

SECOND SEVERN CROSSING:
A WATCHING BRIEF UNDERTAKEN
AT
STOOP HILL, CALDICOT, GWENT

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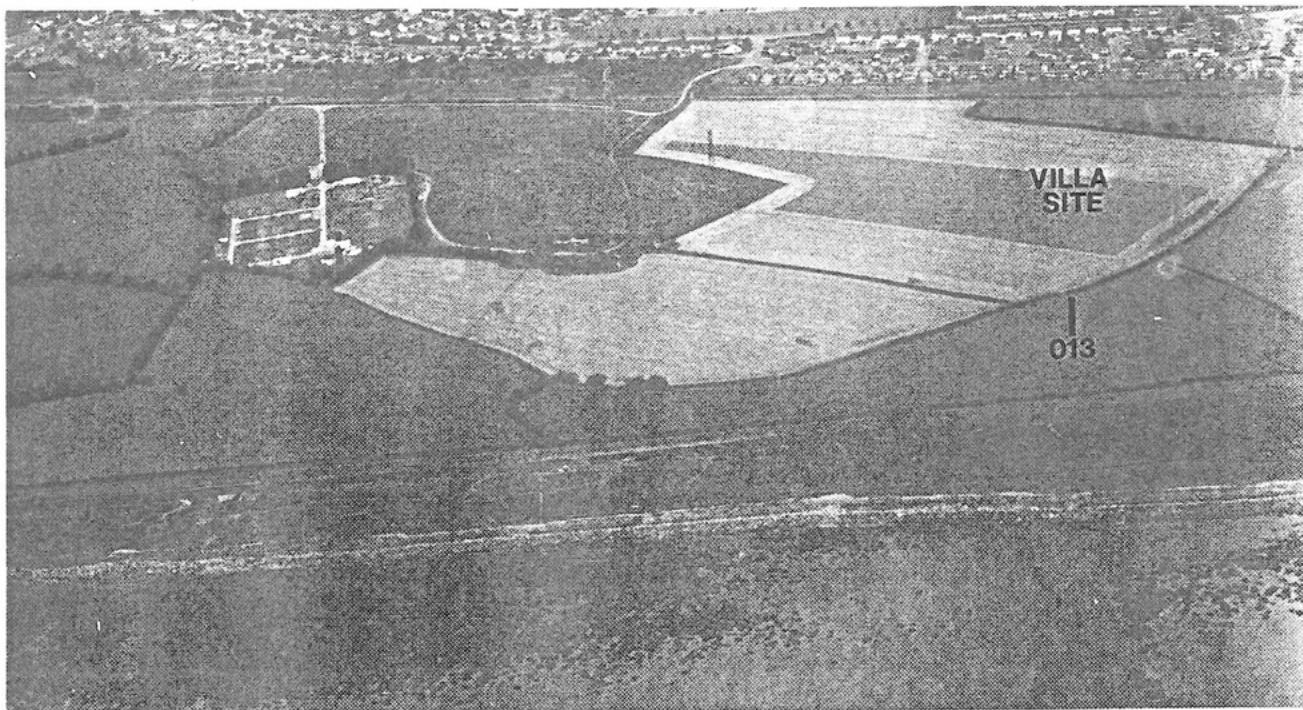


Plate 1. Aerial view of Stoop Hill

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Introduction

The work described here was undertaken as a consequence of ground investigations carried out by Wimpey Geo-Tech.

Assessment by the Glamorgan-Gwent Archaeological Trust in 1990 had demonstrated the archaeological potential of the Stoop Hill area. Recommendations concerning this area were made in GGAT's report to Welsh Office Highways Directorate in September 1990. Whilst it is regrettable that so little regard was given to these recommendations prior to commencement of the Wimpey Geo-Tech operations, the Trust is pleased to acknowledge the assistance given by Messrs R Turner of Cadw, A Wilson of WO Highways Directorate, and RG Frost of Laing-GTM.

Previous investigations at Stoop Hill

Prior to the assessment of the route of the Second Severn Crossing undertaken by GGAT in 1990, aerial reconnaissance in 1953 had revealed the presence of a cropmark at ST 4837 8740 (PRN 482G) (St Joseph 1953, Robinson 1988), which had been interpreted as a Romano-British "villa" (ie farmstead) site, although these are rarely to be found in such exposed coastal locations. The form and dimensions of the cropmark however were by no means incompatible with such an interpretation.

The area occupied by the cropmark is scheduled under the Ancient Monuments and Archaeological Areas Act 1979. Its position at the very edge of the Levels is clearly of some significance, owing to the enhanced opportunities for the exploitation of both the wetland resources of the unreclaimed Levels and the dryland resources of the adjacent areas of solid geology. Particular attention was therefore given to this area during the 1990 evaluation programme.

The villa site had not been seen from the air since its initial discovery, and it was important therefore to assess whether the subsurface features which had caused the cropmarks still survived, and to assess the likelihood of additional features, not visible in 1953, surviving below ground.

Geophysical survey was therefore undertaken in order to elucidate these points. An area was surveyed within the known villa site in order to test the "visibility" of archaeological features, and the results of this survey were wholly consistent with the details shown in the St Joseph photograph (fig 1).

Both the geophysical and the aerial evidence showed the site "fading" to the south, and the known features barely encroach upon the area affected by the road. It was however important to establish whether this was due to erosion or other damage which had entirely removed all archaeological traces, or to the deep burial (and therefore preservation) of features due to movement of deposits downslope by colluviation.

Work was also undertaken to locate and examine the contact between the solid geology and the estuarine Levels deposits. Data from the WS Atkins trial investigations suggested that the nature of the contact at Stoop Hill area was different from that of other locations along the landward edge of the Levels in that there was no peat near the surface. Elsewhere peat deposits have been described along the inner margins of the Levels which represent development of backwater fens in areas protected to some degree from marine influence. At Stoop Hill however the solid geology juts out as a slight promontory, and it is probable that the location was exposed to marine influence too frequently to allow the freshwater input necessary for fen development. The problems posed by the adjacent villa site also meant that it was desirable to look at post-depositional processes such as colluviation.

Auger surveys were therefore undertaken along two transects located approximately at right angles to the wet/ dry contact. (fig 2). These enabled a suitable location for a trial pit to be located with some accuracy, and also provided a broader context for the deposits encountered in the trial pit.

More detailed investigation of the interface between the Levels deposits and the dryland deposits was undertaken by a trial pit located immediately downslope of the villa site.

A full description of the stratigraphy is given in the Trust's assessment report (GGAT 1990, pp16-25, 32-34, 63-64); essentially it shows a sequence with both terrestrial and estuarine influences. The archaeological evidence may be summarised as indicating two main periods of activity.

A significant level of human activity in the prehistoric period (and perhaps centring around the second or early first millennium) was represented by several flint flakes and a sherd of (possibly Bronze Age) pottery. The flints appeared in several cases to be freshly struck and did not appear to have travelled any significant distance. A gully recorded in section near the southeastern end of the trial pit also produced animal bone in addition to flint, and was therefore open around the time at which the artefacts were discarded, although the gully need not have been anthropogenic in origin. Although the spatial and chronological extent of the activity represented by these finds was difficult to determine, the quantity of material was significant.

Additionally there were finds of charcoal and Romano-British material found at considerable depth below the existing ground surface. Unlike the majority of the flints, these finds were abraded and appeared to have been carried downslope from their original position (on the cropmark site) by colluviation. The depth of this horizon may therefore suggest that the invisibility of the "missing" parts of the cropmark complex might be due to burial to a depth where significantly less disturbance and damage

had occurred than on those parts of the site visible from the air or by geophysical prospection.

Further information concerning landscape formation processes was revealed by the auger surveys. These suggested that some of the lowest contexts described might represent a former beach on a wave-cut platform together with material eroded from a buried cliffline. This in its turn indicates that the original terrestrial/estuarine interface has moved some 10 - 15m seawards as a result of the gradual encroachment of colluvial sediment.

Two other areas of 60m x 60m were examined by geophysical survey along the route of the road on the higher area of dry land to the west of the villa, in the region where the watching brief described in this report was subsequently carried out, but no anomalies were detected. The suitability of the technique over this geology/ soil environment was demonstrated by the results from the cropmark site. However, human activities do not necessarily leave palaeomagnetic traces, and a "quiet" area need not denote an archaeologically sterile one. Furthermore, the evidence from trial pit 013 suggests that possibly some colluviation may mask prehistoric horizons near the base of the slope.

The evaluative fieldwork of 1990 therefore indicated that human activity over a significant period of time was registered to considerable depth within deposits which are themselves of significant palaeoenvironmental interest, and that this activity merited more detailed work in advance of the road construction work. The Trust's recommendations included, inter alia, the following:

Recommendation 3: Further field investigations should be undertaken on that part of the Scheduled "villa" complex and its immediate environs affected by the road construction in order to define the extent of prehistoric activity in the area more clearly, to relate both prehistoric and Romano-British activity to depositional processes and to examine parts of the complex believed to be buried by colluvium.
(GGAT 1990, p54)

The high desirability of close collaboration with the developers in the formulation of the next stage of archaeological work, and of forward planning commencing immediately, was also stressed (recommendation 9, GGAT 1990, p56).

The February 1991 Watching Brief

GGAT was informed of proposals to conduct geotechnical investigations on an area adjacent to the Stoop Hill site less than forty-eight hours before the intended time of commencement. The proposals as originally described involved the excavation of five small trial pits approximately 2 x 5m x 2m deep; this proposal was modified to allow for the excavation of two pits 15

x 4m and one of 5 x 5m. This was to be followed by a series of five larger pits c17 x 12m, affecting an area in excess of 1000m². Following a meeting on site between representatives of GGAT, WO Highways Directorate, Laing-GTM and Cadw, it was agreed that GGAT would undertake a watching brief, initially during the trial investigations, and then (depending on results) during the investigation of the very much larger area (c 10,000m²) which was to be subsequently examined.

The first phase of the watching brief was undertaken following the excavation of five trial pits, each measuring approximately 3 x 2m and up to 3m deep. Health and safety considerations meant that detailed observation of cleaned sections was difficult.

The stratigraphy thus observed consisted of weathered bedrock (mercian mudstones) overlain by a sequence of reddish-brown sandy clays. In the southern sections of two of the trial pits however (GTTP2 and GTTP3) archaeological evidence was registered. This was characterised by a layer of reddish-brown clay up to 0.25m deep containing frequent flecks of charcoal and occasional fragments of Romano-British tile and pottery. These observations indicated that further archaeological observations during the next, more extensive, phase of geotechnical investigation would be necessary in order to determine the extent of this layer and to record any associated structural features which might survive.

Again, the contractor's method of working and the extensive use of heavy machinery on the site made archaeological observation difficult. No further evidence of the layer containing the Romano-British material was recovered, suggesting that the deposit was of relatively localised extent. A short length of cobble foundations, almost certainly from a later field boundary, was noted.

The most interesting features noted during this second phase of the watching brief were several channels up to 0.5m deep and 0.85m wide running downslope containing sand and gravel fills, and cutting through the sequence of sandy clays. These channels clearly illustrated the colluviation mechanisms operating on the hillslope. The layer observed in GTTP2 and GTTP3 containing the Romano-British material is probably best explained as being redeposited cultural debris transported amongst the colluvium from further upslope; the channels suggest that such colluviation was more extensive than the relatively gentle gradient of the hill would indicate. The relatively fine definition of the geophysical anomalies on the adjacent villa site would seem to suggest that such extensive colluviation has not occurred in the villa field.

A possible context for what was apparently a short-lived period of drastic sediment movement would be a storm event (or series of events) occurring over a ground surface lacking the protection of the root-mat and foliage of surface vegetation. These conditions would most likely occur during the earlier stages of arable

cultivation before the crop had grown sufficiently to afford the ground surface some protection. The contrast between the degree of colluviation which appears to have taken place on this field and that suggested for the "villa" field to the northeast may simply indicate that the latter field was under pasture at the time of the suggested storm event(s).

Documentary and cartographic research (GGAT 1990, pp 46-48 and fig 18) shows that by 1613 the Stoop Hill area was enclosed, in contrast to the extensive areas of open field arable to landward and the ridged meadows (probably recently reclaimed at that time) to seaward. Whilst there is no firm dating evidence to indicate when the channels were formed, there is plenty of evidence for drastic storm events during the sixteenth and seventeenth centuries.

Conclusions

The data recovered during the course of the watching brief, whilst lacking structural evidence relating to the Romano-British villa or to any earlier phase of human activity, amplifies our understanding of the landscape formation processes in the Stoop Hill area.

The recommendations made (GGAT 1990, pp53-54) in respect of further work in the Stoop Hill area are reinforced. In particular the need for investigations around ST 4809 8717 remains, for the circumstances under which the watching brief was undertaken were not conducive to the detection of evidence for prehistoric activity in the form of flint scatters and the like.

The circumstances surrounding this watching brief demonstrate plainly that close collaboration between archaeologists and all the parties involved in the planning and construction of the Second Severn Crossing is essential. Similarly, the importance of forward planning cannot be over emphasised. In order for the archaeological consequences of any particular stage of construction to be evaluated, the scope and timing of ground disturbance must be indicated at the earliest opportunity.

References

GGAT 1990 Archaeology of the Second Severn Crossing: Assessment and Recommendations for Gwent (edited J Parkhouse and M Lawler) Unpublished report prepared for Welsh Office Highways Directorate

Robinson DM 1988 Prologue. In DM Robinson (ed) Biglis, Caldicot and Llandough: three late Iron Age and Romano-British sites in southeast Wales (Brit Archaeol Rep Brit Ser 188) vii-xxiv

St Joseph JK 1953 Air reconnaissance of southern Britain J Roman Stud 43 81-97

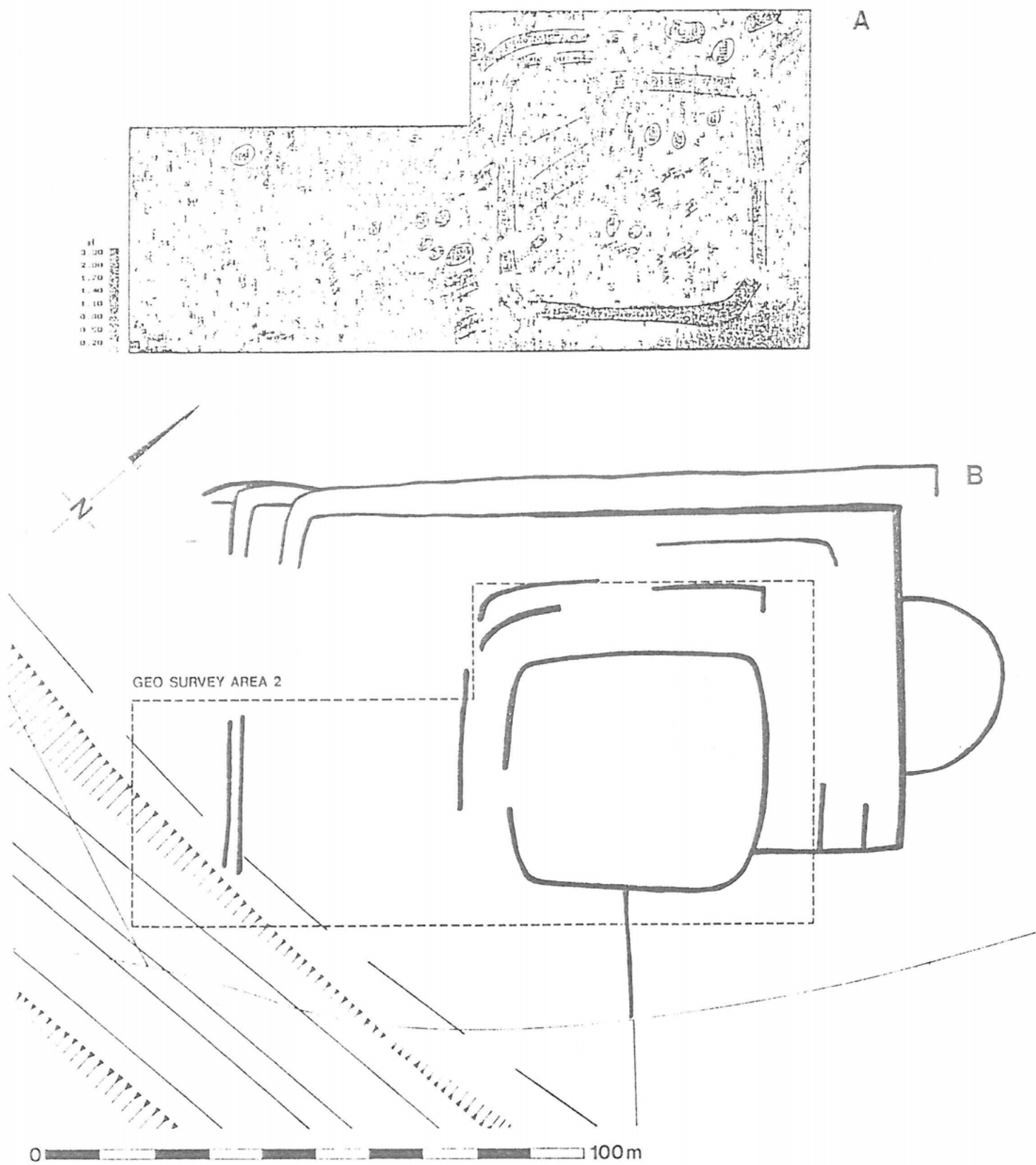


Fig. 1. Part of the Villa site, showing features revealed by (A) geophysical survey and (B) aerial survey.

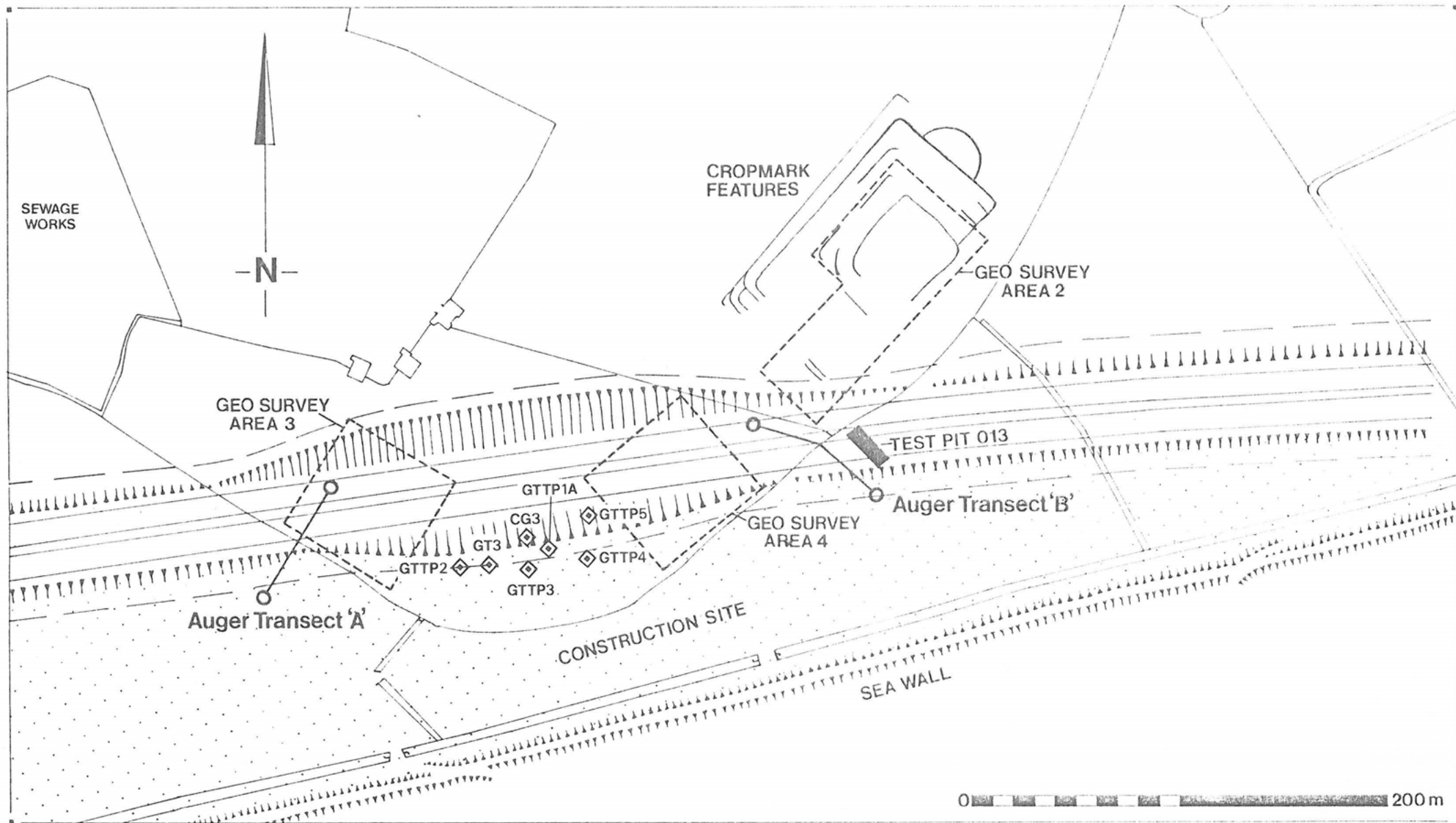


Fig. 2. Area around Villa site, showing location of 1990 trial pit (013), auger transects A and B, geophysical survey areas, and 1991 geotechnical trial investigations.