

Archaeological Watching Brief
on the construction of
**132 & 33KV OVERHEAD ELECTRICITY LINES TO
SEABANK POWER STATION, HALLEN, BRISTOL**
for
South Western Electricity plc



Report No. 263/1997



Bristol and Region Archaeological Services

c/o Bristol City Museum and Art Gallery, Queen's Road, Bristol BS5 7AA. Tel: (0117) 922 3580 Fax: (0117) 922 2047

**132 & 33KV OVERHEAD ELECTRICITY LINES
TO
SEABANK POWER STATION, HALLEN, BRISTOL.**

Centred on
N.G.R. ST 5436 8168

Client: South Western Electricity plc

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Summary

Monitoring of the tower lines, particularly those where pits were being excavated for the tower feet, revealed no anthropogenic activity, peat or buried soil horizons.

However, monitoring of the 33KV underground trench did reveal a Roman-British ditch and associated pottery possibly associated with the nearby undated enclosure and the 2nd-4th century Romano-British settlement near Crooks Marsh Farm (ASMR 4896).

1. INTRODUCTION

- 1.1 South Western Electricity plc (SWEB) have erected and re-laid a number of their 132KV overhead lines in the Avonmouth/Hallen area (Fig.1). Three of these lines connect with the new SWEB substation at Seabank Power Station (currently under construction) near Hallen on Severnside (NGR ST 5350 8260), while the fourth is a supply line to the ICI Severnside Works (NGR ST 5447 8221). The fifth line, a 33KV overhead line which ran from Seabank to near a small industrial estate near Hallen (NGR ST 5450 8120) was dismantled by SWEB and re-laid underground.
- 1.2 The four 132KV overhead lines (G24 to G43, BW1 to BW8, DA1 to DA9 and FF1A to FF5) comprise a total of 43 pylons. The foundations of these towers consist of either tubular piles, precast hardrive or CFA piles. The latter two types have pile-cap constructions around the four legs and it was the excavation work at these sites and the 33KV cable trench which had to be monitored.
- 1.3 The locations of the towers were designed, wherever possible, to avoid known archaeological sites. But in view of the fact that the lines cross open farmland - the archaeological potential of which is largely unknown - and that much of the area of the North Avon Levels is an area of high archaeological potential (Avon County Council Planning Department, Archaeological Guidance Note 1) the County Archaeologist decided that an archaeological watching-brief during the earthmoving and construction phase of the project should be conducted and any archaeological features, finds or deposits recorded.
- 1.4 The geology of the assessment area consists of thick deposits of estuarine alluvial clay of the Pleistocene and Holocene periods sealing bands of peat and further alluvial clays, which in turn overlie keuper marl of the Triassic period.
- 1.5 This work was carried out in accordance with a Project Brief for Archaeological Watching Briefs provided by the Avon County Archaeologist. The work was undertaken by Bristol and Region Archaeological Services (BaRAS) from late March to early August 1996, and this report was subsequently produced by Tim Longman.
- 1.6 The project archive will be deposited with Bristol City Museum & Art Gallery under accession number BRSMG 40/1996. A copy will also be submitted to the National Monuments Record of the Royal Commission for the Historical Monuments of England.

2. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 2.1 Archaeological evidence of human occupation of the Henbury levels during the Neolithic and Bronze Age periods has yet to be found, unlike on the north side of the Severn Estuary (the Caldicot Levels). This does not necessarily mean, however, that none exists, only that none has yet been found.
- 2.2 Dateable material from these periods has been recorded to the north-east of the assessment area in the form of peat deposits, which probably represent late Neolithic/early Bronze Age horizons (Lawler et al 1992, BaRAS 1997).
- 2.3 An auger survey carried out for English Heritage by Wessex Archaeology showed that the depth of alluvial deposits across the Henbury Levels varied with several "islands" of settlement deposits, which presumably shows that the late Iron Age/early Romano-British landscape was more undulating than it is today (Barnes et al 1993).
- 2.4 It appears that the area was not subject to regular periods of flooding in the late Iron Age/early Romano-British periods and that any inundations were localised - this can be determined by the varying depths of alluvium. For example, the late Iron Age settlement at Hallen Marsh (SMR 6390) (NGR ST 5430 8041) lay beneath nearly a metre of sediment, whereas an early Romano-British site at Northwick (NGR ST 5654 8606) was not sealed by any alluvium and has been partially eroded by ploughing (Barnes et al 1993).
- 2.5 The Roman period saw the almost complete reclamation of the Severn Estuary marshes for agriculture, and archaeological evidence of 2nd to 4th century AD Romano-British occupation has been recorded near Crooks Marsh Farm (SMR 4896). Some Dark Age pottery (possibly 5th century AD) was also recovered from the site, indicating that it may have continued to function for some time after the departure of the Roman legions from Britain in 410 AD (Everton & Everton 1981).
- 2.6 The lack of archaeological or historical evidence for the exploitation of the Henbury Levels from the end of the Roman occupation to the late Saxon period has led to the suggestion that a period of marine incursions reverted the whole area to salt marsh or mud flats, but further research is required (Lawler et al 1992).
- 2.7 The evidence for the exploitation of the Henbury Levels before 1100 comes from Saxon charters, place-name evidence and the Domesday Book. A late 10th century charter for Compton (Greenfield) mentions the Upper Compton Rhine and the Old Mere Dyke indicating that part of the artificial drainage system was in place by that time (BaRAS 1996). Place-names incorporating the words "wick" and "worthy" indicate their late Saxon origins as settlements or estate farms, such as Berwick (NGR ST 5572 8067) and Stowick Farm (NGR ST 5478 8075) and Worthy Farm (NGR ST 5364 8200) (Gelling 1984).

- 2.8 Domesday Book (1086) shows the area of the Henbury Levels was held by the bishop of Worcester within the manor of Westbury (on Trym). The manor was divided into sub-manors which included Henbury, Compton (Greenfield) and Itchington (Lawrence Weston). Beneath these sub-manors was a class of prosperous freeholders and it is possibly this stratum of early medieval society which lived, for example, at Worthy Farm (SMR 9221) (NGR ST 5364 8200) which is first mentioned in 1241 in the document "the Feet of Fines". The medieval settlements represented by these farmsteads existed within a complex manorial system (BaRAS 1996).
- 2.9 Further work is required to establish the medieval settlement pattern and while many of the present farms are post-medieval, some may be on the sites of earlier medieval buildings. Moorend Farm (NGR ST 5348 804) for example, certainly dates to at least the 17th century but its location within a rectilinear ditched enclosure would suggest it has been occupied from the medieval period as a defended farmstead (BaRAS 1996).
- 2.10 A significant element in the landscape of the Henbury Levels is the high proportion of fields containing ridge and furrow. It has generally been considered to be largely medieval in date but it may be that a large amount of it is in fact post-medieval (BaRAS 1996).
- 2.11 A major change in the landscape of the Henbury Levels was caused by the enclosure of large areas of common land in the early 19th century. Associated with this was the establishment of new farms, such as Willow Farm (NGR ST 5444 8100) which has been found to date to the late 18th century at the earliest and Poplar Farm (NGR ST 5390 7950) which dates from between 1772 and 1830 (Barnes et al 1993).
- 2.12 The area has largely retained its agricultural character although since the 1960's industrial development has spread up the coast from Avonmouth along the A403 corridor as far north as the Seabank Power Station and the ICI works on Severnside.

3. METHODOLOGY

- 3.1 The groundwork programme comprised five phases of activity at the tower sites on the four overhead lines (G, BW, DA and FF) where it was most likely that the earthmoving work could possibly disturb archaeological deposits.
- 3.2 These five phases were piling - precast hardrive (270-320mm.sq.) or CFA piles (600mm. dia) - the excavation of the four pile-cap pits at each tower site, the construction of the reinforced concrete pile-caps, the backfilling of the tops of the pile-cap pits with some of the excavated soil and finally the erection of the pylons.
- 3.3 The relaying of the 33KV line underground involved monitoring the excavation of the new cable trench in case archaeological deposits or features were disturbed.
- 3.4 At the tower sites where driven tubular steel piles were used there was no excavation work so these did not require monitoring. No spoil was produced as the hollow tubes were rammed into the ground by the piling rigs.
- 3.5 The phase of work which was of primary interest was the excavation of the pile-cap pits. At each of the tower sites where either precast hardrive or CFA piles were used a pit was excavated at the position of each of the tower's legs, usually up to 2.0-3.0 metres deep, depending on the depth of the stiff blue-grey alluvial clay.
- 3.6 Monitoring took place particularly during this phase when archaeological deposits or finds may have been disturbed and could be recorded in-situ.

4. THE WATCHING BRIEF

132KV Line

- 4.1 Monitoring took place from late March to early August 1996 along the lengths of the four new 132KV lines (G, BW, DA and FF) with particular attention being paid to the tower sites where foundation pits were excavated. At those sites the works were observed to record the presence of any archaeological features or deposits. Monitoring work at DA9 did not take place, however, until late April 1997.
- 4.2 A Hymac 360° mechanical excavator was used to carry out all the digging work. The alluvial silts and clays were excavated to depths of between 2.0 to 3.0 metres around the concrete piles which had been positioned earlier.
- 4.3 Amended tower positions and the realignment of the G and BW tower lines did have some potential to affect a number of sites recorded on the former Avon County Council Sites and Monuments Record (SMR), in particular evidence of Roman remains and settlement at SMR references 4896 and 5230 respectively.
- 4.4 The re-routed DA line largely avoided historic features but tower DA6 did fall within the margins of a site recorded on the SMR as a medieval enclosure (SMR 5224).
- 4.5 On the re-routed tower line to the rear of the ICI Severnside Works tower FF3 slightly impinged on the site of a deserted farm (SMR 6716).
- 4.6 Even though the positions of some towers did have the potential to cause a negative impact on archaeological remains, the monitoring of the excavation work revealed that there was no archaeology present at any of the tower sites.
- 4.7 Monitoring of the excavation works revealed a uniformity in the nature of the deposits recorded at all the tower sites, other than G42, BW2, DA2 and DA3 which were located on a land-fill site near Minors' Lane. The stratified deposits (Figs. 4 & 5) revealed in the sections of the tower foundation pits were:
 - (1) dark brown humic topsoil
 - (ii) mid-brown alluvial clay silt subsoil
 - (iii) brownish-grey alluvial silty clay
 - (iv) stiff blue-grey alluvial clay

There was no sign of any peat or buried soil horizons at any of the tower sites.

33KV Trench

- 4.8 Monitoring of SWEB's trench for the relaid 33KV electricity cable from Seabank via Minors' Lane to an industrial estate on Severn Road (NGR ST 5450 8120) took place between late March and mid June 1996. This was done in order to record any archaeological features or deposits which were present.
- 4.9 A 180° JCB mechanical excavator was used to carry out all the digging work. The cable trench was excavated to a depth of approximately 1 metre close to the route of the former 33KV overhead line.
- 4.10 As with the positions of the towers on the new overhead lines, wherever possible, the route of the cable trench avoided any known archaeological sites. Indeed the only recorded site on the SMR which it was thought it could have the potential of affecting was an undated enclosure (SMR 2994).
- 4.11 Due to the shallow depth of the cable trench it was unlikely that any palaeoenvironmental data would be recorded, but it was thought possible that evidence of Iron-Age, Romano-British and medieval activity could be disturbed.
- 4.12 The excavation of the cable trench began outside the main entrance to the new Seabank Power Station (currently under construction) adjacent to Severn Road (NGR ST 5335 8266) and ran north-east across a grass area along the western frontage. It was in that area that the JCB dug through part of an old stone track (NGR ST 5350 8278) which ran E-W from the main road to the site of Seabank Farm (SMR 9225) which was demolished in the 1960's. The track surface lay just beneath the turf layer.
- 4.13 It was only when the excavation of the cable trench reached the fields to the east of Seabank, in the vicinity of SMR 2994, that any undisturbed archaeology began to be recorded. Medieval/post-medieval ridge and furrow (Fig.2) was observed in most of the fields in this area and, in Field 2 (NGR ST 5391 8238), could be seen clearly in the sides of the cable trench. To the south-east, in Field 3 (NGR ST 5404 8232) is located SMR 2994 which is described as an "undated enclosure, underlying ridge and furrow. Possibly this is farmstead site".
- 4.14 The cable trench was excavated close to the south-west side of Field 3 (NGR ST 5400 8229) and it was during this phase of work that a narrow cut feature (Fig.3) was observed in the north-east facing section. After cleaning the section it became apparent that it was a ditch [209], orientated south-west to north-east, which contained at least two fills (210) and (211) and appeared to have been truncated by medieval or post-medieval ploughing. Both fills contained Romano-British pottery dating from the 2nd century AD. A soil sample was also taken from context (211) and is at present being analysed by an environmental archaeologist from Bristol University.

- 4.15 The cable trench was continued through Field 4 - largely overgrown - into Minors' Lane, where it was located on the grass verge to the east of the tarmac road. A number of pottery sherds were found in this area in the brown clay-silt subsoil (205) (NGR ST 5408 8191) dating from the 2nd century AD only approximately 150m from the site of the 2nd-4th century AD Romano-British settlement near Crooks Marsh Farm (SMR 4896).
- 4.16 The trench then crossed the road and was continued on the south side of the lane as far as Minors' Farm. Only a few unstratified post-medieval sherds of pottery were recorded along this stretch.
- 4.17 Beyond Minors' Farm the lane becomes a bridleway and the trench was continued parallel to this until it reached the access road to the nearby British Gas site. The trench was then excavated alongside this road into Field 6 where it ended (NGR ST 5442 8114). Nothing of archaeological interest was recorded beyond Minors' Farm.

5. CONCLUSIONS

- 5.1 No archaeological features or deposits were recorded during the watching brief on the groundworks for the 132KV lines, largely because it was intended, whenever possible, that the pylons were situated away from known archaeological sites.
- 5.2 By its very design the only archaeology which potentially could have been disturbed by the 132KV project groundworks would have related to previously unidentified sites.
- 5.3 However, the watching brief on the groundworks for the relaying underground of the 33KV electricity cable did result in a Roman ditch and some associated pottery being recorded dating from the 2nd century AD. This ditch was situated only metres from the site of an undated enclosure (SMR 2994) which has been tentatively identified as a farmstead. If the Roman ditch is associated with this undated enclosure (? farmstead) then this would date it to the Romano-British period and possibly make the farmstead contemporary with the nearby Romano-British settlement near Crooks Marsh Farm (SMR 4896).
- 5.4 Several other sherds of Roman pottery were recovered from the cable trench along Minors' Lane which are probably also associated with the nearby 2nd-4th century AD Romano-British settlement near Crooks Marsh Farm (SMR 4896).
- 5.5 The monitoring of the groundwork operations has proved beneficial in that the findings of the watching brief contribute to our understanding of the natural and human processes which have shaped the local landscape.

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7. ACKNOWLEDGEMENTS

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Appendix 1: Policy Statement

This report is the result of work carried out in the light of national and local authority policies.

NATIONAL POLICIES

Statutory protection for archaeology is enshrined in the Ancient Monuments and Archaeological Areas Act (1979), amended by the National Heritage Act, 1983. Nationally important sites are listed in the Schedule of Ancient Monuments (SAM). Scheduled Monument consent is required for any work which would affect a SAM.

DOE PLANNING POLICY GUIDANCE

The Planning Policy Guidance of Archaeology and Planning (PPG 16) consolidates advice to planning authorities. The Guidance stresses the non-renewable nature of the archaeological resource, details the role of the County Sites and Monuments Record (SMR), encourages early consultation with county and district archaeological officers and sets out the requirement for developers to provide sufficient information on the archaeological impact of development to enable a reasonable planning decision to be made.

PPG 16 also indicates the circumstances where further work would be necessary and outlines the use of agreements and conditions to protect the archaeological resource.

DISTRICT POLICY

Bristol City Council Deposit Local Plan Written Statement (1993) states (policy B27):

There will be a presumption in favour of preserving any archaeological features or sites of national importance, whether scheduled or not.

Development which could adversely affect sites, structures, landscapes, buildings or areas of local archaeological interest and their settings will require an assessment of the archaeological resource through a desktop study, and where appropriate a field evaluation. Where there is evidence of archaeological remains, development will not be permitted except where it can be demonstrated that:-

- (i) the archaeological features of the site will be satisfactorily preserved in situ, or a suitable strategy has been put forward to mitigate the impact of development proposals upon important archaeological remains and their settings, or, if this is not possible and the sites are not scheduled or of national importance;
- (ii) provision for adequately recording the site prior to destruction is made, preferably by negotiating a planning agreement to ensure that access, time and financial resources are available to allow essential recording and publication to take place.

Appendix 2 : Sites and Monuments Record

Fig. Ref.	SMR No.	NGR	Site
1	5141	5264 7865	Ballast Lane, Avonmouth : undated enclosure
2	3969	5292 7871	Ballast Lane, Avonmouth : undated house platform enclosures
3	3205	5371 7906	S of Poplar Farm, Lawrence Weston Road : medieval earthworks
4	5221	5382 7900	S of Poplar Farm, Lawrence Weston Road : undated enclosure
5	7097	5397 7986	N of Poplar Farm, Lawrence Weston Road : deserted farm site
6	6390	5430 8041	W of Hallen Farm : Iron Age pottery finds
7	6336	5437 8064	SW of Stowick Farm, Hallen : undated earthworks and building remains
8	6713	541 8077	W of Stowick Farm, Hallen : undated earthworks and building remains associated with small group of enclosures
9	5230	5467 8123	S of Gas Works, Crooks Marsh : undated enclosure
10	5225	5418 8155	SW of Minors' Farm, Crooks Marsh : deserted medieval settlement
11	9250	5438 8195	NW of Minors' Farm, Crooks Marsh : site of medieval/post-medieval Crooks Marsh Farm
12	4896	5433 8191	NW of Minors' Farm, Crooks Marsh : deserted Romano-British settlement
13	9221	5364 8200	Brick works, Crooks Marsh : site of medieval/post-medieval Worthy Farm
14	9222	5357 8190	Brick works, Crooks Marsh : site of post-medieval Chittening Farm
15	5226	5438 8209	N of Minors' Farm, Crooks Marsh : undated enclosure
16	5224	5482 8191	N of Gas Works, Crooks Marsh : medieval enclosure
17	5151	5567 8155	Elmington Manor Farm, Berwick Lane, Compton Greenfield : deserted medieval settlement
18	5357	5569 8153	Elmington Manor Farm, Berwick Lane, Compton Greenfield : medieval/post-medieval building
19	6716	5448 8226	E of ICI Severnside Works : deserted farmstead
20	9225	5346 8271	Seabank Power Station : site of post-medieval Seabank Farm
21	2994	5401 8232	E of Seabank Power Station : undated enclosure. Underlying ridge and furrow. Possible farmstead site
22	6677	5442 8158	SE of Minors' Farm, Crooks Marsh : undated enclosure

Appendix 3: The Pottery **by Rod Burchill**

The small pottery assemblage of 17 sherds weighing 250g was visually examined to identify the pottery types present. The material was identified by comparison to the reference collection held by BaRAS (prefixed RFT - Roman Pottery Type) and to the collection of the Bristol Museums Service.

Whilst many of the pottery types present were produced over a long period and the general absence of identifiable forms precluded close dating of many contexts, a second century date would appear appropriate for the assemblage as a whole.

Contexts

- 201 Gloucester (RPT35), Severn Valley : 2nd/3rd century
- 204 Gloucester (RPT35) : 2nd/3rd century
- 205 Congresbury (RPT15 & 17), Severn Valley (RPT29), late Iron Age (RPT3): 2nd century
- 208 Gloucester (RPT35), Congresbury (RPT15) : 2nd/3rd century
- 210 Greyware (similar RPT23), BB1 (RPT5), Severn Valley : 1st/2nd century
- 211 Severn Valley (RPT36) : 2nd century

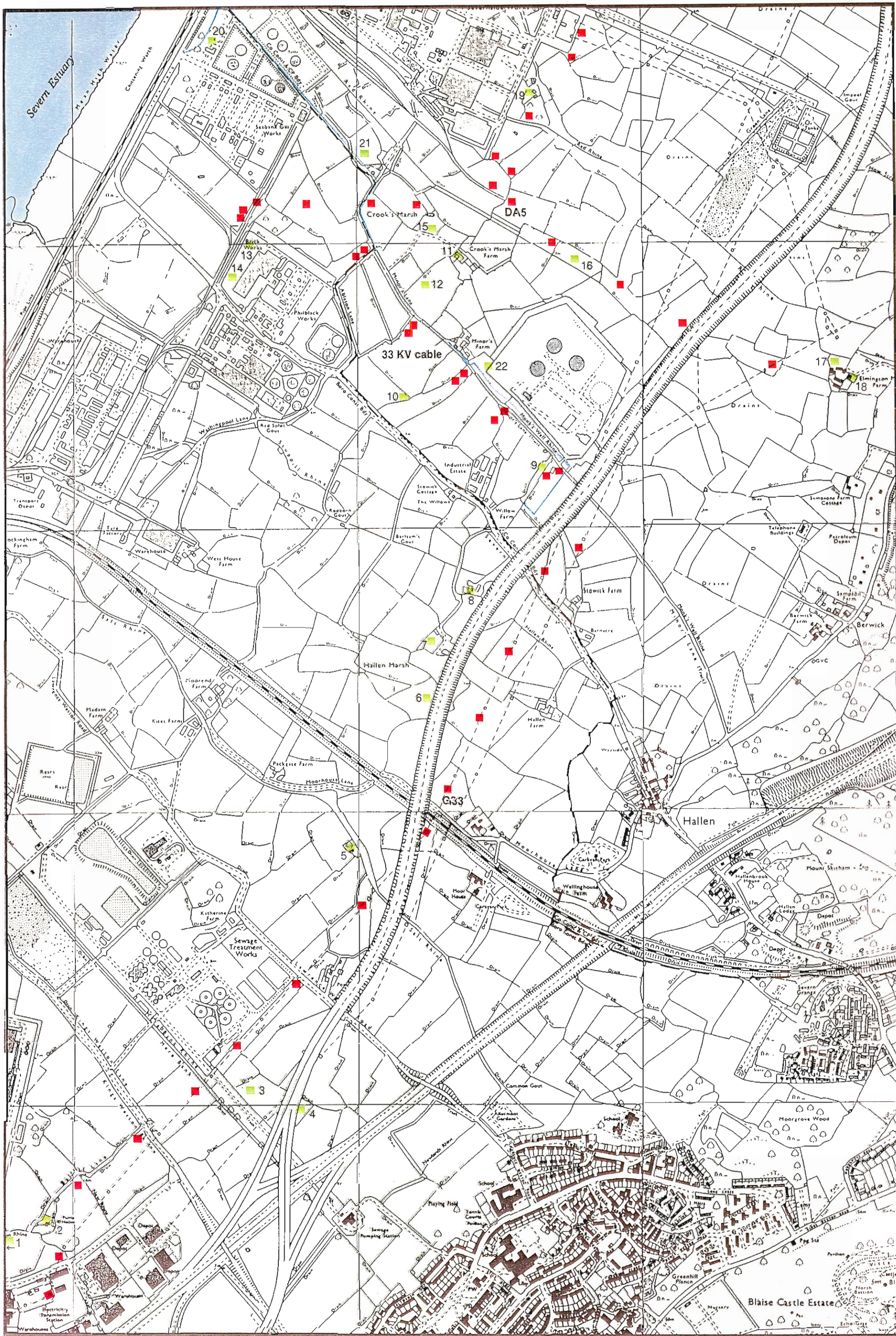


Fig.1 Site location plan showing position of towers and SMR sites

KEY ■ Towers ■ SMR locations

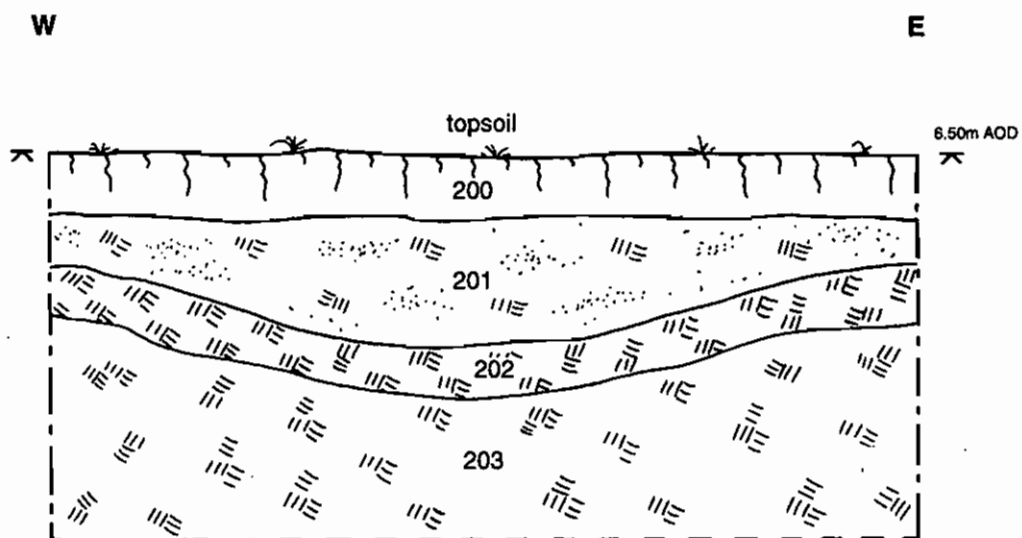


Fig.2 Section 1: South-facing section in Field 2

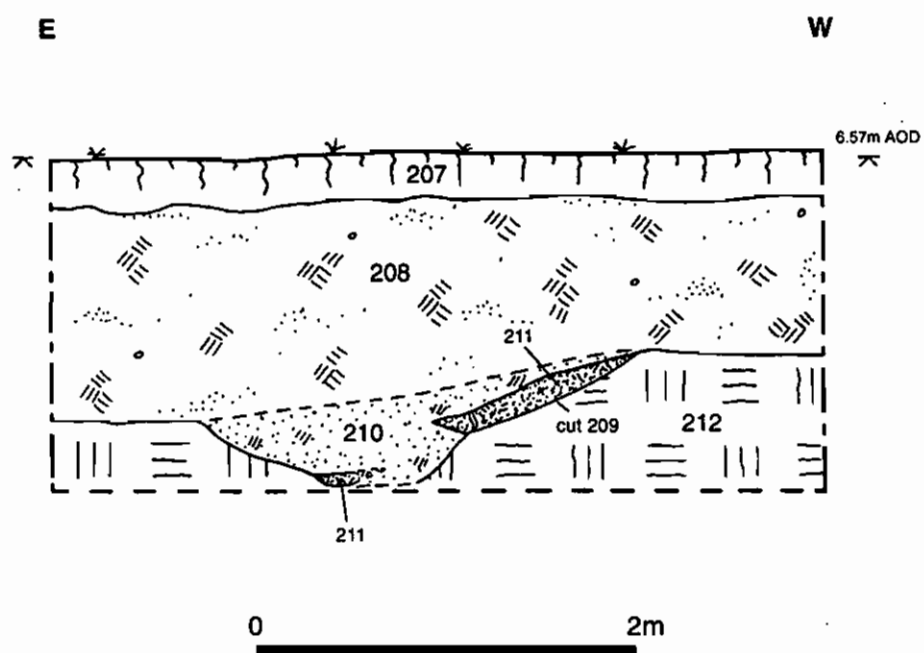


Fig.3 Section 2: North-east facing section in Field 3

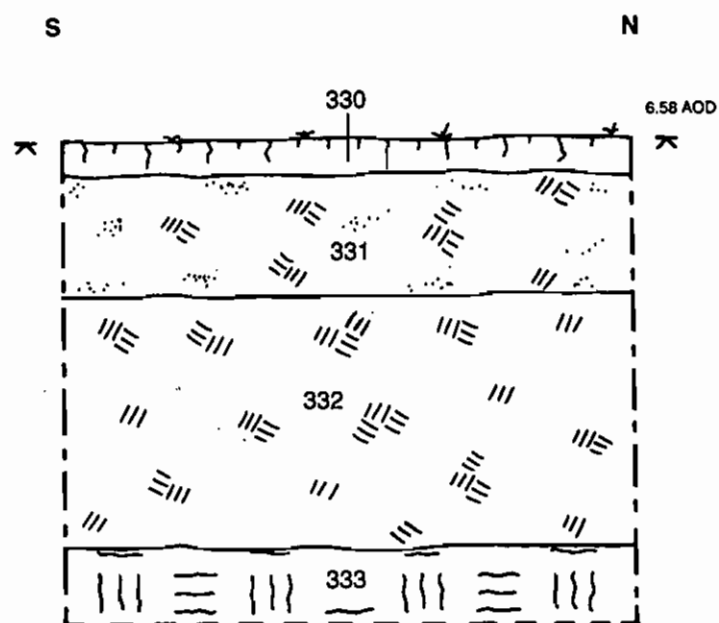


Fig.4 Section 3: Tower G33: East-facing section

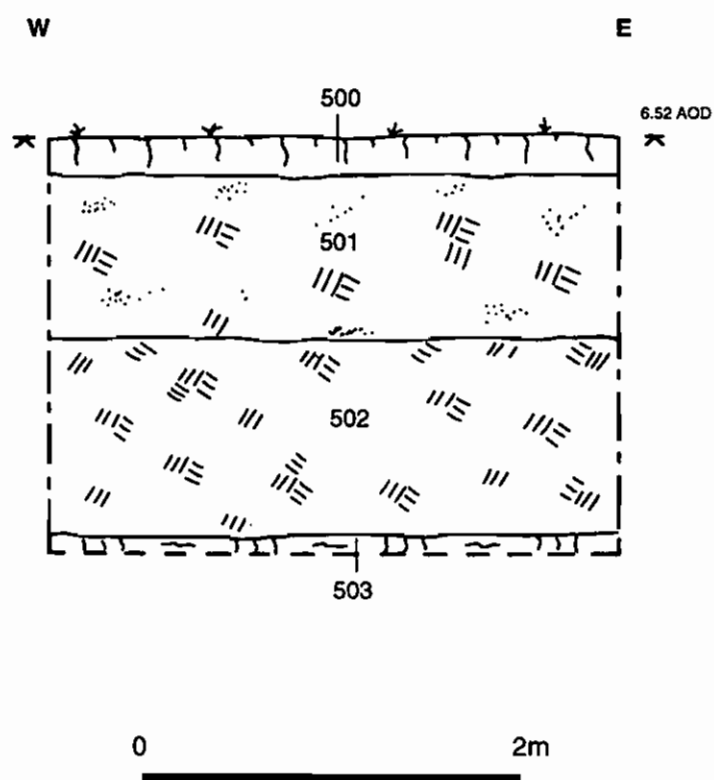


Fig.5 Section 4: Tower DA5: South-facing section



Plate 1 North-west facing section in tower G25 foundation pit



Plate 2 Excavation work in progress in foundation pit at tower G26



Plate 3 South-facing section in tower G37 foundation pit



Plate 4 East-facing section in tower DA5 foundation pit



Plate 5 East-facing section through Seabank Farm driveway



Plate 6 Excavating cable trench through Field 1 east of Seabank



Plate 7 North-east facing section in Field 2 showing ridge and furrow

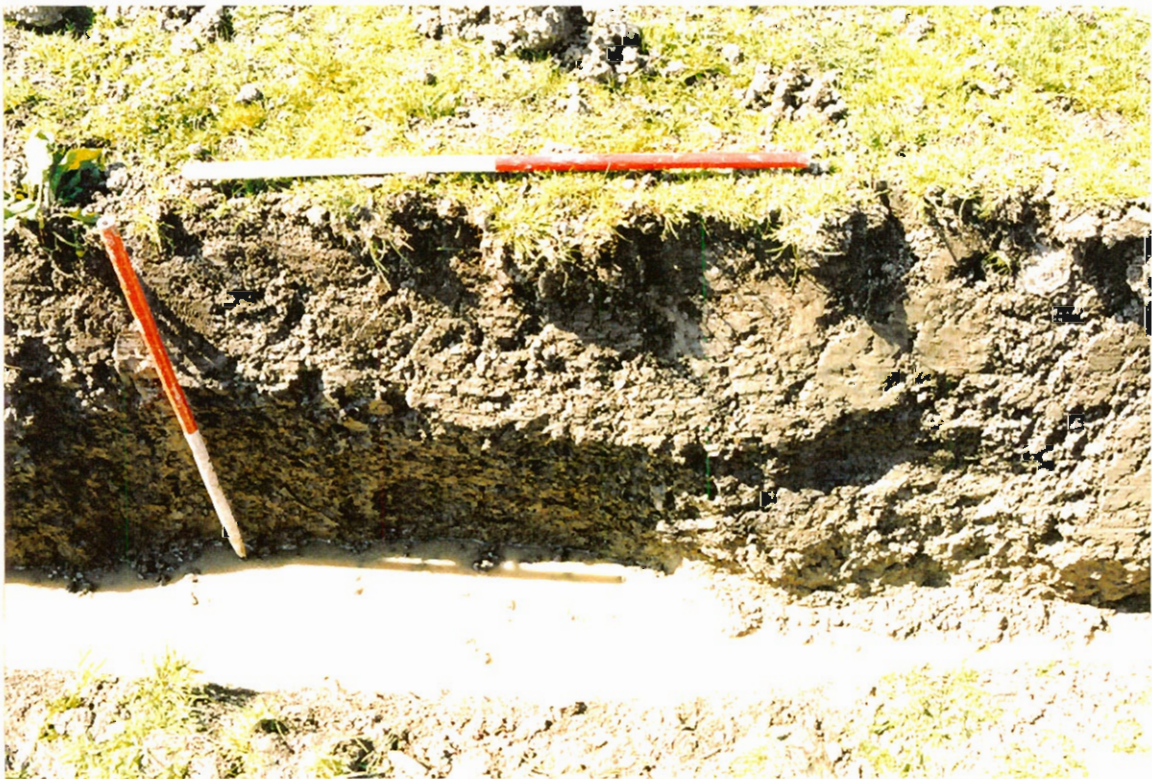


Plate 8 North-east facing section in Field 3 showing Romano-British ditch (209)