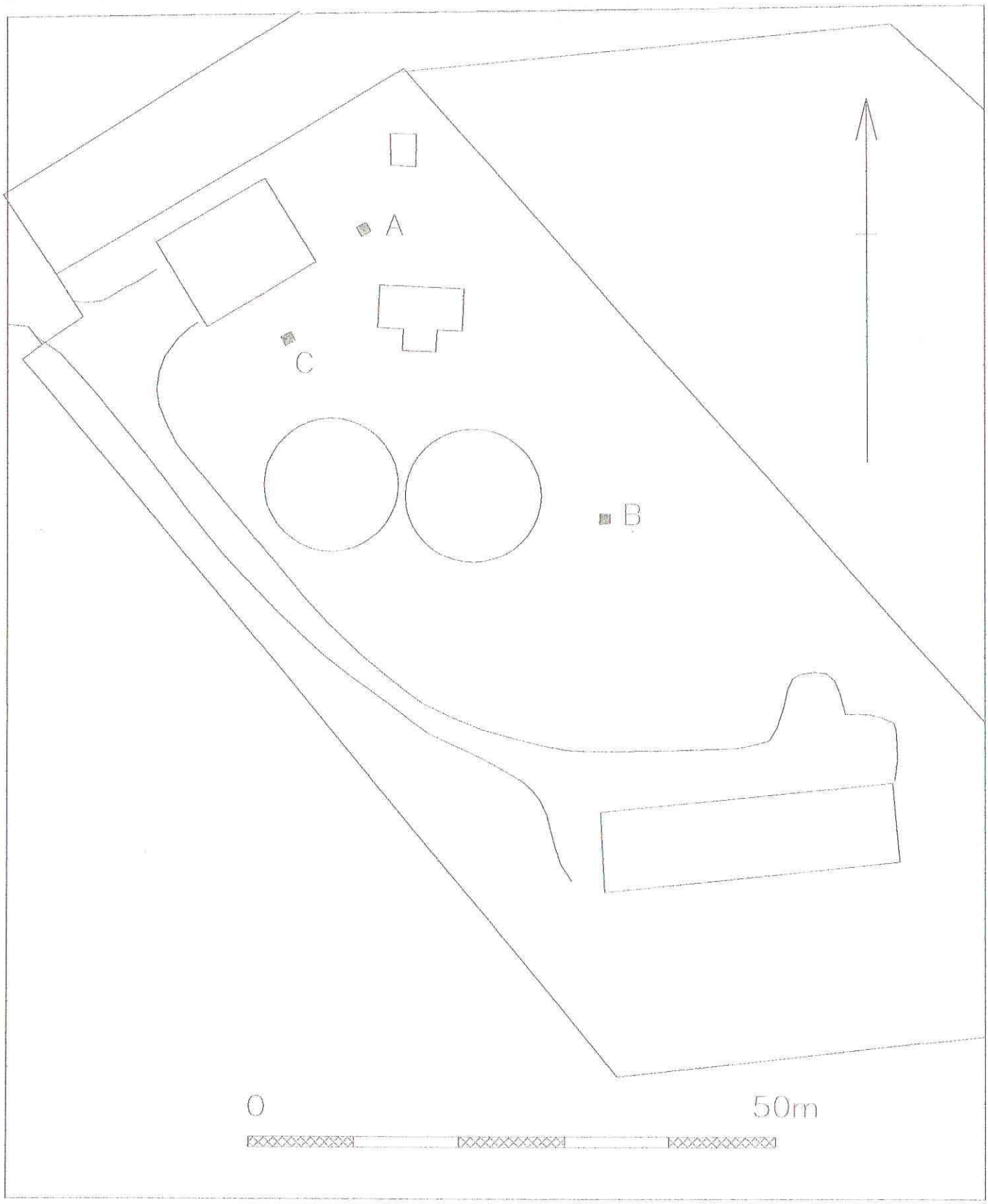

Fig. 5. Trial Pit location

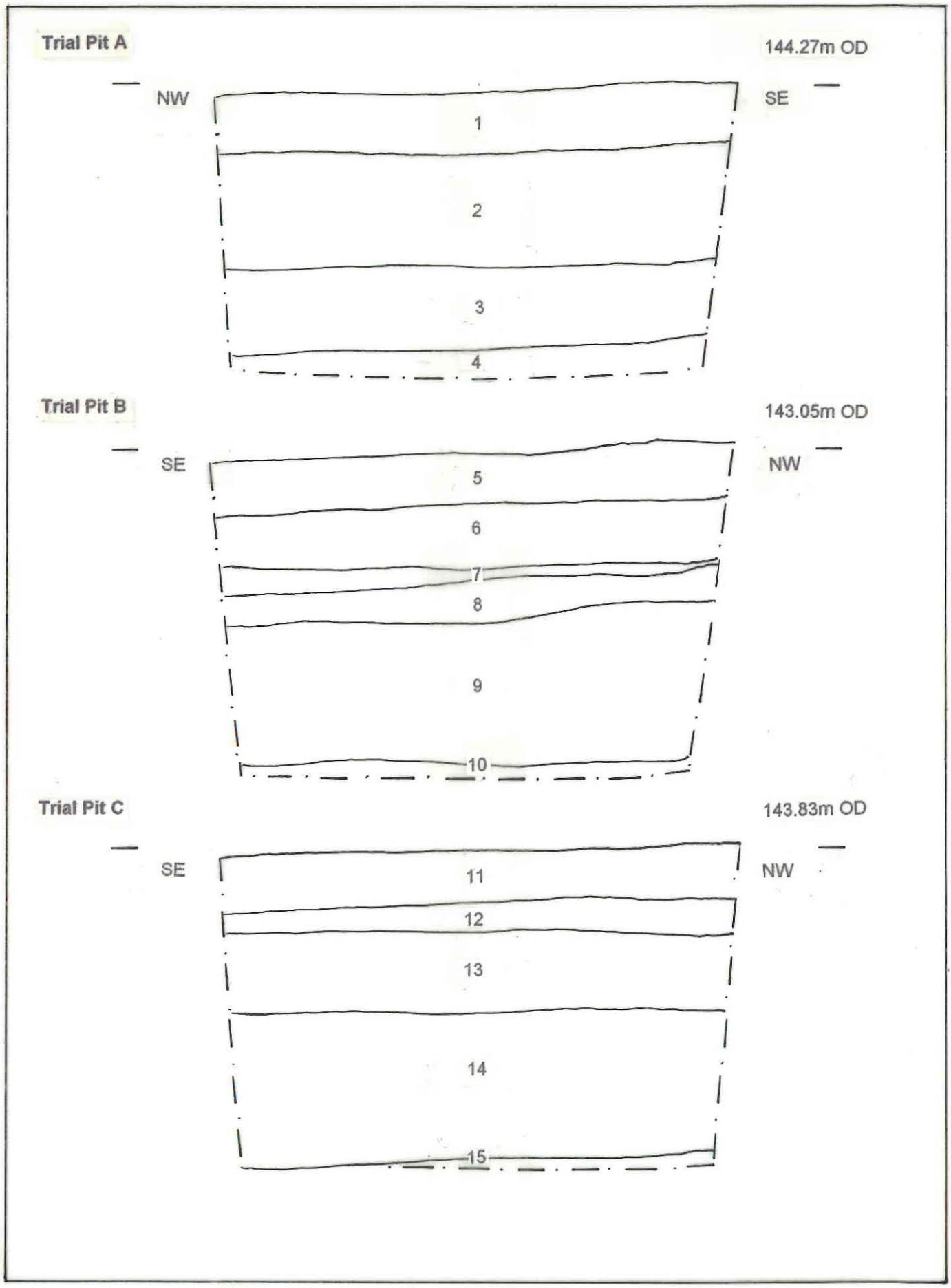

Fig. 6 Trial Pit Sections, scale 1:10

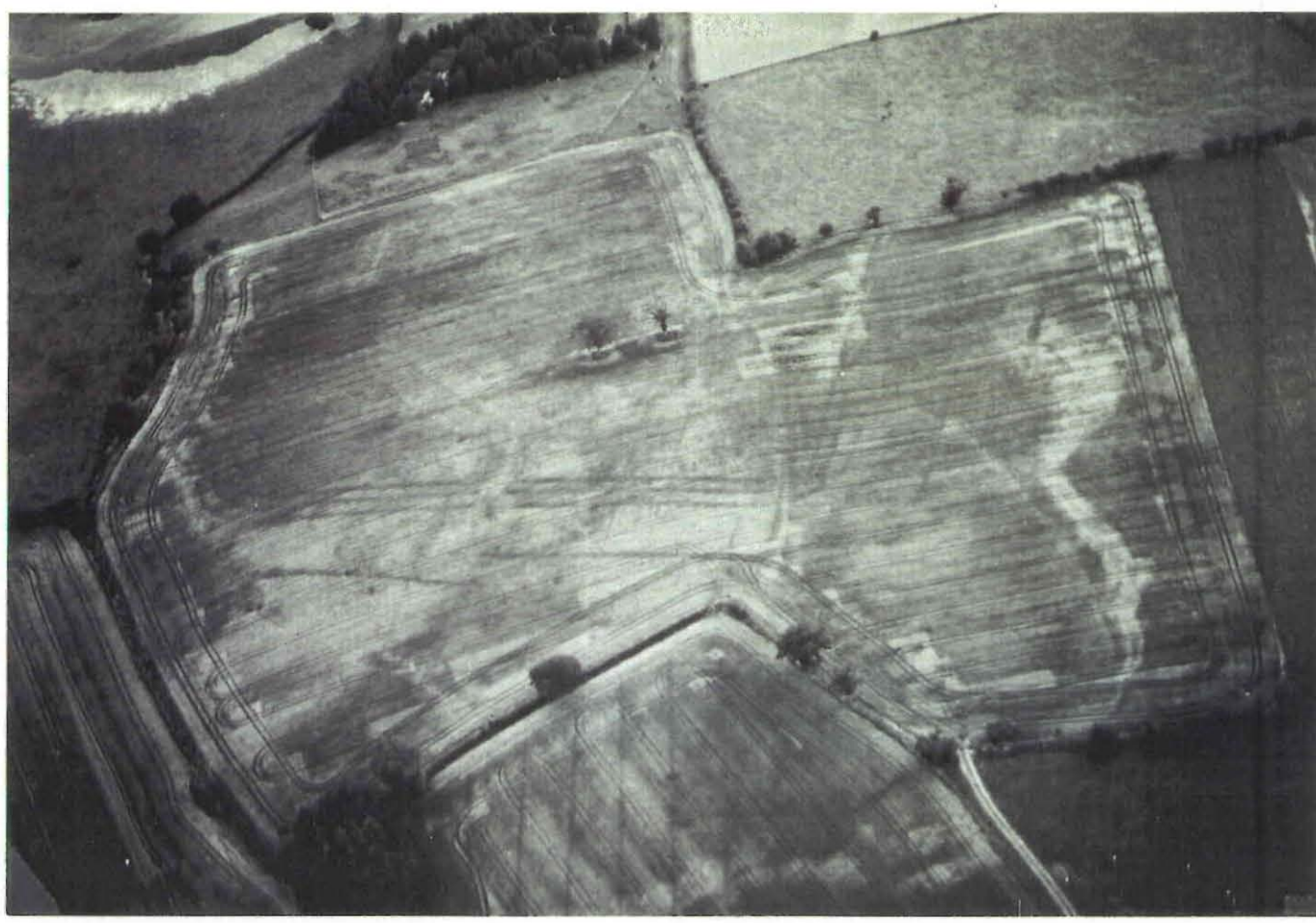

Fig. 7 Aerial photograph of Caersws I Roman Fort from NE. Photo CPAT 86-MB-970

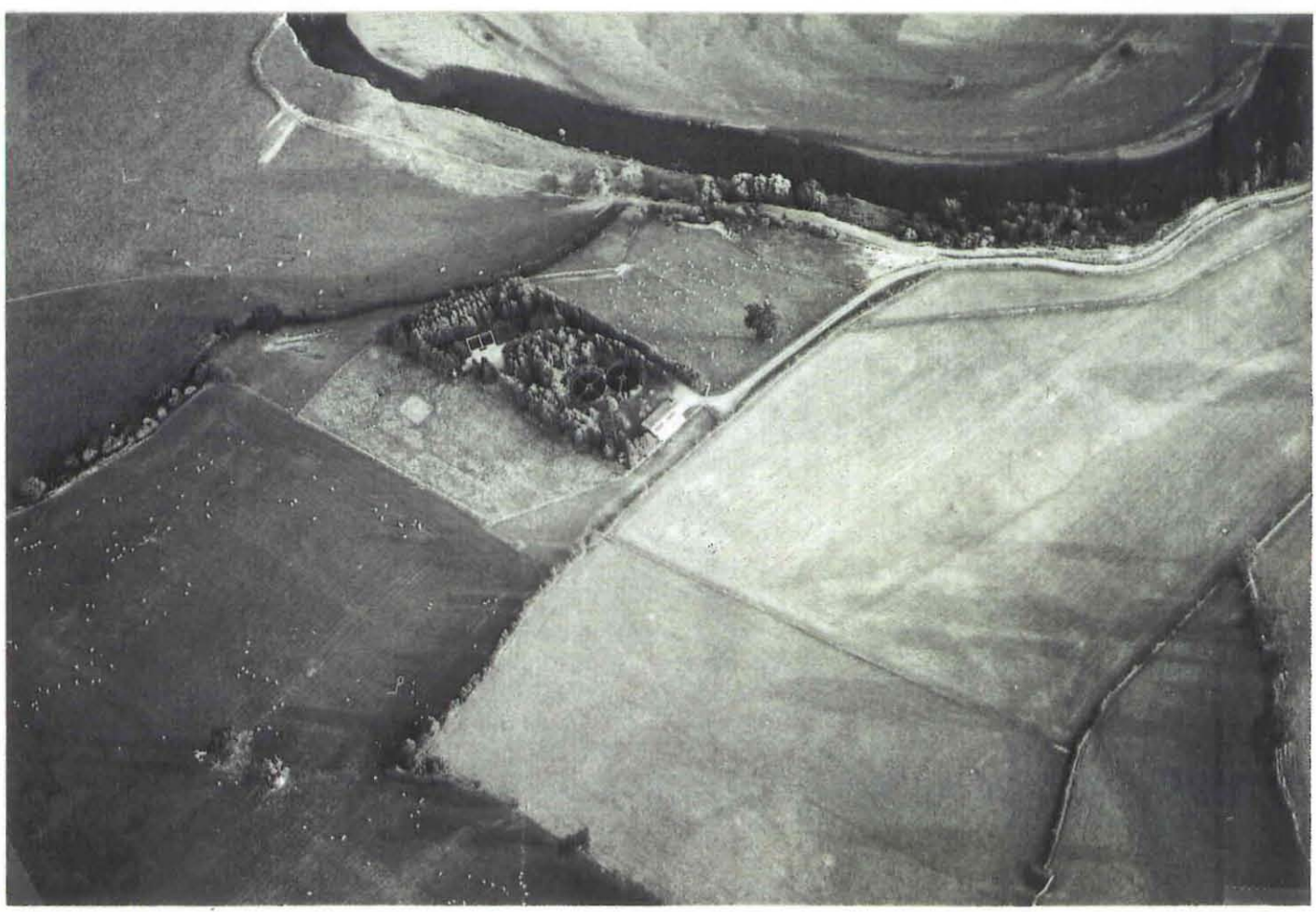

Fig. 8 Aerial photograph of Caersws I Roman Fort annex from N. Photo CPAT 90-MB-1171

Fig 2 is an ACAD plot
on A3 Roland D+Y Plotter.
File LYBL.PLT on project disk
Type PRINT A:LYBL.PLT