

Aerial Survey Report Series

AER/1/2003



ENGLISH HERITAGE

Late Neolithic Palisade Enclosures at West Kennet
Report on the Aerial Photographic
Transcription and Analysis

Surveyed: November 2002
Aerial Photographic Transcription and Analysis by Martyn Barber

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INTRODUCTION

Aerial photographs taken in 2000 revealed previously unrecognised cropmark features associated with the Late Neolithic palisaded enclosures at West Kennet, Wiltshire. The site was first recognised in 1987 and subject to research excavations by Alasdair Whittle of Cardiff University between 1987 and 1992. Those excavations were published in Whittle (1997), the site plan being based largely on RCHME transcription of the known cropmarks (RCHME 1992).

The major new discoveries in 2000 were a pit or timber circle, a formally defined entrance and passage into one of the enclosures, and a straight length of probable palisade ditch connecting one of the enclosures to a newly-recognised enclosure 220 metres to the southeast. The new features were transcribed and described in October and November 2002 as a contribution to an article to be published in the Wiltshire Archaeological and Natural History Magazine (Barber *et al.* 2003).

The purpose of this report is to describe and discuss more fully the features observed and the methods used in transcribing them. In addition, the transcription has been extended south to include additional features not included (for reasons of space and time) in the WANHM article.



Fig 1. The survey area viewed from the north east, with the palisade enclosures themselves located towards the bottom right of the photograph. (NMR 18725/20 15-JUL-2000; © English Heritage. NMR)

DESCRIPTION OF THE SURVEY AREA AND ENVIRONS

Location (Figs 2, 20)

The main palisade enclosure complex, centred at circa SU 109680, is located beneath, south and southwest of West Kennet Farm. The village and henge of Avebury lie circa 1.5 km to the north-northwest, while Silbury Hill is less than a kilometre to the west. The cropmarks at West Kennet lie entirely south of the A4 and are crossed by the current course of the River Kennet. As mapped here, the complex extends circa 500m east-west and circa 1 km north-south.

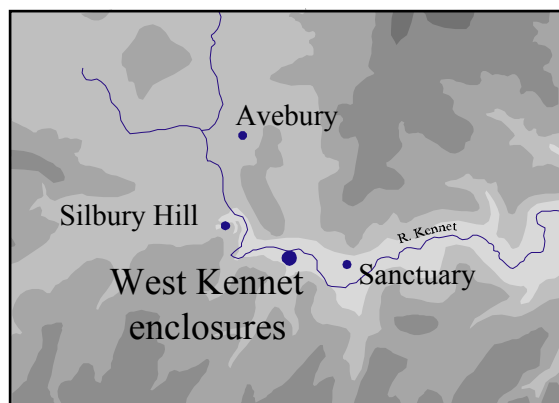


Fig 2. Location of West Kennet in relation to other Later Neolithic monuments in the area.

Topography and drainage

The palisade enclosures lie within the upper Kennet valley, between circa 145 and 150 m OD. At this point, the River Kennet runs broadly eastwards, though a short distance to the east of the site it briefly arcs south around the foot of Overton Hill. The river itself rises at Broad Hinton, running south some 9 km to the Swallowhead Springs, which are located a little south of Silbury Hill. From Broad Hinton to the Swallowhead Springs, the river is known as the Winterbourne. The River Kennet proper begins at Swallowhead Springs, where the watercourse turns abruptly eastwards.

The Kennet itself is a narrow and shallow winterbourne, often dry for a period of several months in spring and summer, although this appears to be a recent development in the river's history, Evans *et al.* (1993, 142) pointing to the advent of extraction of water by boreholes as the chief cause and noting accounts of the river as a perennial stream as far west as the Swallowhead Springs. Palisade Enclosure 1 currently straddles the course of the Kennet, although the relationship between the river and the enclosure during the Late Neolithic are unclear. A study of the environmental history of the upper Kennet valley between Avebury and West Overton (Evans *et al.* 1993) offered little detail directly relevant to the palisade complex but noted some uncertainty as to whether or not an active watercourse existed at the time of the monuments' construction.

Visible as a cropmark on aerial photographs (and plotted on Figs 7 and 8), a broad but irregular dark mark can be seen running between and concentric to the palisade ditches of Palisade Enclosure 1. A similar feature can be observed running outside (i.e. to the south of) and concentric to the outer ditch of the same enclosure. The former was briefly examined during Alasdair Whittle's 1987-1992 excavations at the site and appears to represent an old channel, perhaps of Pleistocene date, which had not fully silted up by the late Neolithic, presumably leaving a shallow but visible depression in the surface. The latter is presumed to represent a similar feature. It seems plausible that the layout of Enclosure 1 took advantage of their presence (Whittle 1997, 86-90).

The surrounding region is dominated largely by chalk downland, the undulating terrain forming an elevated plateau dissected into spurs and dry interflues or coombes, the Kennet being the only regularly flowing river in the area. The chalk rises gently away from the site of the enclosures, the local topography being dominated by Overton Hill to the east, Waden Hill to the northwest and Allcannings and Harestone Downs to the southwest and south respectively. Most of the West Kennet complex as currently known occupies a gently sloping area below the 150 m contour, although additional features possibly connected with the enclosures and lying further to the south and southeast occupy higher ground (170-175 m OD).

Geology and soils

The underlying rock is Cretaceous White Chalk, the area of the enclosures falling within the Middle Chalk and features to the southwest extending on to the Upper Chalk. The *Geological Survey of England and Wales Sheet 266* shows 1st terrace gravel lining the sides of the Kennet valley and some of its tributaries, overlain within the Kennet valley itself by a strip of alluvium (see also Evans *et al.* 1993, fig. 3).

In the vicinity of the enclosures, the soils themselves proved problematic to both excavation (as described in Whittle 1997) and aerial survey. For example, describing conditions encountered while excavating the outer ditch of Palisade Enclosure 1, Whittle (1997, 57) noted that “*in all the cuttings the ditches had been cut through coombe rock, an extremely variable subsoil, from white and yellow to light brown and reddish in colour, and containing variable amounts of shattered chalk and flint with occasional small sarsens. Its mixed composition shows up as irregular crop marks on aerial photographs*”. While trenching to locate the palisade ditches, up to 80 cm of soil was removed before identifying archaeological features. In all arable fields around the site, pockets or spreads of deeper soil show up on aerial photographs as sometimes quite extensive darker patches. Consequently the nature of soil and subsoil can both prevent and obscure the formation of cropmarks of archaeological origin (see Fig. 3).

Vegetation and land use

The area under consideration is mostly agricultural land under regular arable cultivation. During excavations, Whittle noted some compaction of the subsoil caused by regular cultivation over a period of many years, and in some places visibility of archaeological features during excavation was reduced by the combined effect of both regular and deeper ploughing (perhaps steam ploughing) which led to a mixing of



Fig 3. The problems caused by the nature of the subsoil are clearly visible in Field 1, on the right of the photograph and east of Gunsight Lane. The palisades defining Enclosure 1 are just visible towards the top of the photograph, while Outer Radial Ditch 1 can be seen just below the centre. (NMR 4651/46 16-JUL-1990)

topsoil and subsoil (Whittle 1997, 53, 61). The valley floor of the Kennet itself is mainly used for pasture, with fields and river largely bounded by hedges. Coring by Prof. John Evans (Whittle 1997, 53) showed the presence of deposits over 1 metre deep below the present floodplain surface. North of the Kennet, much of the presumed extent of Palisade Enclosure 1 lies beneath the buildings and grounds of West Kennet Manor and West Kennet Farm.

THE ARCHAEOLOGICAL LANDSCAPE

The environs of West Kennet in the Neolithic and Early Bronze Age

The area around West Kennet has long been known for its upstanding monuments of Neolithic and Early Bronze Age date (see for example Burl 1979; Malone 1989; Pollard & Reynolds 2002), the international significance of which was recognised with the establishment of the Avebury World Heritage Site in 1986 (along with Stonehenge). The boundary of the World Heritage Site, which here follows parish boundaries, currently passes through the West Kennet complex. The West Kennet enclosures themselves lie less than a kilometre east of Silbury Hill and circa 1.5 km southeast of the great henge at Avebury, a similar distance beyond which also lies the Early Neolithic causewayed enclosure of Windmill Hill. The complex timber and stone structure known as The Sanctuary is circa 700 metres east of West Kennet, while the sarsen-lined West Kennet Avenue, linking the Sanctuary with Avebury, is presumed to pass by a little to the northeast of West Kennet Farm (though its precise course remains uncertain). 300 metres southwest is the West Kennet long barrow, while the East Kennet long barrow is situated circa 1.4 km southeast. Round barrows of various forms, plough-levelled and earthwork, individually or in cemetery groups, also dot the surrounding landscape while the traces of later, Bronze and Iron Age, field systems and associated features are particularly notable on the higher downland.

The discovery of the West Kennet palisade enclosure complex

Given the high archaeological profile of the Avebury region, it seems remarkable that the presence of such a major complex of prehistoric monuments went unnoticed until as recently as 1987. Indeed, as Whittle (1997, 57) noted with reference to the aerial coverage in particular, *“It is clear that the complex could have been recognised much earlier”*.

The earliest known record of the complex comprises an aerial photograph taken before World War Two (NMR AP ref. SU 1068/9; Fig. 4). It forms part of the NMR’s Crawford Collection, held at the National Monuments Record in Swindon. There is no guarantee that the photograph was taken by OGS Crawford himself, nor is there as yet any accurate information on when the photograph was taken. However, it seems most likely to date sometime between 1925 and 1938 (Geoff Hall, pers. comm.). The western end of Palisade Enclosure 2 is clearly visible as a cropmark towards the bottom left corner of the photograph, which suggests strongly that the cropmark had not been noticed at the time the photo was taken. The photo itself is of poor quality, and it is not immediately obvious what the intended subject was. This is presumably the photograph referred to by Whittle (1997, 57) when noting *“from the 1920s oblique shots taken by O.G.S. Crawford”*.

Better known is a photograph taken by JK St Joseph in 1950 (CUCAP FC 028, taken June 11th 1950; reproduced in Whittle 1997 as fig 26). On that photograph, the two concentric palisade ditches of Enclosure 1 show clearly as cropmarks within the northeast corner of Field 1, as do the silted former channels (see above, p.3). However, the archaeological significance of these cropmarks was not recognised. For example, the Ordnance Survey’s Archaeology Division dismissed the features as

possibly “old irrigation or drainage ditches...unlikely to be of medieval or earlier origin” (NMR monument record SU 16 NW 69: entry dated 29 October 1974).



Fig 4. Detail from the Crawford Collection photograph, taken prior to the Second World War. The view is to the northwest. The line of Enclosure 2's palisade can be seen bottom right as it turns towards a slight change in the line of the field boundary. (CCC 5213/EJ4)

In 1971 (R Cleal, pers. comm.), a pipeline trench was dug through Field 1, running broadly parallel with and circa 10 metres south of its northern boundary. A number of features were observed in the pipe trench by Faith Vatcher, at the time curator of the Alexander Keiller Museum at Avebury. In particular, she noted the presence of two ditches containing what looked like large post-pipes with sarsen packing and charcoal. Other features nearby were associated with a few finds including worked flints, animal bone and a single potsherd of Late Neolithic Grooved Ware. Details were not published at the time, though records are kept in the Keiller Museum (details summarised from Whittle 1997, 54-5).

No further investigation of the site occurred, and it was not until 1987 that trial excavation was undertaken at the site by Alasdair Whittle, following the realisation that the features recorded by Vatcher almost certainly coincided with the cropmarks visible in St Joseph's photograph. Work at the site continued from 1989 to 1992, incorporating excavation, geophysical survey and aerial survey, and formed part of a broader programme of research focusing on the prehistory of the Avebury region (see for example Whittle 1993, 1994, 1997; Whittle et al 1993; Whittle et al 1999).

Excavations 1987-1997: a summary

Between 1987 and 1992, the known extent of the complex increased dramatically, primarily to the west as Enclosure 2 and its associated internal and external features were identified, and to the south where a ditch running southeast from Enclosure 2 seemed to connect the complex with another circular cropmark feature (Structure 4) some 240 metres away. Whittle's trenches are not the only ones to have been dug across the site, however. Excavations in 1989 by the Trust for Wessex Archaeology following an application for planning consent showed that an arc of ditch probably belonging to Enclosure 1 survived on the northern side of the River Kennet, beneath West Kennet Farm (Wessex Archaeology 1989; Whittle 1997, 66-9). Finally, in 1997, an evaluation (again following a planning application) confirmed the likely existence of a palisade ditch, again probably belonging to Enclosure 1, north of the river and west of Gunsight Lane, suggesting that Enclosure 1, or at least one of its ditches, did originally form a complete circuit (Eyre-Morgan 1997). A separate evaluation undertaken in 1997 by Wessex Archaeology, in the same general area as the 1989 evaluation, recovered primarily evidence for Early Medieval and later occupation (see below). Additional watching briefs undertaken in 1989 and 1993 on various parts of the complex are also reported in Whittle (1997).



Fig 5. The site as first recorded from the air by RCHME in 1989, viewed from the north. (NMR 4526/51 11-JUL-1989)

Whittle's excavations comprised a series of trenches across the main enclosure ditches, plus additional trenches across some of the internal features within Enclosure 2 (see Fig 6 for trench locations). Enclosure 1 was shown to be sub-circular, measuring up to 240 metres across, and defined (to the south of the river at least) by two concentric ditches up to 35 metres apart. Each ditch had held a palisade comprising oak timbers up to 40 cm in diameter and standing to a height of perhaps 6 metres or more above the surface. Enclosure 2 appears more elliptical in shape, probably measuring around 340 metres across its longer northwest-southeast axis, and a maximum of 200 metres in width. The enclosing ditch was markedly similar in character to the concentric palisade ditches defining Enclosure 1. Enclosure 2 was shown to contain, towards its southeastern end, three further sub-circular structures, each containing an inner and outer concentric circuit. These for the most part also held timber palisades.

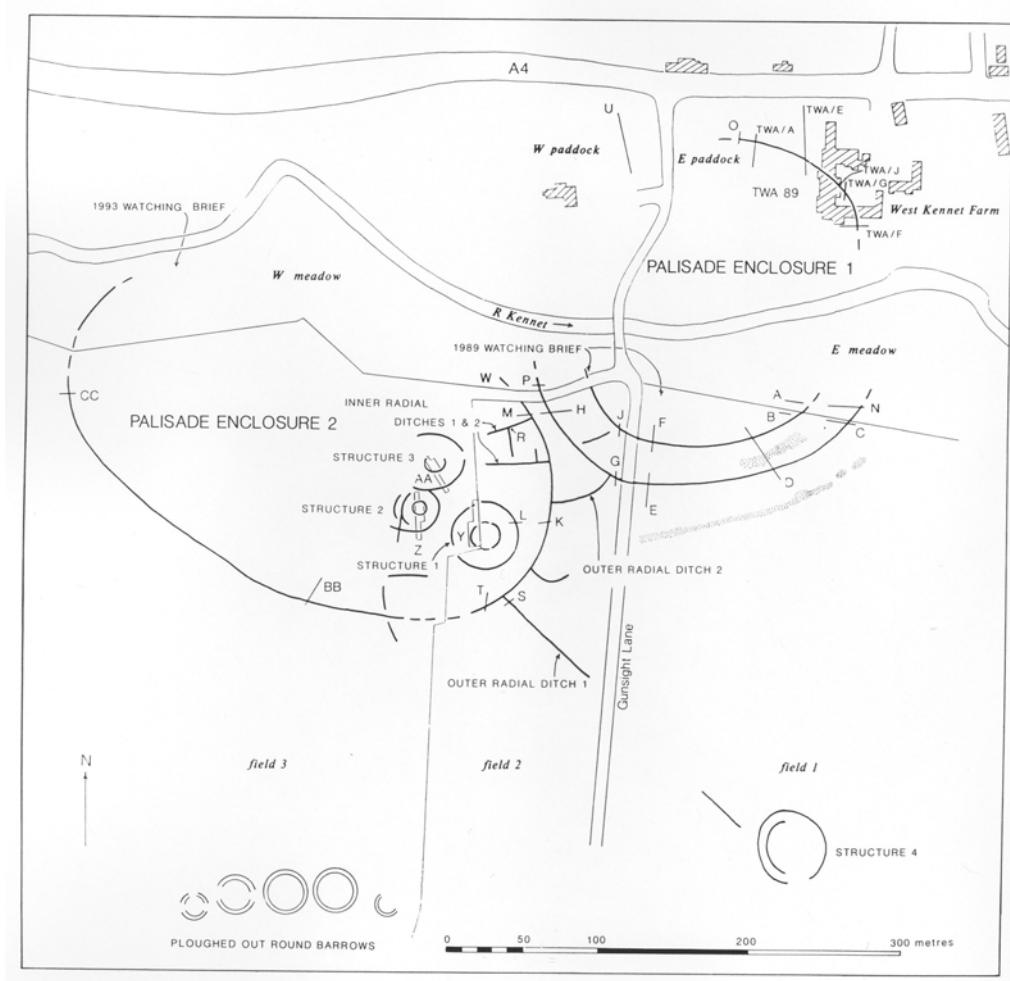


Fig 6. Plan of the palisade complex from Whittle (1997), showing extent of features as mapped from air photographs, geophysical survey and excavation. The various excavation trenches dug between 1987 and 1993 are also marked.

Radiocarbon dates obtained from features across the whole complex focus on the second half of the third millennium BC, placing all the excavated structures towards the end of the Neolithic, though at a time when the first copper and bronze metalwork

was appearing in southern Britain. Apart from a single sherd of Middle Neolithic Peterborough (Mortlake) Ware, the associated pottery was exclusively Grooved Ware – no Beaker or other Early Bronze Age ceramics were encountered. Consequently establishing a sequence of construction, use and abandonment or destruction has proved particularly difficult. Radiocarbon dates from different features overlap considerably, but the complex clearly has the appearance of being multi-phase. Whittle (1997, 156) suggested that the “best guess may be that the enclosures were constructed and used in succession, perhaps overlapping, within a cycle of a few generations”.

The various episodes of excavation have also demonstrated later activity in and around the site, though there is little to indicate activity in the area of the complex throughout the 2nd and 1st millennia BC. Whittle’s excavations recovered some chaff-tempered pottery of Early to Middle Saxon date, notably from the trench across Structure 1 within Palisade Enclosure 2, although this evidence has yet to be published fully (Hamilton, in Whittle 1997, 93; A Whittle pers. comm.). North of the river, evaluation trenches by Wessex Archaeology in 1989 and 1997 uncovered finds and features suggesting the existence of settlement dating from perhaps as early as the 8th century AD, continuing down to the 14th century after which there is a gap in the excavated evidence before the construction of buildings relating to the present farm from the 16th century (Wessex Archaeology 1989; 1997).

The Roman period is of course also represented, though with less certainty. As is well known, the A4 broadly follows the line of the Roman road from *Spinae* (Speen, Berks) via *Cunetio* (Mildenhall, Wilts) and past Silbury Hill on its way to Bath. Roman potsherds plus 11 coins of late 3rd and 4th century date have been found at West Kennet Farm itself (Pollard and Reynolds 2000, 153). Meanwhile work along the course of the Kennet Valley Foul Sewer Pipeline in 1993, following the A4 to the north of the river Kennet and west of West Kennet Farm noted several minor features and finds ranging in date from the Bronze Age through to the Post Medieval period (Powell *et al.* 1996), the most relevant here being a Bronze Age ring ditch (with a possible smaller ring ditch immediately to its north) at SU 1072 6838, just north of the A4 and a little over 100 metres north of the presumed northern limit of Palisade Enclosure 2, and an axe-hammer whose findspot is located at West Kennet Farm just outside the projected course of the ditch of Palisade Enclosure 1.

WEST KENNET PALISADE COMPLEX: AP TRANSCRIPTION

The complex as known to circa 1992 is fully described in the final excavation report (Whittle 1997). The site plan published there (*ibid.* fig 28) and reproduced here as Fig 6 should be compared with the new plan (Figs 12, 20) in order to appreciate the extent of additions and alterations. All observed features are described below, though only those recognised since 1992 are discussed in detail. Naming and numbering of features and fields follows that of Whittle (1997).

Previous history of AP transcription

This is in fact the fourth occasion on which a plot of known cropmarks in the West Kennet area has been produced by RCHME/English Heritage (see Small 1999, 5 and Bewley and Small *in* AAHRG 2001, 84 for a full list of RCHME surveys in the general area). The first (RCHME 1990) was produced following a request from Alasdair Whittle for aerial reconnaissance and photography of the site, and was based primarily on photographs taken on 11 July 1989 and 29 March 1990, in addition to JK St Joseph's 1950 image. The resulting transcription (originally produced at 1:2500 scale) is reproduced here as Fig 7. As can be seen, the visible cropmarks were confined wholly to Fields 1 and 2, with no indication of the likely extent of Palisade Enclosure 2. Of particular note is the pair of dashed lines heading north across the water meadow between the northern boundary of Field 1 and the river. Visible on the ground and on aerial photographs as shallow depressions, the presumption is that they are not prehistoric, and probably represent natural or artificial drainage features of relatively recent date. They are clearly visible on St Joseph's 1950 photo, although the angle and direction from which that photograph was taken suggests, deceptively, that one of these features might continue the line of the inner palisade ditch. In fact, as the plan and photographs from other directions clearly show, this is not quite the case, the junction (if there is one) being markedly angular.

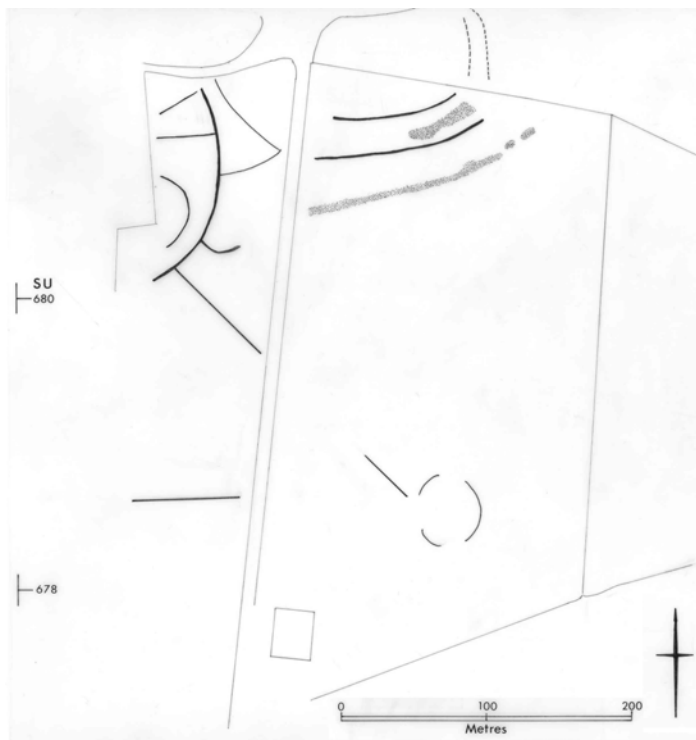


Fig 7. 1990 RCHME survey of West Kennet cropmarks, originally produced at 1:2500. The east-west linear at bottom left is a recent field boundary (see Fig 17).

A new transcription was prepared in 1992 (RCHME 1992), again at 1:2500 scale (Fig 8), but taking advantage of additional photography undertaken in 1990 and 1991. Also, the size of the survey area was expanded considerably to the west, south and east, encompassing 3.2 km² in total. The reasons for the new survey were stated as follows: “*The survey was initiated in response to the requirements of the National Archaeological Record, English Heritage and the Department of Archaeology, University College Cardiff, for a reliable and up-to-date record of the plough-levelled features in the vicinity of West Kennett Farm and the southern extent of the Avebury World Heritage Site*”. It was this survey that formed the basis of the plan published by Whittle (1997), as amended and adjusted in the light of geophysical survey and excavation.



Fig 8. 1992 RCHME survey, originally plotted at 1:2500 but here reduced considerably. Grid points around the margin are at 100 metre intervals.

A third plan (Fig 9) was produced at 1:10000 scale in 1999 during the Avebury World Heritage Site Mapping Project, Wiltshire (Small 1999, 25-6), undertaken as part of the National Mapping Programme (NMP: see Bewley 2001). This new plot added some detail from post-1991 photography but also added previously unrecognised cropmark features visible on the 1989-91 photographs in particular. It was this survey that recorded for the first time Outer Radial Ditch 3, Structure 5, and the linear features to the south of Field 1.

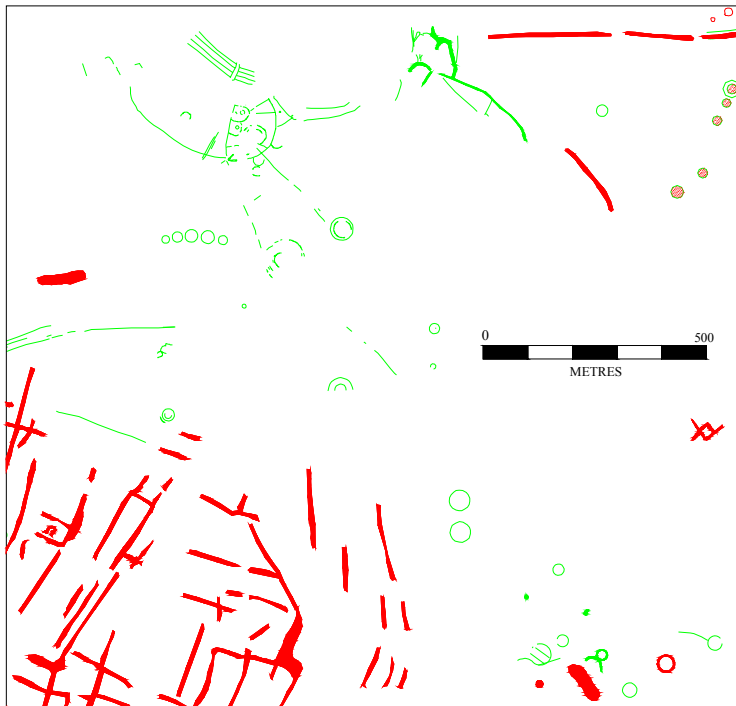


Fig 9. Extract from Small (1999), originally plotted at 1:10000 scale. North to top. Note that the later detail featured here has been omitted from Figs 12 and 20. Features seen as cropmarks are here plotted in green, those recorded as earthworks in red. The West Kennet long barrow is centre left, and the East Kennet long barrow is bottom right.

Variants of the published and unpublished plans have appeared on numerous occasions over the last 15 years, and since 1997 most have drawn on the version that appeared in Whittle (1997). Some of the new information featured on the 1999 survey appears as a rather sketchy addition to a general plan of late Neolithic monuments in the Avebury region in Pollard & Reynolds (2002, fig 27), though with no indication of the source. This new detail is absent from that same volume's plan of the West Kennet enclosures (Pollard & Reynolds 2002, fig 42), although in the accompanying text reference is made to the fact that "recent transcriptions of aerial photographs of the complex by English Heritage have highlighted additional features that imply a more complex sequence of development", these additional features being duly described. The sole source quoted is Crutchley (2000).

The impetus for the latest transcription came from additional features photographed in May and July of 2000 by Damian Grady as part of English Heritage's southern Aerial Reconnaissance programme. Cropmarks at West Kennet Farm (Fig 10) were initially noted during flights focusing on the recently collapsed shaft at Silbury Hill. A brief account of the new elements appears in Crutchley (forthcoming) while a more detailed description forms part of Barber *et al.* (2003).

Survey method and techniques

(i) sources consulted

The 1992 RCHME survey formed the basis of the latest transcription. The latter focused on the same area as is featured in Whittle's (1997) site plan, but including an additional area to the south in order to take in some additional cropmarks of interest to the analysis of the palisaded enclosures.



Fig 10. The “new” cropmark features as first photographed in May 2000. (NMR 18706/07 30-MAY-2000)

The required area was scanned from the 1992 survey drawing and loaded into Autodesk Map 5. Ordnance Survey map detail was then added or amended as necessary from the 1:2500 sheets covering the area, again scanned and loaded into Autodesk Map 5. Cropmark detail plotted in 1992 was then either retained or amended as necessary in the light of post-1991 photography and the 1999 1:10000 NMP survey. Pre-1992 obliques were also consulted, though given the timescale neither verticals nor photographs held by repositories other than the NMR were used. However, the full range of photographic sources was consulted in preparation of the 1992 and 1999 surveys, and it is unlikely that anything of archaeological significance has been overlooked (subject to the caveats about soil conditions – see below, p.14). A full list of photographs consulted can be found in Appendix 1.

Finally, additional detail shown in Whittle (1997) and obtained either through geophysical survey or excavation was added from Whittle’s published site plan and from some of the geophysical surveys themselves. Photocopies of reasonable quality of the latter exist in the archive associated with the 1992 RCHME survey, while additional and much clearer geophysical survey plots of the northern end of Field 2 were provided by Mike Hamilton in October 2002 (e.g. Fig 11). The location of the palisade ditch north of the River Kennet was derived from the site plans published by Wessex Archaeology (1989; 1997) and Graham Eyre-Morgan (1997).

(ii) Methods and constraints

All archaeological features visible on aerial photographs were checked or transcribed using a compilation of photographs. Those displaying the clearest cropmark detail

were scanned and then rectified via the AERIAL 5 rectification programme, with archaeological details then transcribed into Autodesk Map 5 (see Appendix 2). Control information for the aerial photographs was taken from the 1:2500 scale Ordnance Survey map scans referred to above. The target accuracy level for the survey was ± 2 metres, which was achieved in all cases, though problems were encountered. A lack of sufficient control in a number of key photographs, primarily due to the size of the fields concerned and the tendency of archaeological information to cluster in one part of them, meant that a satisfactory spread of control points surrounding the archaeological features could not always be obtained. In addition, due to the time constraints, contour detail, which might have served to further reduce potential inaccuracies, was not obtained. Where available, first or second edition Ordnance Survey maps were also consulted in order to check the location of former field boundaries now extant only as cropmarks.

In most cases, archaeological features were plotted from more than one source – the 1992 survey and one or more photographs, plus the 1997 published plan. Correlation was generally very good, though naturally the previously noted margins of error remain. Much of the 1992 survey detail – the outline of the main enclosures, Structures 1-4, and the linear group of barrows to the southwest – was retained on the present drawing (supplemented of course by the geophysical and excavation information as noted), and five photographs (one from 1992, the remainder from 2000) were selected for scanning and rectification in order to add new detail (see Appendices for details). Subsequently, an additional photograph (SU 1167/40) from the July 2000 coverage was selected for scanning and rectification in order to extend the plot further south.

Quality and reliability of the photography

The problems posed for cropmark interpretation by the local soils have already been referred to, and add considerably to the subjectivity inherent in the whole process. Although the outlines of the main features are quite clear, particularly given photographic coverage taken over several years, the finer detail is more problematic. For all fields concerned, frequent darker patches of deeper soil either obscure archaeological cropmarks or prevent their formation completely. The tendency of these darker patches to form circular or curvilinear shapes means that in some places it is extremely difficult to decide whether certain patches are of archaeological or natural origin. There are, for example, a number of features included on the 1992 and 1999 surveys that have not been included on the present survey. In a number of instances, photographs taken in 2000 suggested a non-archaeological origin. In others, following discussion with Fiona Small, who produced the 1999 survey, assessment of all relevant photographs suggested an archaeological origin was less likely than a natural one. However, there remains no absolute guarantee that all features plotted in 2002 are of archaeological origin, or that all those left off the plan are of natural origin. Confirmation is reliant on further geophysical survey and/or excavation. Problems concerning the interpretation of individual features are outlined below.

Photographic coverage of all the fields concerned is a little uneven, and is partly a reflection of priorities at the time the various photographs were taken. The best and most detailed cropmark information covers the northern end of Field 2 and the area of the palisade ditches in the adjacent part of Field 1. For the 1989 and 1990 coverage

this reflects the known extent of the site and a focus on the area being examined by Alasdair Whittle. The 1991 photography reveals a greater concern with the extent and layout of Palisade Enclosure 2, following recognition of its existence and size within Field 3. The 1992 photography represents the only occasion in which reasonable detail is visible in all 3 fields at the same time, although the focus remains the palisade complex at the northern end of the fields and, to a certain extent, the barely-visible linear barrow group at the southern end of Field 3. In 2000, the photography is broader in scope, the full range of extant cropmark features being photographed from a variety of directions with some invaluable close-ups of finer detail. Unfortunately, in contrast to the clarity of cropmarks in Fields 1 and 2, and further south, nothing at all can be seen in Field 3. The presence of “crop circles” to the south of Field 1 is also less than helpful (Figs 18, 19).

The inclusion of Structure 5 and Outer Radial Ditch 3 on the 1999 survey (Fig 9) has already been noted. Structure 5 is, with hindsight, observable on some of the 1989 photographs (e.g. SU 1068/74), albeit on the periphery of photographs focusing on the known cropmarks to the north, and barely distinguishable against the mottled background. Both are a little clearer on some of the 1992 photographs (e.g. SU 1067/33, reproduced with some loss of clarity in Whittle (1997) as fig. 27), though again, the background noise, oblique angle and distance from the camera can make interpretation difficult, and indicate that the cropmarks had not been observed at the time the photographs were taken.

The value of hindsight is also apparent when returning to the geophysical data. The plots supplied by Mike Hamilton (Fig 11) can now be seen to support re-interpretation of Inner Radial Ditches 1 and 2 as a funnel-shaped arrangement crossed by 2 ditches, each with a roughly central causeway marked by large terminal posts and a broadly corresponding gap in the ditch of Palisade Enclosure 2 (below, p. 20). The continuation of Outer Radial Ditch 2 beyond the line of the outer ditch of Palisade Enclosure 1 can also be seen. The timber or pit circle is more problematic – the geophysical survey clearly picked up the broad outlines of something at the correct location, but the new cropmark information is essential to recognising this fact.

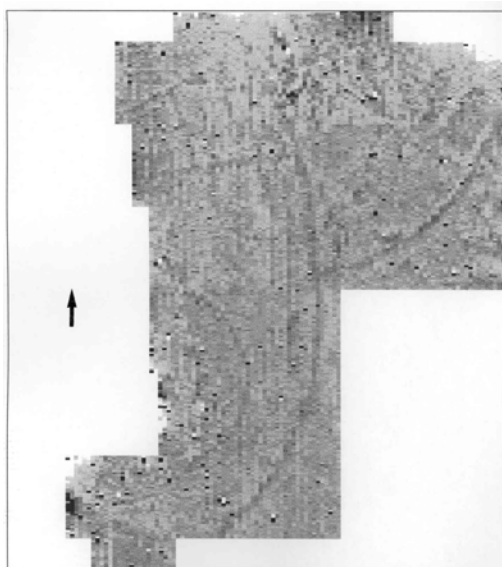


Fig. 11. Plot from geophysical survey undertaken by Mike Hamilton during Whittle's 1987-92 excavations, showing detail at the eastern end of Enclosure 1 and the western end of Enclosure 2.

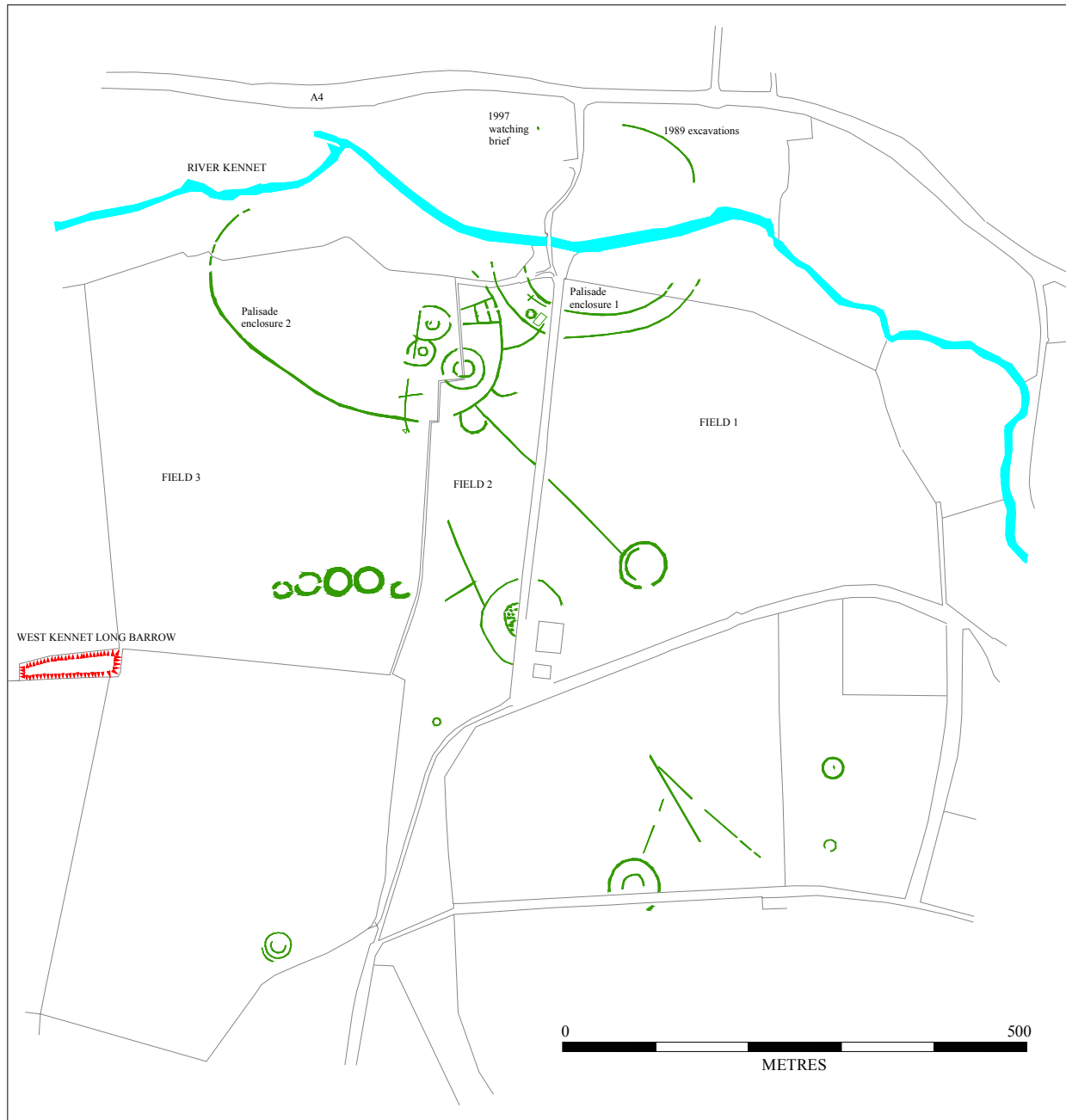


Fig 12. November 2002 full transcription of cropmark features at West Kennet, including additional sites south of Fields 1-3. Cropmarks are plotted in green, the earthwork West Kennet Long Barrow (here depicted schematically) in red. Ordnance Survey map detail is in grey. Note that some cropmark and earthwork features, including traces of later prehistoric fields and linears, and of medieval settlement, have been omitted for the sake of clarity. See Fig 10 for all cropmark and earthwork features in the vicinity. See Fig 20 for a larger version with complete labelling of cropmarks.

THE ARCHAEOLOGICAL SITES

Each component of the complex is briefly described below, with broader discussion reserved for later. Where appropriate, grid references and the unique identifier of the resulting entry in the NMR's AMIE database are also provided.

Palisade Enclosure 1 (Figs 12, 20)

NGR: centred circa SU 1104 6822

NMR: SU 16 NW 69

A sub-circular enclosure, defined south of the River Kennet by a pair of palisade ditches visible as cropmarks and confirmed by excavation. North of the River, a single ditch has been confirmed by evaluation excavations in 1989 (Wessex Archaeology) and 1997 (Graham Eyre-Morgan). It is not clear whether this northern arc represents a continuation of the inner or outer ditches, though at present the outer looks more likely. It is equally unclear if both palisade ditches continue north of the river. The enclosure itself is sub-circular with a maximum diameter, assuming the northern arc represents the outer palisade, of no more than 250 metres.

The inner and outer palisade ditches in Fields 1 and 2 vary between circa 20 and 35 metres apart. The photographs from 2000 suggest that immediately east of Gunsight Lane, the two ditches are slightly further apart and the outer ditch noticeably straighter than featured in Whittle (1997). The latter's plan has been used here to extend the cropmarks into the meadows north of both fields. Note that the natural hollows concentric to the palisade ditches have not been plotted on the new survey.

Pit or timber circle (Fig 13)

NGR: centred at SU 1096 6812

NMR: SU 16 NW 69

Visible for the first time in 2000, a small pit or post circle located within Field 2 between the inner and outer palisade ditches of Enclosure 1. The circle is about 9.5 metres in maximum external diameter, and features clear gaps up to 2 metres across in its circuit to the northwest and southwest. The cropmarks are not clearly defined, with a clear tendency for the individual pit cropmarks to merge on the southeastern side. It is possible that further photography on a later date might have given the impression of a continuous ditch rather than individual pits. A minimum of 21 broadly circular pits or post holes can be counted.

The size and form of the circle compare well with the inner ring of Structure 2 within Palisade Enclosure 2. Excavated in 1992, that ring was of similar size and comprised up to 22 post-pits with a clear entrance gap circa 90 cm wide on the southern side. The postpits were very closely spaced, with ridges of just 10-15 cm between them (Whittle 1997, 84-5, fig 52). Outside the southern entrance of that circle was a Rectangular setting of posts presumed to be contemporary with the circle. There are no certain structures associated with or adjacent to the "new" circle, although there

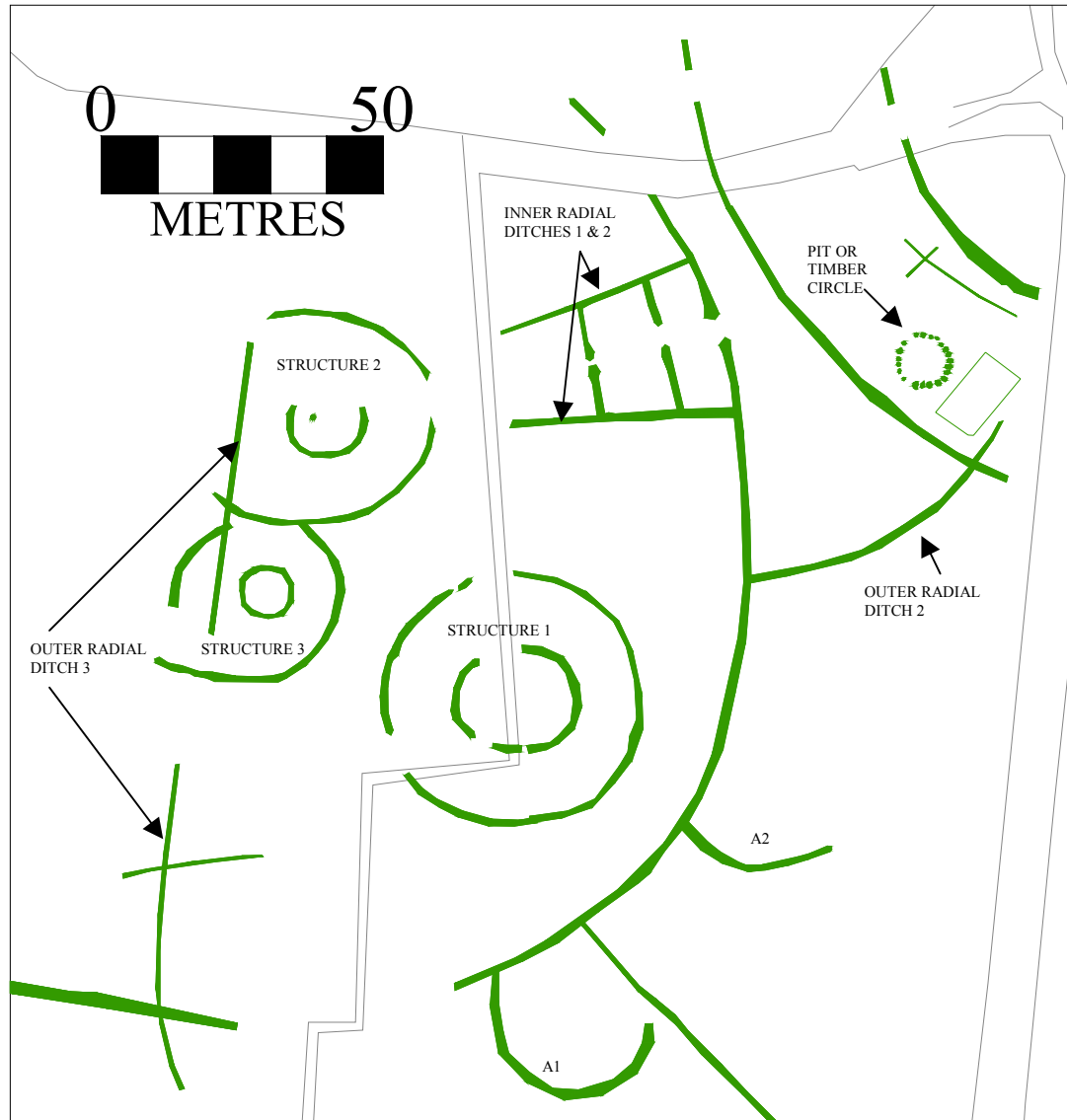


Fig 13. Detail of structures within palisaded enclosures 1 (right) and 2 (left).

is some mottling outside and west of the southwestern entrance that need not be of archaeological origin. There is, however, a slight hint from the cropmarks that one or both posts either side of each entrance or causeway might be slightly offset from the main circle.

Large sub-rectangular feature adjacent to pit/post-circle (Fig 13)

NGR: centred at SU 1097 6811

NMR: SU 16 NW 69

A large sub-rectangular feature located just 2 metres south east of the pit/post circle is orientated northeast-southwest, and measures circa 14 metres by 8 metres. It appears as a fairly solid dark cropmark and may be of natural origin – it looks markedly less regular on earlier photography. If not natural, the feature may represent the former location of a building, or perhaps some form of extraction or quarrying. It does

broadly share the same alignment as the narrow ditches noted to the northwest, though this may be entirely fortuitous. Whatever, it need not be contemporary with the Neolithic features.

Pair of narrow ditches north of pit/post circle (Fig 13)

NGR: ditches cross at SU 1096 6813

NMR: SU 16 NW 69

A narrow ditch runs roughly parallel with and south of the inner ditch of Enclosure 1, and is traceable in the 2000 photographs for a minimum of 24 metres, its continuation in either direction being obscured by proximity to the field edges. It is not possible to trace this feature with any certainty into Field 1. It is bisected by a similarly narrow ditch visible for a minimum of 7 metres. Neither feature can at present be directly associated with any components of the Late Neolithic complex.

Palisade Enclosure 2 (Figs 12, 20)

NGR: centred at circa SU 1078 6813

NMR: SU 16 NW 256

An elongated oval enclosure, aligned broadly northwest-southeast, the palisade ditch is as plotted by RCHME (1992) and extended north beyond Field 3 via the plan in Whittle (1997), which draws on the results of geophysical survey. The maximum length of the enclosure is circa 340 metres, while the degree of curvature at each end suggests it is unlikely to extend as far as the River Kennet, implying a maximum width of 180-200 metres.

Structure 1 (Fig 13)

NGR: centred at SU 1089 1680

NMR: SU 16 NW 256

A double concentric feature crossed by the boundary of Fields 2 and 3, and sampled by excavation in 1990 and 1992 (Whittle 1997, 83-4 and figs 48-50). The outer circle has a maximum external diameter of 45 metres, the inner circa 22 metres (note both these dimensions are larger than those given by Whittle, who may be using internal measurements?). Whittle (1997, 153), noting that the inner ring surrounds a right angle in the present field boundary, suggests that there may originally have been a central mound. The plot here is based on RCHME (1992), as amended by Whittle (1997) and as checked against copies of the geophysical plots and aerial photographs.

Structure 2 (Fig 13)

NGR: centred at SU 1084 6808

NMR: SU 16 NW 256

A double concentric feature circa 10 metres northwest of Structure 1, there are interpretative difficulties which were not fully resolved by excavation (Whittle 1997, 84-5, figs 51-54). Whittle noted that "*the outer ring was not fully definable, especially*

on its western side, where the geophysical evidence could suggest a double line and the air photos a more elliptical layout” (Whittle 1997, 84). Part of this problem can be explained with reference to Outer Radial Ditch 3 (below), but the precise nature of Structure 2’s outer circuit on the western side remains to be fully resolved. The outer circuit is a maximum of circa 30 metres in diameter, the inner circa 10 metres. The latter has already been referred to above, and it is worth emphasising that the cropmarks suggest a continuous ditch, whereas excavation showed a small post-defined circle. The latest transcription is based on RCHME 1992 and Whittle 1997, with amendments to the western half following Small 1999 and consequent re-examination of all relevant photographs.

Structure 3 (Fig 13)

NGR: centred at SU 1085 6811

NMR: SU 16 NW 256

Another double concentric feature, the outer circuit of Structure 3 appears to intersect with the outer circuit of Structure 2 to the south. The outer ring appears incomplete (though see below: Outer Radial Ditch 3) and elliptical in shape, measuring a maximum of 45 metres across. The inner ring appears as a semi-circle open to the north, and measuring a maximum of 15 metres in diameter. However, it is impossible to be certain that the inner ring was not a complete circle on present evidence. Excavation confirmed the presence and nature of both circuits on their southeastern sides, as well as locating a single post hole within the area defined by the inner “ring” (Whittle 1997, 85-6, fig 55). The latest transcription presented here is based on RCHME 1992 and Whittle 1997, with amendments to the western half following Small 1999 and consequent re-examination of all relevant photographs. Note that on the present transcription, as on most previous plans, a gap appears in the outer circuit on its eastern side. It is important to stress here that this is *not* because a genuine break appears in the cropmark at this point, but because the cropmark evidence is here obscured by vehicle tracks and crop damage. Neither a genuine gap nor a continuous ditch can be assumed on the basis of available photography. This area is not covered by any of the geophysical survey plots available at the time of writing.

Inner Radial Ditches 1 & 2 (Fig 13)

NGR: centred at SU 1091 6812

NMR: SU 16 NW 256

A pair of straight ditches running broadly west-south-west from the ditch of Palisade Enclosure 1, forming a funnel shape that can be traced as far west as the boundary between Field 2 and 3, but no further at present. Both ditches were plotted by RCHME (1992) on the basis of aerial photographs and by Whittle (1997), the latter supported by geophysical survey. The latter also provided indications of ditches crossing the interior of this “funnel”. Excavation was limited and unsuccessful: *“One cutting, Trench R, was laid out to investigate inner radial 1, but nothing was found in the area opened despite the most careful examination of the subsoil. The trench was presumably wrongly placed”* (Whittle 1997, 83).

The aerial photographs taken in 2000 have revealed considerable detail about this structure and, as briefly noted earlier, some of the “new” elements can now be identified on earlier geophysical plots. The two radial ditches define a “funnel” traceable for circa 40 metres between the ditch of Palisade Enclosure 2 and the boundary between Fields 2 and 3. At the broader, eastern end where it meets the Palisade Enclosure ditch, the inner radials are about 27 metres apart. At the point where they disappear from view close to the field boundary, they are circa 16 metres apart. An entrance or causeway leading into this structure is visible within the Palisade Enclosure’s ditch, roughly midway between the radials, and measuring no more than 4 metres across. This entrance appears to be flanked by terminal posts substantially larger than the rest of the palisade. Crossing the interior of the “funnel” are two roughly north-south ditches, the western example circa 19 metres long and the eastern circa 22 metres. The former also features a gap close to its midpoint defined by larger posts, while the latter also probably does, although the cropmarks are less clear at this point. The three causeways or entrances do not align precisely, although it is possible that a clear line of site could be obtained through all three at once.

Outer Radial Ditches

Outer Radial Ditch 1 (Fig 14)

NGR: SU 1090 6802 to SU 1106 6786

NMR: SU 16 NW 70, SU 16 NW 256

A more or less straight, linear palisade ditch running southeast from the ditch of Palisade Enclosure 2 for some 240 metres, apparently terminating against the outer circuit of Structure 4 (see below), though there is a possibility that its line continues beyond Structure 4. Excavation confirmed the nature and date of the palisade (Whittle 1997, 82-3). RCHME (1992) and Whittle (1997) showed Outer Radial Ditch 1 as continuous from Palisade Enclosure 2 as far as Gunsight Lane, with a hint of its continuation beyond. The most recent photographs show that it pursues an unbroken course from Enclosure 2 to Structure 4, except for a break in the line of the cropmark where it is now crossed by Gunsight Lane.

Outer Radial Ditch 2 (Fig 13)

NGR: SU 1093 6808 to SU 1098 6811

NMR: SU 16 NW 69, SU 16 NW 256

An arc of palisade ditch traversing the gap between Palisade Enclosure 1 and Palisade Enclosure 2, appearing to close off access to the gap between the outer ditches of both enclosures. RCHME (1992) and Whittle (1997) both depict the arc of ditch terminating at each Palisade Enclosure ditch. However, the 2000 aerial photographs show the ditch continuing northeast beyond the outer ditch of Enclosure 1, before disappearing from view close to the edge of the field. Consequently it is unclear if it continues as far as, or beyond, the inner palisade. There is a hint on the aerial photographs that the extension inside Enclosure 1 does not meet the arc outside Enclosure 1 perfectly, there being a slight misalignment of the two. As already noted, this extension can be seen on the earlier geophysical survey, and continuation northwards was also a possibility noted by Whittle (1997, 83) following observations

in a pipe trench on the east of Gunsight Lane, though clearly if this were the case a change in direction would be necessary.

Outer Radial Ditch 3 (Fig 14)

NGR: SU 1084 6812 – SU 1083 6800 – SU 1091 6780

NMR: SU 16 NW 215, SU 16 NW 256

The aerial photographs taken in 2000 show another more or less straight ditch running northwest from the newly-recognised Structure 5 (see below) towards the boundary of Fields 2 and 3. No cropmarks were visible in Field 3 in 2000, but earlier photographs show a linear feature emerging from the ditch of Palisade Enclosure 2 and broadly on the same alignment. It seems a plausible hypothesis that these two ditches meet, forming a continuous palisade analogous to Outer Radial Ditch 1, running in this instance some 220 metres between Enclosure 2 and Structure 5. More intriguing is the possibility that as it reaches Palisade Enclosure 2, this linear ditch curves round to the north-northeast and continues across the interior of Enclosure 2 for at least another 120 metres, where it appears to cut across the western half of Structure 2 (hence the confusion noted earlier about the form of Structure 2's western side). Beyond this point it is impossible to be certain, but it appears that the outer circuit of Structure 3 may butt up against it, the radial ditch effectively forming a straight "back wall" to the otherwise elliptical enclosure.

Within Enclosure 2, between Structure 2 and the Palisade Enclosure's ditch, the radial appears to be crossed by a length of east-west aligned ditch. A short distance north of Structure 5, a short length of ditch runs from the southwest towards the radial ditch and either terminates on it or continues across it to the northeast for a short distance – the cropmark evidence is unclear on this point.

The course of Outer Radial Ditch 3 inside Palisade Enclosure 2 is highly conjectural, based not on new photographs but on a reassessment of earlier ones, partly as a response to the 1999 survey. This conjecture is strongly supported by the cropmarks (just) visible on SU 1067/24, taken in July 1991, for example, although it is impossible to be certain if the radial ditch is continuous within Palisade Enclosure 2 because of the presence of vehicle tracks running along and cutting across its likely course. Clearly this is something that needs new photography, geophysical survey or excavation to resolve.

Outer Structures

Structure 4 (Fig 14)

NGR: SU 1108 6875

NMR: SU 16 NW 70

As depicted in RCHME (1992) and Whittle (1997), this is a sub-circular enclosure with a hint of an inner concentric circuit. The circuit as revealed by cropmarks is incomplete, but the gap on the southern side need not be genuine. Structure 4 showed very poorly on the 2000 photographs, so these issues could not be resolved. However, as the 1999 survey (Small 1999) suggests, a case can be made on present evidence for

a complete outer circuit and a partial inner circuit. The outer circuit is circa 50 metres in diameter, the possible inner circa 35 metres. Outer Radial Ditch 1 appears to terminate on the outer circuit of Structure 4. Some of the 2000 aerial photographs hint that the line of the radial ditch may continue beyond Structure 4 to the southeast, but this is highly conjectural.

Structure 5 (Fig 14)

NGR: SU 1095 6779

NMR: SU 16 NW 215

The “discovery” of this enclosure in 1999 and its visibility on both the 2000 and earlier aerial photographs has already been noted. The most recent photographs confirm Structure 5 as a double concentric enclosure, the outer circuit sub-circular and around 90 metres in maximum diameter. The inner enclosure is off-centre and equally irregular in outline, and measures a minimum of 40 metres across. This inner circuit in particular is obscured by farm buildings (which are substantially larger than those marked on the most recent Ordnance Survey map) and by the course of Gunsight Lane, which appears to run across the centre of both outer and inner circuits. There appears to be a gap in the inner circuit facing northwest, although it is not clear if this is genuine. The inner enclosure contains, in the portion of it that is visible, at least 14 substantial pit-like features, each of irregular shape, some intersecting with the inner ditch, and all arranged in no discernible order. Given the nature of the soil conditions, it is impossible to be sure, but few if any such pits appear to lie in the area between the inner and outer ditches.

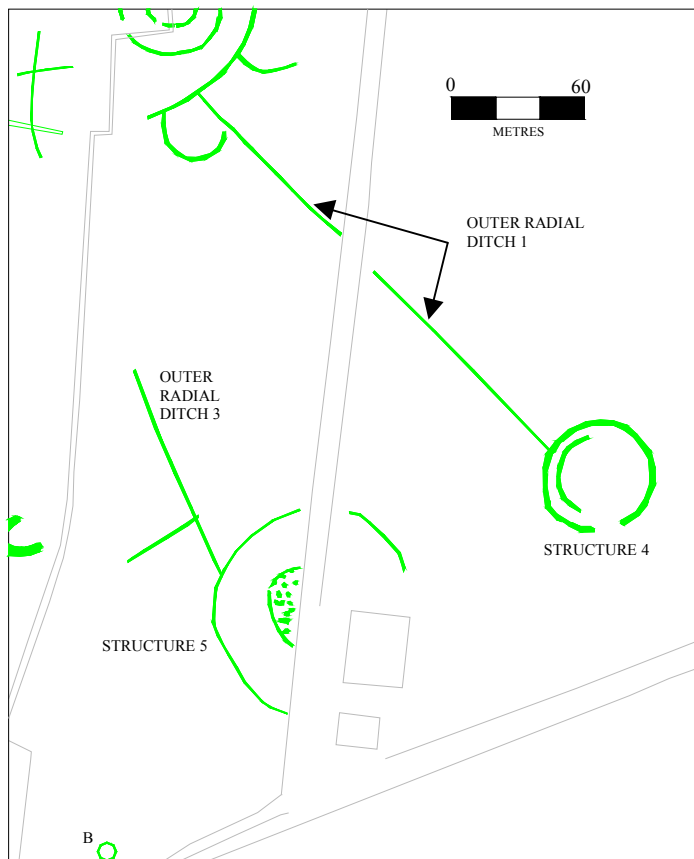


Fig 14. Detail of structures 4 and 5 and of Outer Radial Ditches 1 and 3. Note that the outline of the buildings covering part of Structure 5 is taken from the Ordnance Survey 1:2500 mapping. As recent photographs show (e.g. Fig 18) these buildings are now a little larger.

Other features

Arcs of possible ditch on southeast side of Palisade Enclosure 2 ('A1', 'A2' - Fig 14)

NGR: SU 1093 6803, SU 1090 6800

NMR: SU 16 NW 256

Two semi-circular arcs have been plotted extending from the external side of the palisade ditch of Enclosure 2. The northernmost, located between Outer Radial Ditches 1 and 2, is featured on Whittle's (1997) plan, having also been included on RCHME (1992). The other, immediately south of Outer Radial Ditch 1, was first featured on the 1999 survey (Small 1999). Neither are wholly convincing as archaeological features, but their persistence as cropmarks and the fact that both seem to end on the palisade ditch and extend no further has led to their inclusion here.

Round barrow group south of Palisade Enclosure 2 and east of West Kennet long barrow (Fig 12, 20)

NGR: see below

NMR: SU 16 NW 136

A line of five closely spaced round barrows, each surrounded by a ring ditch, the group as a whole spanning some 150 metres east to west. The line they follow is not quite straight but arcs slightly to the north. There is also clear grading in size, the largest barrow being the central one, and the smallest being located at either end of the group. Listed in RCHME (1992) as among the most significant new finds of that survey. Details of individual barrows from west to east, as amended by Small (1999), as follows:

A: SU 1069 6782 – visible as a ring ditch 15 metres in diameter, with a slight residual mound visible as a chalk spread;

B: SU 1072 6783 – visible as a ring ditch 20 metres in diameter, with a slight residual mound visible as a chalk spread;

C: SU 1075 6783 – visible as a ring ditch 30 metres in diameter, with a slight residual mound visible as a chalk spread;

D: SU 1079 6783 – visible as a ring ditch 30 metres in diameter, with a slight residual mound visible as a chalk spread;

E: SU 1982 6782 – visible as a ring ditch 19 metres in diameter, with a slight residual mound visible as a chalk spread.

In the NMR monument record created following the RCHME (1992) survey, attention was drawn to another monument record, SU 16 NW 46. This referred to a “very small low round barrow, about 12” high, grass covered and unopened...found immediately east of the West Kennet long barrow and on the slope from the barrow towards the farmhouse”. The information was provided to the then Ordnance Survey Archaeology Division by AD Passmore in letters dated 14 February 1957 and 9 January 1958 (neither extant). A field visit on 28 October 1974 noted that “no trace of a barrow survives in the ploughed land in the area cited”. Despite the vague siting information

offered by Passmore, it does seem reasonable to suggest that the feature he noted may have been one of these five barrows.

Small ring ditch southwest of Structure 5 ('B' - Fig 15)

NGR: SU 1086 6767

NMR: SU 16 NW 214

A single ring ditch of small proportions – diameter just 9 metres – located circa 95 metres southwest of Structure 5. Recorded during the 1999 NMP survey (Small 1999), from which present transcription is taken.

Double or triple ring ditch circa 275 metres southwest of the small ring ditch (above) ('C' - Figs 12, 20)

NGR: SU 1069 6744

NMR: SU 16 NW 210

Site first noted and transcribed during the 1999 survey, from which the following information is taken: “Cropmark remains of a possible...round barrow [with] two concentric ditches with diameters of 25m and 15m. The northern half of the inner circuit is not visible and there is the trace of a possible third outer ditch on the southern side...”. Recent photography has added no new detail.

Double concentric feature circa 230 metres south-southeast of Structure 5 and associated linear features ('D' - Fig 15)

NGR: SU 1107 6750

NMR: SU 16 NW 137

The double concentric enclosure was first noted during the 1992 survey, and no additional detail has been noted since. Both circuits appear sub-circular in shape, and are bisected by the modern east-west track and field boundary. The outer circuit is circa 48 metres in maximum diameter, the inner approximately 22 metres across. Only a small part of the outer ditch and none of the inner has been recorded so far south of the track. An old north-south field boundary can be seen very faintly as a cropmark on some photographs, and appears to be aligned on the eastern extremity of the inner circuit, suggesting that it may have been respecting the former presence of a mound.

Traces of linear features have been visible as cropmarks in the area immediately north of this barrow/enclosure on photographs since 1989, and were first plotted on the 1999 survey. They comprise two diverging lines each following a broad northwest-southeast axis. They may represent nothing more than relatively recent field boundaries or tracks, and it is worth pointing out that the more northeasterly of the two lies on a line between the farm buildings overlying Structure 5 and the corner of the field to the southeast.

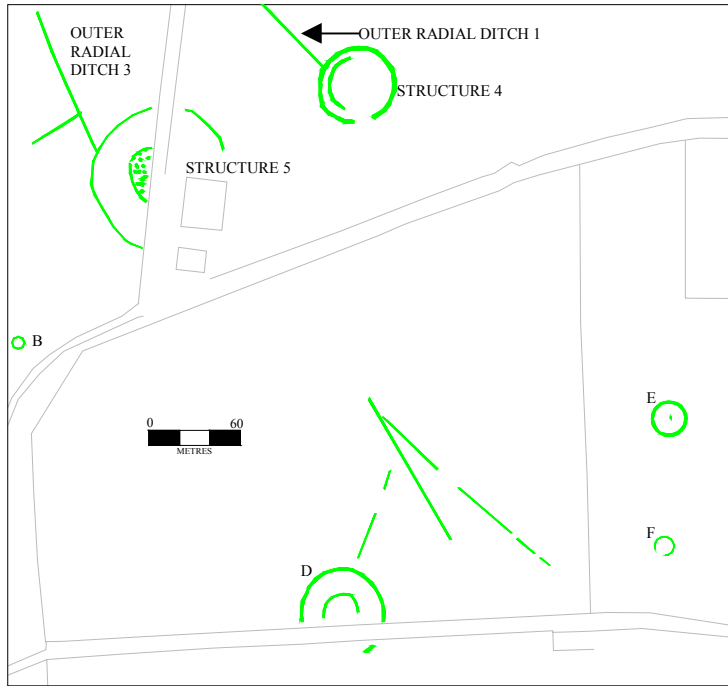


Fig 15. Detail of fields to south of Structures 4 and 5

Running northeast from the barrow/enclosure for a minimum distance of circa 60 metres is another linear cropmark. At present it is impossible to tell if it stops at or short of the outer ditch of the barrow/enclosure or, indeed, whether or not it crosses the linear features to the northeast.

Ring ditch 260 metres southeast of Structure 4 ('E' - Fig 15)

NGR: SU 1129 6763
NMR: SU 16 NW 23

A ring ditch circa 18 metres in diameter first recorded from a JK St Joseph photograph taken July 2nd 1959 (CUCAP: ZI 66). RCHME photographs taken August 4th 1995 show what appears to be a roughly central pit or grave (Small 1999). Not visible on any subsequent photography.

Ring ditch 80 metres south of the above ('F' - Fig 15)

NGR: SU 1129 6754
NMR: SU 16 NW 257

A ring ditch showing as an incomplete circular cropmark, open to the southwest (though this need not be a genuine break in the circuit) and measuring circa 15 metres in diameter. Recorded for the first time on RCHME photographs taken August 4th 1995 and first transcribed as part of Small (1999). Not visible on any subsequent photography.

DISCUSSION

The new features revealed by continued aerial reconnaissance and re-evaluation of earlier photographs have offered more detail and raised more questions about the functions and phasing of an already complex site, though naturally the best hope of answering many of these questions lies with further excavation.

Much of the interior of Palisade Enclosure 2 remains seemingly empty. As already noted, much of the extant photography focuses for a variety of reasons on the northern parts of Fields 1 and 2. Generally, when cropmarks have been visible in these fields, they have not been showing in Field 3. Coverage of the majority of Palisade Enclosure 2 is therefore restricted to a small collection of photographs taken on 29 July 1991 and 22 July 1992, the latter being the only photographed occasion when all three fields have shown clear cropmarks on the same day. Part of the enclosure's interior is also visible on the early Crawford Collection AP referred to earlier. An absence of cropmarks of probable archaeological origin is, of course, not quite the same as saying that the enclosure is demonstrably devoid of major structures west of Outer Radial Ditch 3. Some faint linear and curvilinear lines can be made out among the larger, darker blotches showing as cropmarks (see Small 1999; Fig 9), but there is nothing that can as yet be plotted with any confidence. Clearly this area is the part of the complex most in need of further aerial reconnaissance. However, this apparent emptiness is not without parallel. For instance, many of the causewayed enclosures of the Early Neolithic lack evidence for internal structures and activity when viewed from the air (see the numerous transcriptions in Oswald et al. 2001), the ephemeral traces of short-term events being far less likely to produce cropmarks than the more substantial enclosing ditches. Gibson (2002, 13) has also commented on the failure of substantial areas within other Late Neolithic palisaded complexes, analogous to and broadly contemporary with West Kennet, to produce cropmarks

The interior of Palisade Enclosure 1 is problematic for different reasons. Much of it lies outside arable land and any prehistoric features within are therefore beyond the reach of aerial photography. We are presumably reliant on further applications for planning consent, such as those which have already led to confirmation of the presence of a palisade ditch north of the Kennet and on both sides of Gunsight Lane (Wessex Archaeology 1989; Eyre-Morgan 1997) to discover what lies to the north of Fields 1 and 2. Of course, the photographs taken in 2000 demonstrated what may be revealed within either enclosure given the right conditions and the presence of an airborne camera.

For both enclosures, geophysical survey offers another means of looking for any archaeological structures and features which may be eluding aerial reconnaissance. As Andrew David (in AAHRG 2001, 75) noted, "*Magnetometer surveys by Cardiff and Cambridge Universities were successfully able to supplement aerial photographic evidence at West Kennet and identify parts of the palisaded enclosures and their associated features. The survey coverage was limited, however, and there can be no doubt that more extensive coverage at a higher resolution and of a higher sensitivity could provide significant additional information*".

Pit or timber circle (Fig 16)

Perhaps the most eye-catching feature of the recent photography is the circle of pits or post-holes lying between the palisade ditches of Enclosure 1. This is not an area that has previously produced cropmarks of any real clarity, and nothing even vaguely resembling this feature can be seen on earlier photography. Quite why this circle and the other cropmarks in the immediate area were showing so clearly is uncertain:

“Given the amount of rainfall in the previous months, the position of the enclosures so close to the river Kennet and the lack of other cropmarks in the vicinity, it was a surprise to see any cropmarks in the area let alone significant new features” (D Grady, in Barber et al. 2003).



Fig 16. Pit or timber circle, “Funnel” and other features at the northern end of Field 2, photographed from the north east. Compare with Fig 10, which was taken circa 6 weeks earlier, and Fig 5, taken 13 years earlier. (NMR 18725/14 15-JUL-2000)

Free-standing timber circles in Great Britain and Ireland have been discussed at length by Alex Gibson (1994; 1998). In terms of diameter and number of posts, by itself this new example at West Kennet offers little out of the ordinary, although it lies towards the lower end of the size range. Slightly more unusual is the likely presence of two entrances on the western side, though an east-west line through the circle suggests some symmetry, with a circular eastern half and a slightly flatter western arc between the entrances. Symmetry around an east-west axis would also fit with the possibility of offset posts (or some other form of elaboration) at the entrances – at present, the

slight evidence of this for both entrances is clearer on the eastern side than the western.

According to the data gathered by Gibson (1994; 1998), there is little overall consistency among timber circles in terms of number, direction and elaboration of entrances – hardly surprising given their chronological and geographical range – and presumably many such structural features reflect the particular local circumstances and requirements that prompted construction in the first place. It is worth recalling the broad resemblance with the inner ring of Structure 2, circa 110 metres west-southwest.

Outer Radial Ditch 2 (Fig 16)

The extension of this arc of ditch beyond the line of Enclosure 1's outer ditch is of interest for a number of reasons. Previously seen as linking the two palisade enclosures, it is presumed to represent another substantial palisade (Whittle 1997, 152) although it is as yet untested by excavation. The possibility that it continues beyond the outer ditch of Enclosure 1 has clear implications for the relative phasing not just of the two palisade enclosures but also for the relationship between Enclosure 1's outer and inner palisades. Thus the outer palisade might be later, its construction cutting through the already extant Outer Radial Ditch 2 in the process. Alternatively, if the apparent kink in the line of the radial is genuine, perhaps it originally butted against the outer palisade and was subsequently extended, perhaps to the inner palisade. It is unfortunate that the line of the radial can be traced no further - any such junction with the inner palisade is likely to be beneath or very close to the present line of Gunsight Lane and is thus beyond the reach of aerial photography.

In this context, it is worth considering Whittle's discussion of possible entrances. Trenches F and J, cut across Enclosure 1's inner palisade on either side of Gunsight Lane, contained an "*extraordinary abundance of stones*" which he suggested "*could mark lengths of posts of unusual height. In the case of F and J, it might mark the proximity of an entrance, since the ditch in F narrows to the west and there is a change in alignment of the inner ditch corresponding to the position of Gunsight Lane*" (Whittle 1997, 152). As Whittle noted with reference to the palisade within the henge at Mount Pleasant, Dorchester, Dorset, such an entrance need not be particularly wide. If Whittle is correct, then any such entrance would lie very close to but presumably just east of any continuation of the radial ditch, perhaps beneath the line of Gunsight Lane.

The "Funnel" – Inner Radial Ditches 1 & 2 (Fig 16)

An increasingly common theme being explored among the landscapes of the later Neolithic surrounds the presence of formalised approaches to or pathways between monuments of the period. At Avebury, as is well-known, such prescribed routes occur on a considerable scale. The sarsen-lined West Kennet Avenue, for example, is presumed to pass by the palisade complex a short distance to the northeast en route between the Sanctuary and Avebury itself, although the precise line taken is currently a matter for speculation. The smaller "funnel" formed by Inner Radial Ditches 1 and 2 echoes in miniature such constructions, although a better parallel might be the post-screens and the post-defined approach leading to the northern timber circle within the

Durrington Walls henge (Wainwright and Longworth 1971; Barrett 1994, fig 1.10), or the posthole structures associated with Stonehenge's southern entrance (Cleal et al 1995, 164-5, 483).

In the case of Palisade Enclosure 2, it appears that passage through the entrance in the enclosure's outer ditch marked the beginning of a journey towards Structure 3, a double concentric feature comprising an outer ring and inner half-ring of timbers with a single substantial upright post within the central area. The straight-line distance between this post and the gap in Enclosure 2's palisade is circa 75 metres. As noted earlier, Whittle's 1997 plan depicts a gap in the outer circuit of Structure 3 on its eastern side, aligning broadly but not exactly with the slightly staggered openings through the cross-ditches, though at present the cropmark evidence is not clear enough to confirm the existence of this gap or entrance into Structure 3.

Outer Radial Ditch 3 (Figs 17-19)

This feature has already been described at some length, and it is worth re-iterating here that interpretation of the cropmarks as a single unbroken linear feature at least 340 metres long remains conjecture. The 120 metre stretch within Palisade Enclosure 2 seems likely to be continuous, the cropmark interrupted only by vehicle tracks and crop damage. On the plan presented here, the temptation to "join the dots" has been resisted. How much further the ditch continues north, if at all, is unclear. To the south, the ditch can be followed across the line of the Palisade Enclosure ditch, turning to the south-east as it does, and continuing for a short distance on approximately the same line as the cropmark ditch running northwest from Structure 5. The gap between the two at present is circa 105 metres, crossing diagonally the boundary between Fields 2 and 3. The continuous nature of Outer Radial Ditch 1 might be seen as offering further support.

Assuming a continuous line, Outer Radial Ditch 3 has clear implications for the phasing of the site. It cuts across the line of Enclosure 2's palisade ditch, and appears to cut across Structure 2, yet also seems to form an integral part of Structure 3, which itself has uncertain structural relationships with both Structure 2 and the "funnel" formed by Inner Radial Ditches 1 and 2. At its other end it appears to terminate on the outer ditch of Structure 5. There are, then, a number of relationships between individual features that require further attention. Intriguingly, the line of Outer Radial Ditch 3 also marks the westernmost extent of visible structures within Enclosure 2 – to the west, the enclosure is apparently devoid of substantial structures (though see comments above).

Structures 4 & 5 (Figs 17-19)

Both of these circular structures are clearly in need of further investigation. The nature of their cropmark circuits offers a strong possibility that both feature palisades. The fact that Outer Radial Ditch 3 appears to terminate on Structure 5's outer ditch but cut across Enclosure 2's palisade suggests that the former might pre-date the latter. Some very oblique photographs offer hints that a linear feature continues the line of Outer Radial Ditch 1 southeast beyond Structure 4, though nothing at all can be seen in the field to the south that might correspond with such a feature.



Fig 17. Structure 5, approached from the northwest by Outer Radial Ditch 3. On the left of the photograph, Outer Radial Ditch 1 can also be seen approaching Structure 4, though the latter is only faintly visible. The other linear features appearing as cropmarks, and not plotted on figs. 12 and 20, are recent field boundaries. (NMR 18747/13 15-JUL-2000)

At present, it is difficult to offer an interpretation for the pits within the inner enclosure of Structure 5. Pits are hardly an uncommon discovery on excavated enclosures of Neolithic date, but seldom are they substantial enough to show as cropmarks. The clustering of these features within the inner ditch circuit would appear to rule out a natural origin. The possibility that they represent graves of a broadly contemporary or later date might also be considered (and of course early medieval cemeteries are a far from unusual occurrence on prehistoric sites) but again, the way they cluster within the inner enclosure, plus their irregular shape and spatial arrangement suggests this is among the less likely interpretations.

Features south of Fields 1-3 (Figs 18, 19)

Discussion of the West Kennet palisade complex has tended to focus on the possible relationships, chronological and cultural, between the palisaded enclosures and the well-known, broadly contemporary monuments of Silbury Hill, Avebury, the West Kennet Avenue and The Sanctuary. The West Kennet long barrow should also be mentioned as well – in terms of its date of construction it is considerably earlier than the palisades but as the pottery assemblage from the tomb indicates, in all probability the enclosures were being constructed before the barrow was finally blocked (Whittle 1997, 166).



Fig 18. Features south of Structures 4 and 5 faintly visible among the “crop circles”, which have an unfortunate tendency to obscure cropmarks in this field. (NMR 18826/19 15-JUL-2000).

The purpose of mapping features further south than Structures 4 and 5 is two-fold. First of all, to draw attention to some linear features which might be considered analogous to the radial ditches associated with those structures, as well as further concentric circular ditched features; and secondly to emphasize that it may be useful to look in other directions as well when considering the broader significance of the palisade complex. Whatever points had been chosen to end the latest transcription to the north, south, east and west would have been quite arbitrary in terms of the spread of known sites of Neolithic or Bronze Age date (see Small 1999; figs 9, 10) for the wider distribution of cropmark and earthwork sites). Thus both Outer Radial Ditch 1 and 3 might be seen as framing a southeast-northwest approach to Enclosure 2 but they also reflect the general orientation of a dispersed linear spread of presumed funerary and ceremonial monuments including the East Kennet long barrow, which shares their broad orientation. Also of note in the vicinity of that long barrow are a ring ditch immediately northwest which appears to have covered a rectangular ditched feature; and a ring ditch to the east which features a cropmark ditch trailing away from it for at least 70 metres in a broad west-northwesterly direction (fig 9).

As for the linear features south of Field 1, some doubts have already been noted above, and it is worth bearing in mind Gibson’s (2002, 15) warning of the “*danger...now that archaeological attention is being paid to [palisaded] sites, aerial*

photographs may be over-interpreted so that lengths of field ditch or later prehistoric pit alignments may all be interpreted as Neolithic by over-enthusiastic aerial archaeologists". However, the double concentric enclosure due south of Structure 4, with its possible radial ditch heading northeast, is at least worthy of consideration as being related to the main complex in some way, mainly because of the structural similarities but it is also its alignment with the (extended) line of Outer Radial Ditch 3.

Phasing

As already noted, establishing a sequence of construction at West Kennet is far from straightforward. The complex was clearly multi-phase, something further emphasized by the additional features presented here, but there are few clear indications of the order of events. The excavated pottery assemblage almost entirely comprises Grooved Ware and is fairly homogeneous in nature, while the radiocarbon dates obtained so far from various parts of the complex overlap to a considerable degree. Moreover, the spatial relationships between different components suggest at least a broad overlap, while the principal structural features – the main palisade circuits, Outer Radial Ditch 1 and the outer circuits of Structures 1 to 3 – were created using broadly similar techniques of construction giving, according to Whittle (1997, 152) an impression of uniformity that was quite “striking”.

Discussion of the internal structure, function and phasing of the known complex has been rather limited to date, the most pertinent being Whittle (1997), Hamilton and Whittle (1999) and Pollard & Reynolds (2001). Summarising the difficulties involved, Whittle (1997, 156) noted that *“the best guess may be that the enclosures were constructed and used in succession, perhaps overlapping, within a cycle of a few generations”*. Pollard and Reynolds (2002, 115) suggested that the available radiocarbon dates might allow for Enclosure 1 pre-dating Enclosure 2 by a small margin, though this is highly debatable, the available dates being problematic in a number of respects, especially for Enclosure 2 (Gibson 2002, 6). Pollard and Reynolds also suggest that Outer Radial Ditch 1 might pre-date enclosure 2, though again it is arguable whether the available radiocarbon dates offer a satisfactory basis for such speculation. They also note the possibility that *“the outer lines of palisade around structures 2 and 3 look less like contemporary elements and more like secondary features that are subsequently enclosing”* the inner settings (Pollard and Reynolds 2002, 115).

Thus all sorts of games can be played with the current plan and excavated evidence in order to try and tease out a broad scheme of development, and some of the suggestions made are eminently plausible, but ultimately what is required is carefully targeted excavation and radiocarbon dates of far greater precision than have been obtained so far. Indeed, establishing a reliable chronology and phasing of the complex was among the key research aims noted by Cleal (in AAHRG 2001, 63-4) even before the results of recent photography became known.

It would also be of interest to discover how much of the complex (and indeed of sites in the wider environs) was palisaded. As already noted, much of the complex as trenched by Whittle and others has proved to comprise near-continuous timber palisades of substantial size, with the exception of the inner rings of Structures 1-3,

which are of different character to the palisaded features. In addition, several key components (such as the “funnel” structure and Outer Radial Ditch 2) remain untested by excavation. The ditches of Structure 5 resemble those of features to the north, suggesting the possibility of further palisades, as does the cropmark of Outer Radial Ditch 3. On cropmark evidence, Structure 4 is less clear, as are the features plotted further south.

Palisade Enclosures in the British Neolithic

Palisade-defined enclosures are an increasingly widely recognised phenomenon of the later Neolithic in particular in the British Isles (see e.g. discussions in Whittle 1997, 158-63; Thomas 2001; Gibson 2002). Many such sites are characterised by a complexity and structural elaboration comparable with that seen at West Kennet. Known sites are relatively few when compared to the numbers of definite or possible causewayed enclosures and henges, but are geographically widespread, the best known examples being at Forteviot and Leadketty, both in Perthshire; Meldon Bridge in Peeblesshire; Dunragit, Galloway; Hindwell and Walton, both Powys; plus a handful of others (see Gibson 2002 for a gazetteer with bibliography). Many of these sites were already known to and discussed by Whittle (1997, 158-163). Arguably the main points in common are the presence of substantial walls or palisades of timber and a broad later Neolithic date, although across the group as a whole are other features reminiscent of West Kennet, including post-defined entrances and avenues; substantial areas lacking cropmark evidence for structures; and an association with smaller, often circular structures, representing either the incorporation of already existing monuments or subsequent elaboration of the site. At Dunragit, for example, one of the entrances is defined by a monumental avenue of posts which aligns directly on the sizeable Droughduil mound, located circa 400 metres to the south and, judging by interim statements on the 2002 excavations, broadly contemporary with activity at the Dunragit complex (<http://orgs.man.ac.uk/research/dunragit>). Another common feature is the likelihood that many if not all of these sites were multi-phase – in Thomas’ (2001, 141) words, they “*were reused and reworked over long periods*”. Moreover, they serve to remind that Neolithic enclosure can take many forms.

The recognition that Neolithic enclosure is not solely about causewayed enclosures, cursuses and henges is a relatively recent development, and consequently Darvill & Thomas’ (2001, 12) comment that “The essentially northern and western distribution of these palisaded enclosures is especially notable, with the examples at Newgrange and Knowth, Co. Meath, Ireland, showing the need to look widely along the Atlantic coastlands for further discoveries” may need amendment in the light of future aerial reconnaissance or even re-analysis of known cropmark sites. Those with spaced posts are quite distinctive as cropmarks, but sites such as West Kennet, which show as continuous, if relatively narrow, ditches and which do not conform morphologically to longstanding monument classes may easily have been overlooked as potential Neolithic sites.



Fig 19. The full extent of the complex as visible in 2000, viewed from the north. (NMR 18826/14 15-JUL-2000)

ACKNOWLEDGEMENTS

Fig 2 was produced by Deborah Cunliffe. The original ink drawings of the 1990 and 1992 RCHME surveys, reproduced here as Figs 7 and 8 respectively, were the work of Simon Crutchley. Fig 9 is extracted from the 1999 NMP survey undertaken by Fiona Small. Fig 6, the site plan from Whittle (1997) is reproduced courtesy of Alasdair Whittle (Cardiff University), while the geophysical plot (Fig 11) was provided by Mike Hamilton (University of Wales College, Newport). Aerial photographs from 2000 were taken by Damian Grady.

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APPENDIX 1: WEST KENNET FARM: LIST OF APS CONSULTED

NB: all APs consulted are obliques, and all are held by the NMR, Swindon.

NGR Index	Accession No.	Frame(s)	Date Flown
SU 1067/23	NMR 4703	06	29-JUL-1991
SU 1067/24	NMR 4702	63	29-JUL-1991
SU 1067/32-33	NMR 4763	73-4	22-JUL-1992
SU 1067/82	NMR 18706	02	30-MAY-2000
SU 1067/83-5	NMR 18826	12, 13, 18	15-JUL-2000
SU 1067/86-7	NMR 18725	16, 17	15-JUL-2000
SU 1067/88	NMR 18747	13	15-JUL-2000
SU 1068/9*			
SU 1068/55*	CCC 5213/EJ4		
SU 1068/74	NMR 4526	51	11-JUL-1989
SU 1068/89	NMR4593	19	29-MAR-1990
SU 1068/111-2	NMR 4702	61-2	29-JUL-1991
SU 1068/119	NMR 4767	13	22-JUL-1992
SU 1068/199-203	NMR 18706	01, 07-10	30-MAY-2000
SU 1068/238-242	NMR 18725	13-15, 18, 19	15-JUL-2000
SU 1068/245	NMR 18747	14	15-JUL-2000
SU 1167/10	NMR 4435	27	11-JUL-1989
SU 1167/13-14	NMR 4526	53-4	11-JUL-1989
SU 1167/18	NMR 4651	46	16-JUL-1990
SU 1167/23	NMR 4711	17	29-JUL-1991
SU 1167/24-5	NMR 4703	09-10	29-JUL-1991
SU 1167/27-8	NMR 4703	14-15	29-JUL-1991
SU 1167/29	NMR 15371	26	04-AUG-1995
SU 1167/30-1	NMR 15343	10-11	04-AUG-1995
SU 1167/32-5	NMR 18706	03-06	30-MAY-2000
SU 1167/36-7	NMR 18826	14-15	15-JUL-2000
SU 1167/38-41	NMR 18826	19-22	15-JUL-2000
SU 1167/42-50	NMR 18725	10-12, 20-21, 23-26	15-JUL-2000
SU 1167/51	NMR 18747	12	15-JUL-2000
SU 1168/64-6	NMR 4503	24-6	29-MAR-1990
SU 1168/67	NMR 4651	45	16-JUL-1990
SU 1168/105-6	NMR 18826	16-17	15-JUL-2000
SU 1168/107	NMR 18725	22	15-JUL-2000

* SU 1068/9 is the undated Crawford Collection AP, dating to pre-1938 (see above). SU 1068/55 is an enlargement of that photograph.

APPENDIX 2: AERIAL FILE INDEX

Aerial File	Photograph	Date Flown	Maximum error (in metres)
SU 1067-33	NMR 4763/74	22-JUL-1992	± 0.9
SU 1067-88	NMR 18747/13	15-JUL-2000	± 1.0
SU 1068-239	NMR 18725/14	15-JUL-2000	± 0.9
SU 1167-36	NMR 18826/14	15-JUL-2000	± 0.9
SU 1167-40	NMR 18826/21	15-JUL-2000	± 1.0
SU 1168-105	NMR 18826/16	15-JUL-2000	± 1.0

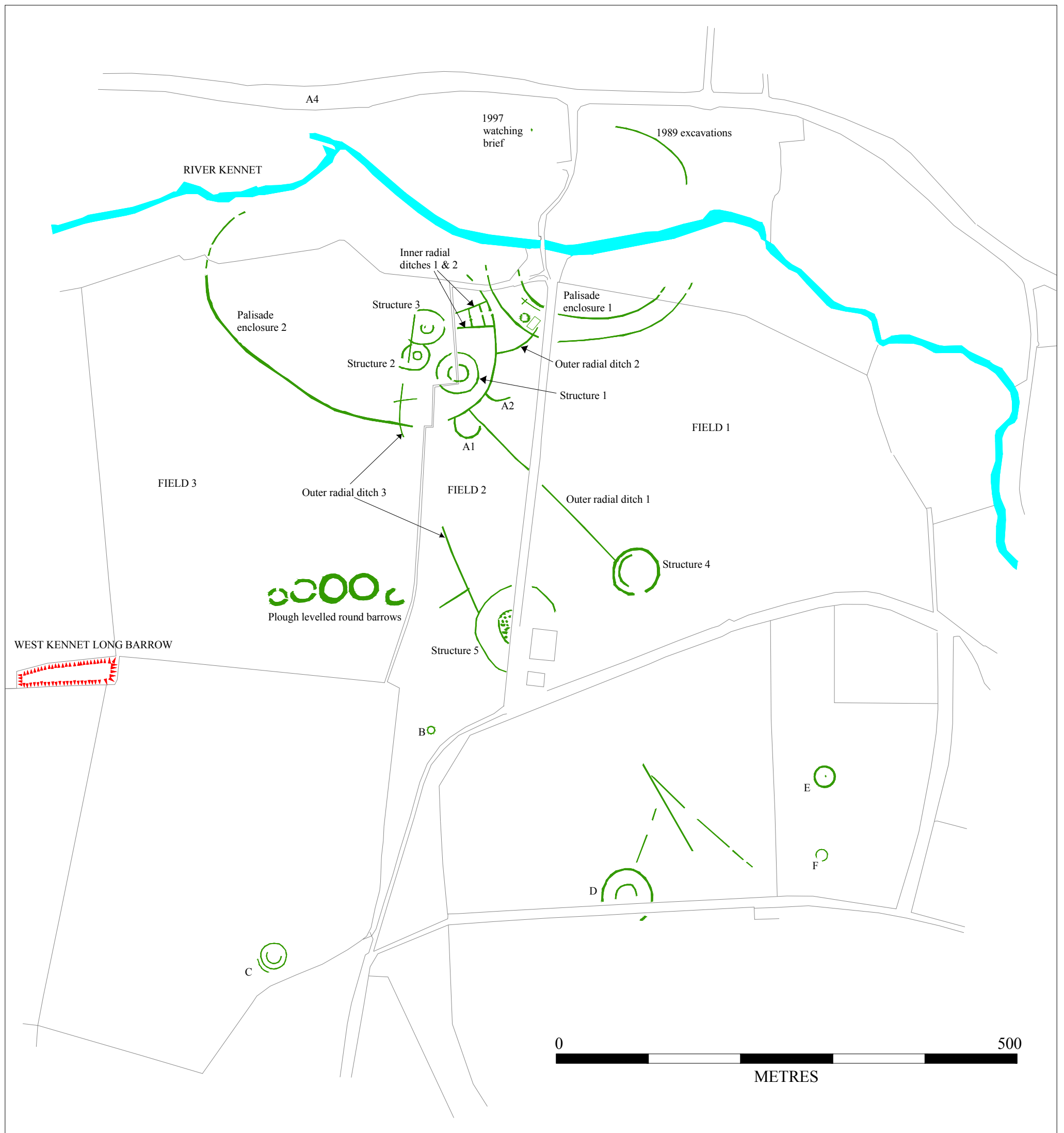


Fig 20. Plan of all features plotted in November 2002. Cropmarks are depicted in green, the earthwork West Kennet Long Barrow (here shown schematically) in red. Ordnance Survey map detail is grey. Note that as in Fig 12, earthworks and cropmarks of probable post-Early Bronze Age date have been omitted for the sake of clarity. See Fig 9 for an extract from the 1999 NMP plan, showing all earthwork and cropmark sites in the wider vicinity.