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EXETER CITY DEFENCES

Excavation & Survey on the City Walls
from North Gate to the Castle
Part 1 Roman
by SR Blaylock No. 88.13

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EXETER CITY DEFENCES
EXCAVATION AND SURVEY ON THE CITY WALLS FROM THE NORTH GATE TO THE CASTLE 1978-88
PART I : ROMAN

by

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Exeter Museums Archaeological Field Unit

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Exeter City Defences Project

The Exeter City defences project embraces a variety of archaeological and historical studies concerning the City Walls and their environs between the period of their construction in the second century AD and early modern times. The project is being undertaken by E.M.A.F.U., under the general direction of C.G. Henderson and S.R. Blaylock, with funds provided by Exeter City Council, English Heritage and MSC (through the Exeter Community Programme Agency, latterly DEXTA).

INTRODUCTION

The following discussion will attempt to draw together observations of the Roman defences that have been made by the Archaeological Field Unit in the past 10 years over the length of wall from the North Gate to the Castle. Most of the recent excavation work associated with the defences has taken place in this area of the city, and a good proportion of recording of the standing wall, especially where Roman facework has been identified, also falls in this part of the circuit. Individual areas of detailed examination, by excavation or by fabric recording of the standing structure, are shown on the outline plan, Fig. 2 and are described in summary form below. For the Roman period the results from these excavations present the most complete sequence of information on the construction and use of the Wall and ramparts and this sequence, as it is understood at present, can best be summarised by reference to the results of the Paul Street excavations, drawing where necessary on observations from two trenches excavated at North Gate in 1978.

As far as the standing structure is concerned, no Roman facework survives on the outside face of the wall, and thus it is excluded from this discussion, with just passing reference to suspected Roman facework elsewhere in the Wall. The rear face, however, retains a good deal of Roman work, both facework and core, and results from recording of the wall at Paul Street and Bradninch Place have contributed additional information to that recovered by excavations.

The excavations, watching briefs and recording of the standing structure in various places along the wall are here summarised with a brief description:
North Gate 1978. Project number 69. Two trenches were excavated over the line of the City Wall, revealing the footings (Fig. 3). The first, Site A, spanned the full width and extended beyond the front face but no levels contemporary with the construction of the wall survived (being cut away by a cellar). Site B examined the development of the ramparts. One section was cut through the wall footings and the clay bonded foundations (Fig. 4, Section 1).
North Gate 1983. A section through the rampart deposits was recorded during a watching brief on the opposite side of the site of the North Gate in 1983. The record of this is drawn up with the 1978 excavation (Fig. 3).
Paul Street 1982-85 Project number 76. The following trenches contributed evidence on the development of the defences:
Trench 6 was excavated in January and February 1982, immediately alongside the retaining wall to the north-east of Maddock's Row. Excessive recent building up of the ground meant that most of the Roman levels could not be reached with safety and the trench was abandoned before much of the rampart deposits had been examined. Some of the upper layers of the second rampart were revealed at the north-west end of the trench (not illustrated). Trench 2 (below) some 6-7m to the north-east was excavated to compensate, in part, for the abandoning of Trench 6.
Trenches 7 and 10. Roman levels in this trench were largely excavated in the course of 1983 with an extension to the south-west being made in early 1984. The sequence of banks and the construction of the city wall were examined in detail in a number of trenches, with later Roman development excavated over a wider area (Figs. 6 & 7). Recording of the standing structure of the wall also took place whilst the excavation was in progress (Fig. 12).
Trench 2. At the same time as Trench 7 a further section above the ramparts was excavated, partly by machine. A full section through the Roman levels was not obtained, but the rear of the rampart was excavated and a section through the two banks immediately behind the wall was obtained by the removal of the lining of a deep intrusion (Fig. 8).
Trench 13, excavated by machine, April 1984. Full section across the line of

the Roman wall and through the two ramparts, complementing sequences observed in trenches 2 and 7 (Fig. 9).

Trench 15, excavated winter 1984-5, revealed a length of Roman wall footings, and, in a trench running back from the wall, a partial sequence of ramparts (Figs. 10, 14). The wall footings exposed in trench 15 and revealed by lowering of ground levels in the course of redevelopment were drawn in plan and elevation in autumn 1986 (not illustrated).

Further wall recording in 1988. A length of recent facework to the north-east of Maddocks Row collapsed in 1988 revealing Roman core. The the area NE and SW of the Maddocks Row archway was recorded again in its new form with Roman work exposed and the ground level lowered in 1988 (Fig. 13, cf. Fig. 12).

Bradninch Place 1985: project number 82. A small section was excavated in 1985 against the inner face of the wall behind the R.A.M. Museum. A sequence of bank deposits and wall footings was recorded (Fig. 11). This ties in with the standing wall recording at Northernhay Gardens (below).

Northernhay Gardens 1982-3: project number 211. Plans and rear elevations were drawn of the wall from the point behind the R.A.M. Museum where it begins after the break at Queen Street to the boundary with Rougemont Gardens. The whole length of 65m was drawn in outline (Fig. 17, scale 1:200), selected areas stone-for-stone at larger scales (Figs. 15 & 16). The wall was consolidated after the recording. Some of the builds and features were obscured by this. Much Roman facework survives on this rear face, containing unique evidence for the form of the rear of the wall. The front elevation has not been subject to detailed recording but visual inspection has been made and additional notes inserted on the 1978 City Wall survey (ECWS 1978).

Northernhay Street 1979: project number 213. Recording of a length of c. 45m of the outside face of the wall between boundaries of Nos. 30 and 44 Northernhay Street, before repairs and consolidation. No Roman work was present and the work is not illustrated here. This length of wall forms the outside face of the wall examined by excavation in trench 15 at Paul Street.

At the time of writing a further area of wall, south-west of 213, in the area of Nos. 44-51 Northernhay Street is scheduled for repair and maintenance work. It is hoped to record this when access is available from scaffolding, perhaps in 1989. It is unlikely that any Roman facework will be found to survive.

THE TOPOGRAPHY OF THE AREA

The area spanned by the wall between North Gate and Rougemont lies on the upper eastern slope of the valley of the Longbrook (Fig. 1). To the north-east the gradient steepens towards the hill of Rougemont, westward the ground falls away in a gentle uniform slope, towards the Longbrook. At the south-west end, near the site of the North Gate, the sides of the valley begin to steepen (by the time the slopes appear in the modern townscape in the St Bartholomew's Cemetery further south-west the wall is running along the crest of a very steep slope which drops some 60 feet to Exe Street) and a small (?) re-entrant valley causes the ground surface to drop further to ¾24m O.D. at North Gate, Site A. The level of natural subsoil beneath the wall at Site B was c. 26.90m. The fall is therefore c. 3.00m in c. 15.00m north-east to south-west. At the next observation of the subsoil 25m to the south-west, beyond the site of the gate, the natural subsoil lies at c. 28.50m. These levels give a skeletal profile across the course of this side valley.

To the north-east the level of the subsoil (here taken as approximating to the original ground surface beneath the wall and ramparts) rises gradually, reaching 30.25m O.D. in Paul Street trench 15, 39.00m at Paul Street trench 13

and 41.80m O.D. on the north-east side of Queen Street in the Bradninch Place trench. Accompanying the south-westerly slope is a more gradual falling off of the ground surface to the west and north-west towards the Longbrook valley. At times this is almost imperceptible especially towards the higher north-eastern part of the area, e.g. trench 13 (Fig. 9), but is noticeable in trench 10 (Fig. 10, section 55/108) where recorded levels of natural subsoil decline from 38.02m O.D. at the south-east end of the trench to 37.60m at the north-west end. This north-westerly slope is still more pronounced at the North Gate site (Fig. 4, Section 5; 69).

The later Roman defences in this section were laid out for the most part on level ground, whereas further south and west a route above steep slopes was chosen by the Roman surveyors. The orientation of the north-west part of the circuit must have been determined by the desired position of the wall on the crest of Rougemont and the line of the defences set out by projecting the course from the alignment above the Longbrook south-west of the North Gate (in modern Bartholomew Street East) to the crest of Rougemont. Because of the level ground on the approaches to the wall in this area it must be expected that the wall was defended by ditches in the stretch from North Gate to the beginning of the slopes of Rougemont. It has been shown by excavation elsewhere, in the vicinity of the East Gate and the area to the north-east of South Gate, that several successive ditches were employed to give depth to the defences. Examination of the contour plan (Fig. 1) will show that at least as far as the immediate approaches to the wall are concerned the stretch under consideration here conforms to the same topographical conditions. On much of the south-western, the south-eastern part of the north-western length (as far as North Gate) and the northern corner, around Rougemont, the ground falls away from the wall precipitously and outer ditches may well have been omitted in these sections.

Various observations have contributed to the knowledge of the natural topography and form of the subsoils in the area. The volcanic outcrop of Rougemont forms the north-eastern limit; the Geological Survey reported that sightings of trap have been made as far south-west as the Rougemont Hotel and Musgrave Alley (Ussher 1902, 62). Both recent excavations in Upper Paul Street revealed that the bottom of the small ditch of the legionary fortress was excavated into trap rock. Other observations in the area have failed to penetrate overlying Culm clays which spread south-westwards and were noted as the basic type of natural subsoil in all the trenches on the Paul Street site. Trap was also noticed as a 'thin unpersistent sheet under old river gravel' between the Higher Market and Queen Street station extending for a short distance down Paul Street and Northernhay Street (idem, 62).

The Culm clays which form the superficial deposits over much of the area under consideration are characteristically mixed on the surface, orange and pink with some white and yellow patches. Where features have been dug into the subsoil to a greater depth the clay is seen to become more compacted and deeper in colour - less orange than pink to purple (e.g. in the cut of the small legionary ditch in trench 8 at Paul Street where a superficial deposit of, presumably weathered, orange clays overlay solid purple deposits). The texture of the clay in the deeper layers at times approaches that of a friable shale or mudstone.

Many of the archaeological deposits connected with the defences reflect the nature of the natural subsoil in their composition, since much of the material employed in the construction of positive features was derived from the excavation of ditches and other negative features. This is especially so in the case of the first rampart the construction of which occurred in advance of

that of the wall. This bank is composed of dumps of clean mixed clays the composition of which matches that of the subsoil clays just described. Fragments of mudstone from the lower, more compacted, clays are also frequent inclusions in archaeological deposits. How much of the trap fragments which are such a distinctive element in the composition of some rampart deposits are derived from natural sources is not known but since little trap is contained within the clay layers of the early bank most is presumably derived from active quarrying of stone elsewhere, for use in the construction of the wall.

Degraded yellowish mixed clays were occasionally noted on the surface of the natural subsoil and these may be a product of mixing of the uppermost surface or perhaps the leached remnants of topsoil layers. Material derived from human occupation, such as charcoal fragments, was noted in these layers and some mixing with artificial deposits is probable.

FIRST- AND SECOND-CENTURY OCCUPATION

Although not directly relevant to the subject of the development of the defences of Exeter, some account of the early Roman deposits in this area is given here by way of a background to the events of the late second century. The positions of the trenches excavated between 1978 and 1986 are shown, in the context of the known Roman development of the area, on Fig. 2. The ditches of the north-western side of the legionary fortress defences lay within the area available for examination on the Paul Street site. A number of the trenches excavated contributed information towards the greater understanding of the fortress defences. A full section through both ditches was obtained in trench 8; a portion of the smaller inner ditch, with its centre line, was revealed in trench 9; further to the south-west, the outer edge of the larger, second fortress ditch was located in trench 5. These observations enabled the precise orientation of the ditches to be plotted. Three trenches excavated in the later stages of the Paul Street excavations, Nos. 13, 14 and 16, contained sections of the metalled track surface which ran along the outer edge of the second fortress ditch. To the north-east the traces of this surface became excessively wide; where seen in trench 13 the north-western limit of the track was c. 16m from the outer edge of the second fortress ditch. This divergence has been interpreted as a broadening of the track outside the ditch and has been reconstructed as such on the plan, Fig. 2.

The fortress defences continued in use after the abandonment by the military c. 85, forming the limit of the early Roman town, although the ditch was not maintained or cleared out, being allowed to silt up. By the time that the timber bridge carrying an aqueduct channel was constructed across the line of the ditch c. 100/101, some 1.5m of silt and slumped clay had accumulated in the bottom of the ditch. The aqueduct was probably a temporary arrangement to supply water to the town whilst alterations were made to the main water supply (Henderson 1984, 2-3). The portion recovered was represented by the lower parts of six driven stakes which carried the structure across the partially filled ditch. Two further post-holes found, cutting the surfaces of the track outside the second ditch in trench 13, probably supported a launder. The oak posts from trench 8 yielded a felling date of 100/101 by dendrochronology, and aside from giving a precise date for the timber used in the construction of the aqueduct, provide a useful indication of the state of the ditch at the time.

In the period after the construction of the aqueduct, which probably had a very limited period of use, the silting of the ditch continued, culminating in the late 2nd century with the accumulation of dumps of rubbish datable to c. 180. These uppermost layers of fill were covered, presumably shortly

afterwards, by layers of clay derived from the levelling of the former fortress rampart. The dating of this episode, fitting in closely with the beginning of the construction of the outer defences, provides a satisfactory sequence of events in that the old fortress defences were finally levelled around the time when the larger enclosure was conceived and laid out.

Very few deposits of this early period were recovered in the trenches towards the front of the area (i.e. near the City Wall and beneath the ramparts). Most trenches contained thin deposits which demonstrably pre-dated the construction of one or other of the ramparts; but invariably the second rampart, constructed with the wall, cut into these earlier layers thus removing all associations with the first bank beneath. Negative features pre-dating the construction of the bank comprise: a curving ditch in trench 10 (Fig. 6, 1216/1463); two pits beneath the rampart 1362 (section 55/108) and 1821 (section 112); and two ?parallel ditches recovered in section in trench 13 (Fig. 9, 1958, 1959). Elsewhere pre-rampart deposits were traced beneath the first bank in the form of clay-soil layers which may represent partial survival of earlier soils. At North Gate site B a Durotrigian coin of the first century A.D. was recovered from one of the layers beneath the first bank (Fig. 4, sections 2 & 5, layer 18). One single sherd of Glastonbury ware (Peacocks group 5; Peacock 1969, 50) was recovered from a layer in the same relative position in the sequence in Paul Street trench 10 (Fig. 6, section 53/95, layer 1782). Although these are isolated finds and were associated with much later material, it may be of significance that the only two finds of pre-Roman material in the area, and indeed almost the only such finds from the whole of the city, have been found in layers immediately above the natural subsoil, which, although mixed, are likely to be derived from pre-bank soil layers. In places (e.g. trench 15, parts of trenches 10 and 13) no soil deposit of any sort intervened between the surface of the natural subsoil and the lowest deposit of the first bank.

THE CONSTRUCTION OF THE FIRST BANK

Seven sections were excavated or cut by machine through the ramparts behind the City Wall: at North Gate Site B, at Paul Street trenches 15, 2, 7 extension, 7, 13, and at Bradninch Place. From these a composite picture of the first bank may be compiled. The greatest surviving amount of the first bank was seen in Paul Street trench 13 (Fig. 9, section 127) where the construction of a building across the line of the wall had removed the superstructure of the wall, but preserved the early bank beneath it. The extension to trench 7 also extended partly underneath the wall, due to the presence of an arched recess in the wall, which allowed access some 1.5m beyond the rear face. Elsewhere the bank was inspected only so far as the rear face of the later wall, or to the point where the foundation trench for the wall cut into the bank. At no point was the full width of the bank, or the later wall, accessible and the nature of both is open to speculation (below p. 6).

The bank was constructed of dumps of clay which were mostly of freshly dug natural subsoils, of mixed composition and containing some material derived from occupation such as charcoal fragments and potsherds. The basic construction materials were thus all consistent with an origin in the immediate vicinity and may have come mostly from the excavation of a ditch outside the bank. Occasional layers of more mixed material may have been obtained by quarrying in areas of previous occupation. The form of the clay dumps varies. In most sections the bank is built up in a series of thin layers, gradually increasing in height and slope towards the top. Where there is an outward slope in the ground surface such as as the North Gate site the tip-lines within

the bank tend to follow that gradient (see North Gate site B, section 5, and North Gate 1983: Figs. 3 & 4).

Maximum surviving dimensions for the bank were recovered from Paul Street trench 13 (Fig. 9, section 127) where the trench extended beyond the projected line of the city wall by some 2.4m. Here the bank was obviously truncated by modern levelling yet stood to a height of 1.40m, approximately the same height as seen in Paul Street trench 15, and at Bradninch Place. In Paul Street trench 7, where the bank was preserved beneath the later rampart, but was not traced so far towards the outer limit, the maximum height surviving was 1.50m. In this section there was no sign of the tip lines within the bank levelling out that might have indicated proximity to the top of the bank. The width of the bank was variable. In Paul Street trench 13 the full width recovered was 10.10m, including 2.40m within the projected line of the wall. It may be suggested that the original outer limit of the bank, if in the same position as that of the later wall, was within 1.00m of the outermost point seen in section 127, for nowhere has the wall been observed to exceed a thickness of 3.50m. Confirmation of this and information as to the form of the front of the bank must await further exploration for this part of the sequence has not yet been seen in excavation. It must be allowed that if the supposition mentioned above is correct: that the front of the wall coincided with that of this bank, then there is little chance of these questions being answered since the construction of the wall footings must necessarily have removed the front of the bank.

The width of the bank in Paul Street trench 13 is exceptional at 7.50m from the rear of the wall - comparable measurements from recent excavations elsewhere suggested a narrower bank, viz. not more than 6.00m, and nearer 5.00m in Paul Street trench 7 (Fig. 6, sections 55/108 and 112) and c. 5.00m in Paul Street trench 2 (Fig. 8, section 107). The last is an estimated measurement obtained from a projection of the rear slope of the bank and the underlying ground level. A bank of c. 6±m from the rear of the wall (this point of origin for the various measurements is employed as a convenient constant, the equivalent to the thickness of the wall c. 3-3.5m must be added to these figures for an approximate full width to the bank) appears to be the average when all sightings are compared. Other broad measurements were recorded at the South Gate: greater than 6.7m (Fox 1968, 11), and at Bedford Circus: greater than 6.55m (Fox 1952, 59, Pl. xxiii). These figures represent minimum measurements since in neither trench was the rear of the bank located.

The nature of the early bank has been the subject of much previous discussion (Bidwell 1980, 60-2). From the various accounts one item meets with general agreement: that this early bank is unlikely to have constituted a defensive barrier in its own right. Although a substantial structure, up to 10m broad, the maximum surviving height of the bank of 1.60m, even allowing for some losses due to later activity and to the lack of evidence towards the front of the bank where it may have been somewhat higher, makes it unlikely that its purpose was defensive. An attempt to reconstruct a projected full height at the front of the wall (3.00m beyond the rear face, constant gradients projected for slope of bank and underlying ground level) yields a maximum height of between 2.10 and 2.50m from the sections at Paul Street trench 7. This range is a maximum height, for neither a continuous slope nor a vertical front face are likely.

If a defensive function is discarded as an explanation for the first bank three further possibilities remain (Henderson 1984, 27): that the bank was intended as a defensive limit for the town but was not finished by the time the decision was made to construct more solid fortifications; that it was seen as a non-defensive boundary to the town, linked with gates to control traffic in and

out of the town and to provide an element of security by the enclosure of the civic territory; or that the first bank represents but a stage in the construction of the outer defences, when ditches and foundation trenches were being excavated, the resulting spoil being dumped within the area as a core for the projected rampart.

Of these possibilities the third may be discounted on the consideration of the following observations on the nature of the bank. The wall footings cut partially through the bank but in all the sections observed in the upper part of the area between North Gate and the Castle, i.e. the Paul Street trenches and Bradninch Place, the cut for the footings did not penetrate to or below the ground surface at the back of the wall. Rather it descended in a series of steps (best seen in Paul Street trench 7 extension: Fig. 6, section 122; and trench 13: Fig. 9, section 127) with the clay layers of the bank preserved beneath the inner part of the wall. Thus the rear of the wall was perched above the clay bank. The footing trench was not recorded towards the front of the wall but is presumed to have stepped down so that the base of the outer face formed a revetment to the lower part of the bank. This practice caused some instability in the wall, so that even during its construction the core was affected by subsidence and cracked and moved outwards (see below p. 11). At the North Gate (Fig. 4, section 1) the wall trench cut through the first bank and deep into the subsoil beneath, a more secure procedure. This difference in technique may be explained by the steeper slope in this position, since a similar sequence was observed at Cricklepit Street where the wall runs along the edge of a steep slope and the footings also cut deep into the subsoil beneath the bank (Simpson forthcoming). It cannot be accepted that, if the first bank were solely the product of the digging of an external ditch, and/or the excavation of a foundation trench, the spoil from these operations would be deposited in a place where it would have to be dug away again immediately for the construction of the wall footings. Although the material of which the bank is constructed is mainly derived from fresh disturbance of the natural clays characteristic of the subsoil of the area and thus may well have been obtained from the digging of an external ditch, the relationship with the cut for the footing trench of the wall clearly demonstrates that the deposition of the bank and the digging of the wall trench were separate events. Evidence presented below suggests that some time elapsed between these events. It has already been noted that material contained within all three elements of the sequence, i.e. pre-bank; first bank deposits and those related to the heightening of the bank, falls within the period 180-200. Within this period the sherds from individual groups are indistinguishable, further refinement of dating not being possible.

Evidence recorded on the upper surface of the first bank at North Gate (Fig. 4, section 5) and to a lesser extent in Paul Street trenches 7 and 13, suggests that the top of the bank may have seen some exposure and use as a surface before being covered by the heightening of the bank. At North Gate the bank layers were covered by a layer (Fig. 4, section 5, 30) of dark grey organic clay with daub, charcoal, cess and pottery sherds, obviously material derived from occupation here or elsewhere. This may, like other layers observed as occasional elements within the first bank, have been merely occupation material redeposited within the bank, or may have accumulated on top of it. In its turn, layer 30 was partially covered by a rough surface of cobbles and volcanic stone (layer 37) which was traced over a distance of 7.5m (plan, Fig. 5). If this surface represented a temporary street, as is possible, it was not detected farther to the north-east, in fact in most other sections in which the tail of the first bank was exposed the surface was clean, with no trace of superincumbent deposits. Only at Paul Street trench 13, where a layer of gravel and small stones (Fig. 9, section 127, 1979) was seen (in

section only) was a comparable layer traced. Nevertheless at these two points at least some activity was present, which must represent the passage of time between the two stages of rampart. Additionally at Paul Street trench 7 (Fig. 6, section 55/108) the natural ground surface behind the tail of the first bank was marginally lower than that preserved beneath the bank, suggestive of a period of wear or erosion before it too was sealed off by construction deposits relating to the City Wall.

Thus whilst there is insufficient evidence to indicate a prolonged hiatus between the two banks, some activity took place whilst the first bank was standing; this supports the suggestion that the bank had an existence independent from the later defensive ensemble of wall and bank. The possibility that the low first bank represents an unfinished defensive rampart (above p. 6) is difficult to judge, one way or the other, on the evidence presently available. At the South Gate excavation (Fox 1968, 11) no relationship was obtained between the rampart and the footings of the gate tower and thus it is not known if the gate stood with the first bank although this is possible since it definitely pre-dated the masonry of the City Wall.

THE CONSTRUCTION OF THE WALL AND HEIGHTENING OF THE BANK

The sequence of construction of the City Wall, and the associated heightening of the rampart, is best exemplified by observations recorded in Paul Street trenches 7 and 7 extension and, with a slightly different mode of construction, at North Gate site B. The following description and discussion is thus based on the evidence recovered from these excavations with supporting evidence from other trenches drawn in where necessary. The wall was built in three stages, unmortared, clay bonded footings were laid, partly or wholly, within a trench cutting the pre-existing bank; once fully above the top of the bank the superstructure of the wall was continued in unfaced mortared footings to a certain height where properly faced work commenced. The three stages were approximately mirrored by stages in the deposition of rampart layers enabling the progress of the heightening to be related to the building of the wall, if not precisely layer-by-layer, at least in general stages. It was possible to demonstrate that the building up of the bank proceeded simultaneously with that of the wall, thus providing easy access to the construction level, and probably was some 2-3 courses below the wall top at any given point. Certain distinctive materials contained within the clay layers of the rampart reflected the breaks in the wall construction.

The foundation trench and clay bonded footings

The cut for the City Wall, where it was seen at Paul Street trenches 7 extension (Fig. 6, section 122) and 13 (Fig. 9, section 127), was not cut fully through the clay layers of the early bank on the line of the rear of the wall, but was cut in a series of steps, with the bank layers running beneath the footings. The first step was revealed in trench 7 extension, and the base of a cut, some 1.50m within the line of the rear face of the wall, in trench 13. No further stepping down was noted. This was prevented by lack of access to the footings further forward. Elsewhere, at Paul Street trenches 2, 7 and 15 and at Bradninch Place only the upper limit of the cut was traced since in these positions the presence of the standing wall above denied access to the footing trench. The first step of the trench did not always cut into the underlying bank to the same depth. In trench 7 extension the full depth of 0.60m of clay-bonded footings was accommodated within a cut (Fig. 6, section 122, 1883) but in trench 7, between 3 and 5 to the north-east, the clay-bonded footings,

apparently of a similar thickness to that of trench 7 extension, stood partly above the top of the early bank and the foundation trench was correspondingly shallower. This suggests something of the lateral form of the foundation trench. Across the width of trench 7 the top of the clay-bonded footings are level (39.70m O.D.) and were c. 0.70m in thickness - thus the base of the trench lay at c. 39.00m O.D. Although the upper surface of the early bank slopes to the south-west (indeed the layers of the bank all slope off in that direction, cf. Fig. 6, section 120) the trench and the wall footings were intended to be approximately level. Thus on the north-east side of trench 7 (section 112) the trench cut some 0.30m into the bank but on the south-west side (section 55/108) the cut was only c. 0.10m deep. Further to the south-west in trench 7 extension the base of the footing trench lay at 38.20m O.D. and again ran on a level (section 122). The vertical difference of 0.80m in the base of the trench between the two sections suggests that the trench was dug in a series of level steps cutting into the bank by up to c. 0.70m and levelling out to the south-west. When the base of the cut approached the level of the top of the bank, as on the south-west side of trench 7, a further step down was commenced thus accounting for the difference in level between sections 55/108 and 122. Elsewhere the points at which the cut and the clay-bonded footings were seen were too far apart for this suggestion to be tested, but the creation of a level base on which to lay the footings of the wall, even though they rested on an insecure base of clay bank layers, would seem a sensible procedure.

At the North Gate, Site B and 1983 observation, the footing trenches cut completely through the front of the first bank and into the subsoil beneath. A possible explanation for this different procedure has already been suggested (above p. 7). The footings for the wall comprised unshaped blocks of trap rubble and smaller chips, with occasional occurrences of pebbles (e.g. in section 122, 1883). Where the rubble was contained by the trench little or no formal bonding material was noted, but where the footings rose above the first bank more reddish brown clay was packed with the stone. Periodic levelling layers of clay were deposited on the rubble, especially so on the top of the footings (2030, section 122). The section at North Gate Site B showed a more carefully constructed footing where layers of packed volcanic rubble (Fig. 4, section 1: 41, 43, 45) alternated with levelling/packing layers of compact clean clay with scattered volcanic fragments (40, 42, 44). The trench in this position was much deeper than elsewhere (1.20m), and the unmortared fill lay entirely below the level of the original ground surface. A fragment of a similar cut was recorded in the section drawn some 43m to the south-west in a watching brief in 1983 (Fig. 3, North Gate 1983). A small portion of clay-bonded volcanic stone was observed within a cut up to 0.40m into the subsoil (21), cutting pre-bank occupation layers. No relationship survived with the rampart layers, the upper part of the wall having been cut away, but the sequence is sufficiently similar to that observed at site B to warrant direct comparison.

Where the clay-bonded footings stood above the bank only the roughest of faces was fashioned. This was often obscured by a transitional deposit of loose volcanic rubble and clay lying against the rough face and merging with the clay of the rampart layers, e.g. section 55/108 (trench 7). A clear transition from the rough face to the sequence of rampart layers, observed in trench 2 (Fig. 8, section 107) indicates the variable nature of the structure.

As the footings, both clay and mortar-bonded, were constructed so the rampart accumulated in parallel. In most cases where the area immediately behind the wall was exposed the first layers of the rampart were composed of waste materials from the construction of the footings, i.e. deposits which

accumulated in the course of working stone and preparing bonding material, rather than being intentionally deposited as heightening of the rampart. This trait was not discernible in the sections exposed at North Gate nor at Bradninch Place where only a very small fragment of the upper rampart deposits survived. At Paul Street trench 13 this part of the sequence was missing, otherwise deposits of this nature were seen in trench 15 (Fig. 10, section 143, part of 3253), Trench 2 (Fig. 8, section 107, 1798), Trench 7 extension (section 122, 2015-2017) and trench 7 (Fig. 6, sections 55/108, and 112, 1792, 1805, 1806). The last-mentioned deposit was the most informative. On the surface of the first bank was a thin deposit of pinkish red clay, 1814, continuous in section 55/108 on the south-west (downhill) side of the trench but patchy on the north-east (uphill) side (section 112). Layer 1814 was of identical composition with clay employed in the bonding of the footings, but at the top of the bank it was cut by the trench for the footings, i.e. the layer was deposited before the footing trench was dug. In spite of this relationship 1814 is related to the deposits of the upper bank and it is suggested that it was derived from the construction of an earlier stretch of wall nearby, presumably to the north-east, deposited as a dump of clay for inclusion in the footings, or as a remnant of the mixing of bonding clay, subsequently spread on the surface of the bank. Thus it can be suggested that the wall was constructed in lengths. No convincing masonry breaks have yet been identified in facework or core to confirm this and, given the relatively limited survival of Roman facework, it is perhaps unlikely that any will be unless lengths of uninterrupted facework can be exposed for examination.

Partly on the surface of the bank, 1801, and partly on the layer of bonding clay, 1814, lay a series of layers up to 0.50m thick containing waste from the building of the footings. Firstly a very loose deposit of volcanic rubble and smaller fragments with very little matrix, 1806; this was consolidated by a patchy layer of bonding clay very similar to 1814, 1805; then a further layer of rubble, 1792. This was almost entirely of volcanic fragments and chippings, mostly less than 0.15 x 0.10m in size, i.e. much smaller than the average size of stone used in the wall footings and therefore quite possibly waste material not required for purposes such as levelling and packing in which smaller stone was employed. Layer 1792 filled in the uneven upper surface of 1805 and 1806 beneath and levelled up the surface to a smooth profile which was subsequently used as a base for the building up of the rampart. Above 1792 layer 1791 still contained much stone waste but set in a matrix of orange-red rampart clay which is the normal medium of the second rampart. No mortar, or mortared stone waste, was recovered from these lower layers. This absence may indicate that the lowest series of layers pre-dates the erection of the mortar-bonded footings. At Cricklepit Street trenches excavated in 1974 contained mortar mixing pits cut into the rear of the early bank, and sealed by the layers of the later rampart (Griffiths 1974, 169; Fig. 4; Simpson forthcoming) indicating that mortar was mixed on site. Presumably the equivalent mixing pits at Paul Street lay outside the area investigated.

Mortar-bonded Footings and Rampart

On the prepared base of the clay-bonded footings the wall proper was erected. The base of the mortared wall was not properly faced to the rear. A height of between 0.45m (Paul Street trench 7) and 1.80m (Bradninch Place) was left with a crude rear face, sometimes, as with the clay-bonded footings beneath, merging with loose stone lying against the face and with the clay layers of the rampart. The nature of the unfaced work is best seen in Paul Street trench 2 (Fig. 8) where some of the stonework was seen in section. Rampart layers run up to the core work (1794-1797) but at the top the corework is capped off by a

layer of rampart clay, 1793, which runs over the top of the footings and up to the lowest course of facework.

The wall core was constructed of unshaped trap rubble of a variety of sizes. The basic courses were roughly laid, sometimes in pitched or herringbone fashion, and the uneven upper surfaces levelled with smaller stone and mortar. Occasionally levelling courses were detectable representing the finishing off of a sequence of courses to a level upper surface. Good examples of the latter were seen in the portion of the wall core recorded at Paul Street in 1988 (Fig. 13). The wall core was bonded with a coarse yellowish mortar with a very high proportion of largish pebbles as aggregate, a distinctive mixture which is readily recognised in the circuit of the walls. This material was employed for much of the fabric, although finer-grade mortars appear in facework and sometimes in the upper levels of the core (see below).

The reason for beginning the rear face of the wall in rubble work and then, after a certain amount was constructed, continuing the rear face in good squared work, is obscure. The height to which the wall was built before facework was commenced on the rear face is variable, taking the level of the original ground surface as a constant, i.e. a level which gives an approximate idea of the height of the wall on the outside when facework was introduced. It is seen that at Paul Street trench 7 the facework begins at c. 2.50m above ground level; at Bradninch Place c. 3.40m; and at Paul Street trench 15 very approximately 1.80m (measured from a projected level of subsoil). The rampart was obviously envisaged as covering the rear face to a certain height but the faced and unfaced sections are obscured equally by the rampart layers. At Paul Street (trench 7) where the unfaced mortared wall is of modest height, no more than 0.55m, it might be suggested that the lowest part of the wall was a continuation of the footings but this can hardly have been the case at Bradninch Place where the unfaced wall starts 1.80m above the footings (Fig. 11; 86, 87, 88). Some of the upper parts of the wall at Bradninch Place could have been faced originally and disturbed in post-medieval times when much of the rampart was removed, exposing a good deal of the Roman wall anew. The refacing that was seen there (85) could equally have been employed to face up rubble core work, exposed on the removal of the rampart.

At several points in the wall between Rougemont and Paul Street deep shear cracks are visible in the core where parts of the wall have tilted forward. It was observed at Paul Street, trench 7, that one of the shear cracks was associated with a void against the masonry in the lowest stage of the second bank. In turn both crack and void were sealed by later deposits in the bank, demonstrating that, in this position at least, the cracking and forward movement of the bulk of the wall core took place before the bank had been raised and therefore during the construction of the wall. The source of such instability in the wall is probably to be found in the technique of building the wall on top of the first bank without deep foundations beneath the rear face. It is presumed (but not demonstrated) that the footings cut more deeply into the bank towards the outer face and that this discrepancy led to the movement of the wall. It is possible therefore that the change in technique observed partially in trench 15 and wholly at the North Gate sites, whereby the footings cut through the first bank and into the subsoil beneath, was introduced to counter the unstable tendency in the wall in the north-eastern section, and not, as suggested above, in response to the increased gradient. This is quite plausible as an explanation since it has been seen elsewhere that the wall was constructed down the slope, from north-east to south-west (above p. 9).

Two intermediate surfaces were recorded in the construction sequence of

the rampart at this point, both composed of fine chippings of volcanic trap. The lower of these (1778, Fig. 6) was confined to a narrow linear depression, c. 1.00m wide. Waste deposits of the same yellow mortar as was used to bond the wall core were mixed with the chippings. The second surface, 1763, was more extensive, spreading over the whole of the surviving upper surface of the rampart, but composed of the same fine stone chippings. It is probable that the material on the surfaces was derived from the dressing of stone for the wall. The mortar present in the first surface indicates that it was in use as the upper footings were under construction. The level of the second surface coincides with the base of the facework of the rear face and thus it may be suggested that this deposit represents the construction surface for the faced wall, the fine chippings being the residue of final working of the blocks before they were set in position. The facework of the wall in the position of trench 7 was built on an alignment at variance with that of the unfaced core beneath, the bottom course of facing stones oversailing the footings by a maximum of 0.15m. This was not a common feature at this point of transition, but it provides evidence that the wall beneath was largely obscured by rampart deposits when the facework commenced. The upper layers of the rampart continued according to the same pattern. Little more has been available for inspection in the various sections excavated. Invariably the uppermost parts of the rampart, and sometimes the facework of the wall, were removed by later intrusions.

At this point a review of the construction of the rampart is necessary. Unlike the first bank, which was composed of clays of a uniformly freshly-dug character, the bulk of the layers of the later heightening were predominantly composed of mixed clays (perhaps even a prepared mix of puddled clays) - with some superficial variation in colour and composition, but of essentially similar origin. Some waste materials appeared in certain clay layers and the sequence was punctuated by intermediate 'working' surfaces. The rampart was based on the sequence of layers of stone waste described above (p. 9) which covered the surface of the early bank to a depth of up to 0.60m. The succeeding deposits were dumped on the slope, spreading backwards from the wall up to a limit which was probably pre-determined (by surveyors?) as the rear lip of the rampart. In every section where the tail of the rampart was inspected, viz. trench 7/10 twice (sections 55/108, 112 and 53/95, Fig. 6), trench 2 and trench 13 it lay within some sort of feature cut into underlying layers (see the simplest of these cuttings, 1679, Fig. 6, section 53/95). The width, up to the limiting feature, was 12.00-12.20m in trench 7/10; 11.5m in trench 2; and 12.7m in trench 13. It may be seen from the sequence of bank layers that much of this width would have been deposited by the time that the upper level of the bank had reached the level of the base of the rear facework. The clay layers of the rampart were deposited in inclined dumps, following approximately the gradient established by the earlier bank. Near the rear face of the wall the layers were built up to form a level top to the rampart. In section 55/108 (Fig. 6) the levelling action of certain upper layers may be observed in the deposits 1775 and 1764.

THE FABRIC OF THE WALL

A full discussion of the building materials is given elsewhere (Blaylock forthcoming). Volcanic trap is employed almost exclusively in the Roman masonry, for facework and core, the only exception in the area under consideration being occasional river cobbles in the footings of the wall at Paul Street trench 7 (Fig. 6, section 122, 1883). Bonding material is mainly the yellow pebbly mortar described above (p. 10) which is seen in all extant Roman work in the wall. Occasionally a finer white mortar appears in facework

and in the upper builds of the wall (e.g. Bradninch Place/Northernhay Gardens, Fig. 15) although the use of this was not universal (cf. the section of core recorded in 1988 at Paul Street (Fig. 13, 2035) where the yellow mortar type was employed to the full height of the surviving core.

Front elevation

None of the facework of the front elevation in this area is Roman, indeed only one section in the whole circuit can be confidently identified as original: at the upper end of Quay Lane (Simpson forthcoming). This build contains squared blocks of dark vesicular trap, similar to the composition of rear facework here and elsewhere, and a weathered horizontal offset near (originally at ?) ground level. Two sections of the outside face of the wall in Northernhay Gardens possibly contain remnants of Roman facework, the majority of the superstructure being rebuilt, perhaps re-using the original stone since both contain a high proportion of dark vesicular trap. The first of these sections at the foot of Rougemont Gardens (i.e. technically outside the area under consideration) may contain fragments of Roman facework re-worked or heavily patched; towards the south-west end of the build a very stony mortar is seen and there are very large weathered blocks of dark vesicular volcanic trap (ECWS 1978, build 6.1). The second section with possible remnants of Roman facework lies some 45-50m to the south-west (ECWS 1978, 7.3). Here only an offset plinth and one or two courses of very large dark purple blocks survive, the superstructure of the facework being rebuilt in rubble. The plinth is not properly chamfered, but varies from nearly horizontal to a shallow weathered surface, and may be similar to the offset seen near the South Gate. It must be said that neither of these examples is especially convincing and at present cannot be certainly identified as Roman work.

Rear elevation

Surveys of standing masonry have now been conducted on the greater part of the rear elevation of the wall from Rougemont Gardens to the North Gate. The major omissions are the exposed corework in Rougemont Gardens itself, and the stretch of post-medieval and modern superstructure to the ancient wall between Paul Street trench 15 and North Gate site B (Fig. 2). A long stretch of standing Roman corework from Paul Street trench 15 as far as Maddocks Row was exposed by excavation (Fig. 14) and lowering of ground level during redevelopment. Much of this section, although recorded, is not illustrated here; areas with surviving facework which were examined by excavation being an exception (Fig. 14, sections 136, 141, 147, 148).

The rear elevation is best preserved at Bradninch Place, to the rear of Northernhay Gardens (by which name the survey of that part of the wall is presently identified, Figs. 14-16). An outline elevation of the whole length of wall is given in Fig. 17, details of well-preserved areas of Roman facework in Figs. 15 and 16 (rear elevations A-C) and supplementary information from excavation in Fig. 11. Large areas of rear facework in several steps or offsets are visible, complemented by information from the wall adjacent to the South Gate (Fox 1968, 11-12 and Fig. 5) give the clearest picture of the form of the rear elevation. It is assumed that all of the facework that survives was originally obscured by the rampart to the rear of the wall. The original height of the wall is unknown, although sections at Bradninch Place where the wall top is c. 5.00m above external ground level, and the parapet c. 6.00m, may not be too far below that level (Fig. 17, sections 2 and 3).

Two sections which preserve Roman facework in quantity were particularly informative: for the lower part of the wall that seen in rear elevation A (Fig.

15) displays the lower, unfaced mortared wall, bonded with yellow, pebbly mortar (Fig. 17, 46) standing to a maximum height of 1.60m. The herringbone pitching of the unfaced core is clearly visible. Two horizontal shear cracks appear in this section (above p. 11; Fig. 17). At the point where facework began the mortar changed to the finer white variety. The facework courses (Fig. 17, 39) were constructed on a slight gradient to the south-west, presumably following the slope of the ground at least in part, and were laid in two faces separated by an offset. Each stage was of approximately five courses (the coursing is irregular and inconsistent). The offsets are clearly seen in the profiles of the wall (Fig. 15, sections 1 and 2).

In the second section, some 23m to the south-west, the wall is preserved to a greater relative height and here three offsets were seen (Fig. 16, section 3). The two lower faces were again of five courses apiece (0.70 x 0.20m) (11, 32), the top face (37) of three only, the facework having been lost from the top of the wall. The exposed core at the top of the wall (8) spanned the height of another two courses, suggesting that the third face too was of similar height. The total height of rear facework in this position, across the three faces, was 2.40m. The top of the third face was 4.50m above the external ground level. If this level is taken as an approximate equivalent to the original ground level, and given that from the top of the third offset (37/8) the rear face stepped in once again and rose for some way to the top of the wall, a minimum height for the wall top in this position would seem to have been in the region of 5.00m+.

The lower part of the rear face was seen again in a small trench excavated against the wall at the south-western end of the Bradninch Place area (Fig. 11). One offset was present in the surviving Roman fabric (two stages of facework, 31 and 20). A lower level of facework may have been removed from this section, below 31 (fronting corework 86), for if 31 was the lowest section of facework this section of wall would have been built unusually high before the faced wall was commenced. Build 31 commences 3.10m above the ground surface beneath the bank. Unfortunately post-medieval activity in this area had removed all traces of earlier facework at the base of the wall. The faced build 31 was rather higher than those observed further to the north-east (six courses, up to 1.15m), near to the height seen, for instance, at Paul Street trench 7 (Fig. 12, section 114, 1770).

At Paul Street a similar sequence was observed although less well preserved. The detailed extract from Section 114 (Fig. 12) shows all the surviving Roman facework in the vicinity of trench 7. Above the unfaced core (for which see above and Fig. 6, section 55/108), a face of up to six courses, 1.10m high, formed the lowest level of facework (1770), over a maximum length of 8.20m (interrupted by an area of exposed core produced by post-medieval activity in the area). The courses were inclined slightly south-westward again. At the north-eastern limit the face was much shallower, up to four courses, 0.55m. Above 1770 the north-eastern half of the wall was rebuilt (240) but to the south-west up to two courses of an upper stage of Roman facework survived (218). No further facework was recovered but a mimimum height was obtained from the observation of Roman corework standing to a height of c. 4.50m above original ground level some 15m to the south-west (Fig. 13, 2035). Unlike the wall at Bradninch Place, no change in mortar type was observed here to coincide with the beginning of faced construction. Although the facework of 1770 was bonded in a good quality mortar, that of the core (Fig. 13, 2035; Fig. 12, section 115, 1687; section 114, 1689) was of the same coarse type as seen in the footings below.

One further area of facework contributes to the overall interpretation, at

Paul Street, trench 15 (Fig. 14, 3126). This was partially examined in elevation (sections 147, 148) and showed a maximum of 14 courses of facework constructed with an outward 'batter' (Fig. 10, section 139) but with no radical offset in the alignment of the face. Insufficient of the lower part of the sequence was seen in this position to assess the significance of this departure from the pattern observed elsewhere, but it may be said that the wall cuts deeply into the early bank at this point and this may represent the transition from the technique of construction employed on the higher ground to the north-east, where the superstructure partially oversails the lower layers of the early bank, to that seen to the south-west at the North Gate sites (above p. 9). No Roman facework has been observed to the south-west of this point.

The Later Tower

Traces of footings for a later structure added to the rear face of the Roman wall were first detected in trench 7 (Fig. 6, sections 55/108 and 112, 1781), represented by a trench cut into the upper layers of the rampart containing stone rubble. Where first observed the trench was badly disturbed by later activity but subsequent extensions of the area of excavation revealed less disturbed footings to the south-west and a robbing trench in the bottom of the cut for a 17th-century bell-casting pit to the north-east (Fig. 7, 1875, 1874, 1841). Thus the full plan of a rectangular structure was recovered. The footings were of mixed volcanic rubble and river cobbles bonded with red clay, set in a shallow footing trench, from 0.20-0.60m deep (this, of course, was originally much deeper, having been truncated with the upper levels of the rampart). Internal dimensions of the building were 6.50m NE-SW and 3.30m NW-SE with walls up to 1.20m thick. Estimates of the original depth of the footing trenches are entirely dependent on thoseof the original height of the rampart. if the rampart stood c. 4.50m high, a minimum height which seems probable in the information obtained on the rear face of the wall at Bradninch Place (above p. 14), footings up to 3.00m deep may be suggested, at least for the part of the structure immediately behind the wall. If the remnants of this building were at all similar in construction to the wall itself then the south-west wall (the only portion not subsequently disturbed by robbing of stone) may represent clay bonded footings originally surmounted by mortared masonry.

The position, relationship to the fabric of the wall, and the assumed massiveness of the footings of this building, all suggest that it was a tower added to the rear of the wall. Given that the thickness of the wall was in the region of 3-3.50m the rectangular plan may reflect a rear projection of a square or nearly square tower partly above the wall itself. Internal interval towers are generally seen as a third-century development in Romano-British towns, which were superseded by the end of the century by externally projecting towers (Henderson 1984, 9). Such a date is in accordance with the position of this structure in the stratigraphic sequence and the high incidence of cobbles in the footings. River cobbles are found rarely if at all in the Roman wall itself.

This structure is the first Roman tower of any sort to have been discovered on the wall at Exeter. On the possibility of further interval towers and the addition of external interval towers see Henderson 1984, 9-10.

Acknowledgements

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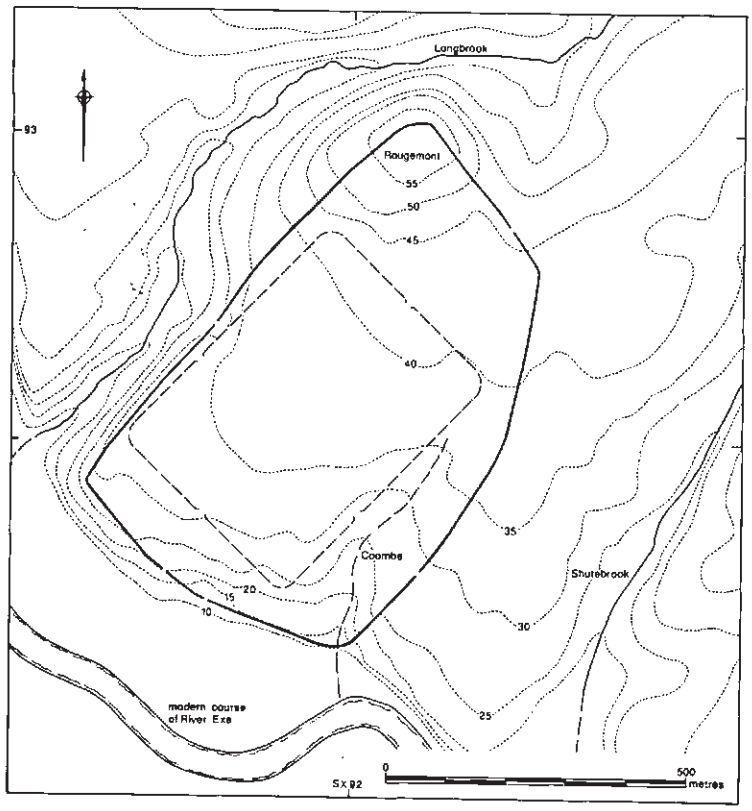

Fig. 1 Contour plan of the site of Exeter, showing the outline of the Roman Wall and the site of the fortress.

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SCOM = 40mm

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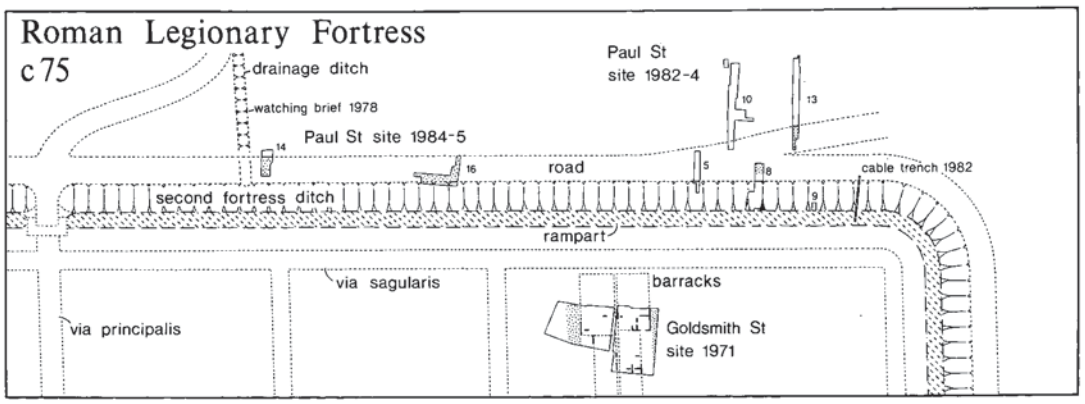

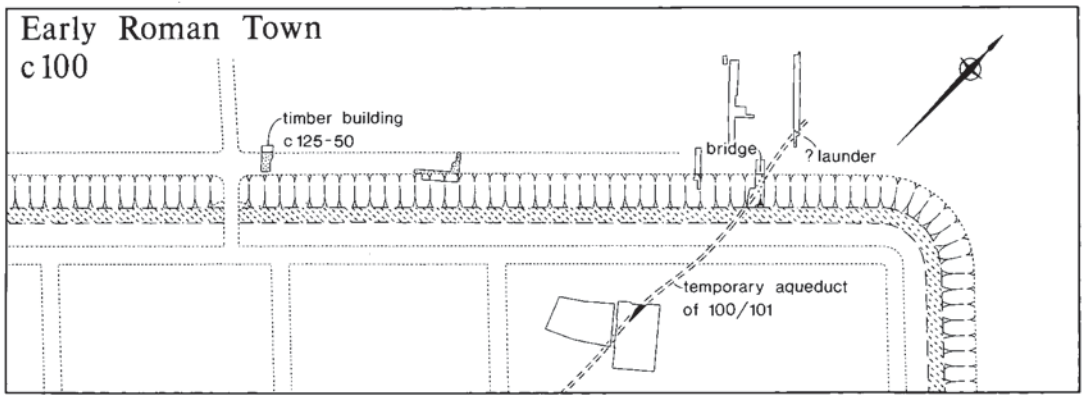

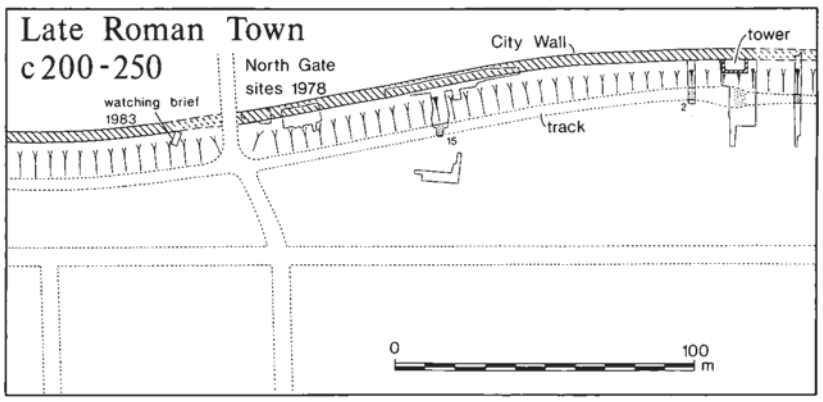

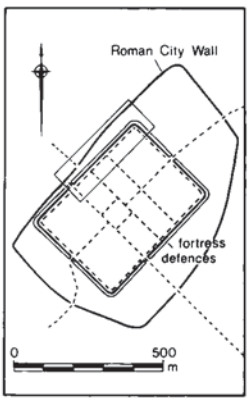

Paul Street, trench locations

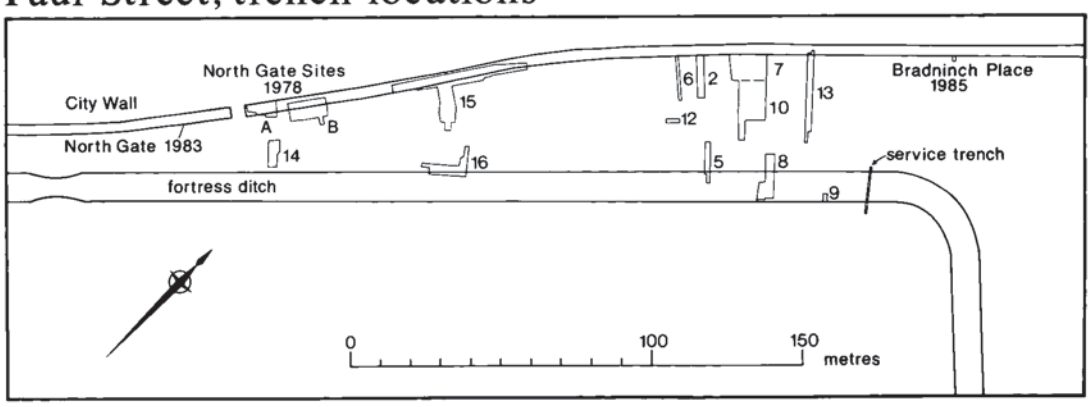

Fig. 2 Development of the north-western section of Exeter in the Roman period, with position of sites mentioned in text (bottom).

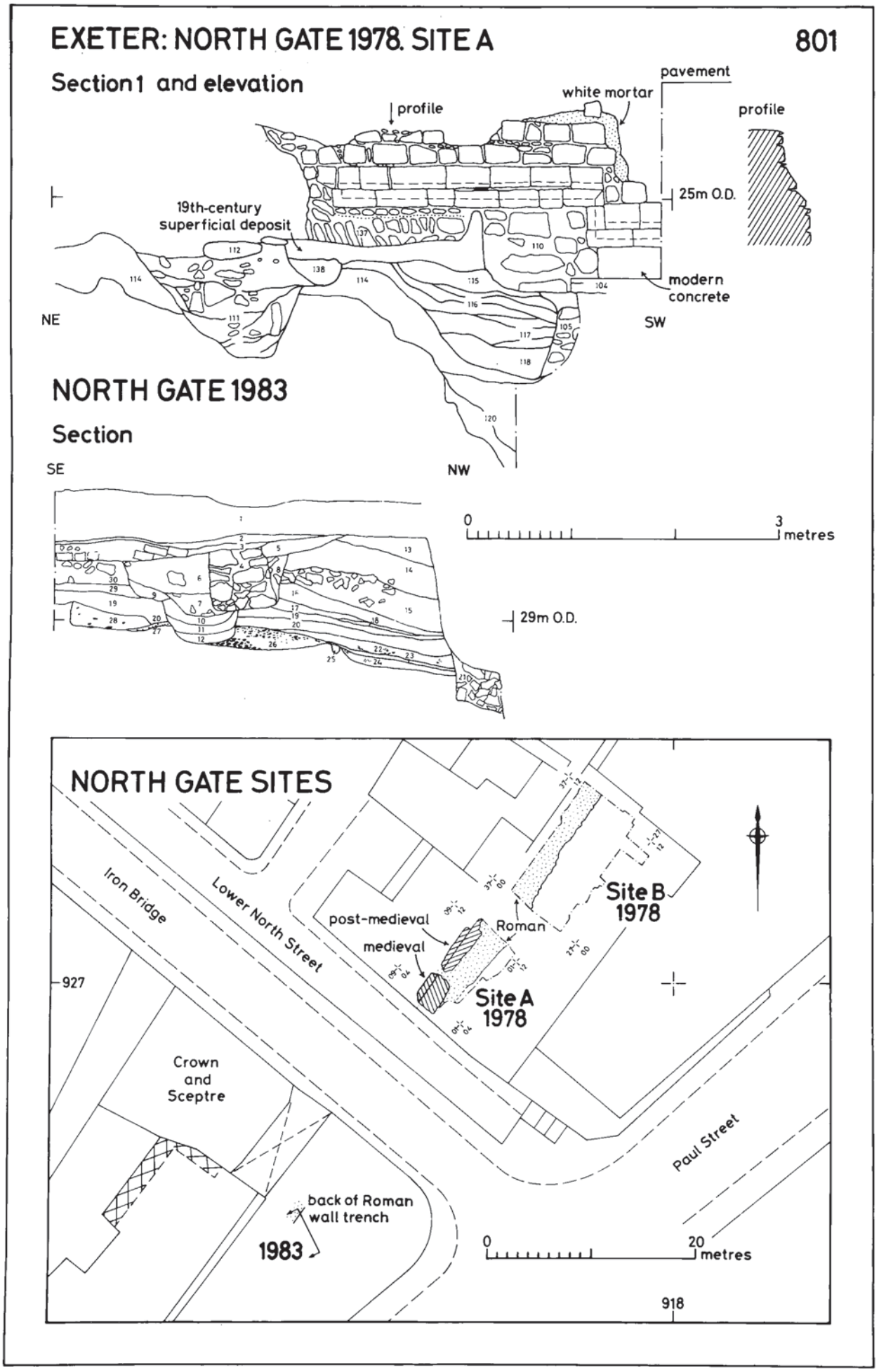

Fig. 3 North Gate sites, 1978 and 1983: Location.

Fig. 3.

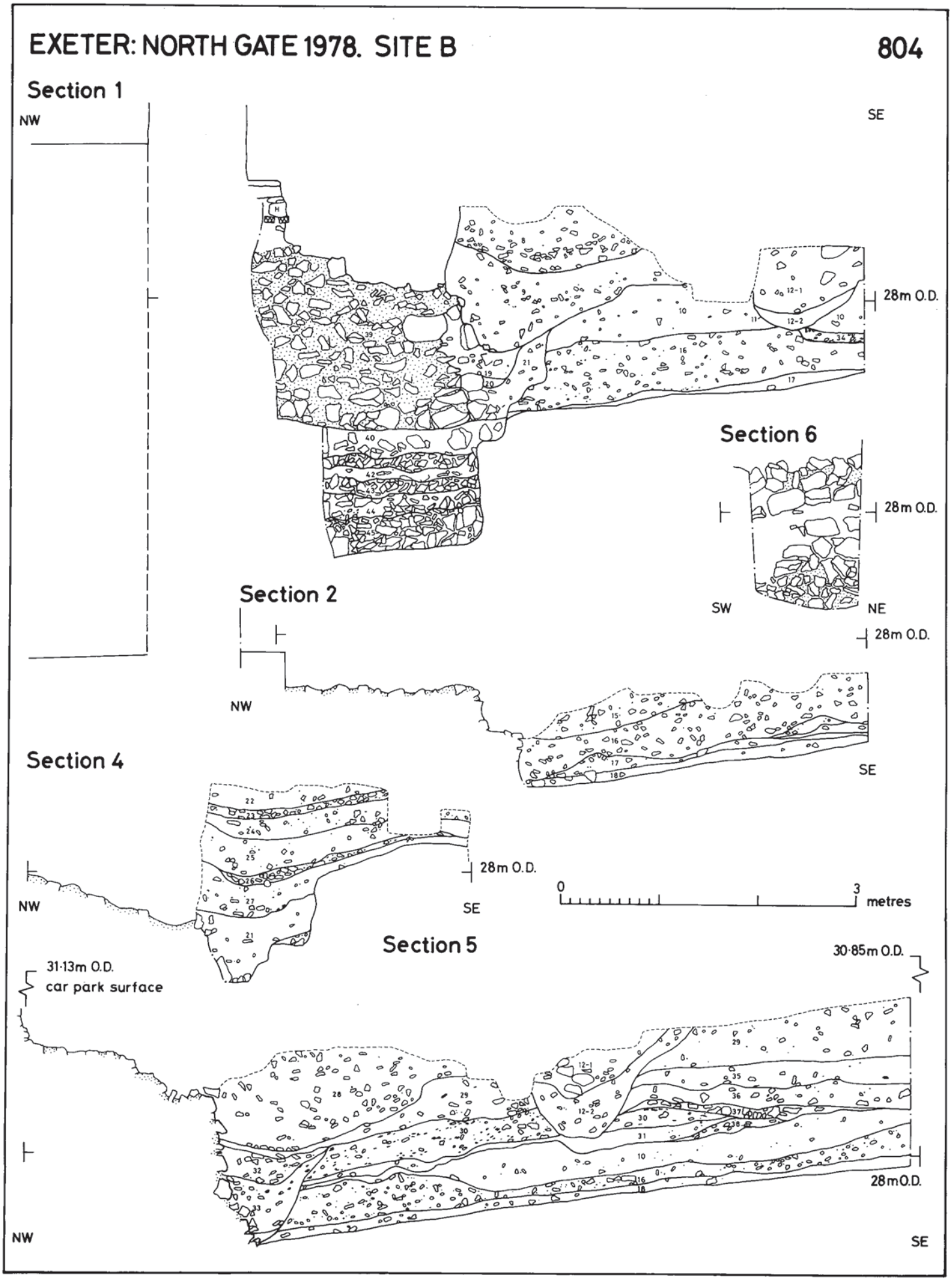

Fig. 4 North Gate, site B, 1978: sections through the wall and ramparts.

FIG. 4 .

Fig. 5 North gate, site B, 1978: Plan of wall footings and associated features.

FIG 5.

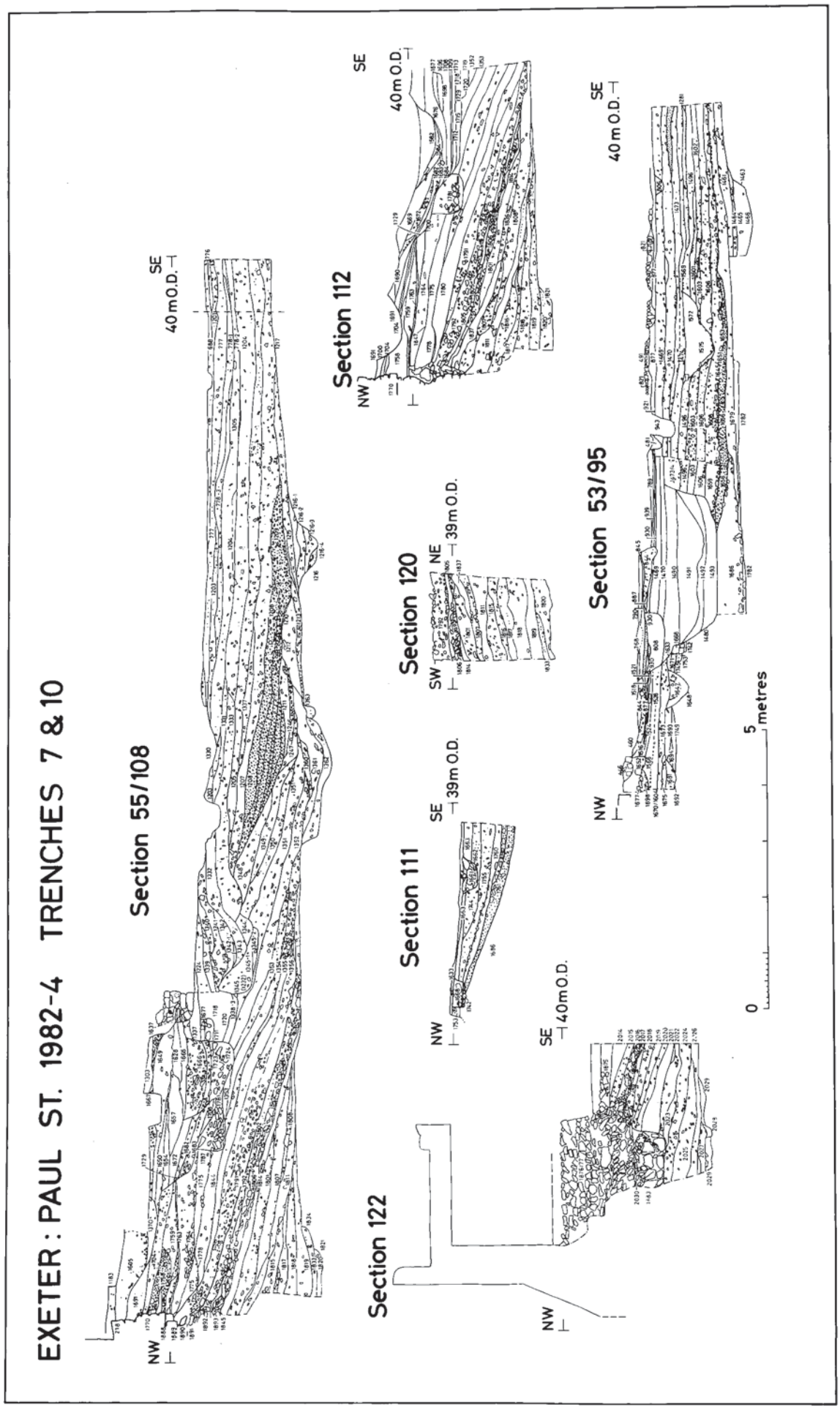

Fig. 6 Paul Street, Trenches 7 and 10, sections through the Roman defences.

Fig. 6.

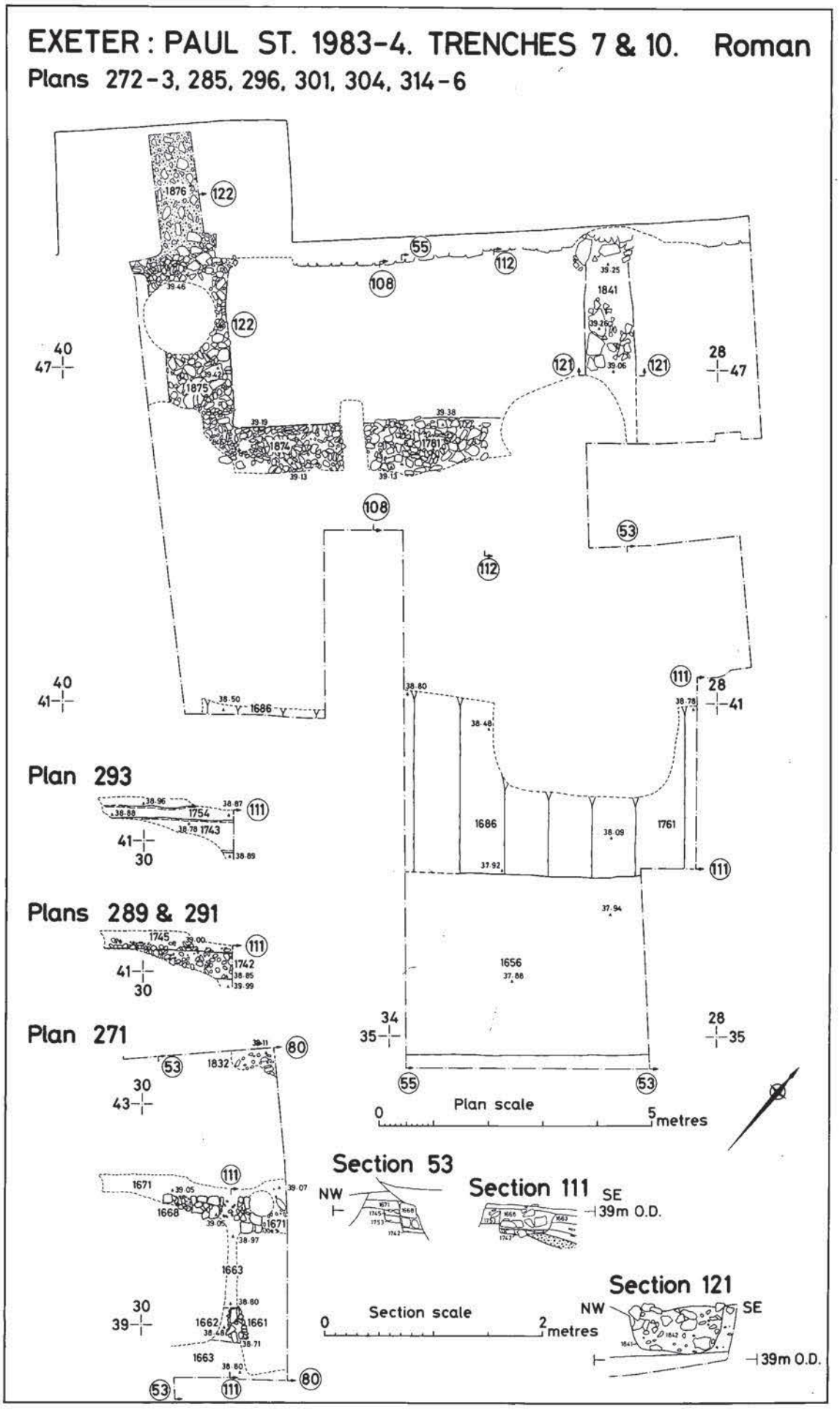

Fig. 7 Paul Street, Trenches 7 and 10, Plan of Tower, base of Wall and limits of Rampart.

FIG 7 -

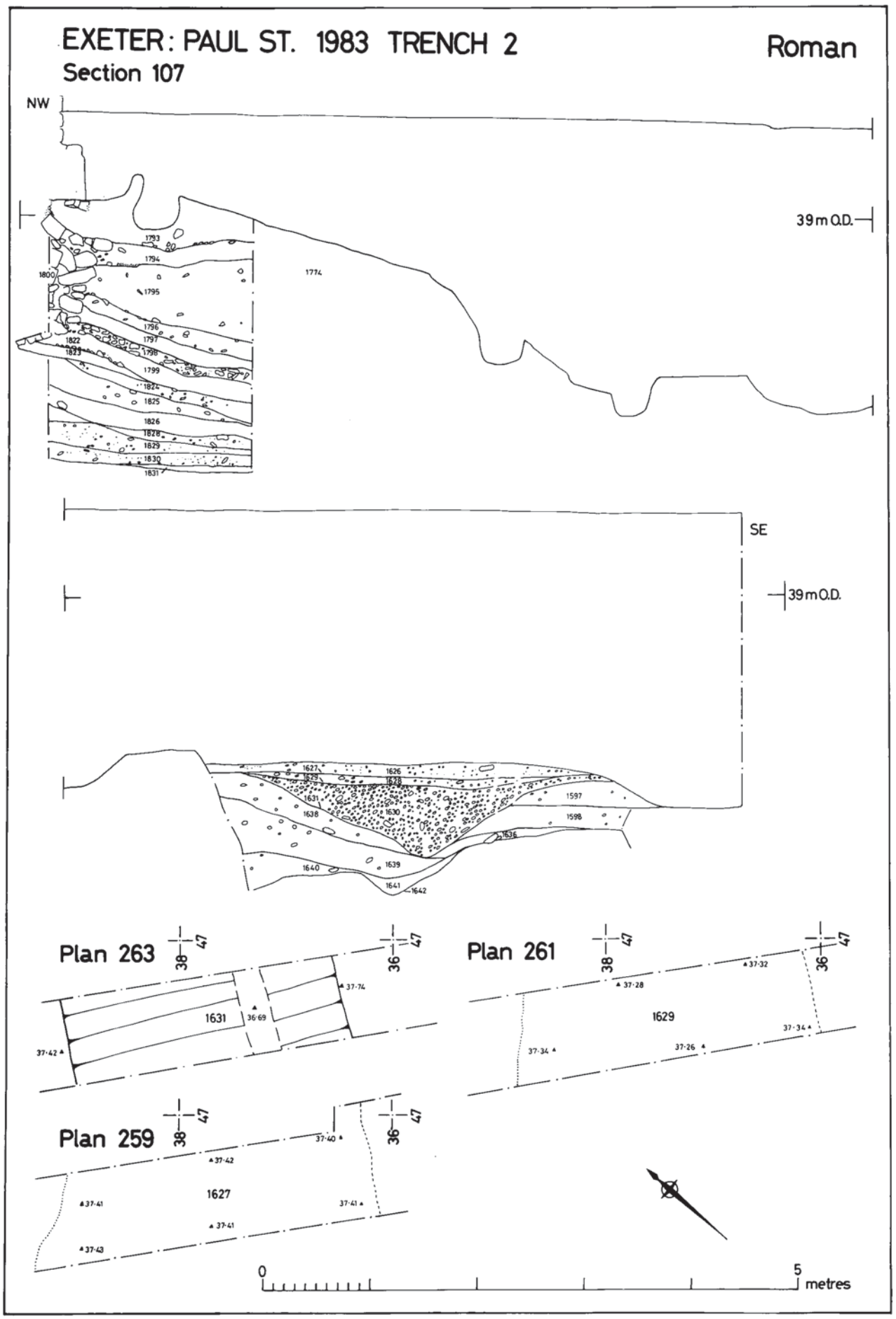

Fig. 8 Paul Street, Trench 2, Rampart section.

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FIG 8.

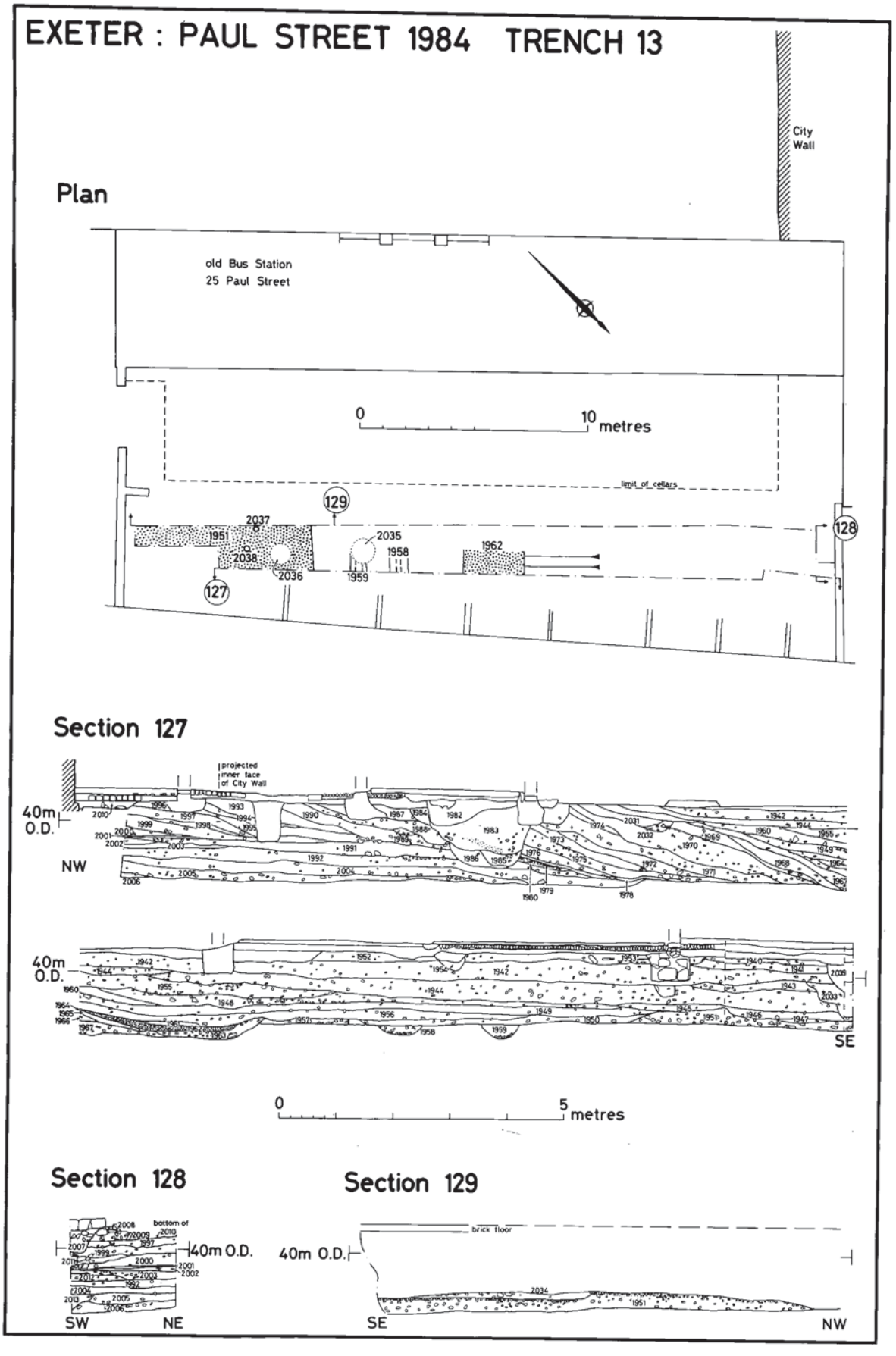

Fig. 9 Paul Street, Trench 13, Rampart section.

FIG. 9.

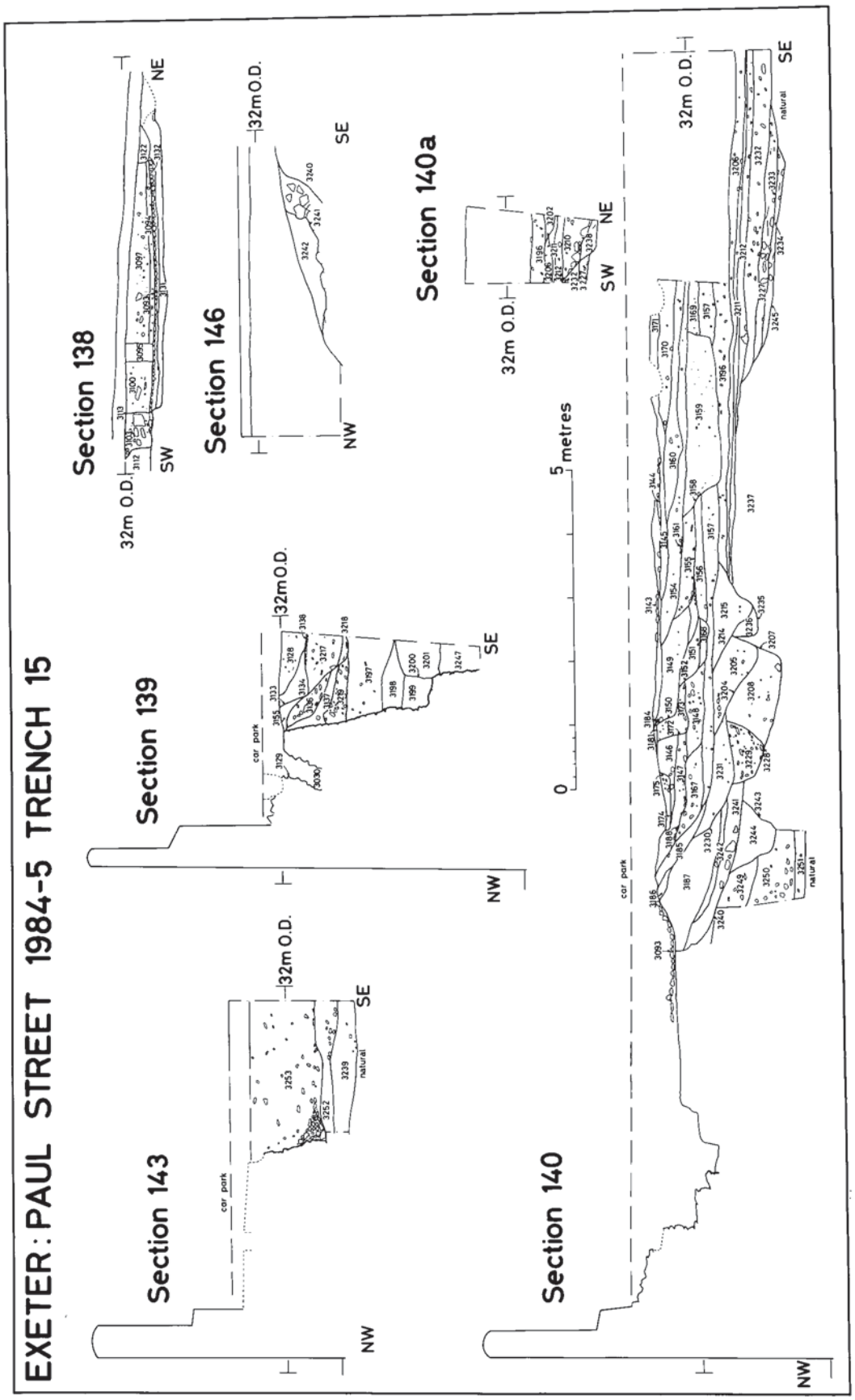

Fig. 10 Paul Street, Trench 15, Rampart sections.

Fig 10.

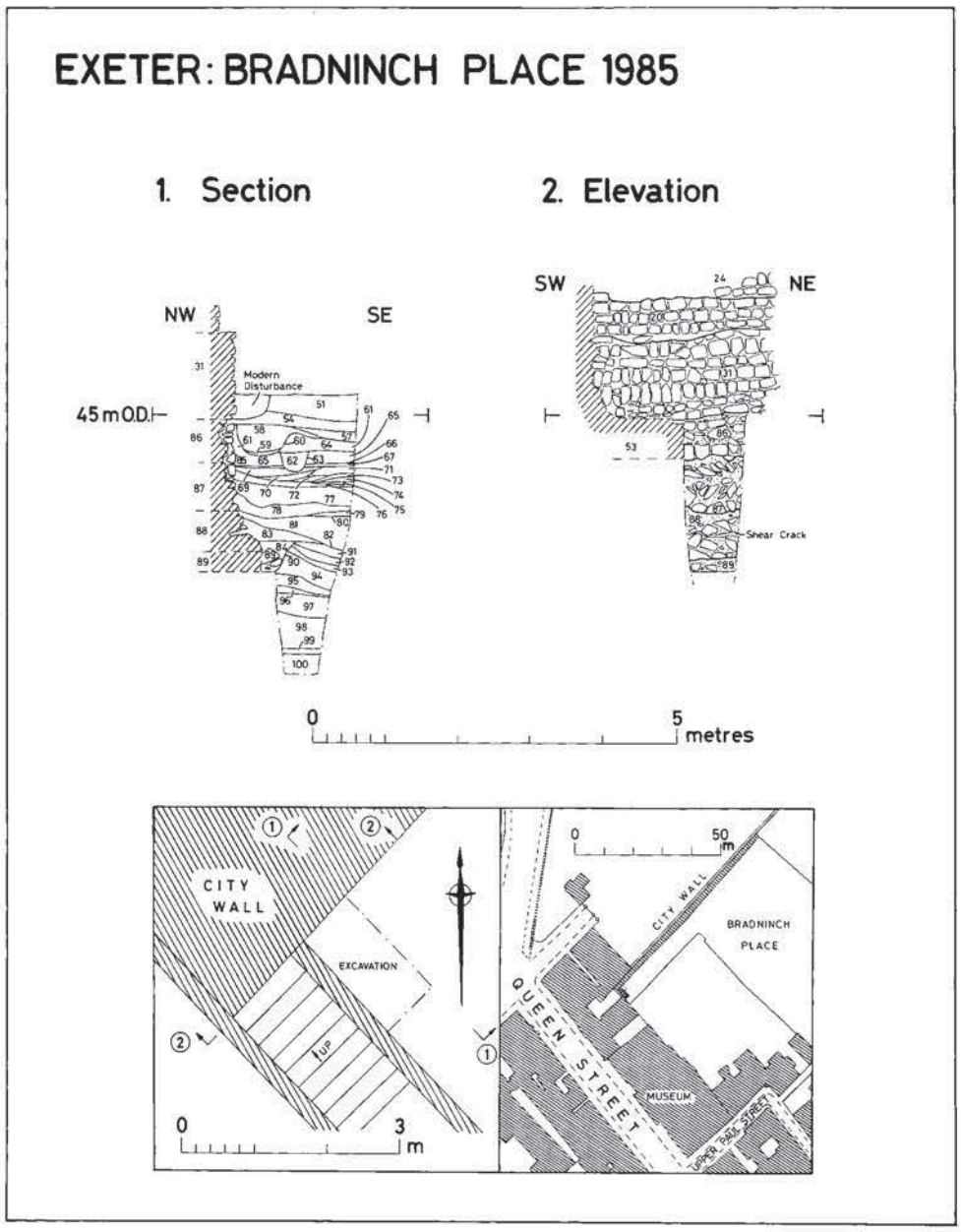

Fig. 11 Bradninch Place, location and details of trench.

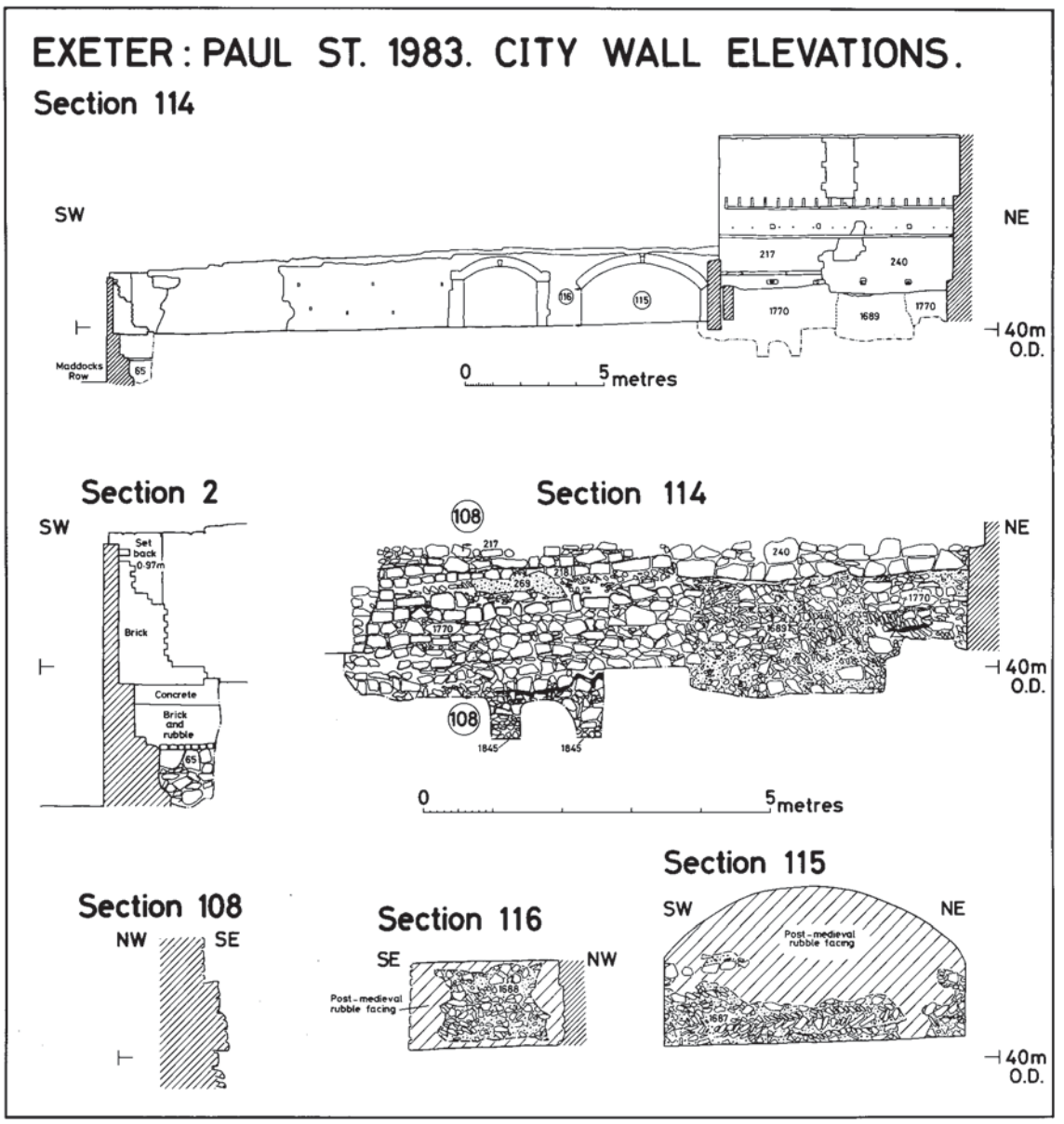

Fig. 12 Paul Street, 1983, City Wall elevations.

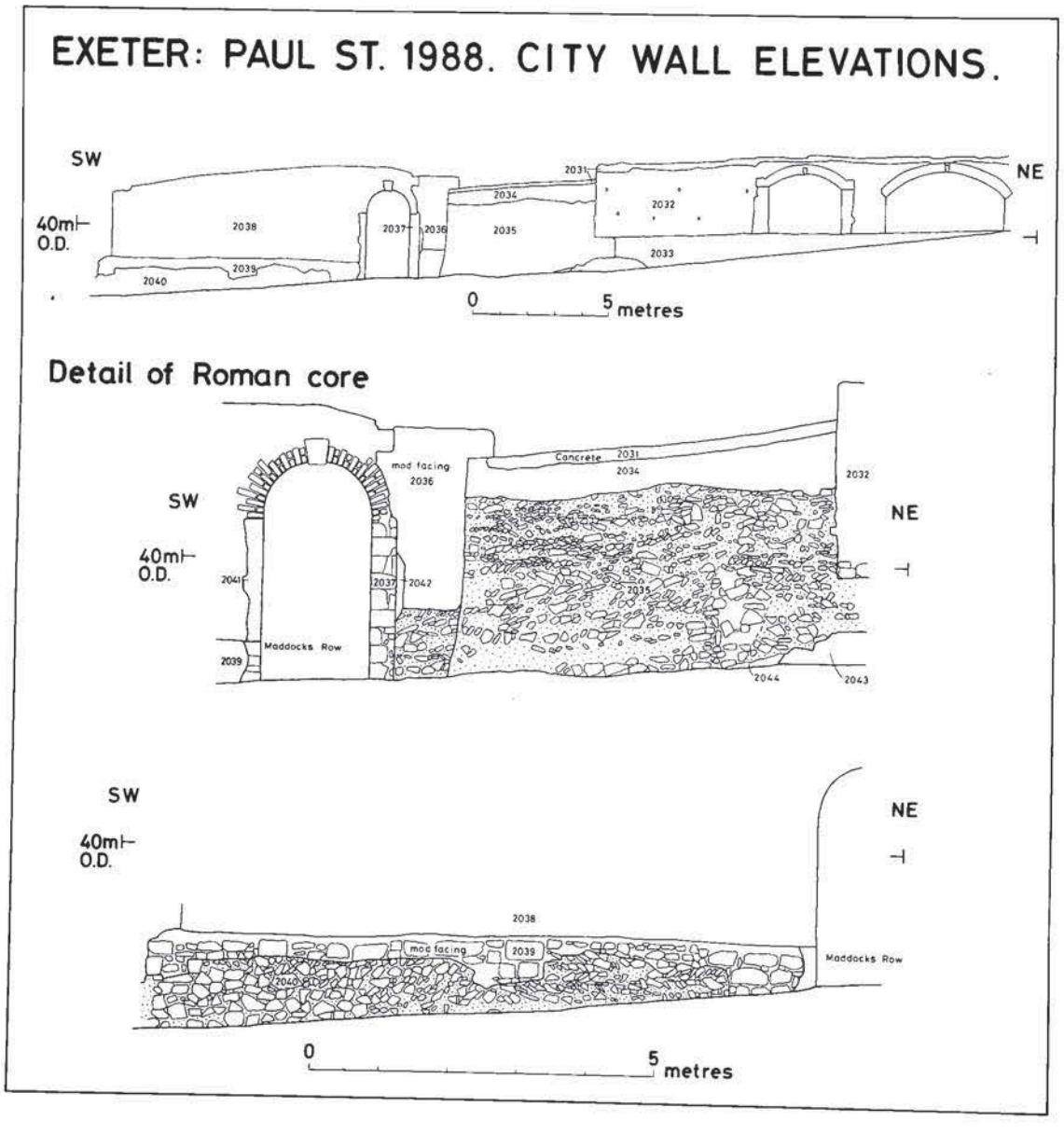

Fig. 13 Paul Street, 1988, City Wall elevations.

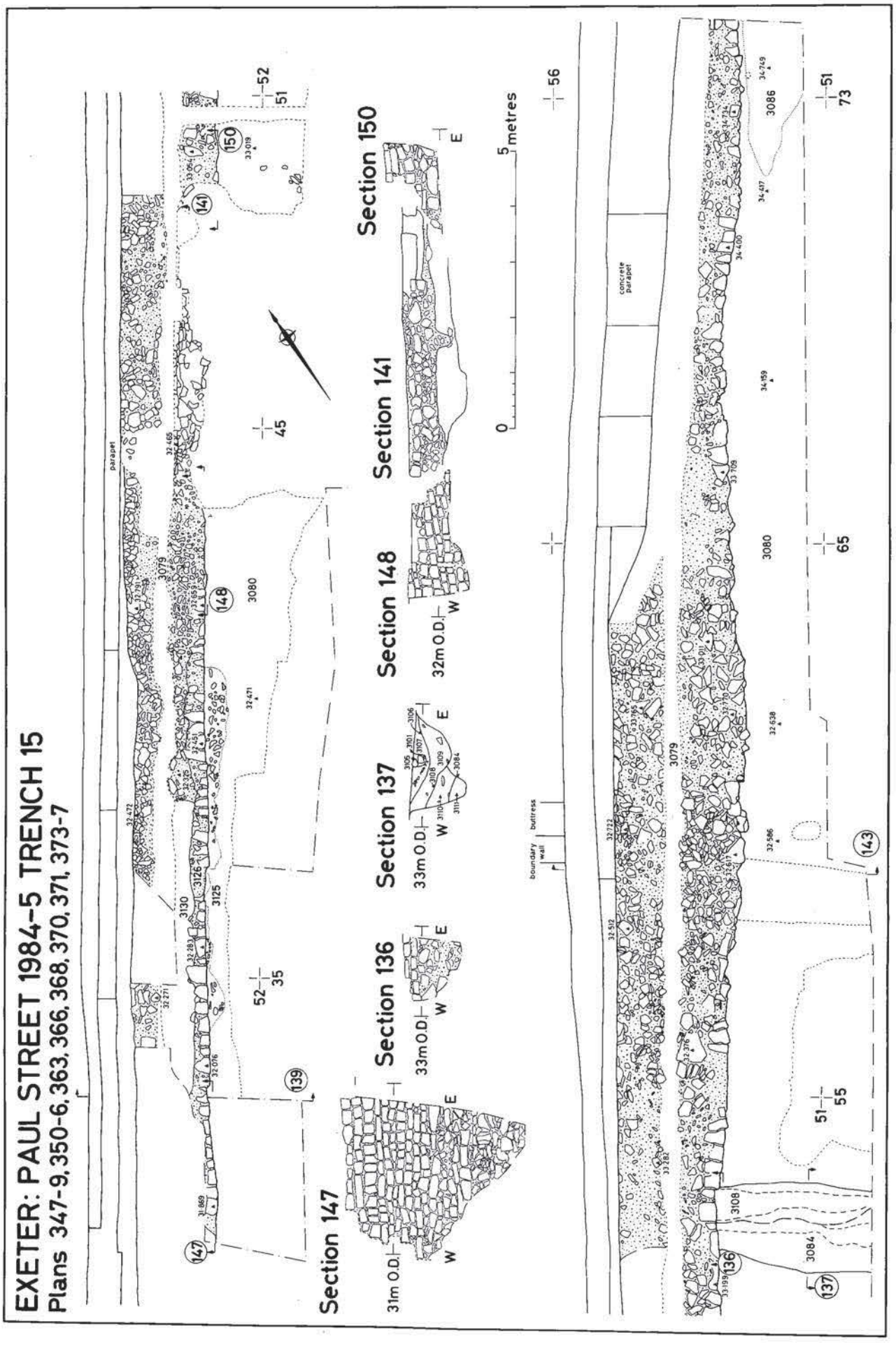

Fig. 14 Paul Street, Trench 15, City wall plan and elevations.

FIG. 14.

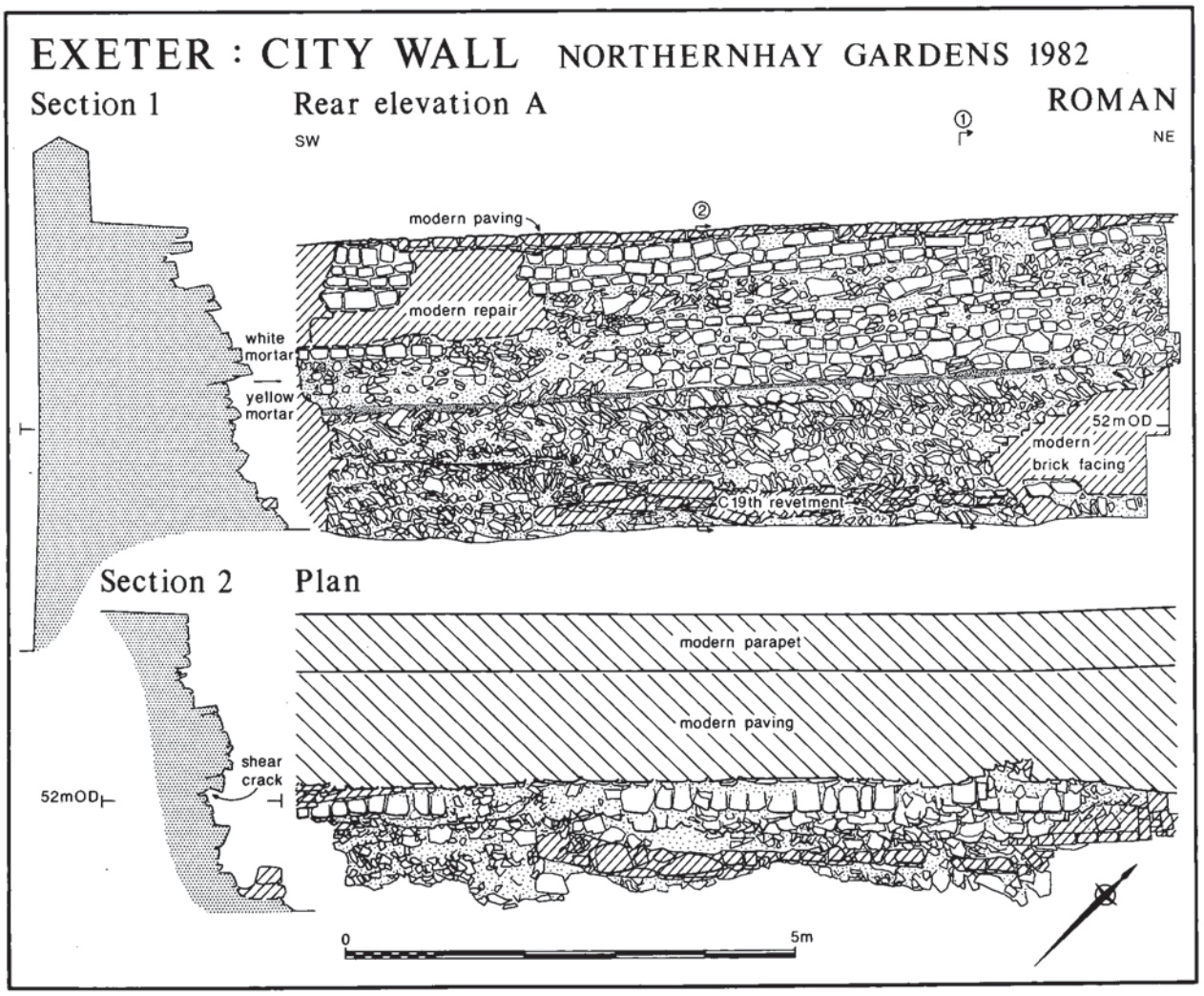

Fig. 15 Northernhay Gardens, rear elevation I.

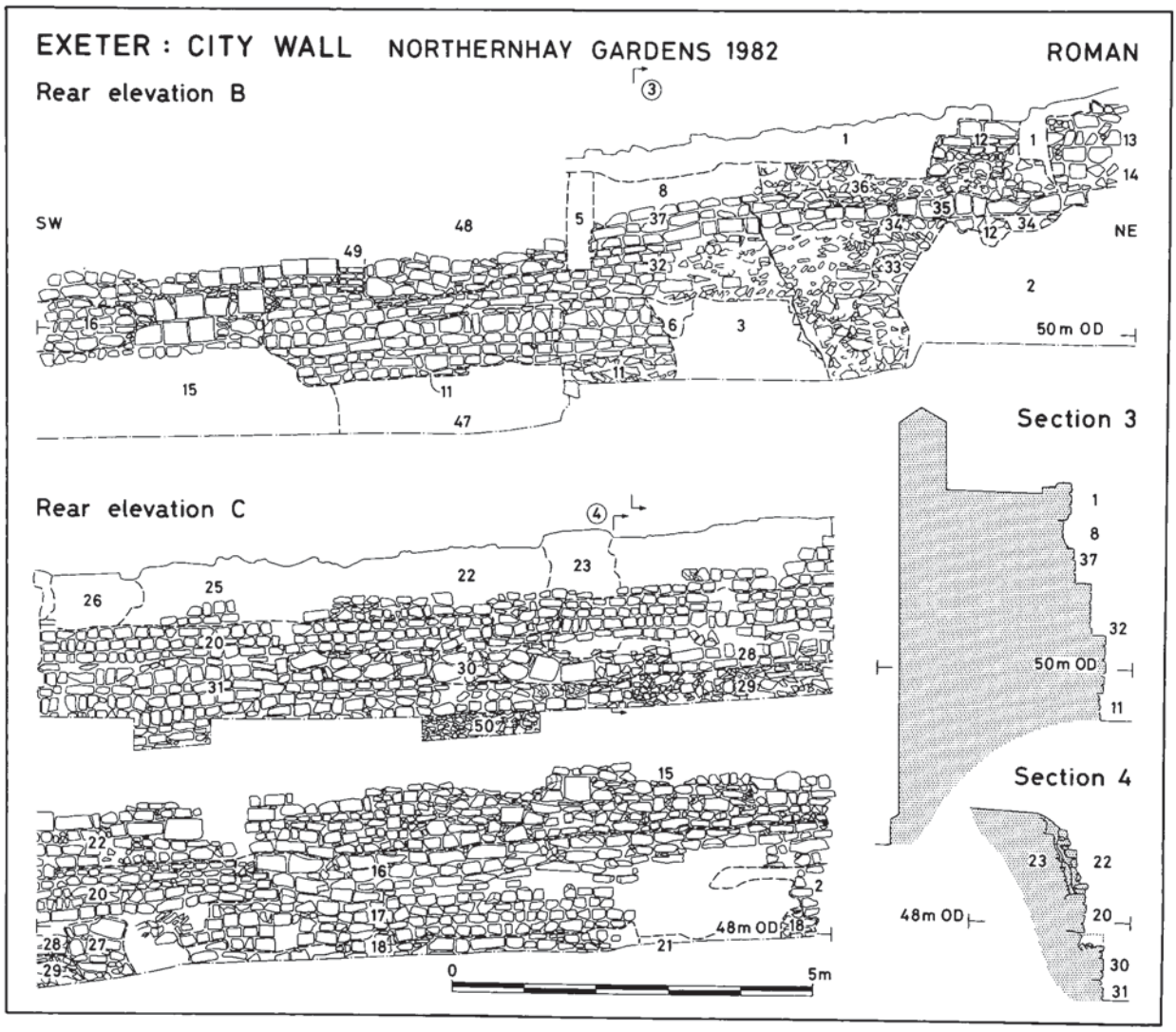

Fig. 16 Northernhay Gardens, rear elevation II.

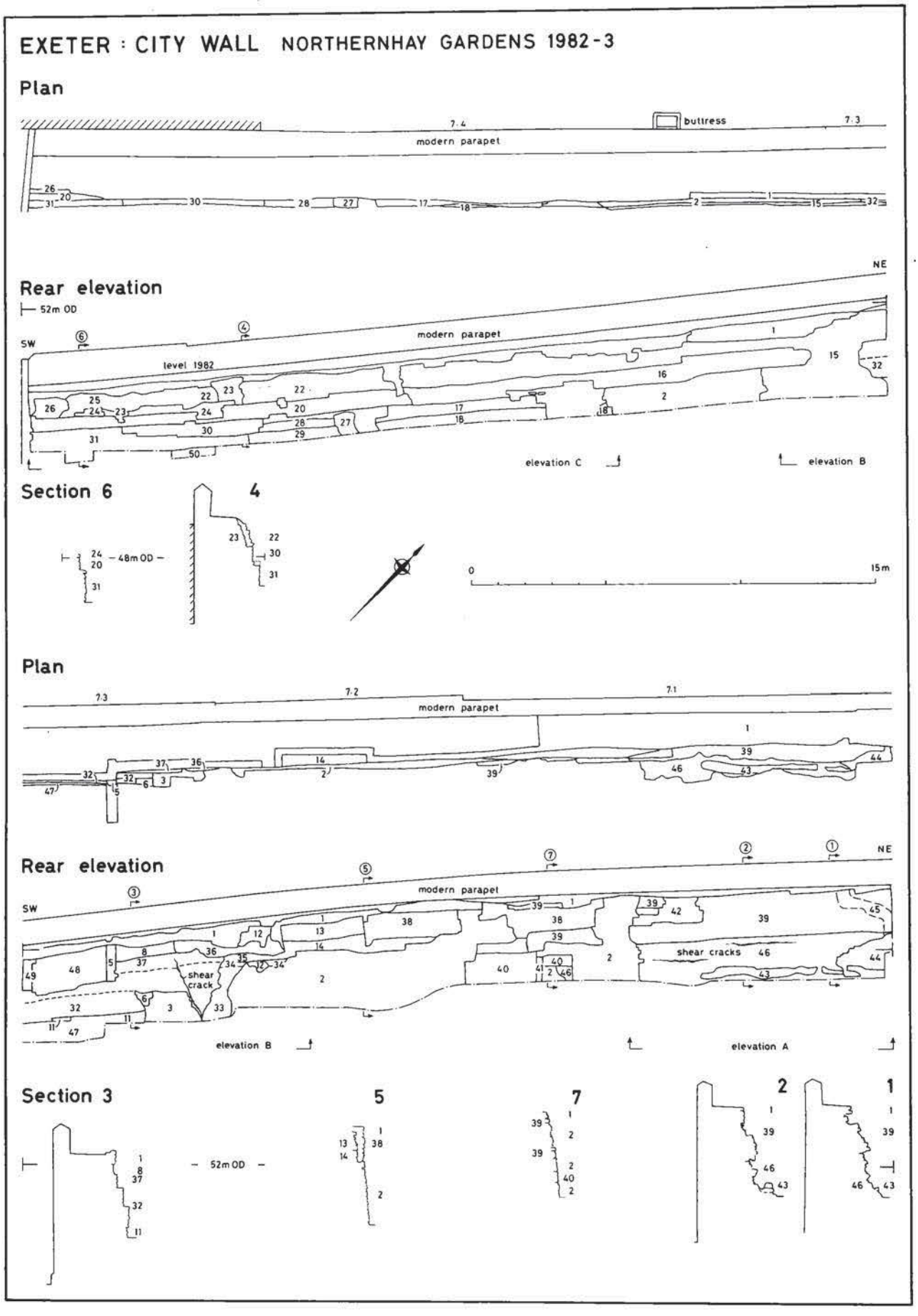

Fig. 17 Northernhay Gardens, outline rear elevation of City Wall.

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Fig 17.