

APPENDIX 12

THE SHEET LEATHER (M)

S Winterbottom

With the exception of two pieces from the fill (546) of early Roman pit 559 (Period 3-5; *Ch 2, p 48*), which yielded two fragments (**M88**, **M122**), and 16 fragments (**M45-60**) from a stratigraphically isolated Roman well (150) in an area of salvage excavation (KLA G; *Ch 1, p 12*), which cannot be closely dated or phased, stitched sheet leather was found only in deposits from Period 6 onwards, the bulk of it occurring in deposits of the later second century (Table 54); a few Roman items also occurred residually in medieval contexts. Some 105 stitched pieces were recovered, in addition to a number of sheet-leather fragments without stitching (these are recorded in the site archive).

This assemblage is larger than that from the southern Lanes (63 stitched pieces; Winterbottom 2010), but far smaller than those from other sites in Carlisle, for example, within the fort at Annetwell Street (439 pieces; Winterbottom in prep a) and on the Millennium Project site (586 pieces;

Period	No pieces
3-5	2
Sub-total	2
6	26
7-8A	16
8B	10
9	8
10A	6
Pre-10C	1
10C	2
Sub-total	69
11A	1
11D	6
Sub-total	7
Roman, not closely phased	19
Medieval	8
Sub-total	27
Total	105

Table 54: Sheet leather by period

Winterbottom 2009), or within the probable fort annexe at Castle Street (272 pieces; Winterbottom 1991). Although most stitched leather may ultimately be deemed to be a product of the military presence, nevertheless the correlation between this and military sites is not as straightforward as it might appear. Elsewhere within the fort, for example, at the BBC Radio Cumbria site on Annetwell Street (Winterbottom in prep b), deposits contemporary with those excavated earlier on Annetwell Street (Winterbottom in prep a), and with identical preservation conditions, produced scarcely any sheet leather. Consequently, on present evidence, little can be inferred about the nature of occupation at any given site from the relative scarcity of leatherwork.

Most of the assemblage from the northern Lanes comprises definite and probable fragments of Roman army tents; some pieces show clear evidence for reuse. Also noteworthy are a shield cover fragment (**M100**; *p 602*), and a decorative appliqué, which may also be military in origin, depicting a gateway (**M101**).

Range of Stitching Types Used

The main stitching types used in Roman leatherworking have been identified; type names and numbers in the catalogue refer to this classification system, which was originated by Willy Groenman-van Waateringe (1967) and subsequently expanded. A full discussion of the classification of stitching types as it applies to Roman leather found at Carlisle appears in the Castle Street report (Winterbottom 1991, 245-51).

Most of the seam (Fig 279) and hem types (Fig 280) are represented in the assemblage from the northern Lanes, with the exception of the Type II/III seam and the Type IVa hem (*cf* Winterbottom 1991, figs 220, 221). Noteworthy here is the occurrence of an unusual group of hem bindings classed as Type IVc (**M3-5**; *p 591*).

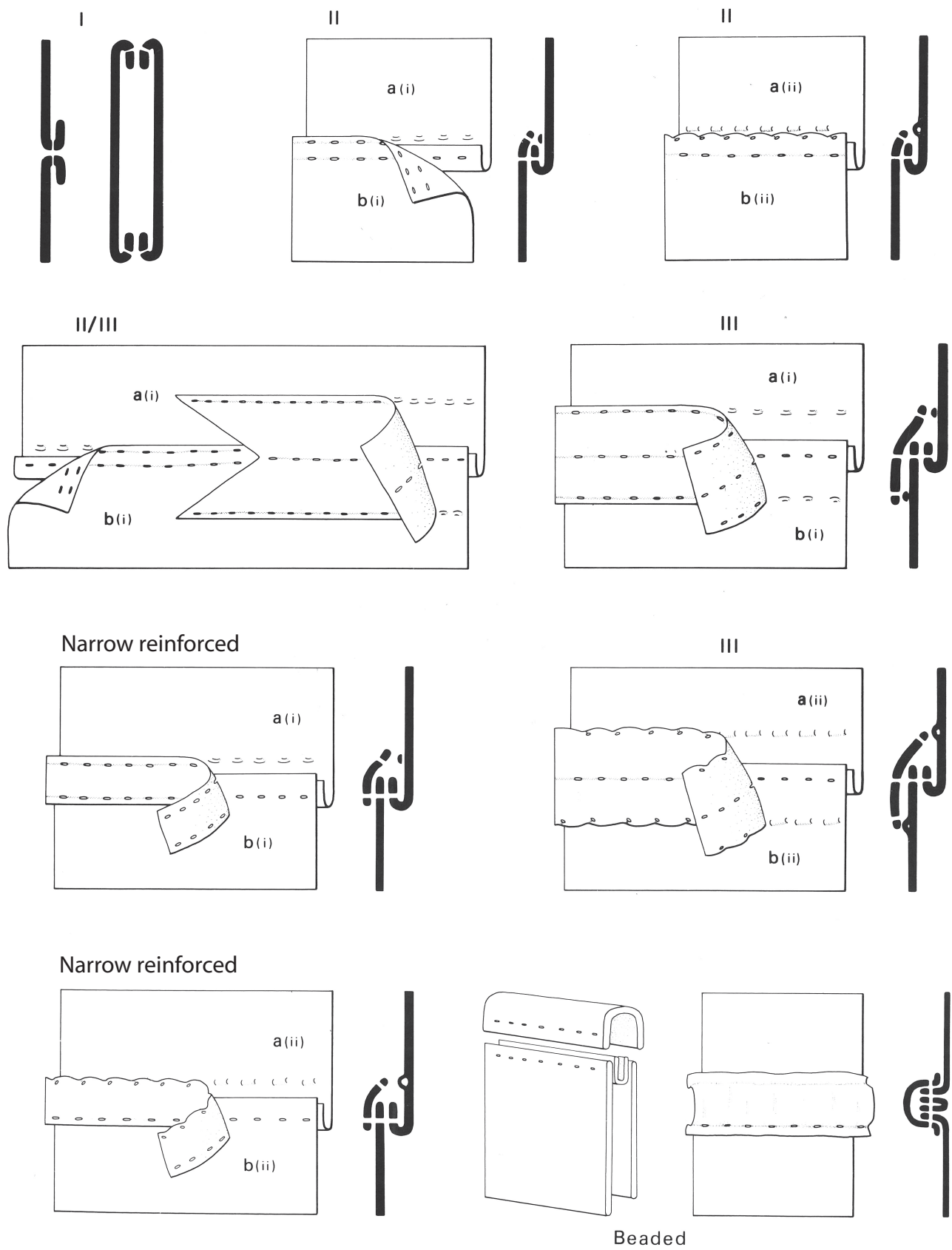


Figure 279: Roman seam types

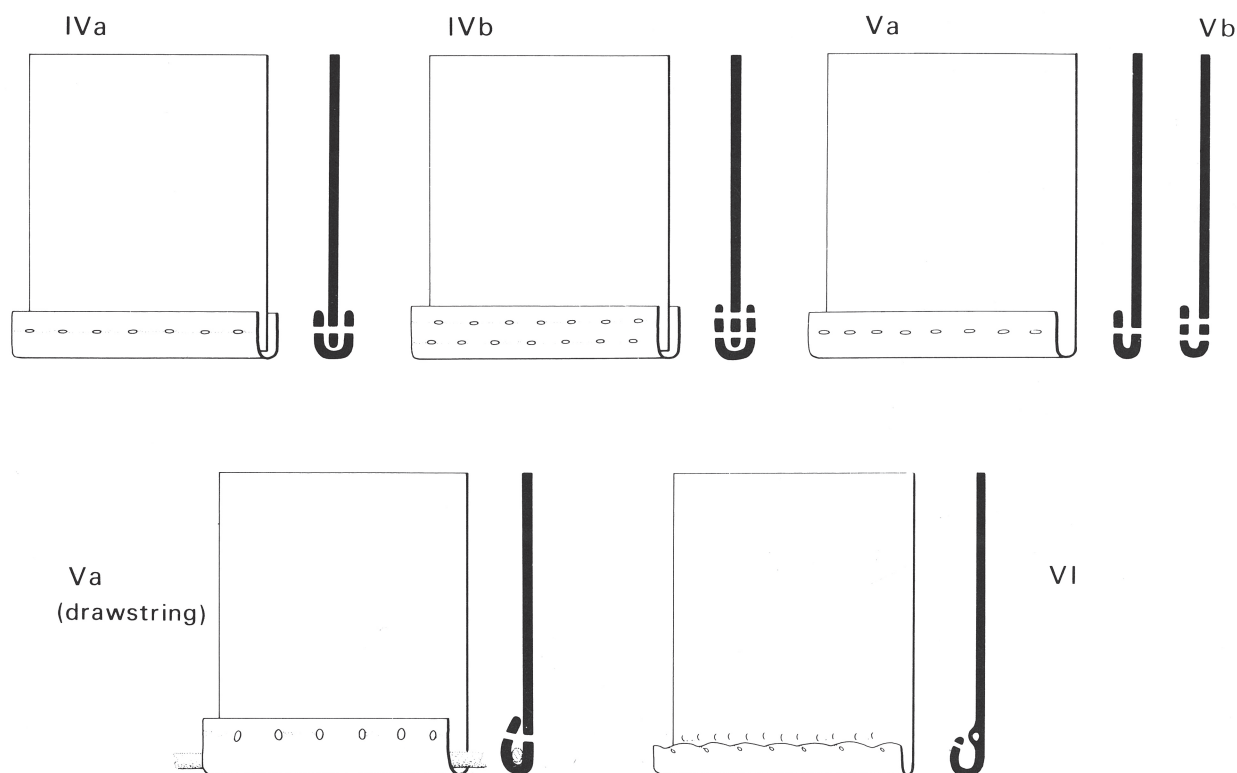


Figure 280: Roman hem types

Size of the Pieces

The mean area of a piece of stitched leather from the northern Lanes (averaging the maximum dimensions of the pieces) is about 1.16 m squared. This is considerably smaller than the dimensions of pieces from other Carlisle sites, comparing with figures of about 2 m squared for the southern Lanes and Annetwell Street (Winterbottom 2010; in prep a), and 4 m squared for Castle Street (Winterbottom 1991).

Proportion of Joining Pieces

Some 58% of the pieces from the northern Lanes were found together with others, to which they had once been stitched. In this respect, the assemblage resembles those from Castle Street (53%) and Annetwell Street (60%), but differs from the southern Lanes, where only 37% of the pieces could be so grouped (Winterbottom 2010).

Cutting Up Subsequent To Use

Secondary cutting, the result of deliberately dismantling objects before discarding them, is a common feature on

Roman stitched leatherwork, and presumably implies extensive reuse (eg Winterbottom 2009). About 23% of the leather from the northern Lanes falls into this category, showing evidence of secondary cutting, or that they belong to a group with some secondary cutting. This compares with only 11% for the southern Lanes, and around 20% for Annetwell Street and Castle Street.

Tent Leather

Although it is not always easy to differentiate between tent leather and other sheet-leather objects, it seems that nearly all the diagnostic sheet leather from the northern Lanes (some 94%) derives from Roman army tents; nearly a third of these are identifiable tent parts, the remainder probably being miscellaneous fragments. The proportions of probable tent leather from Annetwell Street and Castle Street are about 70% and 80% respectively, while the figure for the southern Lanes is much less, at 40-60% (Winterbottom in prep a; 1991; 2010).

There are several possible tent reconstructions (Fig 281). These are based partly on previous work on leather tents from Birdoswald (McIntyre and Richmond 1934), Vindolanda (van Driel-Murray 1990), and Valkenburg, South Netherlands (Groenman-van Waateringe 1967), and partly on

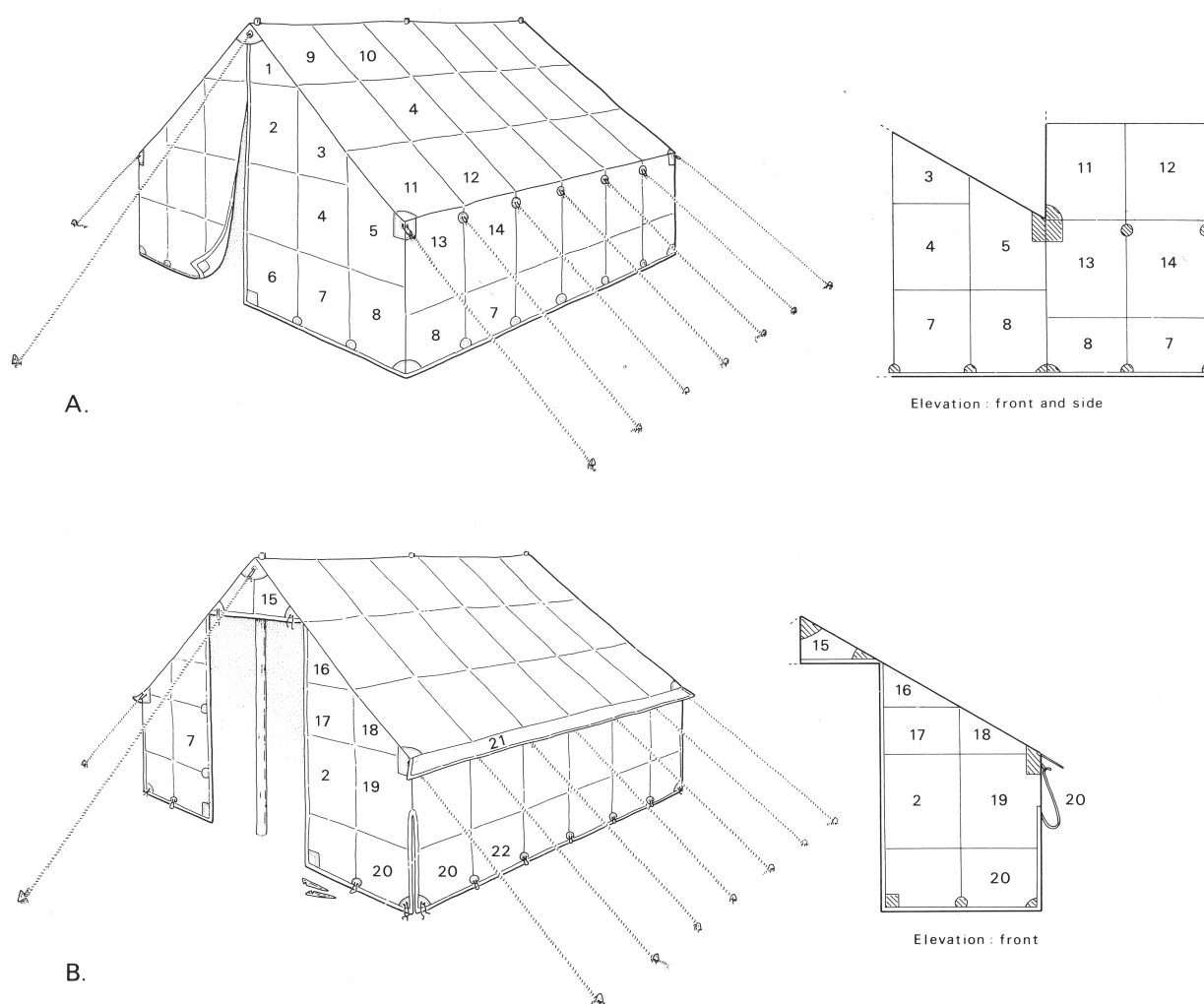


Figure 281: Possible reconstructions of Roman tents

other Carlisle finds. These reconstructions have been discussed more fully in the Castle Street report (Winterbottom 1991, 251-4).

Identifiable tent portions

There are 32 catalogued items which can be assigned with certainty to tents. Two gable-edge panels are each represented by a single fragment. The first (**M1**; p 589), from Period 6, is the corner of a gable edge panel; this probably came from position 3 (Fig 281, A), as there is no evidence for the large reinforcing pieces which were used at tent corners. Because the corner of the panel is distorted, the angle of roof slope can only be estimated at between 25° and 40°. The second gable-edge panel (**M24**; p 589), from Period 8B, also comes from position 3; it is also stretched and distorted, but the best estimate of the roof angle from this piece is 30°. The tent from Birdoswald was reconstructed with a roof pitch of 45° (McIntyre and Richmond 1934), and a pitch of between 30° and 35° was suggested at Valkenburg (Groenman-van Waateringe 1967).

A group of associated fragments (**M2-23**; pp 589, 591), all from the same Period 6 deposit, come from a free-hanging panel corner, possibly from a tent-door flap (Fig 281, A, position 6). Here the reinforcing pieces were squares rather than quarter circles, and more than one thickness was applied on each side of the panel. Three lengths of binding strip (**M3-5**) were recovered, the first two belonging on the long edge, and the third on the short edge of panel **M2**; **M5** overlapped **M3** at the corner. The hem bindings are the only pieces in this group with clear continuous thread impressions, showing that they were sewn on over all the other pieces.

The hem bindings in this group are of an unusual form, being folded off-centre, with three rows of stitching on the wider side and only two on the other. They are classified as Type IVc (not illustrated in Figure 280). Matching of the stitch holes shows that the narrow sides of the strips were sewn to the grain side of panel **M2**. Three lines of stitching thus appear along each of the panel's hemmed edges, although, on the outside of the tent, only two of

these would pass through the binding strip. On the lower edge of the panel, the third row of stitch holes (furthest from the edge) has no thread impressions on the grain side, however, and the surface of the leather between the second and third rows is shiny and unworn. It does appear that a further piece (or pieces) of leather was attached there, but its form and purpose are unknown, and it does not seem to be represented by any of the pieces recovered. The modified form of the IVb hem used in this group is closely comparable with a version also used at reinforced corners and seen on tents from Annetwell Street (Winterbottom in prep a, C214-26). In those cases, the strips were similarly folded off-centre, but with two rows of stitching on one side and only one on the other.

The group from the north-western corner of the site (LALD) includes a single square appliqué (**M6**; *p* 591), belonging on the flesh side of the panel corner. It carries faint traces of a thread impression and is likely to have been the outermost of the sandwich of layers on this side. Below it, to provide additional strength, were four pieces of leather (**M7-10**) arranged in the form of a square. On the grain side of the panel, two layers, each of five separate strips of leather, were sewn to the corner. Both sets were carefully arranged to form squares (Fig 282). The strips in the inner layer (**M11-15**) were laid parallel to the short edge of **M2**, and those in the outer layer (**M16-20**) ran parallel to its long edge. None of these pieces shows any thread impressions, and the outermost layer on this side was probably another square appliqué, the equivalent of **M6**. While **M21-3** are clearly part of the same construction, it was not possible to establish where they belonged.

A line of widely spaced stitch holes (a-b) on the lower edge of **M2**, on strip **M3**, and on some of the packing pieces may represent a loose tacking stage before all the components were finally stitched together. Two holes (c, d) through the panel, appliqué, and packing pieces may have had a similar origin. The use of two or more layers of applied pieces on each side of the tent

is a feature associated so far only with free-hanging corners on material from Carlisle. Another example of the use of a patchwork of pieces, rather than a solid square, comes from Annetwell Street (Winterbottom in prep a, nos C222-6). On panel **M2**, as on most, if not all, of the Carlisle examples of free-hanging corners reinforced with square appliques, there is a small group of larger stitch holes in the corner, suggesting a fastening loop or strap may have been attached there.

Another group of associated pieces, from third-century well 226 (Period 11D; *Ch* 4, *p* 119), also comes from a panel with a free-hanging corner reinforced with appliques on both sides (**M27-31**; *p* 593). This panel is assumed to come from position 6 (Fig 281, A), and to be part of the base of a tent doorway.

The final three items are all appliques. The first (**M25**; *pp* 589-90) would have been attached to a panel in position 8 (Fig 281, A), that is, the outside of the tent at its lowest corner. Appliqué **M26** comes from a similar position, but the lower hem stitches slant in the opposite direction to those on **M25**. Both pieces come from a later second-century pit, 329 (Period 10A; *Ch* 3, *p* 78). The third appliqué (**M32**; *p* 593), from a context that could not be closely phased, would have been attached to a panel in position 11 (Fig 281, A), the lowest corner of the tent roof. Analysis of the stitching shows that it would have been attached to the inside of the panel.

Miscellaneous tent pieces

Seam II stitching is found on three tent-panel fragments, two of which came from the same Period 8B deposit in the eastern part of the site (KLA B; **M33-4**; *p* 593). These do not join but have identical stitching, so may belong to the same panel. The third piece came from Period 11A (**M35**; *p* 593).

Seam III stitching is found on 25 catalogued items. Within this category, there are two groups of related pieces, consisting of panels, reinforcing strips, and repair patches. The first group (**M37-40**; *pp* 593-4) came from the fill (188) of a large second-century pit, 211, of Period 7-8A (*Ch* 3, *p* 61). The main panel fragment is **M37**, with an associated reinforcing strip (**M38**); **M40** may represent the adjoining panel. The main panel was probably repaired in antiquity by a patch sewn on to the inside, and it is probable that a fragment of the patch also survives (**M39**).

The second group of related pieces (**M45-60**; *pp* 595-7) came from a disturbed Roman pit in watching brief area KLA G, which cannot be closely phased. The main panel (**M46**) has two surviving edges, with Seam IIIa(i) present, but the shape of the fragment suggests that there has been reuse. Part of an adjoining panel (**M47**) and three pieces of seam-reinforcing strip

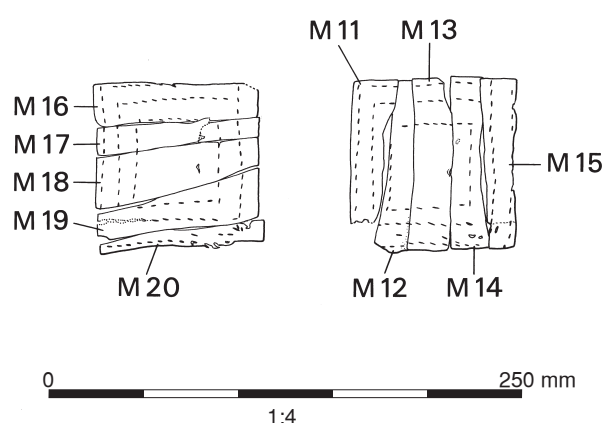


Figure 282: Square appliqué from a tent

(**M48-50**) join the lower edge, while an infill piece (**M51**) also comes from this seam. The relationships of five further associated panel fragments and three reinforcing strips (**M52, M54-60**) cannot be determined with any degree of certainty. The last fragment from this pit (**M45**) is a large panel piece, which cannot be part of the same group as **M46** and its associates, but probably comes from the same tent, as the stitching is of identical appearance.

Of the other fragments with Seam III stitching, three came from the same deposit as **M37** and its associated pieces (*pp* 593-4), fill 188 of pit 211 (Period 7-8A; *Ch* 3, *p* 61); these are a D-shaped panel piece (**M36**; *p* 593) and two torn panel fragments (**M41-2**). A single panel piece was recovered from the fill of second-century barrel-lined well 1016 (Period pre-10C; *Ch* 3, *p* 75; **M43**; *p* 595). The final piece (**M44**) may not be Roman; it is identified as a wide Type III(i) strip, but it came from a medieval pit in the north-eastern part of the site (LAL C). This feature also yielded fragments of medieval shoes (Padley in prep g), together with a high proportion of residual Roman pottery.

There are 16 items with Narrow Reinforced Seam stitching (*cf* Winterbottom 1991), including two groups of associated pieces. The first group comprises two panel fragments with a seam-reinforcing strip (**M61-3**; *p* 597) from the same deposit (fill 188 of pit 211, Period 7-8A; *Ch* 3, *p* 61) as panel **M37** and associated pieces (*pp* 593-4). The other group, from a second-century pit in the central northern part of the site (KLA D; Period 8B), consists only of panel fragments, of which four definitely belong together (**M65-7**) and the fifth (**M68**; *p* 597) may also belong. The remaining items in this category are pieces that do not join, from panels and seam-reinforcing strips.

There are two panel pieces which have Beaded Seam stitching present. Whereas the first (**M77**; *p* 598) is tentatively identified as this type, the other (**M78**) has a characteristic scatter of extra stitch holes at one end, which makes the identification more certain. Both pieces came from a Period 8B pit in the eastern part of the site (KLA B).

The seven hemmed pieces can be divided into three groups. The first consists of a badly torn panel piece (**M80**), with a fragment (**M81**) which may form part of it, and an infill piece (**M82**; *p* 600). These are components of a Type VI hem, and came from the same Period 7-8A pit (211, fill 188) as **M37** and its associated pieces (*pp* 593-4). The second group consists of a panel fragment and a Type IVb hem-binding strip (**M83-4**), which were residual within a large medieval pit in the eastern part of the site (KLA B). The other hemmed pieces are single fragments. Item **M79** (Period 6) has a partly unfolded Type Va hem, while **M85** (from a

medieval pit fill in the central part of the site (KLA C)) has Type Nb stitching.

There are two isolated appliqués from a Period 10C deposit in the north-western corner of the site (LAL D); these belong together, with **M87** being sewn below **M86** (*pp* 600-1). There are four tent-panel fragments with evidence for whip-stitched repairs, all lacking original edges. Fragment **M88** is one of the two sheet-leather fragments from early Roman levels (Period 3-5).

The remaining eight pieces (**M92-9**; *pp* 601-2) have stitch holes which do not conform with the recognised Roman types, although some may be variants. Fragment **M92** resembles a reinforcing strip from a Narrow Reinforced Seam, but lacks thread impressions. Strips of this type have been found at Vindolanda in association with Narrow Reinforced Seams, and have also been found sandwiched inside Type Vb seams as additional reinforcement (van Driel-Murray 2017). Object **M93** is similar, and the two pieces may originally have belonged together; they came from the same Period 7-8A pit, 211 (fill 188), as **M37** and associated pieces (*pp* 593-4). Piece **M95** may have come from a Beaded Seam, whilst **M96** could have come from either a Type IIa seam or a Narrow Reinforced Type a(i) Seam.

Shield Cover

A single fragment of a shield cover (**M100**; *pp* 602-3) was recovered from the same late second-century pit (329), as tent appliqués **M25-6** (Period 10A; *Ch* 3, *pp* 589-92). Unlike other pieces recovered from Carlisle, and to date from other British sites, **M100** seems to be part of a cover for a rectangular shield, rather than one with rounded ends. The best-known examples of rectangular covers come from the legionary fortress at Vindonissa (Gansser-Burckhardt 1942, especially Abb 49-50, 52-3).

Decorative Appliqué

An appliqué (**M101**; *p* 603) depicting a gateway was recovered from a gully 1102 (fill 1094), associated with Period 6 Building 1561 (*Ch* 3, *p* 52). The object is in two parts that do not join, and depicts two three-storey towers, each topped by the gable of a sloping roof. At the bottom of each gable is a triangular pinnacle, and at the apex is what can be interpreted as a winged victory. Originally, the towers were joined at 'ground' level by four arches, but whether the roof between the two towers was gabled or flat is unknown. The two upper storeys of the towers are also pierced by arches,

but these are narrower than those at the bottom. All the arches have round heads and prominent corbels at the spring.

The whole can be seen as a town gateway. The best-known example of this type is the *Porta Nigra* at Trier (Sear 1982, fig 177); although this dates to the early fourth century, it is a well-known Roman type. The first-century *Porta Palatina* at Turin has four arched passageways, flanked by impressive towers, and the ones at Aosta, Spello, and Milan are similar both in type and date (*op cit*, 268). These are perhaps better parallels for **M101**, as it was recovered from Period 6, which has been dated to the Hadrianic/early Antonine period. The function of this appliqué is uncertain. Although openwork appliqués with geometric designs were attached to some Roman shield covers (Gansser-Burckhardt 1942, Abb 60), no obvious parallels to **M101** are known from other sites. However, a stitched panel decorated with an applied piece, possibly representing a building with corner towers, was found at the southern Lanes (Winterbottom 2010, no N22).

Other Stitched Pieces

The remaining four items (**M102-5**; pp 603-4) are from Roman contexts but have stitch holes which cannot be allocated to the well-known Roman seam and hem types. One (**M102**) is the second early Roman piece from the northern Lanes, coming from the same pit fill (546, of pit 559) as whip-stitched panel fragment **M88** (Period 3-5; Ch 2, p 48). One of the other two pieces, from a Period 8B pit in the central northern part of the site (KLAD), folded strip **M103**, resembles a packing strip from a Beaded Seam, although it is very irregular. Stitched piece **M105**, from a later second-century (Period 10A) soil spread in the north-western corner of the site (1021; Ch 3, p 78), also has incisions which may represent a cursive inscription; the piece has some features in common with tent appliqués, but it cannot be classed with certainty as tent leather.

Catalogue

Identifiable fragments of tent are catalogued first, followed by the pieces which use the same sewing techniques. These are followed by items which are not tentage, and, finally, the pieces which cannot be identified. Within each section, catalogue entries are arranged by period.

Objects are normally illustrated from the side on which most stitching details, in particular thread impressions, appear. For panels and infill pieces, this is normally

the flesh side, while for binding and reinforcing strips, patches, and appliqués, it is the grain side. Only where exceptions are made to this rule, or to avoid uncertainty, is the illustrated side labelled.

Abbreviations

LH/RH	left hand/right hand
t/st (s)	tunnel stitch(es) (alternatively 'felling stitches'), which pierce only one side of the leather without going right through the thread impression
outer/inner	nearer to/further from the edge

Tent leather

Identifiable tent portions

- M1** Corner of gable-edge panel (Fig 283), with the sloping upper edge a Beaded Seam, and the vertical RH edge Seam N Ra(ii), or possibly IIa(ii). It is probably from position 3 (Fig 281, A), since there are no signs of the large reinforcing pieces used at tent corners. The RH edge has an extra line of stitching along the apex of the fold, indicating a repair. Some small slits in the interior of the panel have also been repaired. The panel corner is distorted and the angle of roof slope can only be estimated at between 25° and 40°.
L: 208 mm+; W: 85 mm+; Th: 1 mm
KLA F 50, L 5A, Period 6

For **M2-23** (Fig 284), a group of associated pieces from a single feature in Period 6, dimensions and other relevant information are presented in summary catalogue form (Table 55), since they require no individual description.

- M24** Trapezoidal panel from tent gable (Fig 281, A, position 3), stretched and distorted (Fig 283). An estimate of the panel's original shape and dimensions gives an overall width of about 450 mm, a height of about 370 mm, and angle of roof slope of about 30°.
Upper edge: Beaded Seam. There is a small repair/infill in the centre of the upper edge.
RH edge: Seam N Rb. There is a whip-stitched repair near to RH edge, surrounded by tunnel stitching for a small patch sewn to the flesh side.
Lower edge: Seam N Ra(ii).
LH edge: also Seam N Ra(ii)?
W: 400 mm+; Ht: 320 mm; Th: 1.25-1.5 mm
KLA B 1249.01, L 3280, Period 8B

- M25** Quarter-circle appliqué, now two non-joining pieces (Fig 283). The curve of the edge can be reconstructed, however, and suggests little leather is missing between them. There are

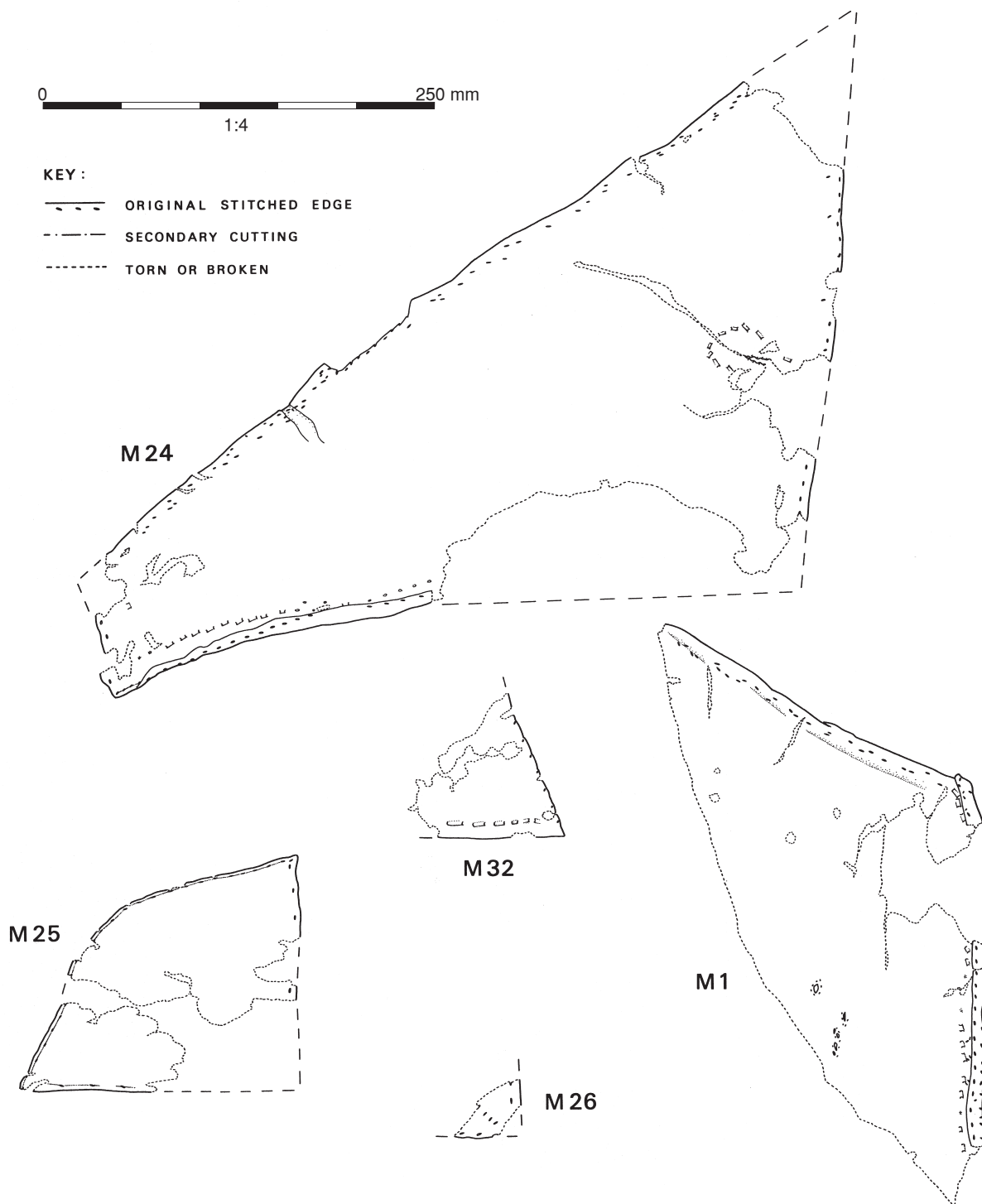


Figure 283: Fragments of tent leather

continuous thread impressions on the upper and LH edges, and faint thread impressions on the lower edge; none are present on the RH edge. The form of this piece suggests it comes from the outside of a tent at its lowest corner (from a panel in position 8?; Fig 281, A). Its vertical edge would have been incorporated into the Beaded Seam down the gable edge and its lower edge incorporated into the panel hem. The presence of thread impressions on

this lower-edge stitching probably indicates a Type Va or Vb hem. A similar appliqué from the Tullie House excavations (Winterbottom in prep b, no 280) has two rows of stitching with thread impressions on its lower edge, as a result of being sewn to the outside of a panel whose edge was then stitched as a Vb hem.

L(reconstructed): 178 mm; W(reconstructed): 148 mm; Th: 1.5 mm

LAL C 329, L 37, Period 10A

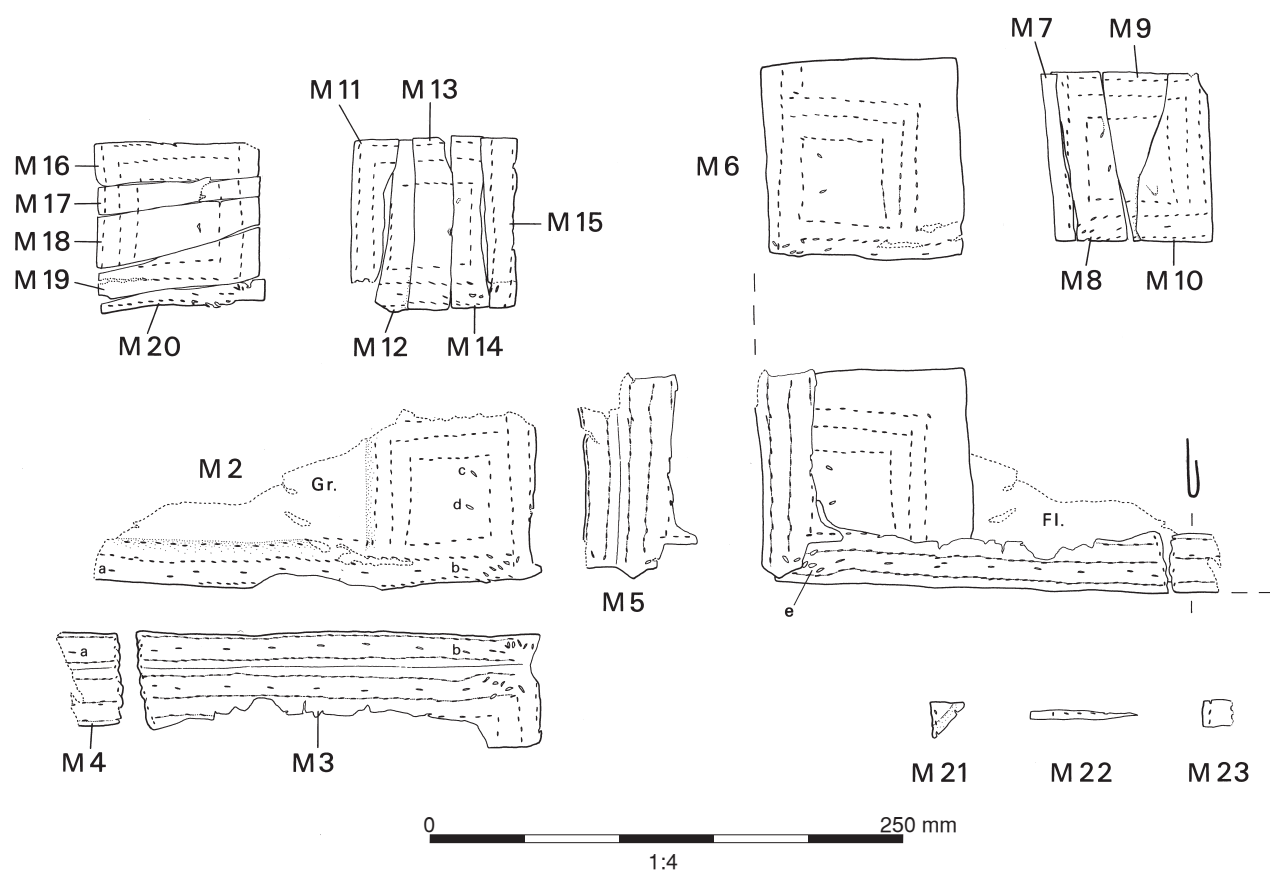


Figure 284: Associated leather fragments from a free-hanging panel corner of a tent

No	Description	L (mm)	W (mm)	Th (mm)	Site	Context	SF No	Period
M2	Panel fragment	235+	93+	1.5	LAL D	1247	L101A	6
M3	Hem-binding strip, Type IVc	209	44-58	1-1.25	LAL D	1247	L101C	6
M4	Hem-binding strip, Type IVc	32+	49+	1.5	LAL D	1247	L101L	6
M5	Hem-binding strip, Type IVc	105	46-60	1	LAL D	1247	L101D	6
M6	Square appliqué	102	101	2	LAL D	1247	L101B	6
M7	Packing piece	88	11	0.75	LAL D	1247	L101U	6
M8	Packing piece	90	25	1	LAL D	1247	L101H	6
M9	Packing piece	89	37	1	LAL D	1247	L101E	6
M10	Packing piece	89	38	1	LAL D	1247	L101G	6
M11	Packing piece	75+	23	1	LAL D	1247	L101N	6
M12	Packing piece	90	21	1.5	LAL D	1247	L101F	6
M13	Packing piece	90	22	1-1.5	LAL D	1247	L101O	6
M14	Packing piece	90	20	1	LAL D	1247	L101P	6
M15	Packing piece	89	19	1	LAL D	1247	L101J	6
M16	Packing piece	86	22	1	LAL D	1247	L101M	6
M17	Packing piece	85	16	1	LAL D	1247	L101Q	6
M18	Packing piece	86	27	1	LAL D	1247	L101K	6
M19	Packing piece	85	21	0.75	LAL D	1247	L101I	6
M20	Packing piece	87	11	1	LAL D	1247	L101R	6
M21	Packing piece	20	18	0.75	LAL D	1247	L101S	6
M22	Packing piece	57	5	1	LAL D	1247	L101W	6
M23	Packing piece	16+	14	0.75	LAL D	1247	L101V	6

Table 55: Summary catalogue of associated leather from posthole 1350

M26 Appliqué? This is a fragment, with two stitched edges at right-angles and with a diagonal line of small slits bisecting the angle (Fig 283). It could possibly be a fragment from the missing RH corner of **M25**, although no trace of a corresponding

diagonal line of stitch holes was visible on the latter. Also, when aligned, its lower, 'hem' stitches slant in the opposite direction from those on **M25**.

L: 40 mm+; W: 37 mm+; Th: 0.75 mm
LAL C 329, L 39, Period 10A

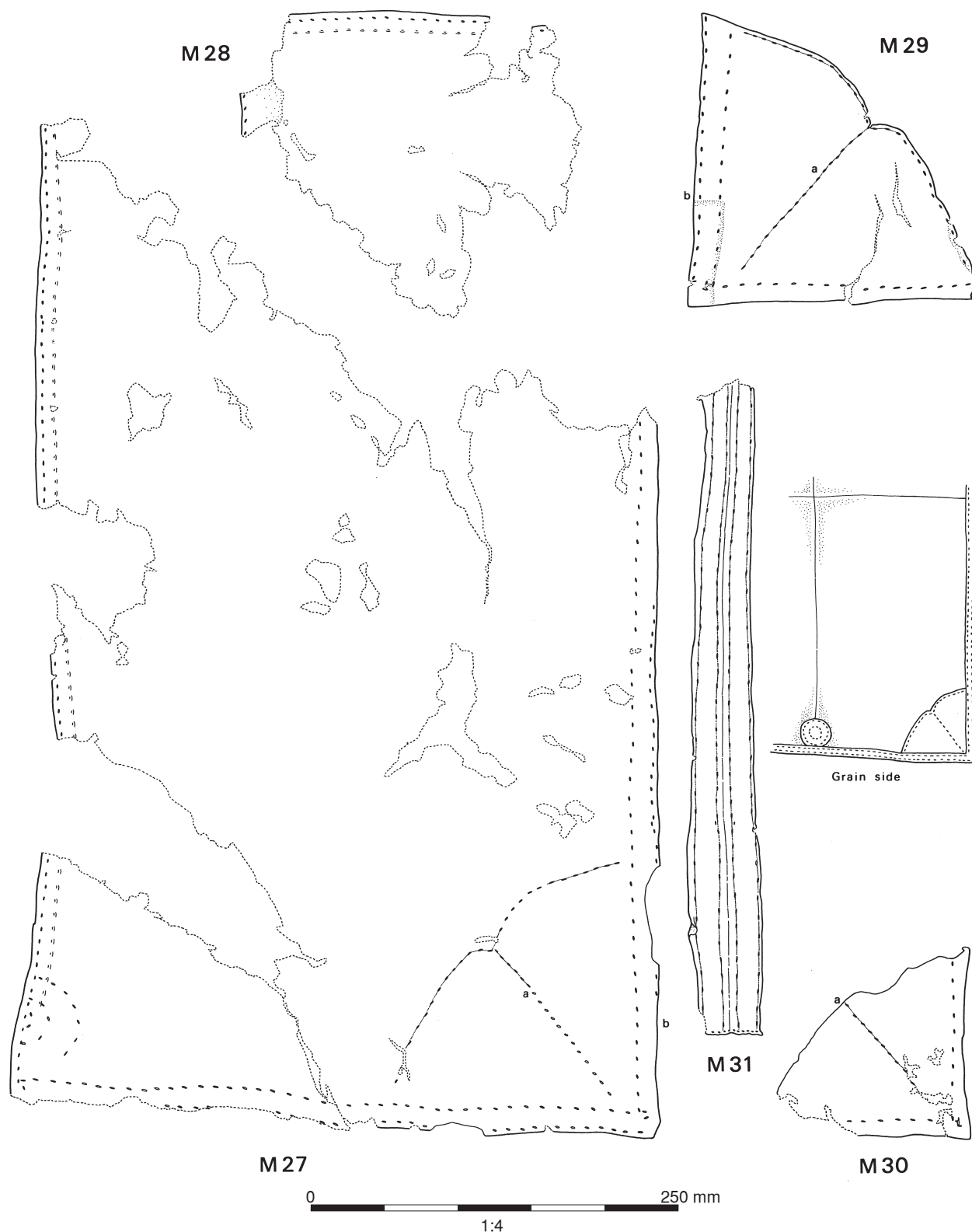


Figure 285: Elements of a tent panel from Period 11D well 226

- M27** Tall, narrow panel (Fig 285), probably from the base of a tent doorway (position 6, Fig 281, A). It has a free-hanging corner, reinforced on both sides with appliquéés (**M29**, **M30**). The base of the seam between this panel and the adjacent one was also reinforced with circular applied pieces, now missing. Item **M28** may be the missing top LH corner of this panel, although it is impossible now to join the pieces convincingly, as the edges of **M27** are very badly damaged. If **M28** does belong there, the panel must have been at least 730 mm long. LH edge: Seam IIIb(i). Lower and RH edges: Hem IVb. Binding strip **M31** belongs on the RH edge. L: 690 mm+; W: 425 mm; Th: 1 mm LAL D 232.18, L 58A, Period 11D
- M28** Torn piece from a panel corner (Fig 285). Both edges are probably Seam IIIb(i), although the LH edge is delaminated and missing any tunnel stitching. L: 230 mm+; W: 205 mm+; Th: 1 mm LAL D 232.18, L 57B, Period 11D
- M29** Large quarter-circle appliqué, bisected by a diagonal line of stitching (Fig 285). The junction of this stitching with the curved upper edge is marked by an indentation, but this may result from an irregularity in the leather, rather than from any attempt to produce a scalloped effect. This piece was sewn to the grain side of panel **M27** in its lower RH corner. Strip **M31** covered the vertical edge down to a point 70 mm from the base. Below that is the impression of a further section of binding strip, now missing, which may have continued around the panel corner and on to its lower edge. Only the upper row of stitching belonging to the lower edge hem has passed through the edge of the appliqué, although two rows of holes are present on **M27**. L: 197 mm; W: 193 mm; Th: 1.5 mm LAL D 232.18, L 57A, Period 11D
- M30** Small quarter-circle appliqué, bisected by a diagonal line of stitching (Fig 285). It is sewn to the flesh side of **M27** in its lower RH corner. The appliqué was not attached around its irregular upper edge, and, on both of the hemmed edges, only the inner row has passed through it. The considerable difference in size between **M29** and **M30** is an unusual feature of this reinforced corner. It is clear that no further pieces were sewn to the flesh side of **M27**, as the corner stitching there, where not covered by **M30**, has continuous thread impressions. L: 130 mm; W: 128 mm; Th: 1 mm LAL D 232.18, L 58C, Period 11D
- M31** Hem-binding strip (Fig 285), Type IVb, with one whip-stitched and one torn end. It belongs on the RH edge of **M27**, where it was sewn over the edges of appliquéés **M29** and **M30**. L: 444 m+; W: 32-48 mm; Th: 1 mm LAL D 232.18, L 58B, Period 11D
- M32** Corner torn from an appliqué, roughly triangular or a quarter circle (Fig 283). The RH edge has been whip-stitched, and the lower edge has a line of tunnel stitching on the grain side. This combination of stitching is found on appliquéés sewn on the insides of tents to the panels forming the lower corner of the roof (position 11, Fig 281, A). The tunnel stitching across the bottom corresponds to the upper edge of a reinforcing strip sewn along the seam joining roof and side walls. Two further examples of this type of appliqué were recovered from excavations at Tullie House (Winterbottom in prep b) and Abbey Street, Carlisle (Winterbottom 1992, no 7). L: 97 mm+; W: 87 mm+; Th: 1 mm KLA F 52, L 7A, Roman, not closely phased
- Seam II stitching**
- M33** Panel. This small piece has identical stitching to **M34**, but does not join it. L: 58 mm+; W: 38 mm+; Th: 0.75 mm KLA B 1249, L 3278, Period 8B
- M34** Rectangular piece cut from a panel edge (Fig 286), with extremely fine Seam IIb(i) stitching. The grain side has an impression of the narrow, folded (IIa) edge of the adjacent panel. Most of the stitch holes in the outer row pass obliquely through the leather, exiting along its edge. L: 156 mm+; W: 57 mm+; Th: 1 mm KLA B 1249, L 3279, Period 8B
- M35** Small piece of panel edge with Seam IIb(i) stitching (Fig 286). It has secondary cutting both parallel and at right-angles to the edge. L: 112 mm+; W: 66 mm+; Th: 1 mm LAL C 209.06, L 34, Period 11A
- Seam III stitching**
- M36** D-shaped piece from panel edge, with Seam IIIa(i) stitching (Fig 286). L: 168 mm+; W: 85 mm+; Th: 1-1.5 mm KLA B 188.05, L 223, Period 7-8A
- M37** Fragment of panel edge with Seam IIIb(i) stitching (Fig 286). Strip **M38** belongs on this seam, and **M40** may be part of the adjacent panel. Fragments **M37** and **M38** both have right-angled portions cut from their lower edges. An arc of stitch holes around the cut on

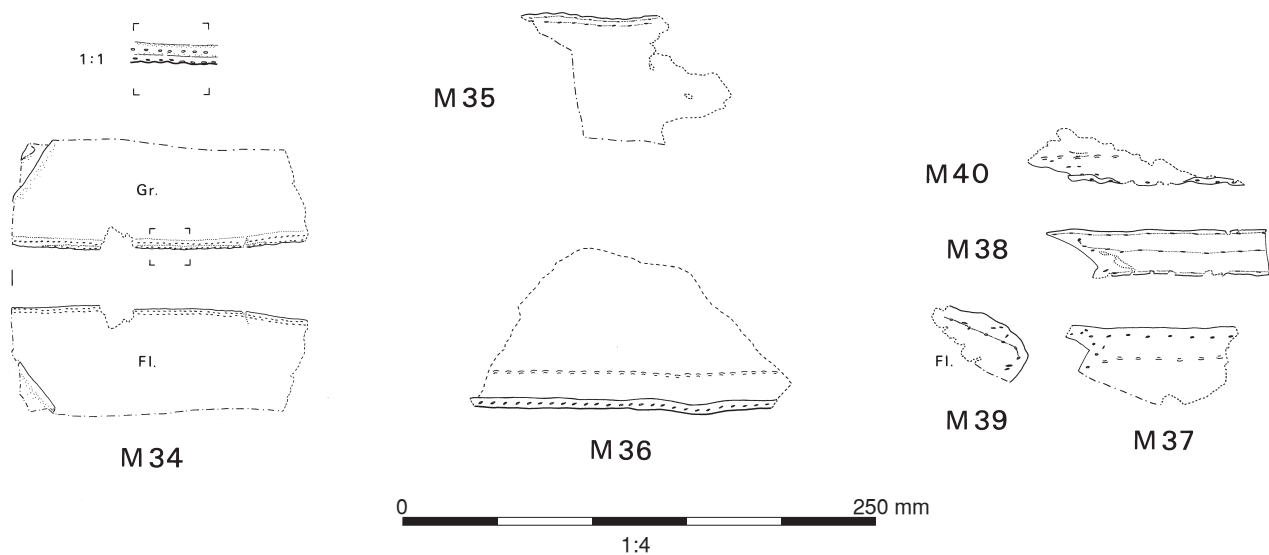


Figure 286: Seam II and Seam III stitching

M37 has thread impressions on the grain side. These cut-aways suggest a repair, effected by removing the damaged area and replacing it with a patch sewn to the inside. Fragment **M39** appears to be a fragment of the patch used.
L: 92 mm+; W: 40 mm+; Th: 1 mm
KLA B 188.05, L 270A, Period 7-8A

M38 Seam reinforcing strip (Fig 286), Type III(i), with cut ends.
L: 116 mm+; W: 24 mm+; Th: 0.75 mm
KLA B 188.05, L 270B, Period 7-8A

M39 Part of a ?rectangular patch with thread impressions on its flesh side (Fig 286).
L: 56mm+; W: 26mm+; Th: 1.5mm
KLA B 188.05, L 270D, Period 7-8A

M40 Fragment of paneled edge with Seam IIIa(i) stitching (Fig 286). The stitched edge slants inwards at the LH end, and has stitch holes along it with a continuous thread impression on the grain side, suggesting a patch sewn to the flesh side.
L: 115 mm+; W: 28 mm+; Th: 1 mm
KLA B 188.05, L 270F, Period 7-8A

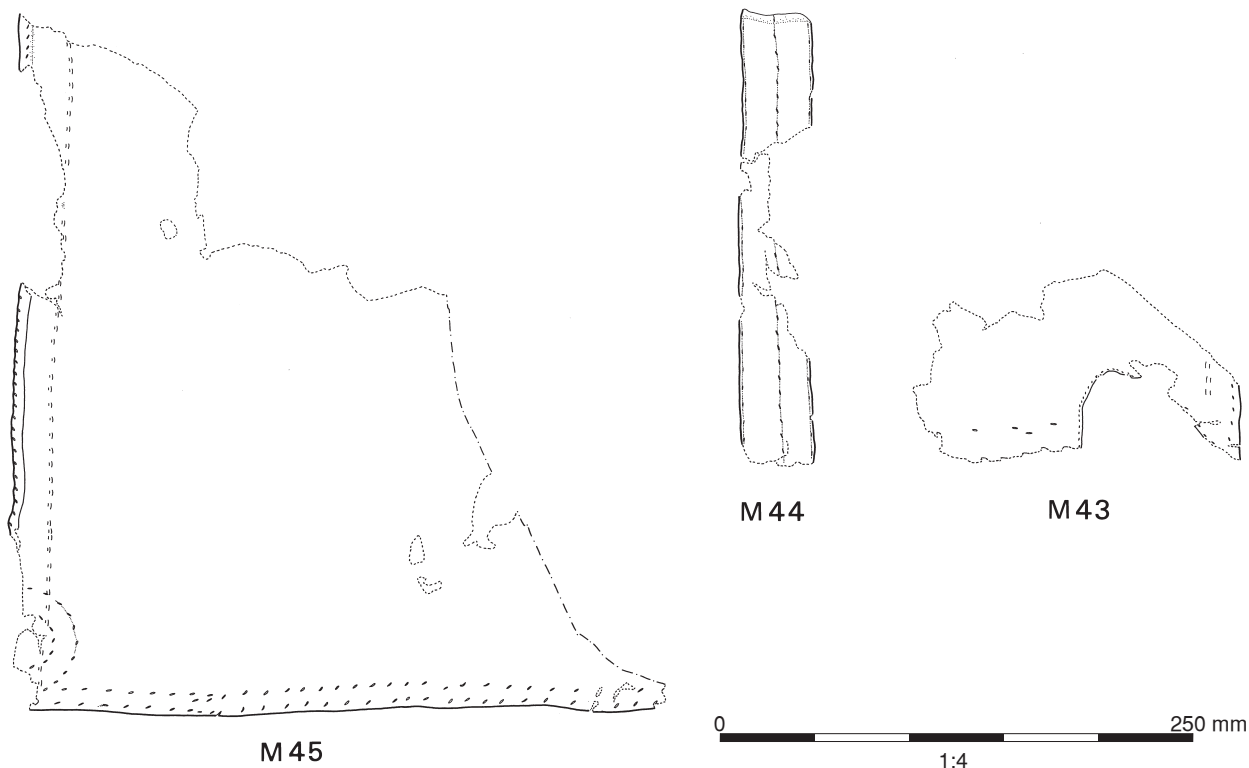


Figure 287: Examples of Seam III stitching

- M41** Torn piece from right-angled panel corner. Only tunnel stitching survives on one edge. The other appears to be Seam IIIb(i).
L: 120 mm+; W: 80 mm+; Th: 1 mm
KLA B 188.05, L 817, Period 7-8A
- M42** Torn piece from panel edge, Seam IIIa(i).
L: 102 mm+; W: 70 mm+; Th: 1 mm
KLA B 382.03, L 835A, Period 7-8A
- M43** Torn piece from panel corner with an infilled area adjacent to the RH edge (Fig 287).
RH edge: Seam IIIb(i).
Lower edge: two rows of stitch holes without thread impressions, the holes in the upper row being further apart than those in the lower. This edge may have been a IVb hem.
L: 171 mm+; W: 100 mm+; Th: 1 mm
LAL D 1016.05, L 78, Period pre-10C
- M44** Seam-reinforcing strip (Fig 287). This is a wide Type III(i) strip, with one skived, original(?) end and one torn. At the skived end, there is no impression of the overlaid end of another strip, and the thread impressions run up to and over the edge. Although this can be seen as a Roman seam type, this context has also produced fragments of medieval shoes (Zant and Howard-Davis in prep).
L: 240 mm+; W: 38 mm; Th: 1 mm
LALC 26.01, L 45, Period 14A-B (Post-Roman)
- M45** Panel (Fig 287). It is a large corner piece, with secondary cutting on the lower RH edge. The junction of the seam and hem was reinforced with a circular appliqué sewn to the grain side. A faint thread impression around the outer circle on the flesh side suggests there was no second appliqué there, although two were usual (one on each side of the tent) at such junctions. The form of reinforced corner is like that seen on **M27**. This panel could come from the base of a tent wall (Fig 281, A, positions 6-8), or from the side of a door flap (position 2).
LH edge: Seam IIIa(i).
Lower edge: Hem IVb.
L: 368 mm+; W: 332 mm+; Th: 1-1.25 mm
KLA G 150, L 1B, Roman, not closely phased
- M46** Panel (Fig 288). It is a large piece with two Seam IIIa(i) edges at right-angles. Secondary cutting on the upper edge suggests part of the panel has been reused. Part of an adjacent panel (**M47**) and three sections of seam-reinforcing strip (**M48-50**) join the lower edge. The infill piece, **M51**, is part of the same seam. The original positions of a corner fragment, **M52**, four more edge fragments (**M54-7**), and three further reinforcing strips (**M58-60**) could not be determined. Another accompanying large panel piece, **M45** (Fig 286), has Seam IIIa stitching with a IVb hem at right-angles. **M46** cannot be part of **M45**, but the identical appearance of its stitching suggests it may be from the same tent, and possibly from an adjacent panel.
L: 664 mm+; W: 320 mm+; Th: 1-1.25 mm
KLA G 150, L 1A, Roman, not closely phased
- M47** Panel (Fig 288). This is a corner piece, with upper edge Seam IIIb(i) and RH edge Seam IIIa(i). It has been roughly cut up along the lower edge.
L: 305 mm+; W: 65 mm+; Th: 1 mm
KLA G 150, L 1C, Roman, not closely phased
- M48** Seam-reinforcing strip (Fig 288), Type III(i). The LH end is overlapped by **M49**.
L: 186 mm; W: 36 mm; Th: 1 mm
KLA G 150, L 1I, Roman, not closely phased
- M49** Seam-reinforcing strip (Fig 288), Type III(i). The LH end is overlapped by **M50**.
L: 46 mm; W: 36 mm; Th: <1 mm
KLA G 150, L 1J; Roman, not closely phased
- M50** Seam-reinforcing strip (Fig 288), Type III(i). A central arc of stitching shows where the infill, **M49**, was attached to both panel **M46** and to this strip.
L: 95 mm; W: 37 mm; Th: 1 mm
KLA G 150, L 1K, Roman, not closely phased
- M51** Edge infill (Fig 288), Seam IIIa(i) stitching. It is attached at the LH end of the lower edge of **M46**.
L: 80 mm; W: 30 mm; Th: 0.75 mm
KLA G 150, L 1H, Roman, not closely phased
- M52** Torn fragment from panel corner (Fig 288). The LH edge is Seam IIIb(i); the lower edge is Seam IIIa(i).
L: 102 mm+; W: 96 mm+; Th: 1 mm
KLA G 150, L 1D, Roman, not closely phased
- M53** Seam-reinforcing strip (Fig 288), Type III(i), with both ends torn. Two tunnel stitches crossing on the grain side suggest the strip belonged at a panel corner (cf **M48**), and the central line of stitching is a good match with that on the LH edge of **M52**.
L: 90 mm+, W: 34 mm+; Th: 1 mm
KLA G 150, L 10, Roman, not closely phased
- M54** Panel (Fig 288). This is a torn edge fragment with Seam IIIb(i) stitching. Only one tunnel

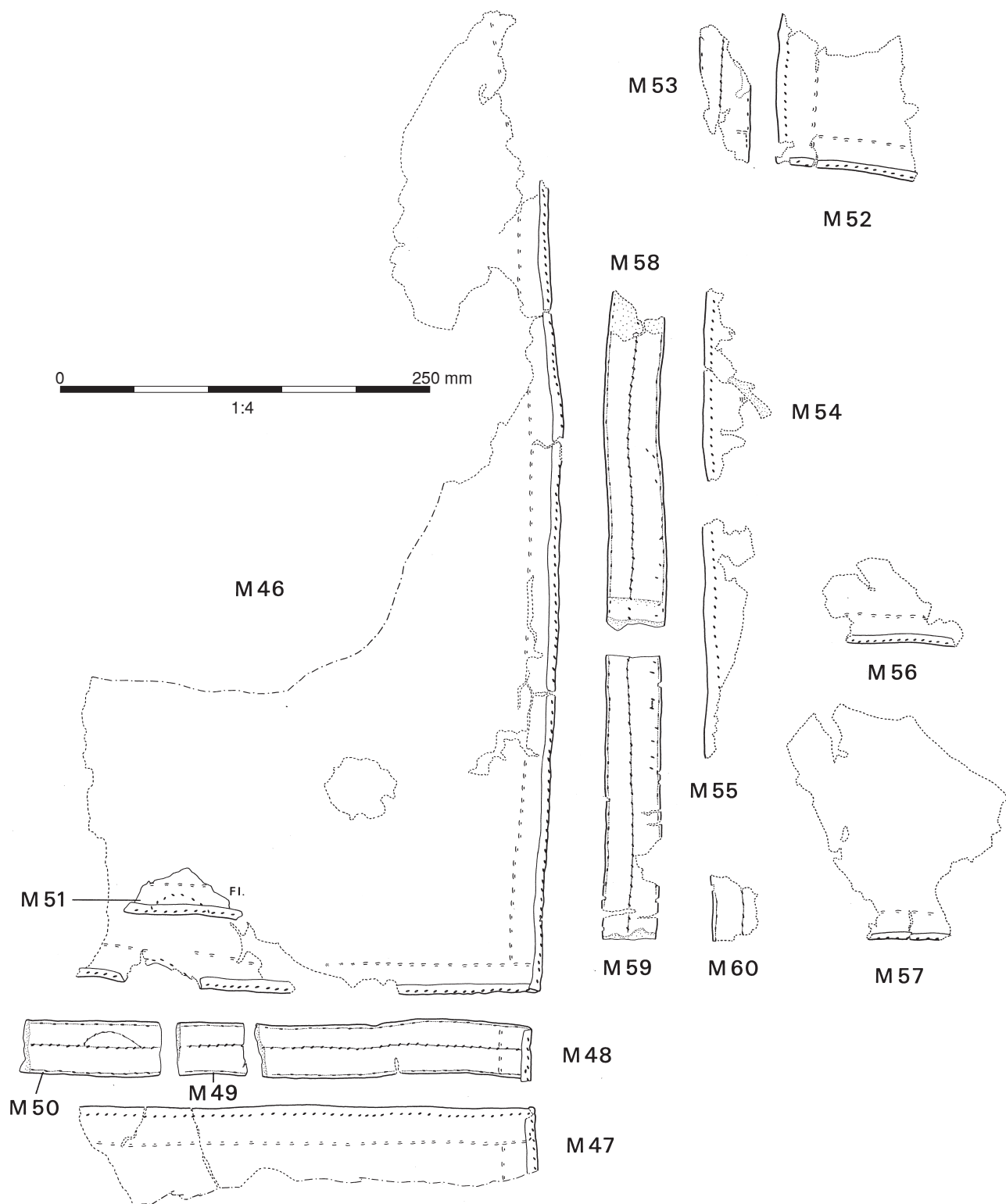


Figure 288: Group of panels and associated reinforcing strips from the south-west of the site

stitch is visible; the rest may have been abraded.
L: 130 mm+; W: 46 mm+; Th: 0.75 mm
KLA G 150, L 1E, Roman, not closely phased

M55 Panel (Fig 288). This is a torn edge fragment with Seam IIIb(i) stitching. The tunnel stitches are abraded?

L: 161 mm+; W: 35 mm+; Th: 0.75 mm
KLA G 150, L 1F, Roman, not closely phased

M56 Panel (Fig 288). This is a torn edge fragment with Seam IIIa(i) stitching.
L: 96 mm+; W: 57 mm+; Th: 1 mm
KLA G 150, L 1G, Roman, not closely phased

- M57** Panel (Fig 288). This is a torn edge fragment with Seam IIIa(i) stitching.
L: 160 mm+; W: 130 mm+; Th: 1 mm
KLA G 150, L 1P, Roman, not closely phased
- M58** Seam-reinforcing strip (Fig 288), Type III(i). The upper end is torn, while the lower end is overlapped by strip **M59**. Both strips are likely to belong on the RH edge (as drawn) of panel **M46**, but their exact positions are unknown. Both have extra stitch holes, probably from a repair, on their RH edges.
L: 227 mm+; W: 39 mm; Th: 1 mm
KLA G 150, L 1L, Roman, not closely phased
- M59** Seam-reinforcing strip (Fig 288), Type III(i). Both ends are original but the lower is damaged.
L: 190 mm; W: 38 mm; Th: 0.75 mm
KLA G 150, L 1M, Roman, not closely phased
- M60** Seam-reinforcing strip (Fig 288), Type III(i). This is a torn fragment from one side of a strip.
L: 45 mm+; W: 30 mm+; Th: 1 mm
KLA G 150, L 1N, Roman, not closely phased
- Narrow reinforced-seam stitching**
- M61** Panel (Fig 289), Seam NRa(i) stitching, which joined it to **M62** and **M63**. At the LH end, secondary cutting runs parallel, then at right-angles, to the edge.
L: 404 mm+; W: 73 mm+; Th: 1-1.5 mm
KLA B 188.05, L 219A, Period 7-8A
- M62** Torn strip from panel edge, with Seam NRb stitching (Fig 289).
L: 407 mm+; W: 23 mm+; Th: 1 mm
KLA B 188.05, L 219C, Period 7-8A
- M63** Seam-reinforcing strip (Fig 289), Type NR(i). One end is torn; one is cut to a blunt point.
L: 118 mm+; W: 14 mm+; Th: 1-1.5 mm
KLA B 188.05, L 219B, Period 7-8A
- M64** Large panel piece (Fig 289), with lower edge Seam NRa(i). The RH edge is mostly torn along the tunnel stitching, but is probably also NRa(i).
L: 405 mm+; W: 215 mm+; Th: 1.5 mm
KLA B 1249.01, L 3277, Period 8B
- M65** Panel (Fig 289). This is a badly torn piece, with a short portion of Seam NRa(ii), or possibly IIa(ii), stitching.
L: 300 mm+; W: 167 mm+; Th: 1-1.25 mm
KLA D 464.03, L 4A, Period 8B
- M66** Panel (Fig 289). This is a torn fragment, with NRa(ii) or IIa(ii) stitching. The edge has become unfolded and three tunnel stitches are visible underneath. These may have been produced accidentally when executing the outer row of stitching.
L: 128 mm+; W: 110 mm+; Th: 1 mm
KLA D 464.03, L 4C, Period 8B
- M67** Panel (Fig 289). This is a badly torn piece, with part of a stitched edge and adjacent stitching for a small patch sewn to the flesh side. The edge is flat and may represent Seam NRb stitching, linking this piece with **M65** and **M66** from the same context. The slanting line of tunnel stitches below the seam stitching should not occur on a NRb edge, and the stitches may indicate a repair.
L: 252 mm+; W: 188 mm+; Th: 1 mm
KLA D 464.03, L 4B, Period 8B
- M68** Panel (Fig 289). This fragment has a single line of stitch holes, similar to those on **M67**, together with a scatter of additional small holes, probably from a repair.
L: 140 mm+; W: 31 mm+; Th: 1 mm
KLA D 464.03, L 4D, Period 8B
- M69** Piece torn from panel edge (Fig 289), Seam NRa(i). The edge is partly unfolded.
L: 207 mm+; W: 78 mm+; Th: ≤1 mm
LAL D 1100, L 130A, Period 9
- M70** Panel (Fig 289). This is a torn fragment, with Seam NRa(i). It will not join **M69**.
L: 76 mm+; W: 37 mm+; Th: 1 mm
LAL D 1100, L 130B, Period 9
- M71** Seam-reinforcing strip, Type NR(ii). Two pieces have torn ends, and do not join.
Piece 1: L: 189 mm+; W: 11-15 mm; Th: <1 mm
Piece 2: L: 119 mm+; W: 8-12 mm; Th: <1 mm
LAL D 1085, L 89A, Period 9
- M72** Panel, torn fragment, Seam NRb. An original 90° corner has stitching on both edges. It does not join **M73** or **M74**.
L: 104 mm+; W: 101 mm+; Th: <1 mm
LAL D 1085, L 89B, Period 9
- M73** Panel, torn fragment, Type NR(b). It does not join **M72** or **M74**.
L: 135 mm+; W: 46 mm+; Th: <1 mm
LAL D 1085, L 89C, Period 9
- M74** Panel, torn fragment, Type NR(b). It does not join **M72** or **M73**.
L: 125 mm+; W: 51 mm+; Th: <1 mm
LAL D 1085, L 89E, Period 9

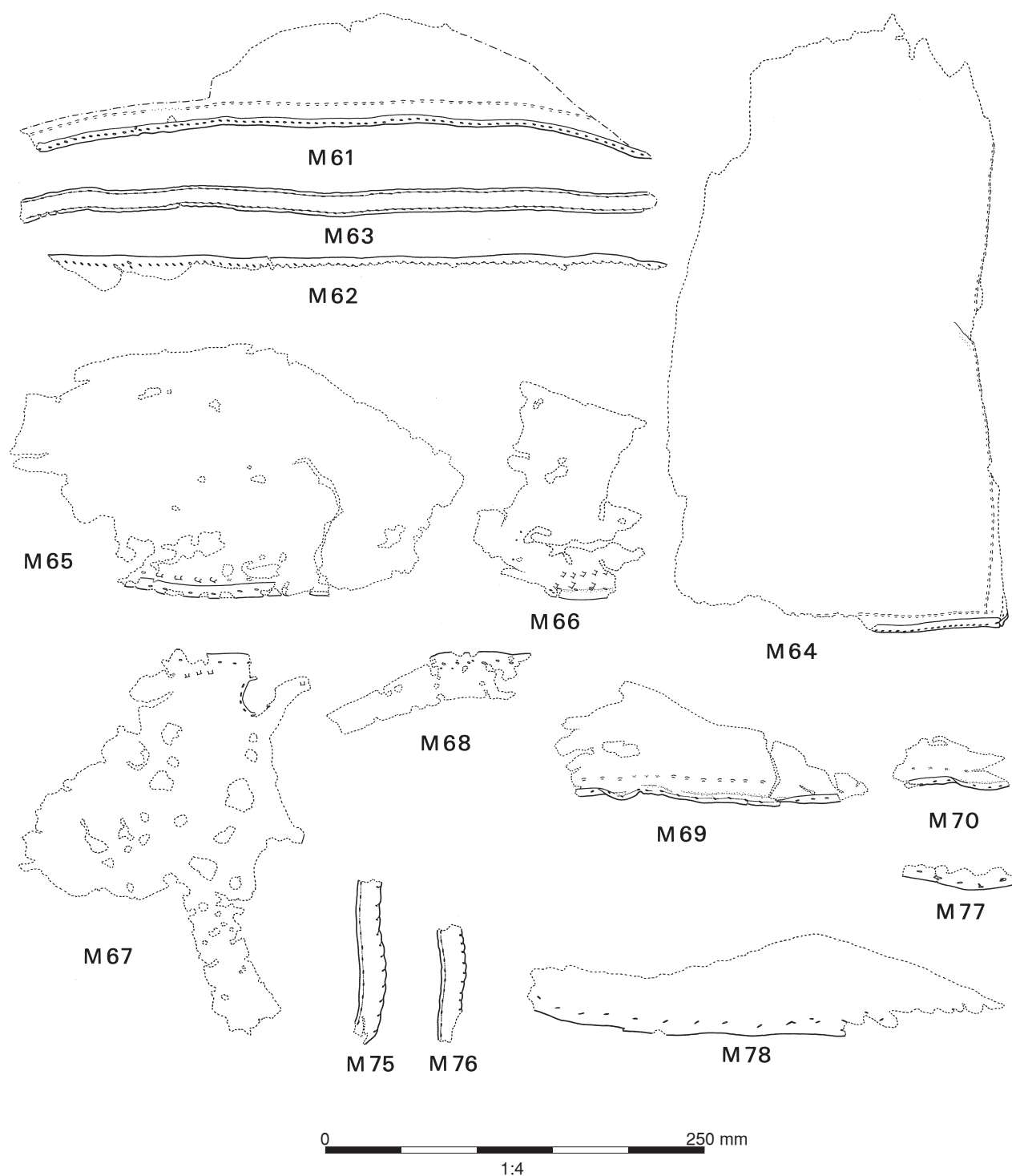


Figure 289: Examples of narrow reinforced-seam and beaded-seam stitching

M75 Seam-reinforcing strip (Fig 289), Type NR(ii), with torn ends.

L: 110 mm+; W: 15-18 mm; Th: 1 mm
LAL D 1021, L 84A, Period 10A

M76 Seam-reinforcing strip (Fig 289). This is similar to **M75**, but their ends do not join.

L: 77 mm+; W: 14-16 mm+; Th: 1 mm
LAL D 1021, L 84B, Period 10A

Beaded-seam stitching

M77 Panel (Fig 289). This edge fragment has a single line of stitching (some intercutting holes) at 25 mm from the edge. It is probably from a Beaded Seam.

L: 74 mm+; W: 13 mm+; Th: 1 mm
KLA B 1249.01, L 3266, Period 8B

M78 Panel (Fig 289). This is an edge piece, probably with Beaded Seam stitching. There is a

characteristic scatter of extra holes at one end.
L: 313 mm+; W: 67 mm+; Th: 1.25-1.5 mm
KLA B 1249.03, L 3282A, Period 8B

Hemmed pieces

M79 Panel (Fig 290). This large, irregularly torn piece has parts of two original edges at right-angles.

Lower edge: Hem Va, partly unfolded.

RH edge: Seam NRb or Beaded Seam.

L: 460 mm+; W: 380 mm+; Th: 1.25 mm

KLA F 50, L9, Period 6

M80 Panel (Fig 290). This badly torn piece has 50 mm of a Type VI hemmed edge surviving.

Some 30 mm of another edge, approximately at right-angles, has small stitch holes close to the edge, and a faint thread impression on the grain side. It is likely that this was the site of a patch or infill attached to the flesh side of the panel. A simple lap seam would not normally be used to join two tent panels together. The associated infill piece, **M82**, may have been attached with its LH edge there.

L: 275 mm+; W: 142 mm+; Th: 1 mm

KLA B 188.05, L 1297A, Period 7-8A

M81 Stitched fragment (Fig 290). This is a small edge fragment, with neat oval stitch holes at 1-2 mm from the edge. It was found with panel

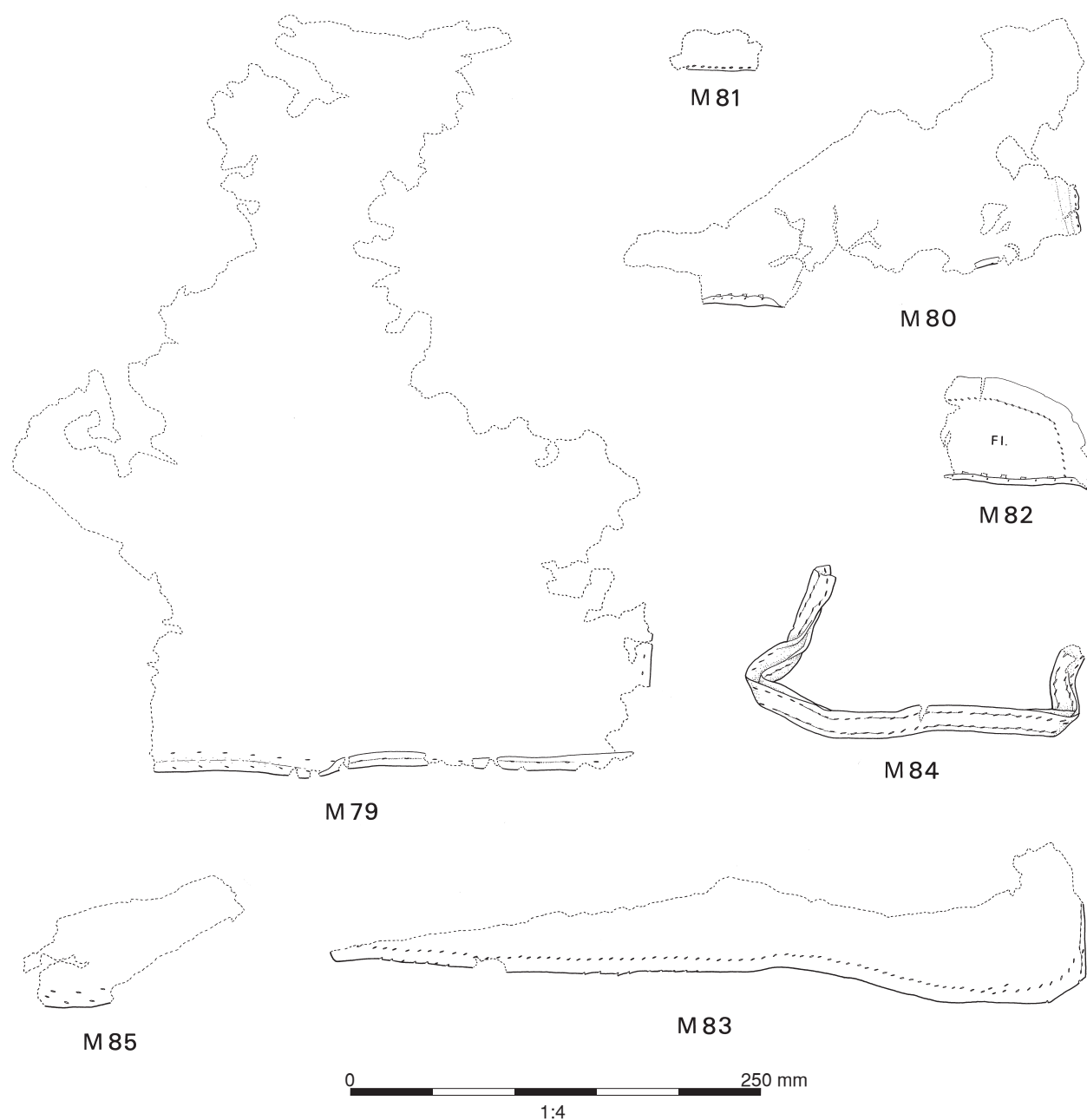


Figure 290: Hemmed pieces

- M80**, and may represent a continuation of the stitching on the RH edge of that panel.
L: 58 mm+; W: 25 mm+; Th: 0.5 mm
KLA B 188.05, L 1297B, Period 7-8A
- M82** Infill piece (Fig 290), the LH edge torn away. The lower edge has Type VI hem stitching, suggesting a link with **M80**.
L: 90 mm+; W: 64 mm; Th: 1 mm
KLA B 188.05, L 1301, Period 7-8A
- M83** Strip torn from a panel edge (Fig 290). Both ends are cut more or less vertically, and the strip may represent the complete panel width. The lower edge has Hem IVb stitching, although for most of its length the outer row of stitching has just clipped the edge of the panel, or missed it altogether. The spacing of the stitch holes is identical to that on binding strip **M84**, and the two appear to belong together. At its RH end, the hem stitching curves upwards, but disappears at point A. The curving path of the stitching suggests that the RH edge of the panel may also have been hemmed. Its present form,
- however, is that of a lap seam with continuous thread impressions on the flesh side. As in the case of **M80**, a lap seam joining the two tent panels would be very unusual. This, together with the evidence of the curving hem, suggests either that the panel has been reused, or that the edge was infilled, repaired, or extended using a narrow strip of leather.
- L: 455 mm; W: 98 mm+; Th: 1.5-2 mm
KLAB 690.02, L 1875, Period 14A (Post-Roman)
- M84** Hem-binding strip (Fig 290), Type IVb. There is one original end and one torn.
L: 320 mm+; W: 30 mm; Th: 2 mm
KLAB 690.02, L 1874, Period 14A (Post-Roman)
- M85** Panel (Fig 290). This is a torn edge fragment, with Hem IVb stitching.
L: 135 mm+; W: 60 mm+; Th: 1.5-2 mm
KLA C 811.01, L 25, Period 14B (Post-Roman)
- Isolated patches and appliqués**
- M86** Appliqué (Fig 291). This may originally have been circular, being subsequently cut in half.

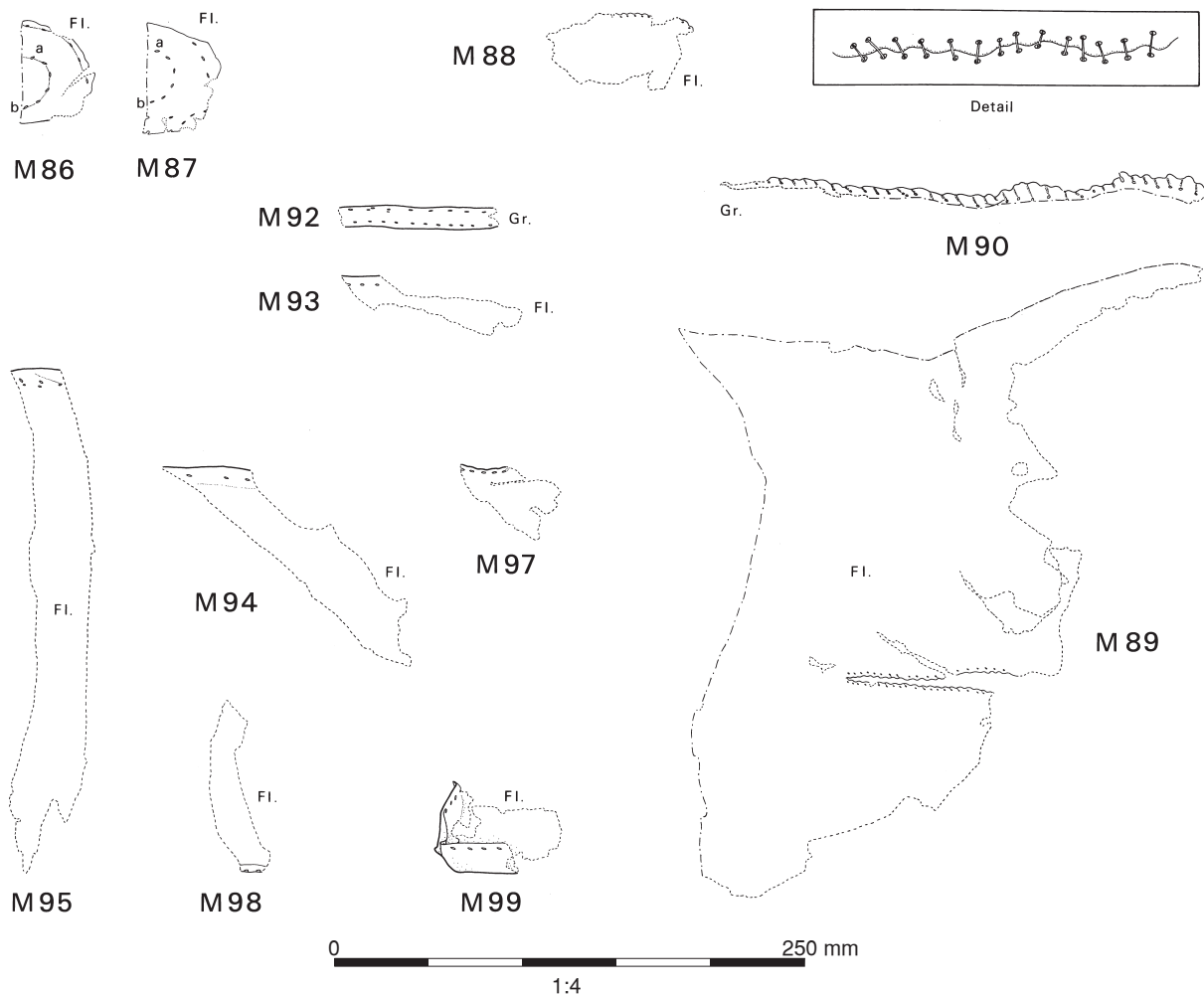


Figure 291: Appliqués, whip-stitched repairs, and unidentifiable stitching

Two arcs of stitching have continuous thread impressions on the flesh side.

L: 55 mm; W: 39 mm+; Th: 1 mm

LAL D 955.02, L 70A, Period 10C

- M87** Appliqué (Fig 291). This piece was sewn beneath **M86**, *ie* to its grain side, with the stitch holes marked a and b corresponding. Appliqué **M87** has no thread impressions on its stitching, and is either an applied piece sandwiched under **M86**, or part of the panel to which it was attached. The upper edge is skived on the grain side and appears original, so the former may be more likely.

L: 59 mm; W: 40 mm+; Th: 1.25 mm

LAL D 955.02, L 70B, Period 10C

Whip-stitched repairs

- M88** Panel? This is a fragment, with 40 mm of whip-stitching, the other edges irregular and torn (Fig 291). It is probably from a repair to the centre of a panel.

L: 70 mm+; W: 37 mm+; Th: 1 mm

KLA D 546, L 15B, Period 3-5

- M89** Panel (Fig 291). This irregularly shaped piece has no original edges, but demonstrates evidence of secondary cutting on two sides. A linear tear in the centre is repaired with whip-stitching (thread impressions on the flesh side).

L: 296 mm+; W: 280 mm+; Th: 1.25 mm

KLA F 50, L 5E, Period 6

- M90** Panel (Fig 291). This is a narrow strip cut from an irregular whip-stitched edge, with oblique thread impressions on the grain side. It is probably one side of a long tear in the centre of a panel, repaired by sewing the edges roughly together (see inset; Fig 291). The stitched edge has subsequently been removed, possibly in order to use the leather again.

L: 256 mm+; W: 13 mm+; Th: 1 mm

KLA C 937, L 22A, Period 14B (Post-Roman)

- M91** Panel. This is a further piece, very twisted, resembling **M90**, but with the stitch holes further apart.

L: 150 mm+; W: 18 mm+; Th: 1.5 mm

KLA C 937, L 22B, Period 14B (Post-Roman)

Unidentifiable stitching

- M92** Reinforcing strip? It has torn ends, and two rows of stitch holes without thread impressions (Fig 291). This resembles a reinforcing strip from a Narrow Reinforced seam, but, without thread impressions, it would have to have been sewn below such a strip, as additional

strengthening. Such pieces were found in association with NR seams on a tent from Vindolanda (van Driel-Murray 2017, fig 4). Strips of this form have also been found sandwiched inside Type Vb hems as additional reinforcement.

L: 185 mm+; W: 12 mm; Th: 1 mm

KLA B 188.05, L 270C, Period 7-8A

- M93** Fragment of panel edge, with ?NRb seam stitching (Fig 291). The stitch holes are similarly spaced to those on **M92**, and the two pieces may belong together.

L: 95 mm+; W: 20 mm+; Th: 1 mm

KLA B 188.05, L 270E, Period 7-8A

- M94** Panel (Fig 291). This is an edge fragment, with a single line of stitch holes at 5 mm from the edge. There are no thread impressions.

L: 167 mm+; W: 34 mm+; Th: 1 mm

KLA B 382.03, L 844A, Period 7-8A

- M95** Panel (Fig 291). This narrow torn strip has 27 mm of an original stitched edge. There are single oblique thread impressions on the flesh side. It is possibly from a Beaded Seam.

L: 267 mm+; W: 35 mm+; Th: 1 mm

KLA A 1031.03, L 1436, Period 8B

- M96** Panel. This is a fragment from a folded and seamed edge (IIa(i) or NRa(i)?). The edge has subsequently unfolded and all the tunnel stitches are torn and abraded.

L: 125 mm+; W: 124 mm+; Th: 1.25 mm

LAL D 232.12, L 128, Period 11D

- M97** Appliqué fragment? This torn scrap has closely spaced stitching at 1.5 mm from the edge (Fig 291). It is delaminated and there are no thread impressions.

L: 53 mm+; W: 32 mm+; Th: 2 mm

KLA B 690.02, L 2056, Period 14A (Post-Roman)

- M98** Panel? This torn fragment has a folded edge and two rectangular stitch holes (2 x 1 mm) along the apex of the fold (Fig 291). The holes appear to have been punched through the leather.

L: 92 mm+; W: 19 mm+; Th: 1.5 mm

KLA C 937, L 22C, Period 14B (Post-Roman)

- M99** Panel or appliqué (Fig 291). This is a crumpled piece, with the lower edge folded, and with stitch holes along the folded portion. There is further stitching on the LH edge. Although the piece was too fragile to open out, the folded edge might be accidental; unfolding could produce a single straight edge with stitch holes

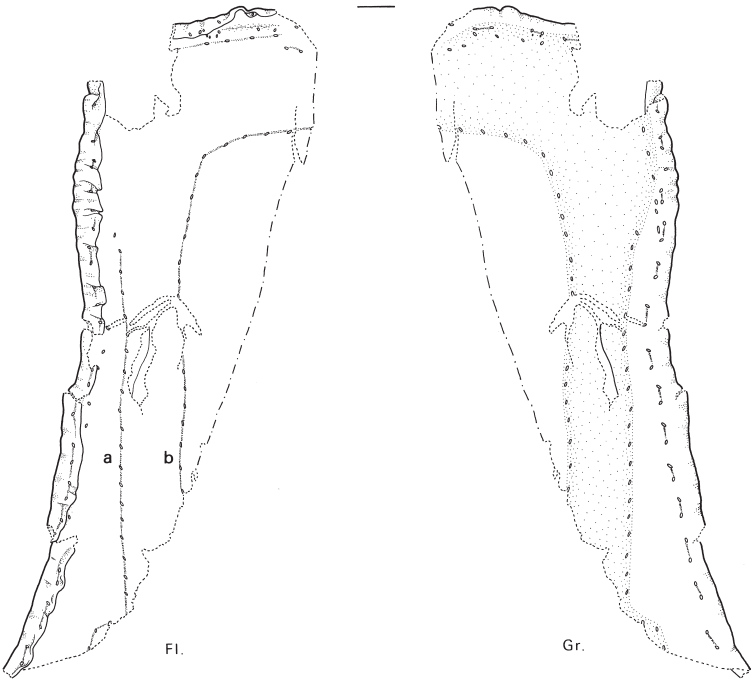
at 2-3 mm from it, as on appliqués **M25** and **M29** (p 593).
 L: 65 mm+; W: 52 mm+; Th: 1 mm
 KLA F 52, L 7B, Roman, not closely phased

Shield cover

M100 Shield cover (Fig 292). Corner piece edged with a Va tacked hem, roughly cut up on the opposite side. The puckered hem has alternating thread impressions on the inside (flesh side) and outside (grain side) of the cover. Those on the

outside are intermittent, or at least difficult to see, in places. Two lines of internal stitching (a, b) follow the line of the edge. They are 50 mm apart along the top (as drawn) and 32 mm apart down the side. These stitching lines have continuous thread impressions on the inside of the cover, and are associated with a glossy band on the outer surface, which extends from one line to the other. They appear to represent two sides of a curving strip (also of leather?), sewn to the outside of the cover close to its

M100



M101

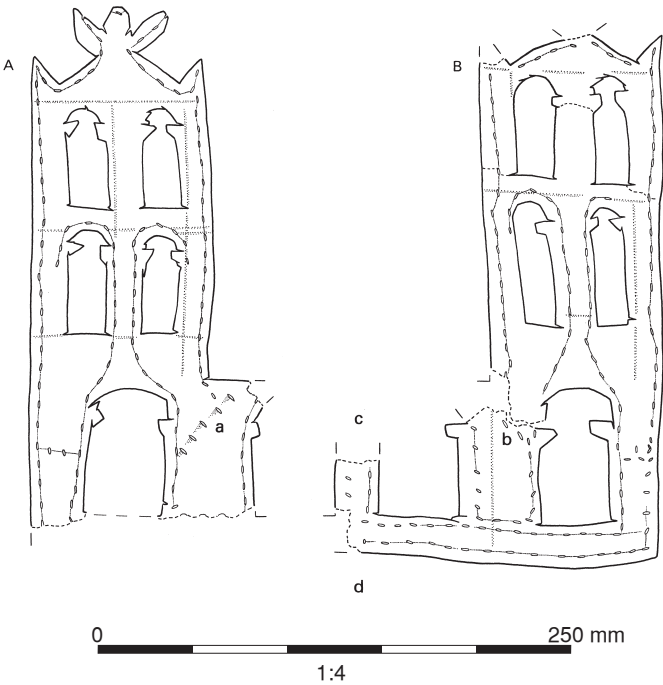


Figure 292: Shield cover and appliqué of a gate

edge, which has protected part of the surface from wear. At the corner, the hemmed edge and the internal stitching turn almost through a full 90°. This appears to be part of a cover for a rectangular shield; it is not possible to say which edge represents the top and which the side of the cover.

L: 170 mm+; W: 93 mm+; Th: 1.25-1.5 mm
LAL C 329, L 38, Period 10A

Decorative appliqué

M101 Appliqué (Fig 292), now in two pieces which do not join. It is of openwork construction and would have been sewn to a contrasting backing material. Stitching around the edge and around most of the internal apertures has continuous thread impressions on the grain side. Fine scored lines on that side show how the elements of the design were marked out before cutting. Two towers are represented, each with a sloping roof, probably surmounted by a winged Victory. Two upper floors are represented by pairs of narrow, round-headed windows with projecting corbels. At ground-floor level, the towers are connected by a series of wider corbelled arches. Each piece has parts of two of these surviving, but there may have been more.

The original width of the appliqué is uncertain, although the pieces have been arranged as if the design were symmetrical around line c-d. On piece A, the vertical edge marking the right-hand side of the tower stops just above the level of the ground-floor arches, and then turns through 90° to run horizontally above them. The edge may have turned upwards again and the space between the towers may have been occupied by a gabled facade; a sloping roof-line might be inferred from the diagonal line of stitching at a, mirrored at b. Reconstruction of the central portion can only be conjectural.
Ht: 147 mm; W (min): 165 mm; Th: 1.5 mm
LAL D 1094, L 88, Period 6

Other stitched pieces

M102 Stitched fragment (Fig 293). This is a straight stitched edge, with a curving, secondary cut edge opposite. At the wider end, a diagonal line of three tunnel stitches and two larger through-stitch holes, also set diagonally, converge with the edge stitching. Faint thread impressions appear along the straight edge, but these may be 'ghost' impressions, made through a superimposed piece of leather. Insufficient survives for this piece to be classed with certainty, but its appearance is consistent with it being of Roman date.

L: 133 mm+; W: 32 mm+; Th: 1 mm
KLA D 546, L 15A, Period 3-5

M103 Wide folded strip, with some stitch holes through both thicknesses, some apparently through one side only (Fig 293). No continuous thread impressions link the holes; a single hole near the lower end (as drawn) has a thread impression running over the edge of the strip. This fragment resembles a packing strip from a Beaded Seam (*cf* Fig 279) rather more than a hem-binding strip, but is extremely irregular even by comparison with examples of the former.

L: 346 mm+; W: 40-48 mm; Th: 0.75 mm
KLA D 464, L 2, Period 8B

M104 Strip (Fig 293). Four stitch holes (originally part of two rows?) running obliquely at one end suggest this piece results from cutting up a piece of stitched leather for reuse. Its shape is fairly regular, and it may have been used, perhaps as a thin strap, rather than being

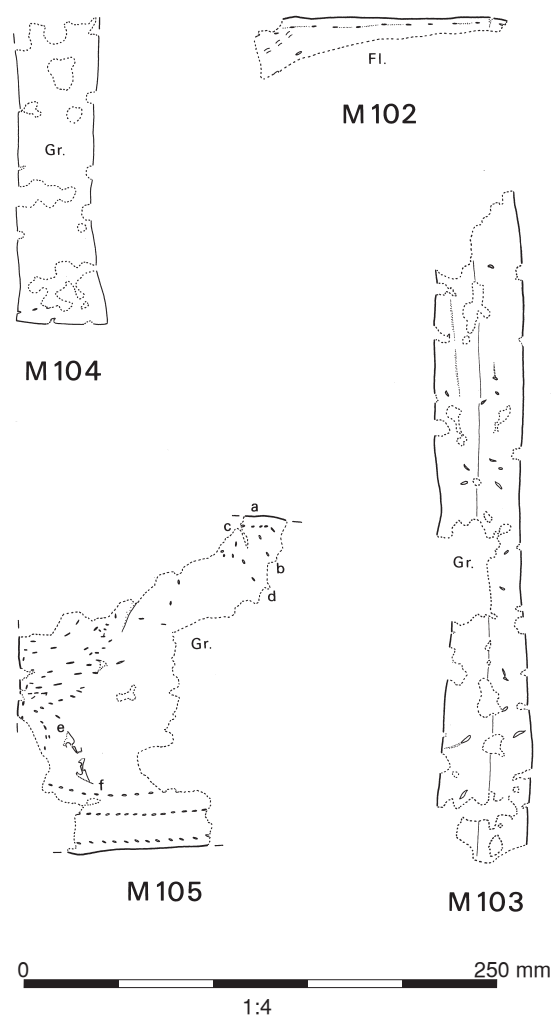


Figure 293: Stitched pieces

merely discarded as an off-cut.
L: 161 mm+; W: 40-47 mm; Th: 1 mm
KLA D 464.03, L 5, Period 8B

- M105** Stitched piece (Fig 293), parts of three original cut edges, of which the lower has three regular rows of stitching. The upper and left-hand edges appear to have a single row, and there are possible indications in the upper right-hand corner of two arcs of stitch holes running from the upper edge to the (missing) right-hand edge (a-b; c-d). None of the stitching carries any thread impressions. Large numbers of jumbled stitch holes, some

of them trending in diagonal lines towards the left-hand edge, occupy the upper part on the left-hand side. These probably represent repeated repairs at a point of weakness. The incisions in the leather between e and f are possibly a cursive inscription. This piece has some features in common with appliqués sewn to tent corners at the points where the main guy ropes were attached (*cf* Winterbottom 1992, fig 16, no 11), but insufficient survives for it to be identified with certainty.

L: 170 mm; W: 145 mm+; Th: 1.25 mm
LAL D 1021, L 84C, Period 10A