ISSN 1478-7008

ENGLISH HERITAGE

Ravenglass Roman fort, Cumbria

Keith Blood

SURVEY REPORT

Archaeological Investigation Report Series AI/18/1998

RAVENGLASS ROMAN FORT
CUMBRIA

Archaeological investigation Report Series AI/18/1998

NMR No: SD 09 NE 1
NGR: SD 0880 9580
RSM NoS: 13569, 13570

Surveyed March 1998
Surveyed by K. Blood, T. Pearson
and M. Jecock
Report by K. Blood
Drawings by K. Blood, T. Pearson

English Heritage 1999
ISSN 1478-7008

Please note that this report was originally produced by the Royal Commission on the Historical Monuments of England, which merged with English Heritage on 1 April 1999

York Office: 37 Tanner Row, York YO1 6WP
Tel: 01904 601901 ***Fax:*** 01904 601998
National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon. SN2 2GZ
Tel: 01793 414700 ***Fax:*** 01793 414707 ***World Wide Web:*** http//www.english-heritage.org.uk

CONTENTS

LIST OF FIGURES

INTRODUCTION AND BACKGROUND TO SURVEY

At the request of the Lake District National Park and English Heritage, the RCHME have undertaken a survey of the remains of the Roman fort at Ravenglass. The survey was partially funded by English Heritage (Historic Properties North). The purpose of this survey is to provide a large-scale plan and a detailed textual description of the remains for management purposes and also to increase the currency of the National Monuments Record for this area. The monument described below (NMR No. SD 09 NE 1; RSM Nos. 13569 and 13570) is a Scheduled Ancient Monument and was surveyed at 1:1000 scale in March/April 1998 (Figure 2).

The fort itself, situated at SD 0880 9580, is reduced to an earthwork platform overgrown with trees and scrub and has been severely mutilated by a railway cutting and by coastal erosion at its western end. By contrast much of the associated bath-house, known as Walls Castle, survives as standing masonry. This has Guardianship status and is open to the public.

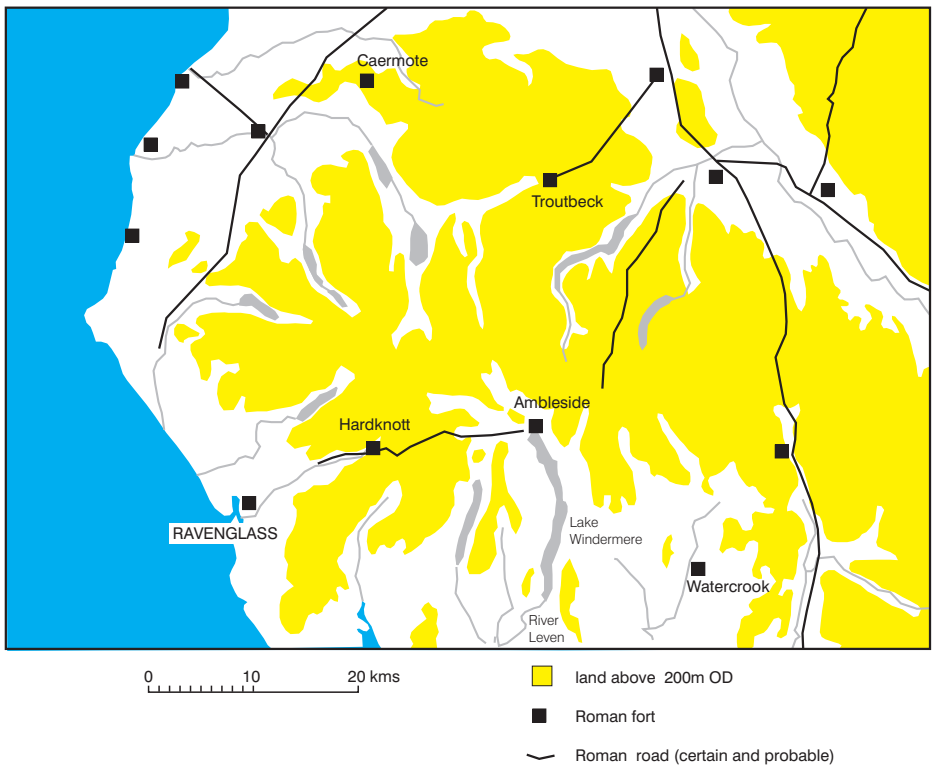

Figure 1.
Location diagram.

TOPOGRAPHY, GEOLOGY AND LAND-USE

The fort is situated at the edge of an eroding west-facing cliff, at about 10-15m above mean high water, overlooking the broad, shallow estuary of the River Esk at the western extremity of a spur which ascends north-eastwards to Muncaster Fell. This spur defines the watershed between the valleys of the River Esk to the south-east and the smaller River Mite to the north-west. About 1.5 km to the south of the fort, the Esk turns northwards to flow by the fort to join the Mite beside the coastal village of Ravenglass some 500m to the north-west. The estuary, protected by sand-bars to the seaward, remains in use as a natural harbour for small craft to the present day; at the fort it is about 200m wide at high tide but at low tide it is reduced to a shallow un-navigable channel some 30m wide.

To the north and south of the fort the gently undulating coastal plain is traversed by a series of stream gullies draining into the estuary to the west; the fort is situated between two of these which affords a measure of natural protection. The northern gully has been in part incorporated in the north ditch of the fort. Eastwards the ground rises gently through pasture fields to the Lakeland Hills.

As well as the destruction of the west defences by erosion there has been further severe mutilation of the fort. The railway from Carlisle to Barrow-in-Furness has been driven in a north-south direction through the west half of the fort in a cutting. All that survives of the fort platform between the railway cutting and the sea cliff is an elongated ridge, now not more than 17m wide overgrown with bramble and gorse. A rescue excavation of the summit area was undertaken here in 1976-8 (Potter 1979, 1-138). This has provided the most complete description of the geology; Potter describes `bedded deposits of red clay, silt and gravel laid by marine action.' The greater part of the fort lies to the east of the railway within a belt of trees named Walls Plantation which extends for about 700m alongside a metalled carriage-drive to a large Victorian mansion about 40m to the south-east of the fort; this house is named Walls and a stone tablet on the chimney-breast bears the date 1885. This plantation was originally ornamental, or at least partly ornamental, designed to accompany the 19th-century dwelling but it is at present unmanaged (see below).

HISTORY OF RESEARCH

The archaeological history of the fort has been synthesised fully by Collingwood (1928, 353-66), Birley (1958, 14-30) and Potter (1979, 1-138). This is summarised below.

According to Birley (1958, 14-5), the earliest known reference to the fort is by Camden in the edition of 1600 (690) where it is stated there was `...a station conveniently girt by two rivers where Roman inscriptions...exist.'. Birley also notes that a contributor in the Roman section in Hutchinson (1794, cxlviii) mentioned `...an entrenchment certainly Roman, as coins and broken altars have been found in it, and it was doubtless one of the smaller stations constructed for the defence of the coast in that remote corner, [this is presumably a reference to the other coastal forts eg Maryport, Beckfoot, Moresby, and not to the milefortlets of the western extension of the Hadrianic frontier].

It is significant that the fort is not published on the Ordnance Survey 1st edition map (Ordnance Survey 1861) and it was not until 1876 when the `...ancient camp from which Muncaster takes its name...' was located by William Jackson, acting on information from a Mr Lees (Jackson 1878, 17). It could `...plainly be discerned in a field in front of the farmhouse called Walls, not many yards distant from the ancient ruin of Walls Castle.'. Jackson noted the distinct and continuous traces of a `...wall and fosse...' around all but the west, seaward side, indicating dimensions of 140 yards [128.2m] long [meaning in this case north to south] by not more than 120 yards [109.9m] east to west; apart from `...round towers at the two eastern angles...' there were `...no other indications...on the site.' (by which Jackson probably inferred no upstanding structures). Clearly erosion of the sea cliff above the estuary of the Esk on the west side of the fort was already underway in 1876. Jackson also provided an account of some discoveries made [not by him] in the summer of 1850 when the railway cutting through the fort was under construction. Some 150 yards to the south-west of Walls Castle three cone-shaped pits, about 20 yards apart, were found; they measured approximately 15 feet deep, 10-12 feet in diameter at the bottom, which was flagged, narrowing to about 16 inches at the top, which was covered by a stone slab. The sides were formed of horizontal timbers with the spaces between filled with stones. The pits were filled with dark peaty material which on excavation were found to contain many bones including human remains all too decayed for preservation; also found were two `...oak clubs...' and some leatherwork, but all of this was seen not during, but after the treasure-seeking workmen had finished digging. Jackson mentioned a gold coin of the Emporor Vespasian also found in the railway cutting which suggested to him an Agricolan foundation for the fort.

According to Ferguson (1888, 296-7) the first archaeological excavation within the fort took place in 1885-6 under the auspices of Lord Muncaster. In the autumn of 1885, a short length of the western wall `...showing a bold set-off...' was uncovered; elsewhere the walls had been removed down to the foundations and neither the angles nor the gateways could be found. [Jackson noted about 10 years earlier (1878, 17) that the west defences had been destroyed by erosion, so the reference by Ferguson to the `western wall' being excavated is a misidentification of the orientation of the fort.] After the 1885 season an accurate plan was made. [This has not been located.] The

following year, several trenches were cut in the interior of the fort and a `...trail of walls...' was found but in most cases the very foundations had been destroyed. On the advice of Ferguson and Dr Collingwood Bruce who were present at the time of the excavation, it was decided that the site had been so comprehensively plundered for stone that further excavation would be fruitless and the work was abandoned. No further excavations were undertaken of the fort until the rescue dig by Potter in 1976-8 discussed below (Potter 1979, 1-138).

Numerous finds have been made over the years, mainly in the eroding sea cliff on the west side of the fort. In particular, Miss M. C. Fair kept a watching brief on the fort for a period from the 1920s until after the war; her findings were summarised in 1948 (Fair 1948, 218-21). Collingwood (1928, 353-66), Birley (1958, 14-30) and Potter (1979, 1-138) have recorded these finds though doubtless many have gone unrecorded. In 1925 Miss M. C. Fair (1925, 374-5) noted some pottery exposed in a land-slip in the sea-face on the west side of the fort; this included a piece of Samian, fragments of a *mortarium* and sherds manufactured at the Muncaster Roman pottery kiln (see below) as well as fragments of oxydised iron, burnt wood, fused glass, bones, slates, tiles and bricks. It is also mentioned that from the area north of the fort `...(presumably the annexe), emerged shattered slates, bricks, floor *tessarae*, *tegulae*, box-flue tiles and heavy floor-tiles, all as made at Park House.' [the Muncaster kiln]. These remains suggested that the annexe contained some high status building heated by a hypocaust. The Muncaster kiln is situated about 5km to the north-east of the fort; Miss Fair undertook some trial excavations there in 1922-3 and Bellhouse dug the kiln more extensively in 1957 and 59 (Bellhouse 1960, 1-12).

In contrast to the ephemeral nature of the fort remains, a large part of the bath-house has survived in the landscape as a prominent, upstanding structure. Birley (1958, 15) stated that the first literary reference to it was in John Denton's Accompt [as he styled it] written about 1610 where he described the ruins, known as Old Walls, as an old castle formerly the residence of the Penningtons (in Birley 1958, 15). Hutchinson (1794, 564-71) named the remains as Walls Castle and perpetuates the tradition that it had been a dwelling of the Penningtons. He noted that a number of finds had been made many of which were Roman. The OS map 0f 1861 propogates the name Walls Castle printed in Old English script, i.e. non-Roman (Ordnance Survey, 1861).

The ruins were first recognised as Roman in 1876 by Knowles and Jackson (1878, 23-26) but they were thought to be of a villa rather than a bath-house. They note the names of nearby fields, which include Castle Meadow, Castle Field, Stone Warron, Stone Acre, Broad Walls, Walls Field, Walls Close, Black Stones etc, and suggest this indicated the extent of lands occupied by the `old dwellers'. A full account of the upstanding architectural remains, a fragment of a larger building, is provided by Knowles and Jackson. In 1881, Jackson returned to excavate the site to determine its Roman origin (1883, 216-24), and produced a full report with a plan and engraving of the excavation, suggesting that the ruins were those of a Roman villa which extended further to the east [measuring in total 10.0m east-west by 6.8m]. This classification as a villa was extended to the OS 2nd edition map (Ordnance Survey 1899). McGilchrist (1919, 18-9) seems to have been the first to establish that Walls Castle was a bath-house and not a villa.

In 1927 Collingwood (1928, 353-66) communicated the fullest study of the fort and bath-house to date, the latter being described as `...the best-preserved Roman building in the north of England.'. Regarding the fort, the east rampart was recognised by Collingwood in its entirety running parallel to the carriage drive for about 140 yards [128m] as a bank three to five feet [0.9m-1.5m] high with a double outer ditch; of the two ditches the inner was wet enough to grow rushes and the outer adjoined the edge of the drive and was partly filled in. The eastern parts of the north and south defences were visible for 60 yards [55m] and 112 yards [103m] respectively before being cut and destroyed by the railway cutting. Outside the northern rampart was a single ditch, the two eastern ditches having run together at the north-east corner; this ditch deepened as it travelled westwards developing into a ravine about 20 feet [6.1m] deep. The southern rampart was clear and sharp falling to a flattish strip of ground beyond which is a ravine with a stream in the bottom. The part of the fort west of the railway survived as slender triangle under grass, 20 yards [18.3m] across at its widest. That the west side of the fort was eroded is testified by the evidence of Roman occupation levels exposed in section in the face of the sea cliff, including pottery, tiles and charcoal. No trace of internal buildings or gateways were seen. Collingwood referred to the pits discovered in excavations for the railway cutting (Jackson 1878, 17-22) and suggests they may be `...underground storage chambers...' based upon some largely circumstantial evidence.

Collingwood considered that the remains found by Fair to the north of the fort (1925, 374-5) was evidence of a civil settlement; in communication with Miss Fair he stated that the surface finds made by her indicated a settlement covering an area equal to the size of the fort. He observed that no trace of a rampart and ditch such as might have surrounded an annexe was discovered by Miss Fair.

By the time Birley examined the site (1958, 14-30) the fort platform east of the railway was obscured by the dense plantation and was virtually inaccessible. It was considered that very little of the fort, apart from the west rampart and *intervallum*, had been lost through erosion and that the work was originally about 140 yards square. Birley speculated that the fort faced eastwards up Eskdale and the Roman road connecting the forts at Hardknott and Ambleside. The building north of the fort, part of a civil settlement according to Collingwood based upon finds made by Fair was considered by Birley possibly to be a *mansio*.

Regarding the bath-house, Birley (1958, 23) quoted some notes from Fair in 1954 including a suggestion that there were two structural periods in Walls Castle and that according to an `ancient farmer' the `...outer north ditch enclosed the bath-house'. There is no reference to two phases either by Jackson (1878, 23-6) or by Brann (1985, 81-5) who, in May 1983, undertook a detailed survey and fabric analysis of the bath-house on behalf of the Department of the Environment, prior to the consolidation of the monument which was then placed under guardianship .

The most comprehensive examination of the fort took place during two main seasons of excavation in 1976-7 by Potter (1979, 1-138) followed by a few days work in June 1978. A full excavation report has been produced and will not be duplicated here; what follows is a brief summary of the findings. Digging was confined to the narrow, flat-topped ridge between the railway and the sea cliff which had demonstrably eroded since Collingwood had described it in 1927. It was this erosion which

prompted the excavation, but Potter considered that in any event this area was likely to contain the best-preserved elements of the fort as the rest of it to the east of the railway must have suffered much damage from tree and root disturbance.

The area of excavation occupied most of the ridge which was at its widest towards the north side narrowing to a point to the south. A total of seven trenches were opened; these are lettered A-G on Potter's plan (1979, 11) generally from north to south. The earliest phase of Roman occupation identified by Potter (his phase 0) was part of the western defences of a fortlet visible in trenches D, E and G, comprising an outer ditch and a palisade trench revetting a rampart. Most of the work was destroyed by the railway cutting; what remained suggested a work of similar dimensions to the milefortlets of the Hadrianic frontier along the Solway Coast further north, and indeed the milecastles of Hadrian's Wall itself. Measured over the outer V-shaped ditch, betwee 2.8m and 3.3m wide and 1.6m deep, the work was not more than 34m across overall; within the palisade it must have been less than 24m. Potter dated phase 0 to 120-130 AD and suggested that the fortlet was an element in the western extension of the Hadrianic frontier.

The phase 0 fortlet was demolished and superceded by the fort visible today, for which Potter has identified four distinct phases (1-4). The defences, exposed in trench A, comprised a primary rampart of turf at least 3.7m across and 0.5m high later fronted by a stone wall, a berm, 4.0m wide, and a V-shaped ditch, possibly as much as 6.6m wide and up to 1.7m deep, which runs along the edge of the ridge parallel to the gully. By chance the small section of the ditch excavated incorporated a rounded butt-end which Potter considered marked the position of the northern entrance (see below). In the interior, in excavation trenches B-E there were the remains of a succession of timber-framed barrack blocks orientated east to west. Behind the rampart was a series of five *intervallum* road surfaces and at the back of the rampart a succession of ovens was discovered.

It was conjectured by the excavator that the fort was built about 130 AD; phase 2 extended to 190-210 AD at which point in time the stone revettment was added (phase 3 until about 350-370 AD), and the final phase (4) ran to 370-400 AD or later. Potter acknowledges the evidence for this sequence is limited. Apart from a single Medieval grave, post-Roman activity was attested only by a scatter of sherds, one of which came from the robber trench of the stone-faced fort wall suggesting a late Medieval date for the removal of the Roman wall.

It is not within the remit of this report to discuss the Roman road which extended in an easterly direction from Ravenglass fort over the passes of Hardknott and Wrynose via Hardknott fort to Ambleside fort. This is covered adequately by two major sources (McGilchrist 1919, 17-29; Richmond 1949, 15-31), and its course in the vicinity of Ambleside fort is discussed in the recent survey of that fort (RCHME 1998). Both sources acknowledge that for the west section of the road in Eskdale there is limited trace of its course. Though McGilchrist could see no sign of it in 1919, he noted that during drainage operations it was found near the fort running from the east gate east by a little north, along the crest of the gentle ridge leading up to the park of Muncaster Castle. Richmond shows the course on an OS map but at too small a scale to be useful. However, on a single air photograph (CUCAP 1951) two dark parallel lines (two of several) could be seen in the open field next to Walls Plantation, which extend roughly

towards a centre point of the east rampart. This could be the buried remains of the Roman road but there are a number of such dark lines running parallel and at right angles and may simply be former plough lines (see below).

The early OS maps at 1:2500 scale (Ordnance Survey 1861 and 1899) provide useful insights into the development of the area around the fort in the 19th century. As stated previously, the fort was identified as late as 1876 (Jackson 1878, 17-22) at which time Walls Castle was recognised as Roman but not as a bath-house. It was not until 1927 that the first reference was made to Walls Castle as an external bath-house (Collingwood 1928, 353-66). In consequence, the 1st edition map (Ordnance Survey 1861) fails to show the fort, and Walls Castle is annotated in Old English not Gill Sans (Roman) Script perpetuating the belief held then that it was the ruins of former dwelling of the Pennington Family. The 1861 OS map (Ordnance Survey 1861) shows a farmhouse together with outbuildings and a garden immediately to the north which were destroyed when the Victorian mansion was built on the same site. Both dwellings share the name Walls. A farm road named Croftshead Lane extends from the north, past Walls Castle to the old farm and beyond. The pattern of fields in 1861 was one of small irregularly-shaped enclosures reflecting an earlier Medieval landscape, and on the aforementioned air photograph (CUCAP 1951) there appears to be traces of broad ridge-and-furrow in the field immediately to the east of the fort. On the OS map of 1861 (Ordnance Survey 1861), a stream is shown flowing down a gully for a short distance westwards from Walls Castle before entering the sea. The railway, constructed through here in 1850 is shown on the 1861 map as a single line; by 1874 it was doubled (Bairstow 1995, 24-5).

By the date of the OS 2nd edition 1:2500 map (Ordnance Survey 1899), the landscape had more or less assumed its present-day configuration. Walls mansion, built in 1885, is shown within a garden, incorporating an orchard and other trees; the house was approached from the north by a curving carriage drive, roughly on the line of the old farm track, through a plantation of coniferous and deciduous trees known as Walls Plantation. The latter covered the remains of the fort. A double `pecked' line, shown on the map as being unconnected with any other features, extends from a point just north-west of Walls mansion northwards parallel to the railway and through the fort in a slight dog-leg for about 340m; it was probably a formal woodland walk. The boundaries of the sub-Medieval fields had been removed by 1899 and replaced with large, more rectilinear fields which in the main have survived. The east rampart of the fort is depicted as an outward-facing scarp and that part of the north defence is shown as a ditch-like feature developing into a gully as it heads westwards; in the base of this gully, close to the railway boundary, the map shows a `ROMAN WELL'. The term `ROMAN CAMP' is incorrectly centred about 70m to the north of the fort, and Walls Castle is annotated `ROMAN VILLA' after Jackson's misinterpretation (1883, 222). Within the true confines of the fort is the annotation `Roman Coins found (AD 1887)'; this may be an inaccurate reference to the single coin reported found in 1886 during the excavations by Lord Muncaster (Ferguson 1888, 297) or it may be the only record of a separate coin find for which there are no literary references.

The depiction of the remains of the fort continues unaltered from the OS 2nd edition 1:2500 map onto the current OS map (Ordnance Survey 1899 and 1971); the name is changed to `GLANNAVENTA ROMAN FORT' and positioned correctly. Walls

Castle is annotated `ROMAN BUILDING', and `ROMAN WELL' continues to be shown in the north ditch of the fort. The carriage drive is called `Walls Drive'.

There seems to be some confusion amongst Roman scholars as to the name of the fort at Ravenglass. The name GLANNAVENTA is favoured by Rivet and Smith (1979, 367), but according to Mann (1989, 75-9) GLANNIBANTA and CANTIVENTI are possible alternatives. During the excavations by Potter an oval lead sealing from deposits of phase 3 was found; the stamp upon it refers to a unit interpreted by Shotter (in Potter 1979, 73-4) as Cohors I Aelia Classica, in garrison at TUNNOCELUM, usually identified with Moresby, some 26 km to the north. In 1995, fragments of a Roman military diploma issued to a veteran of Cohors I Aelia Classica in AD158 was discovered on the foreshore at Ravenglass fort; in *Notitia Dignitatum* this cohort is associated with ITUNOCELUM (Tomlin 1997,463-4).

RCHME ARCHAEOLOGICAL FIELD SURVEY 1998 (Figure 2)

(The letters in brackets refer to annotation on Figure 2).

The Roman fort at Ravenglass is in poor condition, having been severely mutilated by a combination of factors. In 1850, the railway from Carlisle to Barrow-in-Furness was driven through the west part of the fort from north to south in a cutting, up to 31.0m wide and up to 6.8m deep, which would have destroyed any Roman levels absolutely. This has isolated what little remains of the western sector of the fort from the wooded east part.

By far the largest area of the fort occurs to the east of the railway where it can be seen as a low platform in dense woodland with no structural remains identifiable as Roman surviving above ground. The wood comprises mature conifers and deciduous trees interspersed with naturally re-seeded trees, mainly ash, with thickets of rhodedendrons scattered through the site. Many of the trees, notably the old conifers, have blown down obscuring large swathes of the fort and creating holes up to 0.8m deep in the ground surface. Virtually the whole area of the fort and its immediate surroundings is covered by a mat of brambles with some bracken and nettles. The majority of the trees are marked with orange paint prior to a programme of sympathetic felling as part of a plan by the Lake District National Park to contain damage to the site and to return most of the site to grassland, leaving a belt of trees alongside the railway and in front of Walls mansion as wind-breaks (J. Hodgson pers comm).

It must be made clear that the site, having gone unrecognised for many years and unmapped until 1899, must have made little impact on the landscape when it was in open ground (Ordnance Survey 1861), so that now, after over 100 years of disturbance by tree growth, the remains are extremely difficult to analyse and the quality of the sub-surface remains must be in question.

The best-preserved defences are in the east where for its whole length the line of the defences is marked by an outward-facing scarp, up to 0.6m high with a single outer ditch, some 7.0m wide, and 0.3m maximum depth, visible in a partially waterlogged state for about 70m. Collingwood (1928, 354) had postulated a further outer ditch next to the modern road known as Walls Drive; though there are traces of a west-facing scarp here, it appears to be associated with the drive as it continues beside it well beyond the fort. No entrance can be seen along the east side of the fort. There is evidence that there has been some mutilation of the defences at the north-east corner which may have been caused by puddling by animals before the plantation. The supposition by Collingwood (1928, 354) that the two eastern ditches revert to one at this point is not apparent neither, on the evidence above, is it likely. This area at the head of a natural gully extending westwards is and probably always was marshy; it is also the lowest point of the fort being some 3.9m below the highest along the south rampart.

Potter was unable to interpret a south defence with certainty, presumably because his work took place in summer in the middle of the growing season. Although the rampart here is masked by quantities of rhodedendrons it can be seen quite clearly (in

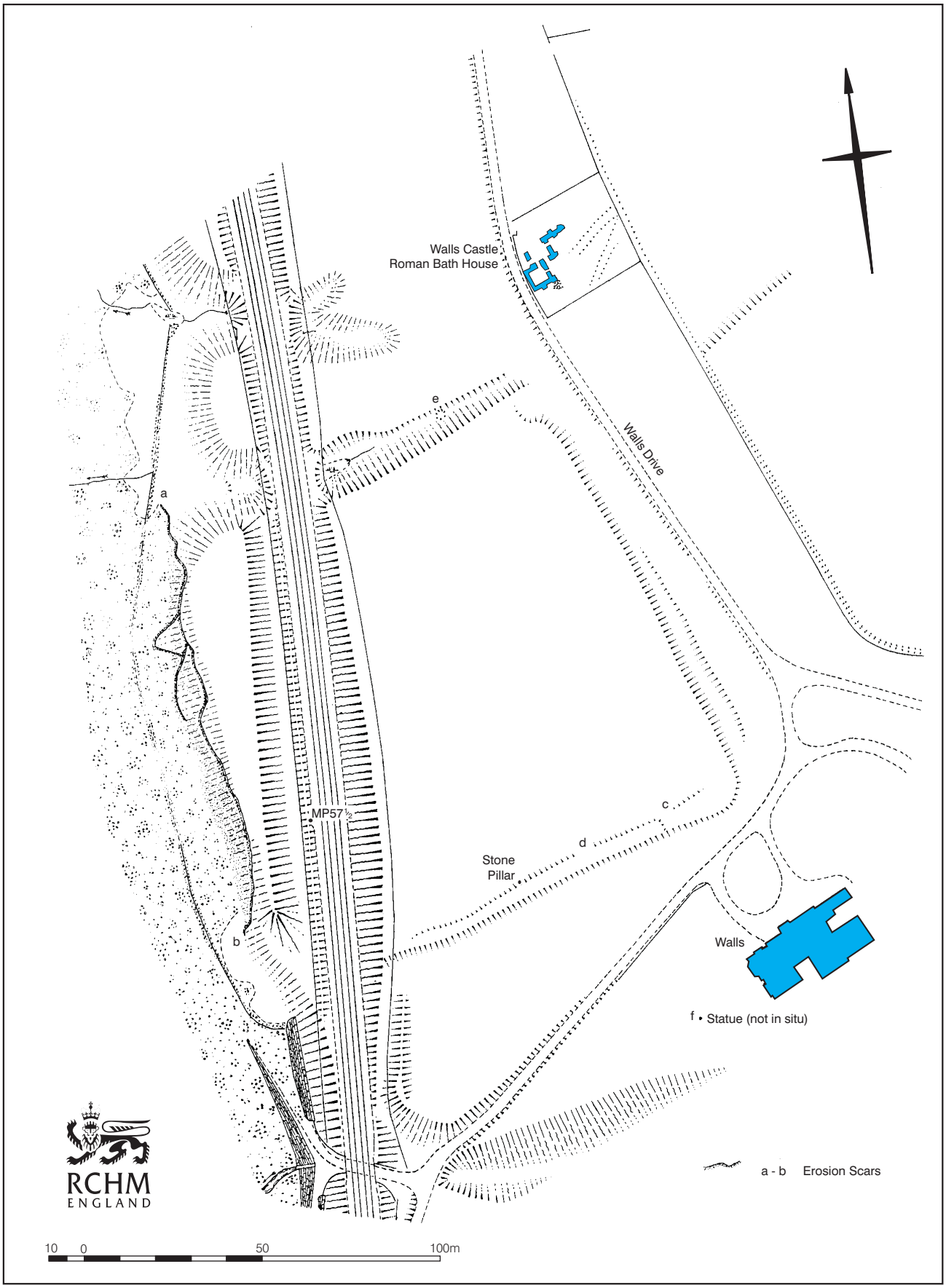

Figure 2. RCHME earthwork survey of the fort at 1:1000 scale.

March-April) as a bank running from the south-east corner of the fort, rounded in classic Roman style, for about 110m until the railway cutting slices through it. It is about 7.0m wide, not more than 0.5m high externally, with an internal counterscarp, up to 0.4m high but generally less than that. Although this inner counterscarp is a relatively low, ephemeral feature, it is traceable continuously along the whole of the surviving south side of the fort, except that there are two gaps clearly visible along its length with a corresponding slight shallowing of the outer scarp. One of these gaps (c), some 23m from the south-east corner of the fort, probably marks the cut of the supposed woodland walk shown on the OS 2nd edition map (see above); it is about 3-4.0m wide. The other (d), about 47m from the south-east corner and about 5.0m wide, may be an original Roman gateway. This will be discussed later.

At the north-east corner of the fort the north defences survive as a depression, some 7.0m wide and about 0.4m to 0.5m deep both inside and out. The depression deepens, widens and, as it heads westward, develops into a natural gully. About 27m along its course there is a seasonal spring head, showing as a muddy, bowl-shaped hollow, 7.5m in diameter (e) and here the gully is about 1.4m deep internally and 0.7m deep externally with a width of 9.0m. A short distance to the west of this point a sluggish stream appears. Some 65m from the north-east corner of the fort the gully is crossed by the railway on an embankment. It then continues beneath the railway angling slightly northwards until it breaks out onto the foreshore over 9.0m below the fort platform. If the line of the ditch/gully to the east of the railway is extended westwards, it projects onto the fort ditch excavated by Potter at the north end of the ridge to the west of the railway (this is best seen in Figure 3). Along this north side there is no evidence of an inner bank nor of an entrance. No trace of any structural remains can be seen at the position of the supposed `Roman Well' shown on the OS 2nd and current editions (Ordnance Survey 1899 and 1971) at the base of the gully to the east of the railway, which here is silted and marshy. This situation on the line of the Roman ditch would appear an unlikely one for a well contemporary with the fort.

There is no trace of the fort defences nor internal structures in the western sector which is reduced to a flat-topped ridge sandwiched between the railway cutting and the eroding sea cliff. The summit area, overgrown with brambles and tussock grass, measures 110m north to south by a maximum of 17m wide towards the north end tapering to a point in the south where there is a thicket of gorse. Despite the density of the vegetation slight traces of some of the back-filled trenches of Potter's excavations of 1976-8 (1979, 1-138) can be seen up to 0.2m deep, in particular the east edge of trenches B and C and the baulk between them (Potter's lettering system). Though Potter's plan and that by RCHME do not fit precisely, it has been possible to relate the position of the excavated remains, of which nothing is now visible, with the detail shown on the plan by RCHME with an accuracy of +\- 1m (see Figures 2 and 3).

The unstable cliff of red clay defining the present west edge of the fort and the east side of the estuary of the Esk is some 9.2m high above a beach level comprised mainly of cobbles. Formerly there was an area of turf-covered consolidated mud flats at the base of the cliff and this was retained by a strong stone wall. This was shown on the OS 1:2500 map (Ordnance Survey 1861) as a continuous feature and defined the high water mark of ordinary tides, though the cliff itself was not depicted. As the base of the cliff is now between 7m and 12m from the retaining wall it can be deduced that the cliff erosion cannot have exceeded that amount since 1861. To the north of the area of

survey this wall is still fairly well preserved and towards the south end parts of it now survive up to 1.2m high, but below the fort most of it has been destroyed by the action of the sea either completely or down to discontinuous footings. In the absence of this protective wall the majority of the mud flats have been washed out, and only small patches remain. As a result, very high tides (as experienced during spring tides on 31-March-1998 to 1-April-1998) reach about 0.8m-1.0m up the cliff, and this will undoubtedly accelerate the rate of erosion. Indeed some collapse of the cliff occurred between 31-March and 1-April. The erosion scar extends for some 125m (a-b).

In the interior of the fort some fragments of Roman brick and tile, and some slate, probably Roman, can be seen in the root system of trees which have blown over. Close to the south rampart is an octagonal pillar of red sandstone with a pointed top which is leaning slightly to the north, caused no doubt by the root growth of an adjacent coniferous tree. The pillar is 1.4m high and 0.33m across with a chamferred base. Its purpose is obscure as is its date but it is almost certainly late, probably contemporary with the building of the Victorian mansion and the formation of the ornamental Walls Plantation.

There is little to add to the description of the Roman bath-house provided by Jackson (1883, 216-24) and Brann (1983, 81-5); it is still known locally as Walls Castle despite the re-classification. The fabric has been consolidated and the site is now under guardianship. The trees which formerly grew right up to the remains have been felled and the bath-house now stands in a fenced enclosure under permanent pasture large enough to take account of the sub-surface remains east of the standing fabric. Some old tree stumps remain; ground disturbance within the enclosure comprising slight depressions, not more than 0.15m deep, defies interpretation but is more likely to be a result of tree growth and removal rather than being Roman.

Nothing can be seen of a *vicus* either to the north of the fort where Miss Fair made some finds of Roman building materials suggesting a building with hypocaust (Fair 1925, 375) or in the open field to the east of the bath-house. The former is covered by dense woodland and scrub and the latter has apparently been well-cultivated in recent times, evidenced by a plough line at the edge of the field. The double-line feature visible on an air photograph (CUCAP July 1951), which may be speculated to mark the course of the Roman road heading north-eastwards from the fort towards Eskdale, cannot be identified on the ground. A ploughed-down scarp, 0.4m high, visible in the field is not on the same line and its date and purpose is not ascertainable.

At the time of survey, Walls Mansion was undergoing some renovation and part of it had been apportioned as flats. Much of the garden was overgrown but, forming part of a grotto in the terraced lawn 20m west-south-west of the house, is the remains of a statue in two pieces of what appears to be a female (f) (see Figure 4). According to the landowner (P. Frost-Pennington pers comm), reporting a communication with David Sherlock of English Heritage, this sculpture is considered to be Roman; it is not known where or when it was found or how it came to reside in the garden. A millstone, 1.3m in diameter, lies close by the statue, and in front of the house, just beside the drive way, there are three more millstones, respectively 1.45m, 1.35m, and 0.95m in diameter. Again the date and provenance of these stones is unknown; it is conceivable that they may have come from the stream gully at the southern edge of the garden but the stream as it exists today would appear to be too slight to drive a mill.

DISCUSSION

Since the decisive excavations of the fort in 1976-8 by Potter (1979, 1-138) and the fabric analysis of the bath-house for the Department of the Environment in 1983 (Brann 1985, 81-5) no major archaeological work has been done. Previous 20th-century researchers have each noted the density of woodland on the greater part of the fort east of the railway and the erosion of the west side. Both problems remain; the woodland was formerly an ornamental, or at least a semi-ornamental plantation which would have served as a windbreak for Walls mansion (built 1885), but it is now unmanaged. The mixture of mature tree cover, rhodedendrons and scrub, together with a ground cover of brambles with some bracken and nettles, makes for the worst possible combination for detailed ground inspection. The difficulties are exacerbated by the uprooting of mature trees by the wind, a continuing process, which not only damages the sub-surface of the fort but also adds to the problems of ground analysis.

As stated above the erosion of the sea cliff to the west of the railway has continued since the excavations of 1976-8 and the west part of some of Potter's trenches appears to have disappeared over the edge. It is estimated that a further 3.0m-4.0m has gone over the last 20 years, but it is difficult to be accurate as Potter's plan and that of RCHME do not match exactly.

So it can be seen that the state of the remains of the fort is poor and this has been the case over a long period of time. The evidence for this is a find by Potter of a Medieval sherd in the robber trench of the fort wall (1979, 50) suggesting a date for its destruction, and the fact that the fort apparently went unlocated until Jackson described its position in 1876 (1878, 17-22).

The overall size, shape and primary layout of the fort remains ambiguous. Two hypotheses should be considered. Firstly, Potter discovered the butt-end of a ditch in his excavations (see g in figure 3) which he considered most probably marked the position of the north entrance into the fort (1979, 19). Though he acknowledges that precision is impossible, he estimated that the north rampart of the fort extended further west by a minimum of 30m beyond the cliff edge. This would indicate that the longer axis of the fort was east to west measuring at least 140m by about 120m transversely. It would appear therefore that the fort faced either east or west. From Potter's observation of the supposed north gate (g), an offset towards the west defences (whatever their precise situation) infers that the work must have faced west towards the sea. No south gate can be seen corresponding to Potter's supposed example in the north.

A second hypothesis would contradict Potter's interpretation. The two breaks in the inner scarp of the bank demarcating the south rampart (c and d) have been mentioned; these are distinctive despite the incursion of trees and other vegetation and the poor quality of the remains. They occur at about 23m and 47m from the south-east corner. The former (c) can be explained as a break for the `woodland walk' which first appears on the Ordnance Survey 1:2500 map of 1899 but which is no longer visible except at this gap in the south rampart. No other explanation for the other gap (d) is plausible other than its identification as an original Roman gate. If this is accepted then its position along the south defences, off centre towards the east, would indicate 1) that

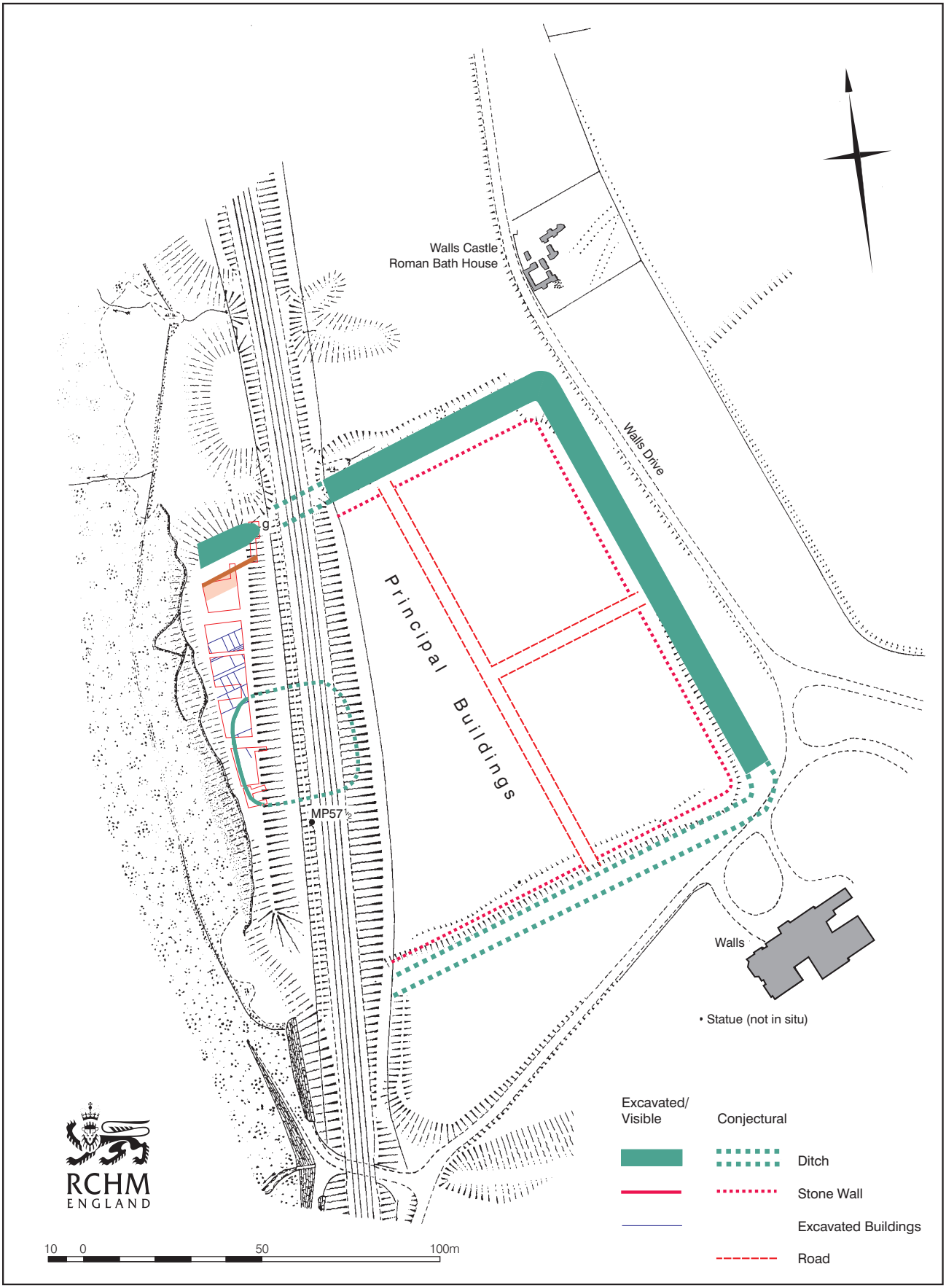

Figure 3. RCHME plan at 1:1000 scale with the excavation trenches of 1976-8 superimposed. Plan shows suggested disposition of rampart,gates and principle internal buildings.

the fort faced east not west, a theory favoured by Birley (1958, 25), and that this gate was the *porta principalis sinistra*. Birley's opinion is preferred; the only proven Roman road at Ravenglass is that coming via Hardknott from Ambleside to the east side of the fort (McGilchrist 1919, 17-29; Richmond 1949, 15-31), though information on its precise line is incomplete, and gives no clues to the exact location of the east gate. Neither the east nor a north gate, opposing the break in the south, can be located. If this hypothesis is taken one step further it should be possible to locate with some confidence the central range of buildings, comprising the headquarters building, the commandant's house and probably a granary, as occurs at Hardknott and Ambleside, and the majority of this range should have survived the cutting of the railway.

The relationship between the phase 0 fortlet excavated by Potter (1979, 1-136) and the sequence of milefortlets and towers of the western extension of the Hadrianic Frontier along the Cumbrian Coast must at present remain conjectural. There is no doubt that the remains of the fortlet at Ravenglass described by Potter (and no longer visible) are in all respects similar to milefortlet 1 at Biglands (NY 26 SW 2) which he excavated (Potter 1977, 149-83) and milefortlet 21 at Swarthy Hill (NY 04 NE 22) excavated in 1990-1 (report forthcoming); the latter has been consolidated and left exposed to public view. Both are unquestionably an integral part of the sequence of milefortlets and towers along the Cumbrian Coast directly comparable with the milecastles and turrets of Hadrian's Wall which constitute the western extension of the Roman frontier. Up to the present day, this sequence has been identified with certainty only as far south as tower 25b (re-numbered) at Risehow (NY 03 SW 1), some 40 km to the north of Ravenglass. It is certainly true that much of the landscape between Risehow and Ravenglass is buried beneath the conurbations and industrial heartlands of West Cumbria; whether this accounts for the absence of the milefortlet/tower configuration is not known. It does seem highly unlikely that the western extension of Hadrian's Wall ended on the tower at Risehow; it is more probable that it ended on a significant geographic feature or a position like Ravenglass where the fortlet was fairly soon enlarged to a fort. A supposed milefortlet was discovered at about SD 087 942 in 1978, 1 Roman mile south of Ravenglass fort (The Guardian Newspaper 20-JUN-1978). The source of this information is not known and has not been sought during the RCHME survey.

It is a matter of speculation as to why the west part of the bath-house has survived as an upstanding structure, up to 3.5m high, when both the east part, discovered by excavation in 1881 (Jackson 1883, 216-24), and the fort itself have been robbed down to the foundations. The suggestion by Fair (in Birley 1958, 23) of two phases, unspecified by date, is not borne out by fabric analysis in 1983 (Brann 1985, 81-5). As early as about 1610 the building was said to be a ruin, thought to be an old castle, formerly the residence of the Pennington family (in Birley 1958, 15) and this belief appeared to continue until Jackson's excavations disproved it. The Pennington family are still the major landowners in the area and the survival of the tradition of an early seat of the Penningtons may have ensured the survival of the bath-house as a ruin, possibly a `picturesque ruin'.

Waste water from the bath-house must have drained westwards into the sea by a gully, some 30m to the north of the north ditch of the fort. The Ordnance Survey map of 1861 shows a stream flowing into this gully from the vicinity of the bath-house. The

water source is more difficult to define. There is no evidence of a spring at Walls Castle, and if the source were further afield to the east where the ground rises gently then it was either over-ground or by a culvert lost in subsequent agricultural activity. In either case all trace has gone.

From the evidence of finds made to the north of the fort in the plantation there was undoubtedly an associated *vicus* here and this probably extended around the east side considered to be the side to which the fort is most likely to have faced. Examination of air photographs of the field east of the fort proved inconclusive; the crop marks form no pattern of Roman settlement and are probably more a reflection of Medieval agriculture and post-enclosure fields than of Roman activity.

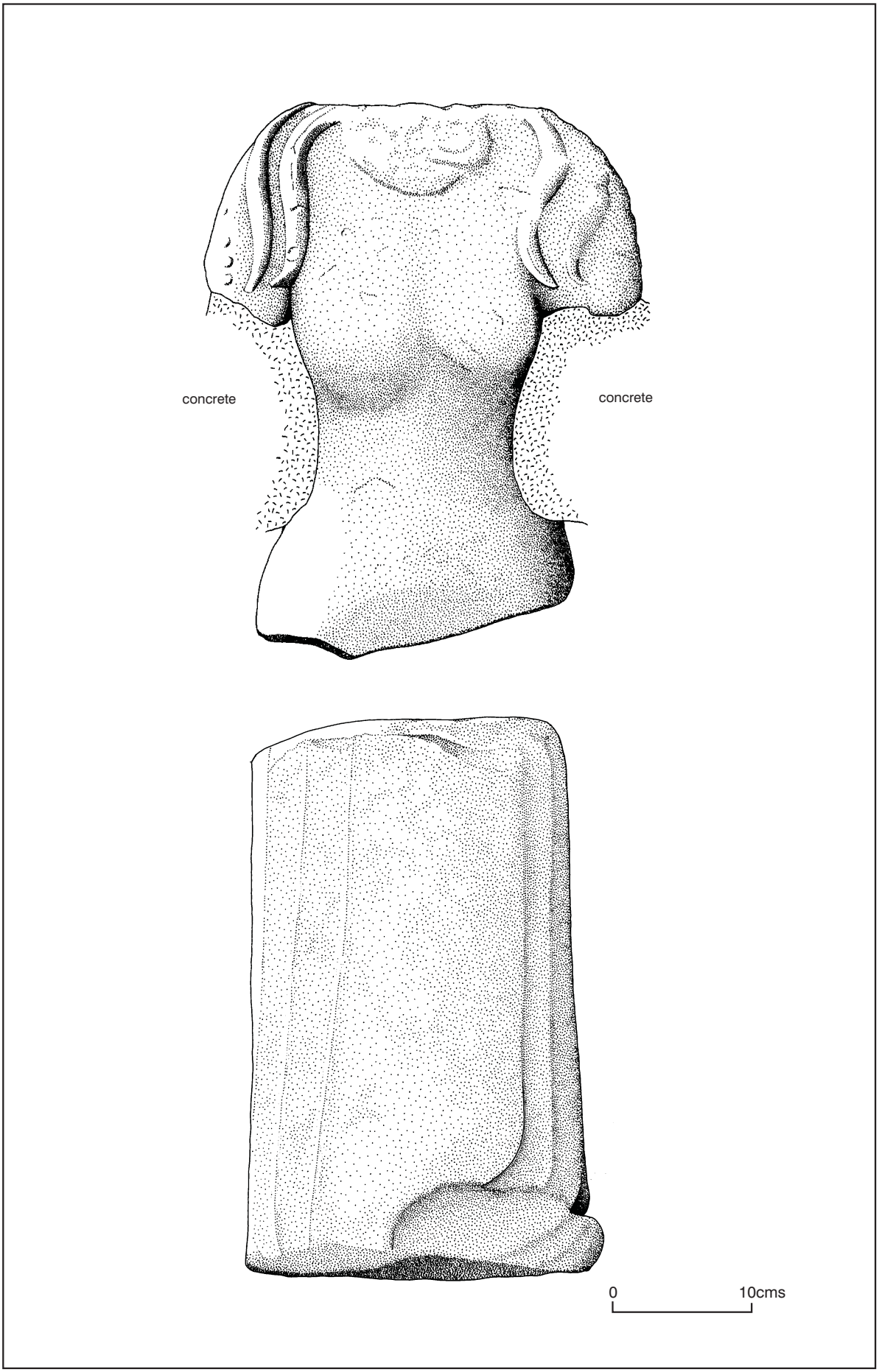

Figure 4. Illustration of brocken statue at present lying in the garden of Walls Mansion

METHODOLOGY

The first phase of the survey was carried out within the OS National Grid using co-ordinates brought onto site by Leica single frequency Global Positioning System (GPS) equipment. OS GB 36 co-ordinates were purchased for the triangulation pillar (OS Stn no SD0897: NY11/T13 Cumblands) situated about 1.7 km to the north-north-west of the fort, and used to fix the position of three intervisible survey stations on site, all permamently marked with metal pegs. These points were then incorporated into a traverse of 13 stations using a Wild TC1610 total stations theodolite to provide 1) accurate control for the third phase of survey, and 2) to supply `hard' detail including all upstanding buildings, fences and walls, roads and tracks, and railway features. At this stage the `soft' coastal detail was also surveyed; much of it was overgrown with dense scrub and difficult of access, and for these reasons it was considered more practical to observe onto a prism with the theodolite than by any other method. Using a Calcomp Automatic Plotter a control plot was produced on permatrace. This was taken into the field for the third phase of survey for which a combination of plane table methods, employing a Wild RK1 self-reducing alidade, and graphic techniques was used to supply the remainder of the detail, mainly the very ephemeral slopes of the earthwork itself.

ACKNOWLEDGEMENTS

RCHME wishes to acknowledge the cooperation of Mr Peter Frost-Pennington of Muncaster Estates for comment on the more recent history of the area. Valuable assistance in the survey of and research into the site was provided by Stewart Ainsworth, Marcus Jecock and Trevor Pearson of RCHME York. The report was edited by Stewart Ainsworth.

BIBLIOGRAPHY

Bairstow, M. 1995, *Railways in the Lake District*, 1995, Halifax.

Bellhouse, R. L. 1960, Excavation in Eskdale, the Muncaster Roman kilns, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2, 60, 1960, 1-12.

Birley, E. 1958, The Roman fort at Ravenglass, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2, 58, 1958,14-30.

Brann, M. L. 1983, A Survey of Walls Castle, Ravenglass, Cumbria, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2, 85, 1985, 81-5.

Collingwood, R. G. 1927, Roman Ravenglass, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2, 28, 1928, 353-66.

CUCAP, 8043; 05-July-1951.

Fair, M. C. 1925, In Proceedings, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2,25, 1925, 374-5.

Fair, M. C. 1948, Roman finds on the Cumberland Coast, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2, 48, 1948, 218-21.

Ferguson, R. S. 1888, The Roman Camp at Muncaster in Proceedings, *Trans Cumb and Westmor Antiq and Archaeol Soc* 1, 9, 1888, 296-7.

The Guardian Newspaper, 20-JUNE-1978.

Hutchinson, W. 1794, *A History of Cumberland*, 1, 1794, 564-71.

Ordnance Survey, -, County Series 1:2500, Cumberland Sheet LXXXII.11. Surveyed *circa* 1861.

Ordnance Survey, -, County Series 1:2500, Cumberland Sheet LXXXII.11. Surveyed 1899.

Ordnance Survey, 1971, National Grid Series 1:2500 Sheet SD 0895 and SD 0995. Surveyed 1971.

Jackson, W. 1876, The Camp at Muncaster and certain Roman Discoveries there, *Trans Cumb and Westmor Antiq and Archaeol Soc* 1, 3, 1878, 17-22.

Jackson, W. 1881, An Account of some Excavations made at Walls Castle in 1881, *Trans Cumb and Westmor Antiq and Archaeol Soc* 1, 6, 1883, 216-24.

Knowles, the Rev Canon and Jackson, W. 1876, Walls Castle, Ravenglass, *Trans Cumb and Westmor Antiq and Archaeol Soc* 1, 3, 1878, 23-6.

McGilchrist, C. R. B. 1918, The Roman Road in Eskdale, *Trans Cumb and Westmor Antiq and Archaeol Soc* 2, 19, 1919, 17-29.

Mann, J.C. 1989, Birdoswald to Ravenglass, *Britannia* 20, 1989, 75-9.

Potter, T. W. 1977, The Biglands milefortlet and the Cumberland coast defences, *Britannia*, 8, 1977, 149-83.

Potter, T. W. 1979, The Roman Fort at Ravenglass in Romans in North-west England, *Cumb and Westmor Antiq and Archaeol Soc Research Ser* vol 1, 1-138.

Richmond, I. A. 1947, The Roman road from Ambleside to Ravenglass, *Cumb and Westmor Antiq and Archaeol Soc* 2, 49, 1949, 15-31.

Rivet, A. L. F. and Smith, C. 1979, *The place-names of Roman Britain*, 1979, 367, (London).

RCHME, 1998, *Ambleside Roman Fort: An Archaeological Survey Report* (NMRC Swindon: RCHME archive report).

Tomlin, R. S. O. (ed) 1997, in Roman Britain in 1996, *Britannia* 28, 1997, 463-4.

APPENDIX I: Table of NMR numbers linked to this site.

SITE NAME	COUNTY	DISTRICT	PARISH
Ravenglass Roman Fort	Cumbria	Copeland	Muncaster
NMR no	Unique Identifier	NGR	Site Name
SD 09 NE 1		SD 0880 9580	Ravenglass Roman Fort