IV
The Construction Order of the Milecastles on Hadrian's Wall

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SUMMARY

Simpson's contention that Broad and Narrow Walls were used in milecastle construction is re-assessed and then used to reconstruct their building order. This reveals clusters of early, Broad Wall, milecastles adjacent to features which can reasonably be described as points of strategic importance. It is suggested that the unusual size of milecastles 47 and 48 is a consequence of their early construction, while the provision of large double barrack blocks within them is due to their construction prior to the fort decision. As well as Broad and Narrow Gauge perimeter walls, the study reveals some evidence for a Middle Gauge. This was restricted to the completion of milecastles started to the Broad Standard and can be shown, through its relationship to Great Chesters, to predate the Narrow Gauge.

INTRODUCTION

The regular series of milecastles and turrets on Hadrian's Wall is familiar to all students of Roman frontier works.[1] Yet despite this notoriety the milecastles remain, as Dobson put it, 'one of the great mysteries of the Wall'.[2] Positioned along the *murus* at intervals, as their name implies, of approximately one Roman mile, the milecastles represent an adaptation of the installation type known elsewhere as a fortlet. As well as providing barrack accommodation for a small complement of men, the milecastles permitted passage through the curtain by way of their north gates. The significance of this latter has attracted the epithet of 'fortified gateways',[3] although it is important to note that the absence of a north gate at milecastle 35, due to its position directly south of a 30 m vertical drop, did not eliminate the installation's reason for being.

Between each milecastle were two or, in exceptional circumstances, three regularly spaced towers[4] and for many years this repetitive sequence was seen as a classic example of the old military adage that 'you are not paid to think'. However, installations have been found up to 210 m from their measured positions,[5] indicating that while the desire for a regular cordon was the dominant consideration, some flexibility was permitted. Woolliscroft has suggested that these subtle variations were deployed primarily to maximise the milecastles and turrets signalling potential, although in some cases they were also utilised to overcome topographic constraints.[6]

As the milecastles and turrets were originally intended to be the only garrisoned structures on the Wall line, our interpretation of them is central to our understanding of the Hadrianic frontier as it was originally conceived. A reconsideration of the milecastle building programme offers some indications of a coherent set of priorities when it came to constructing these structures, as well as some possible implications for the structural history of the Wall in general. The following discussion is concerned with the building order of the milecastles rather than the curtain itself. Accordingly and in keeping with Stevens' approach,[7] references in the text to 'the curtain' are an attempt to differentiate the free-standing stretches of the Wall from the north walls of the milecastles and turrets.

SUMMARY OF THE WALL'S CONSTRUCTION HISTORY

As far as can be reconstructed, the original specification for Hadrian's Wall was a stone Broad Wall approximately 3–2.74 m wide running certainly from Newcastle and possibly from Wallsend[8] as far west as the Irthing. West of the Irthing the curtain and milecastle perimeters were constructed of turf, resulting in a Wall approximately 6 m wide at the base. The turrets were of stone throughout. Central to this original blueprint was the retention of the bulk of the military forces in the Stanegate forts. This arrangement was quickly found to be unacceptable and the decision was taken to provide a series of auxiliary forts on the Wall line. At or around this time the curtain was judged to be unnecessarily wide and reduced to the Narrow Gauge of approximately 2.41–2 m in width. Two forts, at Great Chesters and Wallsend, have been found to bond with this Narrow curtain. At some point after the fort decision was taken, but prior to the selection of the site at Carrawburgh, work began on the monumental earthwork known as the Vallum. This effectively restricted access to the Wall from the south. The Turf Wall and milecastles from the Irthing to just west of milecastle 54 were also rebuilt in stone to a Narrow Gauge at around this time. The remainder of the Turf Wall may, depending on the interpretation of pottery from milecastle 79, have been rebuilt in stone as late as AD 160 following the evacuation of the Antonine Wall.[9] This work was undertaken to an Intermediate Gauge of approximately 2.6–2.44 m.

The transition from a Broad to Narrow Gauge curtain has facilitated the study of both the operational breakdown of construction duties and the overall building programme for the Wall. However, within this framework the milecastles remain less well understood. While it has long been recognised that the working parties laying foundation and building structures could be operating at some distance from those constructing the curtain,[10] how much work was initially carried out on the milecastles by these gangs remains contentious. Certainly there is evidence for two different approaches to milecastle construction. One involved the construction of the entire installation perimeter as a unit, the other prioritised work on the north gate and wall and possibly also the south gate. Even in those cases where the milecastles were constructed as a unit in plan, it has been argued that 'they were taken no higher than a man might reach' as 'it is frankly impractical to consider the building of *any* part of the Wall as an isolated structure to a height of more than [1.5 m] without exceptionally good reasons…'.[11] The nature of many of the early site reports is such that it is not always possible to distinguish between those milecastles which were built as a unit and those which were not. However, the tortuous construction programmes that some milecastles underwent has long been known, primarily due to the apparent replication of the Broad and Narrow Wall standards found on the curtain in the milecastle perimeter walls.

SIMPSON'S THEORY OF BROAD AND NARROW MILECASTLE WALLS

Simpson observed in 1931 that milecastles with Broad perimeter walls ought to come early in the construction history of the Wall, while noting that a number of milecastles which were begun to Broad specifications, were only finally completed to the Narrow standard.[12] The suggestion that the milecastle perimeter walls mirrored the changes occurring on the curtain and its attendant implications have had a mixed reception and it is important to review the evidence.

Simpson identified milecastle 48 (fig. 1) as a representative example of a Broad Wall structure and in this context it remains the most instructive of its type.[13] The milecastle seems to have been constructed as a single unit[14] with Broad perimeter walls approximately 2.78 m wide. At its north-west corner these are still standing to a height of 2.7 m. Given the extra labour and materials required, it seems inherently unlikely that a perimeter of this thickness would have been erected after it

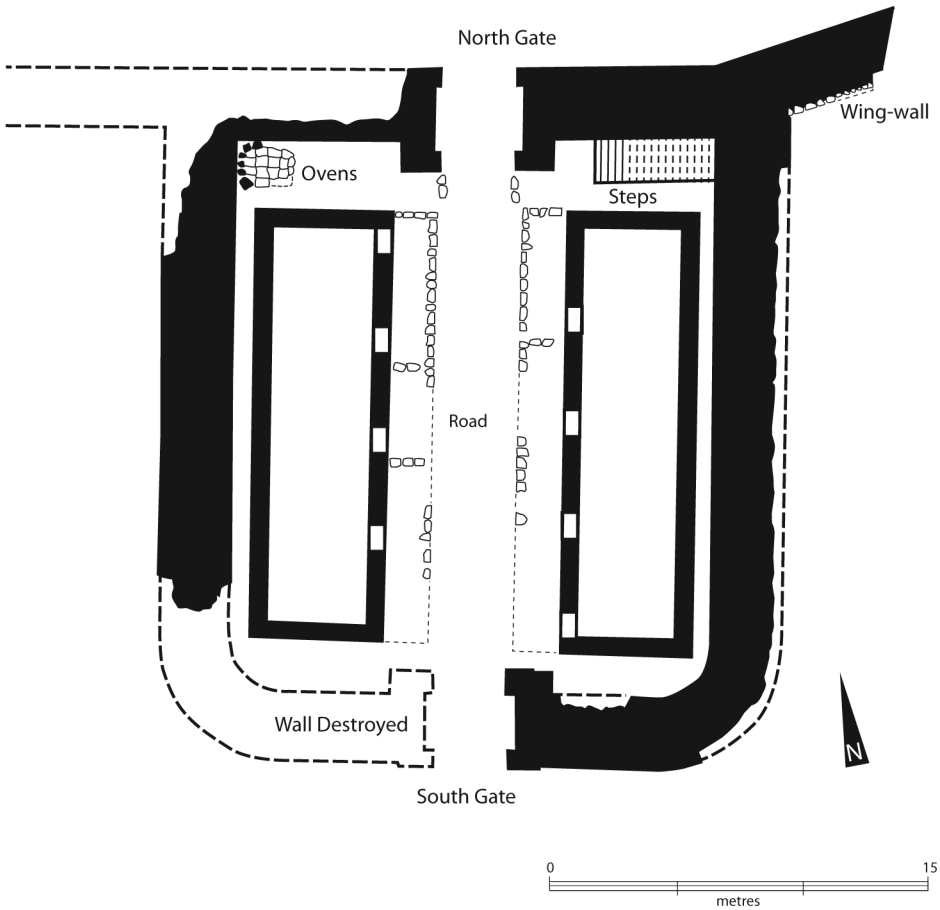


Fig. 1 Milecastle 48, phase 1. (Re-drawn from J. Gibson & F. Simpson, 'The milecastle on the Wall of Hadrian at the Poltross Burn', CW², 11 (1911), facing p. 424.) (1:300)

was found to be unnecessarily wide for the curtain. This conclusion is reinforced by the provision of a Broad Gauge wing-wall, clearly signalling an intent to bond the milecastle into a Broad curtain. On the east side, at least, this never came and a Narrow curtain, 2.1 m wide, was eventually built on the Broad foundations, resulting in a point of reduction at the junction with the wing-wall. Interestingly, as preserved, the wing-wall is only Broad to a height of 6 or 7 courses. Above this point it was replaced by a Narrow wall 2.4 m wide.[15] A similar feature at a number of turrets has prompted the suggestion that work at these sites served only to fix their positions prior to the arrival of the curtain and was not carried above 1.5 m in height.[16] This was not the case at milecastle 48 where the north-east corner continues above the surviving height of the Broad wing-wall, while the north-west rises above the height given by Hill and Dobson as the maximum attainable without the use of scaffolding. Given then that the requisite scaffolding was on site at some stage during the construction of the Broad Wall milecastle, there is no reason to believe that the installation was not completed to this gauge. If the previous arguments are accepted then it seems reasonable to conclude

that work on Broad Gauge milecastles began during the life-span of the Broad curtain and that at least some of them may have been completed prior to the reduction to the Narrow Standard.

Whether or not the introduction of Narrow milecastle perimeter walls paralleled the reduction to a Narrow Gauge curtain is harder to ascertain. The majority of milecastles on the Stone Wall with Narrow side and south perimeters have a Broad north wall. This could be attributed to either the completion of milecastles designated for modular construction after the reduction to the Narrow Gauge,[17] or a deliberate policy to provide narrower side and south walls from the start.[18] Certainly the absence of any short-axis milecastles with complete Broad Gauge perimeters, if not indicative of a gap in our knowledge, could be taken to suggest that different building gangs had different ideas about how wide milecastle side and south walls needed to be. However, there are some indications that the south gate of the short axis milecastle 42 was only adjusted to the requirements of the narrower perimeter with some difficulty. Furthermore, completely Broad Wall milecastles do include examples with both type III and type IV gates (fig. 2). Traditionally assigned to different legions, this implies that the conceived need for Broad perimeters was reasonably widespread. Equally the existence of milecastles with type III gates in conjunction with Broad north and Narrow side and south walls and ultimately entirely Narrow perimeters is suggestive of a change in plan similar to that encountered on the curtain. This argument can also be made for the adaptation of the type IV gate to the Narrow Wall requirements, resulting in the type II gate (fig. 2).

An examination of whether the Narrow side walls are bonded into the Broad north walls may hold some potential for ascertaining whether Broad north and Narrow side walls were constructed contemporaneously. However, this relationship was often not established during early excavations and even where it is known, the picture is far from clear-cut. At milecastle 42 the narrower side walls abut the

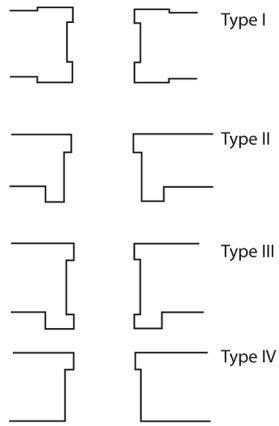


Fig. 2 Milecastle gate types. The examples shown are north gates. (Based on J. Hooley & D. Breeze, 'The building of Hadrian's Wall: a reconsideration', AA⁴, 46 (1968), p. 99.)

Broad north wall,[19] but so do the side walls at milecastle 27, a completely Broad Gauge structure.[20] The matter is further complicated by evidence that the building gangs sometimes constructed butt-ends for the side walls in conjunction with the north walls. This has been detected at milecastle 37,[21] milecastle 39,[22] and an extended example at milecastle 35 would explain the small point of reduction in its west rampart,[23] 9.8 m south of its junction with the north wall (fig. 3). If the theory of distinct Broad and Narrow phases of milecastle construction is viable, then any butt-walls constructed in conjunction with the Broad specifications would also be expected to be Broad. However, Hill has suggested that reducing the milecastle walls within the structure may have been 'inimical to the military mind',[24] and it is noticeable that with only two exceptions, at milecastles 35 and 37, changes in width only occur at the junctions of the perimeter walls (figs. 3 & 4). Certainly a mid-perimeter point of reduction similar in scale to that at the milecastle 48 wing-wall may well have been considered undesirable for safety reasons. Indeed, even here the presence of a facing stone projecting out of the east face of milecastle 48, in line with the wing-wall and clearly intended to bond with it, has been taken as testament to

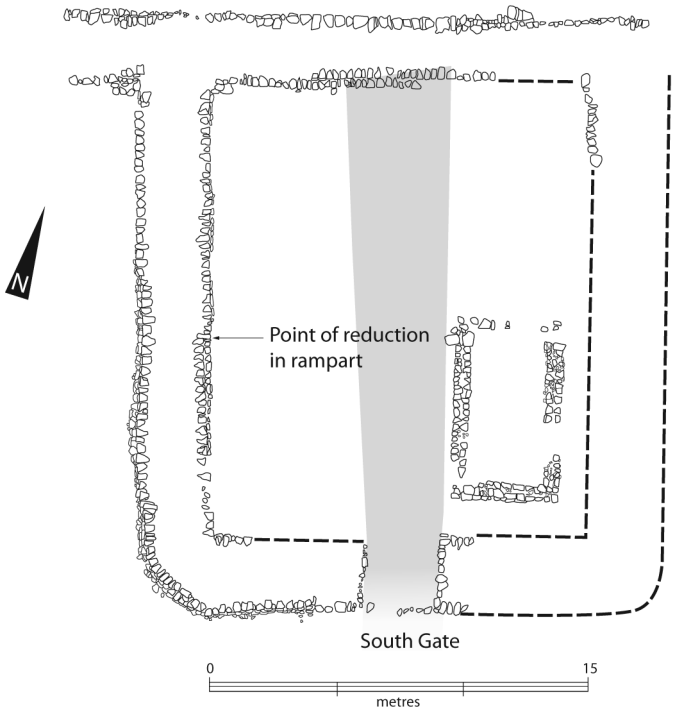
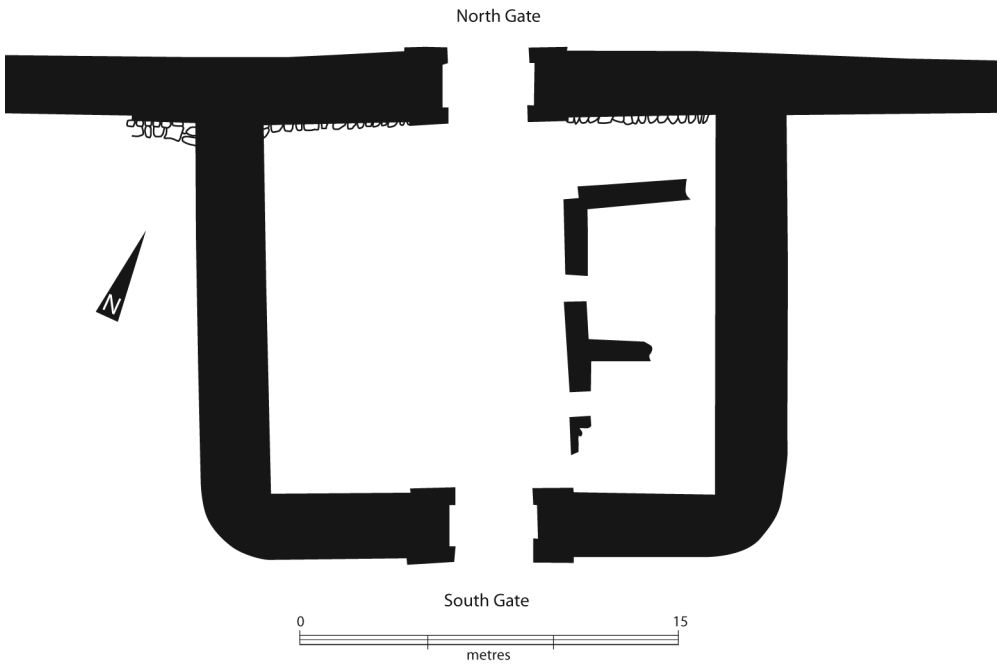


Fig. 3 (left) Milecastle 35, phase 1. The fill of the walls has been omitted for clarity. (Re-drawn from D. Haigh & M. Savage, 'Sewingshields', AA[5], 12 (1984), facing p. 38.) (1:300)

Fig. 4 (below) Milecastle 37, phase 1. (Re-drawn from P. Hunter Blair, 'Housesteads Milecastle', AA[4], 11 (1934), plate XVII.) (1:300)



a partial demolition and then narrowing of the wing-wall at a later period.[25] Interestingly in this context the projection of a facing stone from a lower course of the west perimeter at milecastle 37, immediately adjacent to its junction with the north wall,[26] serves as a possible indication that this wall was also originally intended to be wider. Accordingly any Broad butt-walls still awaiting completion when the curtain was narrowed could have been reworked, especially if they had not been constructed to their full height, thus creating the illusion of a Narrow perimeter bonding with a Broad north wall. It is clear that further study of the north and side wall junctions is required before the significance of their relationships can be fully understood.

On present evidence the behaviour and known widths of milecastle walls remains consistent with their being linked to the reduction from a Broad to Narrow curtain. As such, although Simpson's designation of Broad and Narrow Wall structures cannot be considered proven, it is certainly viable and the building programme it reveals is worthy of consideration. No attempt will be made to set the following arguments to a specific timeframe. The individual milecastle wall widths can be found in the appendix.

THE BROAD WALL MILECASTLES

Two milecastles are known to have been completed to the Broad Wall standard, here taken to be between 3–2.74 m in width: Milecastles 10 and 48. Milecastles 27 and 47 can almost certainly be added to this category. A further four milecastles, 23, 24, 25 and 26, have Broad side walls, while Milecastle 9 has Broad east and west walls and a narrower south wall. If this amalgamation of Broad Wall and mostly Broad Wall milecastles is arranged into groups they reveal three distinct building zones. The first, attested by milecastles 9 and 10, indicates construction in the vicinity of the Dewley Burn. A possible addition to this group may be the Westgate Road milecastle, although its footings, at 2.9 m wide,[27] are narrower than might be expected for a Broad Wall installation. The second group, comprising milecastles 27, 26, 25, 24 and 23, implies a building gang working east from the North Tyne and west from the Portgate. The third, consisting of milecastles 48 and 47 seals the topographical bottleneck between the Irthing and the Tipalt Burn.

It is suggestive that all three groups are associated with features which can legitimately be described as areas of strategic concern. The Dewley Burn, which lies directly west of milecastle 10, occupies a sharp narrow defile that crosses the line of the Wall. Such a feature is unique in the eastern sector and represents the clearest opportunity for unobserved movement across the projected Wall line in this area. The importance of Dere Street, crossing the Wall east of milecastle 23 is obvious,[28] while the North Tyne, directly west of milecastle 27 needed to be secured and bridged to ensure lines of supply and communication along the course of the Wall. This is equally true of the Irthing and Tipalt Burn, east and west of milecastles 47 and 48. Unsupervised, both rivers present a means of free movement and potentially threaten any attempt to bring the area under close control. Regardless of the nature of the perceived or actual threat, these are all areas which it would be prudent to make sure of, and the known clusters of Broad Wall milecastles suggest that their building program was influenced by the desire to control points of concern to the military authorities. This would certainly be in keeping with fortlet use elsewhere in the country and, while the endgame of a regular sequence was clearly paramount, there seems to be no reason why it should not have been exploited in this manner during the initial phases of construction. Indeed it is possible, though entirely speculative, that some of these structures were garrisoned in advance of the completion of the curtain. This would have permitted a close eye to be kept on the road and river crossings and may also have been used to control people seeking to relocate themselves either north or

south of the Wall line once its construction became public knowledge.

Building work was also underway on the central sector of the wall with the massive doorways for milecastles 37, 38, 42 and possibly 33[29] being constructed. Milecastles 42, 38, 30, 22, 20, 18, 17 and 13 also had their north walls completed to the Broad standard.

MILECASTLES 47 AND 48

Of the Broad milecastle clusters, that consisting of milecastles 47 and 48 is particularly interesting. Originally it was thought that the two milecastles had different gate types, implying the presence of two separate legionary gangs.[30] However Hooley and Breeze have demonstrated that the excavators of milecastle 47 were mistaken and that both milecastles had type III gates. In this context it remains surprising that milecastle 47 was built with standard A walls.[31] Both milecastles are also unusual in providing substantially larger internal areas than any other known milecastle on the Stone Wall. 395 m^2 is available in milecastle 48 and 385 m^2 in milecastle 47, as against the Stone Wall average of 277 m^2. This anomaly has been linked to the sizes of the rebuilt stone milecastles on the former Turf Wall west of the Irthing. While it is undeniable that these milecastles achieved unparalleled internal areas, culminating in the 644 m^2 available in the stone milecastle 52,[32] it has yet to be proven that such sizes were standard for their turf predecessors. Milecastle 49TW was found by Richmond to have an internal area of only 251 m^2,[33] while milecastle 50TW enclosed 337 m^2 [34] and the estimate of 432 m^2 for milecastle 51TW[35] is only sustainable if there was no berm between the rampart and ditch. If the standard berm width of 2.4m between the Turf curtain and Wall ditch in the vicinity of milecastle 51 is applied to the milecastle ditch, then this would result in an internal area entirely in keeping with the Stone Wall average. As it is these turf milecastles which are closest in the construction order to milecastles 47 and 48, it is legitimate to suggest that their size was arrived at independently. Certainly the single small barrack block in milecastle 50TW presents a major obstacle to the theory that milecastles 47–54 were built large from the start to counter a pre-existent threat in this area.[36] The possibility that one had emerged by the time of the rebuild of the Turf Wall in stone is a different matter. Hill has suggested that the eccentric plans of turrets 48a and 48b can be attributed to their having been constructed by inexperienced workmen[37] and a similar factor may account for the size of milecastles 47 and 48. It is certainly suggestive that when compared to the Stone Wall average their east-west and north-south dimensions are only out by 2.8–3.1 m. Given the significance of this figure to the Broad Wall milecastles, it is possible that a partial confusion between the intended internal and external dimensions resulted in the size of milecastles 47 and 48. Alternatively, the legion responsible for type III gates may have begun the construction process with different ideas about how large the milecastles needed to be. Certainly while milecastles 47 and 48 are significantly larger than the other Stone Wall milecastles, it is noticeable that all known type III milecastles are above the average size.

Milecastles 47 and 48 are also unusual in containing large double barrack blocks, seemingly from their primary phase. Those in milecastle 48 are the most thoroughly excavated and with a combined area of 172 m^2 occupy less than half the internal space available (fig. 1). The desire to accommodate a garrison of above average size should not therefore be an explanation for the internal area of milecastles 47 and 48. As Gibson and Simpson observed, barracks of an equal size could have been erected in the smaller milecastles and still left adequate space for an internal road and oven.[38] Nevertheless this opportunity was not taken, so far as we know, in any of the examples so far excavated. Here a note of caution is required. Recent excavations at Wallsend revealed that the fort barracks were originally constructed of timber, a feature missed during earlier investigations.[39] The primary milecastle barracks on the Turf Wall are known to have been wood-built and it remains possible that

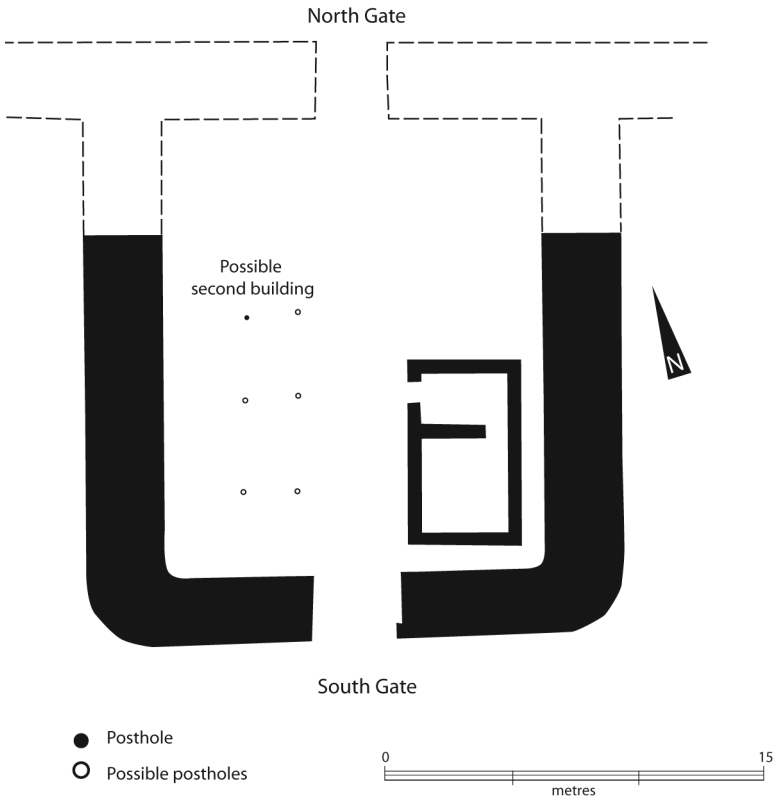


Fig. 5 Milecastle 9, phase 1. (Re-drawn from E. Birley, 'Excavations on Hadrian's Wall west of Newcastle upon Tyne in 1929', AA⁴, 7 (1930), plate XLII.) (1:300)

the same will be found true of the Stone Wall milecastles. Early timber structures have been found at milecastle 39, although these were associated with construction work.[40] Yet the one certain example of a Hadrianic milecastle barrack block, from milecastle 50TW, is sufficiently similar to the stone examples from milecastles 9, 35 and 37 to sustain the possibility that these barracks were of stone, or at least had stone dwarf-walls, from the very start (figs. 3, 4, 5 & 6). Similarly the presence of 'luxury' features in milecastle 48, including stone steps and barracks with verandas, window glass and tiles is consistent with the possibility that these internal buildings came early in the building sequence, before such provisions were considered to be an unnecessarily costly extravagance.

If, and it is far from proven, the structures designated as the primary barracks in milecastles 9, 35, 37, 50TW, 47 and 48 have been correctly interpreted, then the divergence in size between the first four and last two examples is marked. The stone barrack in milecastle 9 occupies 32 m^2 and even if the slight evidence for a contemporary wooden structure[41] is accepted, together these structures still only account for 43 m^2 of the 272 m^2 available. Similarly large areas of unused internal space are attested in milecastles 35, 37 and 50TW. As such it may be more pertinent to turn the question on its head and ask not 'why are there double barrack blocks in milecastles 47 and 48?' but 'why do the vast majority of the milecastles appear to be empty apart from a small, single barrack block in their primary phase?' Certainly it is only when considered in the context of Hadrian's Wall that the barracks in milecastles 47 and 48 are unusual; when considered in the context of fortlets in general,

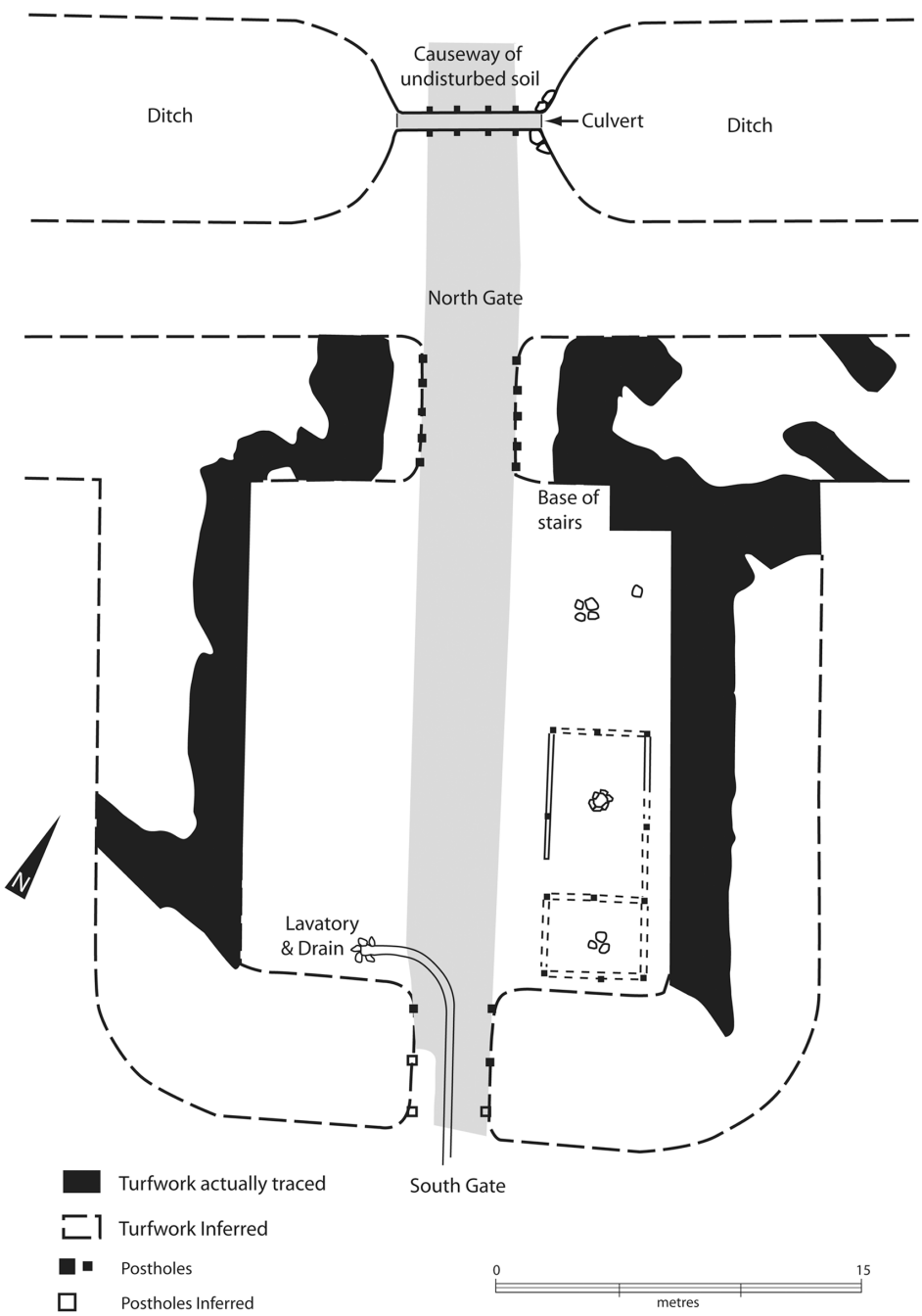


Fig. 6 Milecastle 50TW. (Re-drawn from F. Simpson, I. Richmond & J. St. Joseph, 'The Turf Wall milecastle at High House', CW², 35 (1935), 221.) (1:300)

they fit perfectly. Breeze and Dobson have noted with reference to the small barracks that 'there is hardly accommodation enough for the minimum to keep the milecastle functioning'.[42] One possible explanation for this is that the barracks in milecastles 47 and 48 are the only ones so far recovered that were constructed before the fort decision was taken. If so, they would represent the quantity of accommodation considered necessary to house a garrison capable of policing the Wall. By the time that the barracks in milecastles 9, 35, 37 and 50TW were constructed, it had been decided that the forts would bear the brunt of the patrolling requirements. The earlier completion of the barrack accommodation in milecastles 47 and 48 could also be taken as an indication that their location at a point of strategic concern led to their being garrisoned in advance of the majority of their counterparts.

THE NARROW WALL MILECASTLES

The reduction in scale to the Narrow Wall is believed to have occurred at, or shortly after, the decision to build auxiliary forts on the Wall line.[43] Accordingly the final Stone Wall milecastles were completed and the first Turf Wall milecastles were rebuilt in stone against a backdrop of large-scale construction and, in some cases, demolition work. The Narrow milecastle perimeter walls are here defined as being between 2.41–2 m in width. It is revealing to note that of the 32 milecastles for which reasonable data exists, 14 had the majority of their known perimeters built to the Narrow standard. Of these, milecastles 29,[44] 39, 40, 49, 50, 52, 53 and 54 were constructed entirely to the Narrow Wall standard. Interestingly the milecastles with the narrowest confirmed perimeter walls on the Stone Wall, 39 and 40, also have unusually narrow gateways. While this trend is not reflected in the contemporary rebuilding of the eastern turf milecastles in stone, it is possible that this narrowing was a reflection of the growing unease, following the fort decision, that the milecastle gateways were unnecessarily large.

One milecastle in particular, number 35, offers a series of structural clues which seem to reveal just how disjointed the construction process could be (fig. 3). Its north wall was 2.18 m wide above the offsets and built on a Broad foundation 3.3 m thick.[45] As has been noted, its west wall preserves a small point of reduction which decreases its width from 2.85–2.48 m. A single course above the offset respects the intended width of the west wall for a further 4.5 m south of this point. The south wall was 2.8 m wide above the offsets and the site report also draws attention to the lower quality of workmanship encountered in the south-west corner.[46] None of this need indicate any more than sloppy construction or later repair, but if the milecastle building programme was influenced by topographic concerns, repeatedly interrupted construction at milecastle 35 would not be surprising. The installation lies on Sewingshields crags, a formidable natural barrier, and was positioned directly to the south of a 30 m vertical drop, making it one of the most difficult sites to infiltrate on the entire Wall. Accordingly in the event of a change of plan, or if work in other areas was overrunning, a team engaged at milecastle 35 would be the most obvious to reallocate.

There are further indications that the completion of the Wall and its attendant installations in the central sector was, in general, regarded as being of secondary importance. These include the two narrowest milecastles on the Stone Wall, 39 and 40, the latter of which lies only 300 m east of the highest point of the Wall. There is the discrepancy between the course of the Broad Wall foundation and the Narrow Wall on Mons Fabricius and there is evidence that Housesteads was completed before the adjoining stretches of Narrow Wall.[47] Hill has observed that work on the north gate at milecastle 37 and the north and west gates at Housesteads was interrupted.[48] It has also been noted that west of milecastle 39 Broad Wall foundations were only laid where there were wide gaps in the Whin Sill,[49] further suggesting that construction schedules were sensitive to topographic concerns.

THE MIDDLE GAUGE MILECASTLES

This Middle Gauge is only attested in a very small number of Stone Wall milecastles and is nowhere used to construct an entire installation. At 2.6–2.44 m in width it falls between the Broad and Narrow standards and seems to have been restricted to the completion of a group of milecastles begun to the Broad specifications. Examples include the side and south walls of milecastles 37, 38 and 42, the east and west walls of 22 and 43 and the south wall of milecastle 9. The presence of Middle Gauge side walls in milecastle 43 helps to establish the position of this type in the construction order, as this milecastle was demolished to make way for Great Chesters, a fort which is bonded into the Narrow curtain.[50] As such the use of Middle Gauge milecastle perimeters may anticipate the reduction in width of the curtain wall and represent an experiment into the viability of a narrower curtain prior to the fort decision. If this is so, then given the limited use of the Middle Gauge, it was concluded that not only was a narrower curtain possible, but also that even greater savings on manpower and material were achievable.

CONCLUSION

The previous arguments have attempted to show that Simpson's theory of Broad and Narrow Wall milecastles remains viable and that the building programme it reveals has some implications for our understanding of these installations. Construction work seems to have prioritised those milecastles closest to the points where topographic factors threatened the integrity of the newly designated Wall zone and, in particular, facilitated unregulated north-south movement. However, it is important to emphasise that the endgame of a regular sequence of milecastles was always the paramount concern. While this may have been manipulated during the early phases of construction, it was never departed from. These indications of an early move to ensure the security of the projected Wall line need not imply the presence of an actual or perceived threat to military activity in the region, although they certainly do not preclude one. Laying aside the question of precisely how porous the Wall was intended to be to civilian traffic, it would certainly have regulated or prohibited a wide range of activities. Accordingly, it would be desirable to be in a position to minimise unsupervised north-south transit across the Wall zone as soon as possible after its construction became public knowledge. At its simplest, the areas in question are all such that it would be prudent to bring them under close control and any responsible commander would have acted accordingly.

It is with the above arguments in mind that Hill and Dobson's observation that 'it is frankly impractical to consider the building of *any* part of the Wall as an isolated structure to a height of more than [1.5 m] without exceptionally good reasons…' is particularly pertinent.[51] The survival of Broad Gauge walls to a height of 2.7 m in milecastle 48 makes it a strong candidate to have been completed to this standard. If so, a number of other Broad Wall milecastles are likely to have received the same treatment, precisely because there were exceptionally good reasons for so doing. The early construction of milecastles 47 and 48 is also likely to explain their unusual size. Whether this was a miscalculation on the part of the construction team or a deliberate policy of that particular legion is harder to ascertain. The extant plan of the internal arrangements at milecastle 48 certainly has the ring of an early, idealised layout and fits well with a generous internal area. However, if this was the legion's intention then their resolve did not last for long and was certainly not mirrored by the construction teams working on milecastles 10 and 27.

Once the priority milecastles 10, 23, 27, 47 and 48 had been completed, attention seems to have turned to filling in the gaps. Milecastles 24, 25 and 26 were begun and probably completed to the Broad Gauge, as were three sides of milecastle 9. In general though there seems to have been a shift towards modular construction with the emphasis, so far as we can tell

from the early excavation reports, on the north wall and gate. This resulted in 13 of the 19 Stone Wall milecastles for which reasonable data exists, receiving Broad north walls.[52] At some stage prior to the fort decision and the reduction to the Narrow Wall, there appears to have been a short-lived experiment into the viability of a Middle Gauge. Structurally, its contribution seems to have been limited, serving only to complete a handful of milecastles begun to the Broad specifications. However, if the existence of this gauge as a discrete entity is accepted, then its wider implications are more significant and appear to indicate that the military authorities were already seeking ways to reduce the workload.

If milecastle construction was influenced by a desire to secure a specified number of problem areas along the line of the Wall, then it is reasonable to postulate that these installations were garrisoned sooner rather than later after completion. The double barrack blocks in milecastles 47 and 48 would certainly be consistent with this, although their attribution to the primary phase of occupation cannot be considered proven. Nevertheless it is tempting to see the large empty internal areas which certainly existed in the Hadrianic milecastle 50TW and, on present evidence, also in milecastles 9, 35 and 37 as representative of the changing status of the milecastles following the fort decision. If so, then it is perhaps fitting that the earliest milecastles appear to have fulfilled the role for which the fortlet type was originally designed, before being shoehorned into a regular sequence and ultimately, emasculated by the forts.

APPENDIX: MILECASTLE WALL WIDTHS

The following table gives the known widths of the milecastle perimeter walls. An attempt has been made to include only those for which certainty is possible. Doubtless there will be some omissions. However, for the sake of completeness, when only the footings survive these have been included and are annotated with an 'F'. All other measurements are given above the offsets. Those widths derived from measuring off a plan are annotated with an asterisk ('*'). Finally, given its importance to the arguments in this paper milecastle 47 has been included, although the excavators were only able to establish that its walls were over 2.74 m in width.

Table 1 Milecastle wall widths.

MILECASTLE	NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL	
	Feet	Metres	Feet	Metres	Feet	Metres	Feet	Metres
Westgate Road			9'5" F	2.9 F			9'5" F	2.9 F
9	9'7"	2.92	8'4"	2.54	9'	2.74	10' F*	3.05 F*
10	9'7"	2.92	9'7"	2.92	9'7"	2.92	9'7"	2.92
13	9'3"	2.82			7'8"	2.33	7'8"	2.33
17	9'2"	2.79	7'11"	2.41	7'11"	2.41	7'11"	2.41
18	9'3"	2.82	7'9"	2.36	7'9"	2.36	7'9"	2.36

Table 1 Milecastle wall widths (cont.).

MILECASTLE	NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL	
	Feet	Metres	Feet	Metres	Feet	Metres	Feet	Metres
19			7'10"	2.38				
20	9'7"	2.92						
22	9'2"–9'5"	2.79–2.87			8'	2.44	8'	2.44
23					9'6"	2.89	9'6"	2.89
24					10'	3.05	10'	3.05
25					9'	2.74	9'	2.74
26					9'	2.74	9'	2.74
27	10'8"F	3.25 F	9'4"	2.84			9'6"	2.89
33	7'7"–6'7"*	2.31– 2.00*			7'3"	2.21	6'11"	2.11
35	7'2"	2.18	9'2"	2.8			9'4"–8'2"	2.85–2.48
37	9'- 7'6"	2.74–2.29	8'6"	2.59	8'6"	2.59	8'6"	2.59
38	9'10	2.99	8'2"	2.49	8'2"	2.49	8'2"	2.49
39	7'	2.13	7'	2.13	7'	2.13	7'	2.13
40	6'9"	2.06	6'9"	2.06	6'9"	2.06	6'9"	2.06
42	9'2"	2.79	8'	2.44	8'	2.44	8'	2.44
43					8'	2.44	8'	2.44
47			Over 9'	Over 2.74	Over 9'	Over 2.74	Over 9'	Over 2.74
48	9'2"	2.79	9'1"	2.77	9'2"	2.79	9'1"	2.77
49 SW	7'7"	2.31	7'7"	2.31	7'7"	2.31	7'7"	2.31
50 SW	7'7"	2.31	7'7"	2.31	7'7"	2.31	7'7"	2.31
52 SW	7'7"	2.31	6'8"	2.03	6'8"	2.03	6'8"	2.03
53 SW					7'	2.13		
54 SW					7'	2.13		
64 SW							8'6" F	2.59 F
72 SW	8'2"	2.5			7'2"	2.2	7'2"	2.2
73 SW			6'8"	2.03	6'8"	2.03	6'8"	2.03
79 SW	7'6"	2.29	8'1"	2.47	8'1"	2.47	8'1"	2.47

NOTES

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[2] B. Dobson, 'The function of Hadrian's Wall', *AA*[5], 14 (1986), 9.

[3] D. Breeze and B. Dobson, *Hadrian's Wall*, 4th ed., London (2000), 33–40.

[4] Except in instances where tower provision was governed by predetermined factors such as bridging points or the retention of pre-existent turrets.

[5] R. Collingwood, 'Hadrian's Wall a system of numerical references', *PSAN*[4], 4 (1930), 179–87.

[6] D. Woolliscroft, 'Signalling and the design of Hadrian's Wall', *AA*[5], 17 (1989), 5–19.

[7] C. Stevens, *The building of Hadrian's Wall*, Kendal (1966).

[8] P. Hill, 'Hadrian's Wall from MC0 to MC9', *AA*[5], 29 (2001), 15.

[9] J. Gillam, 'Milecastle 79 (Solway)', *CW*[2], 52 (1952), 38.

[10] C. Stevens 1966, 12.

[11] P. Hill and B. Dobson, 'The design of Hadrian's Wall and its implications', *AA*[5], 20 (1992), 40.

[12] F. Simpson, 'Excavations on Hadrian's Wall between Heddon-on-the-Wall and North Tyne in 1930', *AA*[4], 8 (1931), 310 & 317.

[13] The plans of the milecastles in this paper have been re-drawn from the drawings published in the original excavation reports, at a uniform scale of 1:300. Where appropriate, a very few extra details have been added to the plans; these are derived exclusively from the text and illustrations in the original excavation reports.

[14] J. Gibson and F. Simpson, 'The milecastle on the Wall of Hadrian at the Poltross Burn', CW[2], 11 (1911), 403.

[15] J. Gibson and F. Simpson 1911, 405.

[16] P. Hill and B. Dobson, 'The design of Hadrian's Wall and its implications', *AA*[5], 20 (1992), 39–40.

[17] C. Stevens 1966, 53.

[18] J. Hooley and D. Breeze, 'The building of Hadrian's Wall: a reconsideration', *AA*[4], 46 (1968), 97–114.

[19] F. Simpson, *et al*., 'Milecastles on Hadrian's Wall explored in 1935–36', *AA*[4], 13 (1936) 269.

[20] J. Gillam, 'Excavations at Low Brunton milecastle, No. 27, in 1952', *AA*[4], 31 (1953), 166.

[21] P. Hunter Blair, 'Housesteads Milecastle', *AA*[4], 11 (1934), 156.

[22] J. Crow cited in S. Frere, 'Roman Britain in 1982', *Britannia*, 14 (1983), 290.

[23] D. Haigh and M. Savage, 'Sewingshields', *AA*[4], 12 (1984), 36.

[24] P. Hill, 'Hadrian's Wall: some aspects of its execution', *AA*[5], 19 (1991), 37.

[25] J. Gibson and F. Simpson 1911, 405.

[26] P. Hunter Blair 1934, Plate XVI fig 1.

[27] B. Harbottle, R. Fraser & F. Burton, 'The Westgate Road milecastle', *Britannia*, 19 (1988), 153.

[28] The possibility that work commenced at the Portgate has been suggested by Breeze & Hill. D. Breeze and P. Hill, 'Hadrian's Wall began here', *AA*[5], 29 (2001), 1–2.

[29] F. Simpson, *et al*. 1936, 262.

[30] F. Simpson, *et al*. 1936, 271.

[31] J. Hooley and D. Breeze 1968, 100.

[32] See F. Simpson and I. Richmond, 'Bankshead Milecastle 52', *CW*[2], 35 (1935), 249–50.

[33] I. Richmond, 'Excavations at milecastle 49 (Harrow's Scar) 1953', *CW*[2], 56 (1956), 23.

[34] F. Simpson, I. Richmond and J. St.Joseph, 'The Turf Wall milecastle at High House', *CW*[2], 35 (1935), 220.

[35] F. Simpson and I. Richmond, 'The Vallum at milecastles 51 Wall Bowers and 50TW High House', *CW*[2], 37 (1937), 159.

[36] It must however be acknowledged that there are additional indicators of a special interest in this stretch of Wall. Although the scale of the Wall ditch in the vicinity of milecastles 47 and 48 could be an indicator that it too came early in the construction history, as has been argued on the Antonine Wall, other features are suggestive. There is the retention of the Pike Hill tower and Carvoran fort, as well as the construction of Trajanic fortlets at Throp and

Haltwhistle Burn. I am indebted to Prof. Breeze for these observations.

[37] P. Hill, 'The stone wall turrets of Hadrian's Wall', *AA*[5], 25 (1997), 42.

[38] J. Gibson and F. Simpson 1911, 398.

[39] N. Hodgson, *The Roman fort at Wallsend (Segedunum)*, Newcastle upon Tyne (2003), 4.

[40] R. Woodside & J. Crow, *Hadrian's Wall: an historic landscape*, Great Britain (1999), 40.

[41] E. Birley, 'Excavations on Hadrian's Wall west of Newcastle upon Tyne in 1929', *AA*[4], 7 (1930), 156.

[42] D. Breeze & B. Dobson, 'Hadrian's Wall: Some problems', *Britannia,* 3 (1972), 189.

[43] C. Stevens 1966, 30–34.

[44] Although Hunneysett cites the perimeter walls at milecastle 29 as 2.13 m wide, Prof. Breeze has kindly informed me that this figure is not confirmed elsewhere.

[45] D. Haigh and M. Savage, 'Sewingshields', *AA*[4], 12 (1984), 36.

[46] D. Haigh and M. Savage 1984, 38.

[47] J. Crow, *Housesteads*, London (1995), 18.

[48] P. Hill 1991, 35–6.

[49] J. Crow, 'Construction and reconstruction in the central sector of Hadrian's Wall', [In *Roman Frontier Studies 1989*, V. Maxfield and M. Dobson (eds), 44–7] Exeter (1991), 44.

[50] Although construction work on Great Chesters appears to have commenced later than at the majority of the Wall forts, it is considered to be part of the original sequence. D. Breeze and B. Dobson 2000, 50.

[51] P. Hill and B. Dobson 1992, 40.

[52] A further five milecastles are likely to have had Broad north walls, bringing the total to 18 out of 24.