CHAPTER 4

KOM EL-NANA: THE STONE BUILDINGS

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4.1 Introduction

Figure 4.1. The site of the South Shrine, viewed to the south. The line of dumps in the mid-distance is from the 1963 E.A.O. excavation, itself visible as a shallow depression immediately in front of them.

On the surface of certain parts of Kom el-Nana are scatters and concentrations of fragments and chippings of limestone, sandstone, and gypsum, and sometimes fragments of an artificial conglomerate made from all three. Similar materials occur densely within excavators' dumps at the Aten temples within the Central City and so make them pointers to the existence of sites where stone buildings of the time of Akhenaten once stood. In the preliminary survey of Kom el-Nana carried out in 1977 the principal areas and patches of chippings were marked on a sketch map subsequently published (Kemp 1978: 30, Fig. 5). They occur towards the centre of the site and appeared to represent two distinct areas, something which the excavations of 1989 have

confirmed to the extent that it is now possible to think of two stone buildings having been there and to give them names, e.g. North Shrine and South Shrine. The site of the South Shrine is the more straightforward to excavate, partly because most of the area was never re-used, and partly because a large amount of the overburden was removed by the E.A.O. excavations of 1963 (Figure 4.1). An aerial photograph taken in 1922 depicts for this part an uneven surface characteristic of recent digging although with none of the holes sharply outline by shadows which occur elsewhere, confined, so it would seem, to the Roman area. Our own work has shown that at least the southern side of the South Shrine had escaped the worst effects of modern digging. Part of the North Shrine, by contrast, was subsequently covered by elements of the late Roman settlement which included a building which has remained as a distinct mound. Since the late Roman levels deserve careful treatment of their own which was not included within the 1989 excavation plans much less progress has so far been made in uncovering the North as compared to the South Shrine. The 1922 aerial photograph shows clearer signs of serious modern pitting in the stone-chippings-covered area on the north side of this mound than is evident over the South Shrine, and our own excavations have confirmed this to be the case and that digging for treasure by local villagers has sometimes been quite deep and destructive and is a habit which persists to the present (Figure 4.2).

At the beginning of the season a grid of five–metre squares was laid out over each of these areas, and excavation was pursued for the full season. By the end of the season at the South Shrine a block of eight squares had been completely excavated down to the Amarna Period gypsum floor, together with two isolated squares lying further to the west which turned out to be beyond the limits of the stone building. At the very same time part of the large dump of the 1963 E.A.O. excavations to the south of the South Shrine was cleared away. Two reasons lay behind this: the tail of the dump probably covers the southern edge of the temple, and a few pieces of decorated stone lying on the surface promised that more pieces lay within the dump, and this proved to be so. At the site of the North Shrine the season's work produced a linear excavation of 5 squares across ground that lay between the Roman mound on the east and Roman walls and debris on the west. This trench exposed the front edge of the shrine, and in a single square located to the east of the main line it proved possible to work within the confines of the shrine itself.

4.2 The excavation and ancient destruction of the South Shrine

The initial block of five–metre squares was situated over the large depression left as a result of the 1963 sondage, the aim being to reclear this hole so that it could form a basis for deciding how excavation into new ground should be continued. The main part of the 1963 sondage lay in squares AA29, AB29, AC29, AA30, AB30, and AC30 (Figure 4.3), and formed an irregular depression in which little of the original floor remained visible, for the sides of the pit had weathered and slumped, and had also trapped wind-blown sand. Part of the eastern edge of AC30 coincided with a recent shallow digging which had exposed undisturbed horizontal layers of sand and chippings, but which was of a size and character suggestive of the work of an animal trying to dig a burrow. More ominously, the north side of the area was covered with deposits of loose dark soil originating from a large hole dug into the south side of the late Roman brickwork and also the underlying Amarna Period chippings. This substantial digging had mostly been done subsequent to 1977, when the survey plan was done. Traces of the 1963 excavations also continued to the west, but in the form of irregular linear depressions running north–south representing the weathered remains of trenches, and extending across the ground to the north which lay outside the limits selected for the 1989 excavations.

The material excavated over these six squares was partly slumped or otherwise recently disturbed material, and partly destruction debris from ancient times lying still undisturbed in the southern parts of squares AA29–AC29. At the outset it was decided to remove all of the debris in this block of squares as a single unit [5132], and in retrospect it is still hard to see what advantage would have accrued from a subdivision into component units, although in labelling the stone fragments division by five–metre square was kept. Significant stratigraphy was encountered in two areas, and in one case, involving a thin but intact Roman layer, an exception was made (see below). Eventually the excavation was extended northwards, under the supervision of

Figure 4.2. The stone chippings area over the site of the North Shrine, viewed towards the north–west at the beginning of the 1989 season. The irregular surface in the foreground is the result of very recent digging for decorated stone fragments.

Christopher Kirby, into a part of the site less affected by the 1963 digging, and here full stratigraphic control with separation and labelling of units was resumed.

Two drawn sections, although atypical in representing islands of debris undisturbed in modern times and thus possessing a greater degree of stratigraphic structure, illustrate the general character and composition of the covering deposits.

The first (Figure 4.4) shows the side of a cut made through a peninsula of undisturbed ground in square AA30 between a trench and the main pit of the 1963 digging. At the time of drawing a further 20 cm remained to be removed before bedrock was reached, and this part of the stratigraphic column is thus missing. At the top lies 10 cm of pale grey dust with some chippings and small stones, representing the original surface cover undisturbed since late Roman/early Christian times. This latter period is represented by a sharply defined layer [5305], 5 cm thick, of

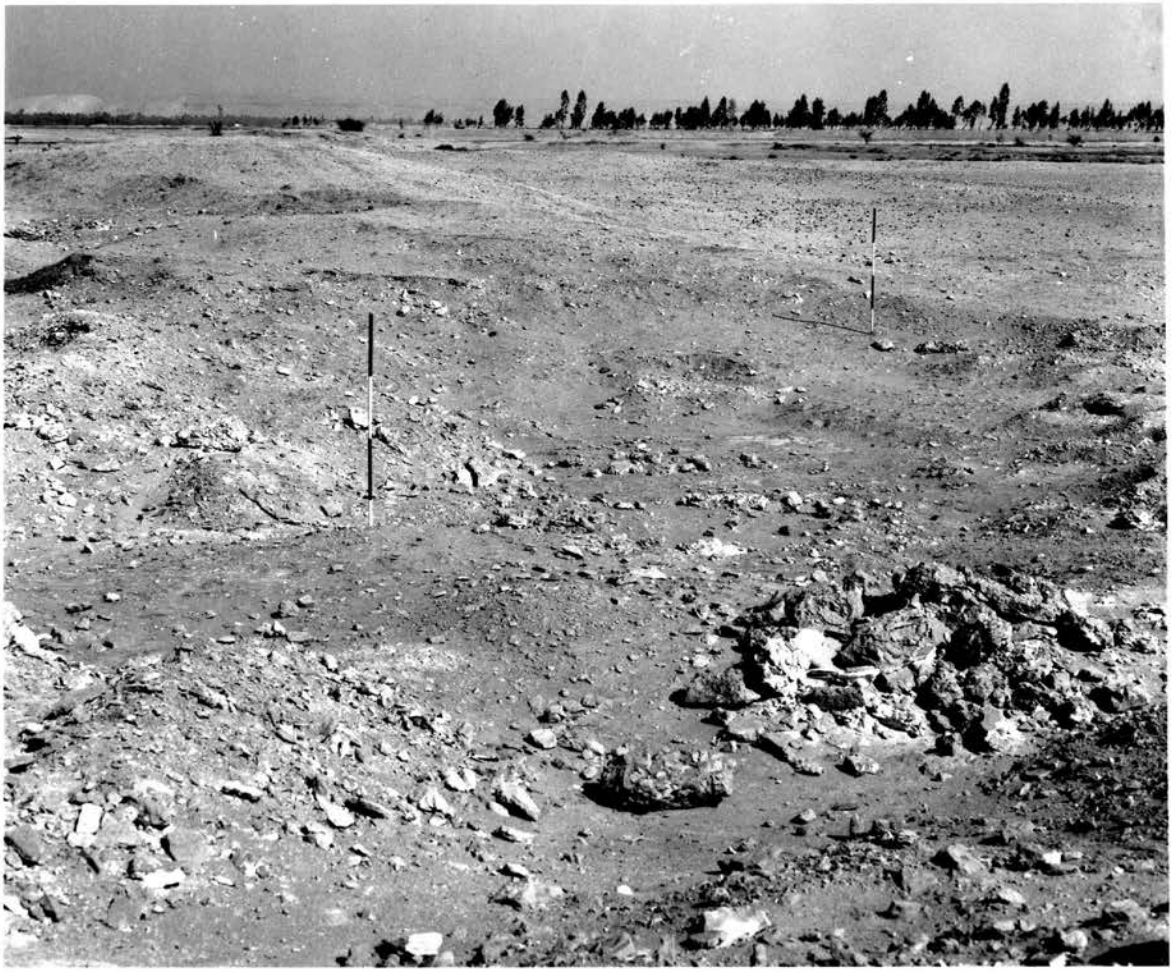

Figure 4.3. The site of the 1963 excavation photographed in 1977 towards the north–east.

grey–brown dust containing small pieces of charcoal, small weathered sherds, and fibrous plant material, presumably the tail of the midden which was centred further north and was sampled at the end of the season in square W30. Dust from this layer had filtered down into the underlying sandy deposit, but the layer itself was still separated from it by a sharp and almost horizontal horizon, suggesting that a smooth, weathered pre-Roman surface over the site of the South Shrine was maintained in this area during the late Roman occupation. The remainder of the stratigraphic column consists of destruction debris from the shrine mixed with wind-blown sand, and shows a marked upwards-fining of materials, with sand and dust towards the top, and larger pieces of stone in increasing numbers towards the bottom. In the middle reaches of the column the mixture was of sand, pebbles, small chips of limestone and pieces of gypsum. At the foot of the column the distribution of materials takes on a strong horizontal component, with a pile of much larger broken pieces of limestone in a dense matrix of gypsum to the south. This lay, in fact, over the line of an east–west wall of the shrine which had been completely destroyed down to *gebel* and must have been part of an east–west linear spread of larger elements left over from a very thorough smashing of the wall and its foundation. If one imagines the elements of this column turned over and mixed together more evenly one has a good impression of the character of much of the deposit [5132] as it was removed from the block of six five–metre squares.

The second section (Figure 4.5) is the west face of square AC29. The line of the ground illustrates the sloping surface of the weathered 1963 pit. At the northern (right) side of the section

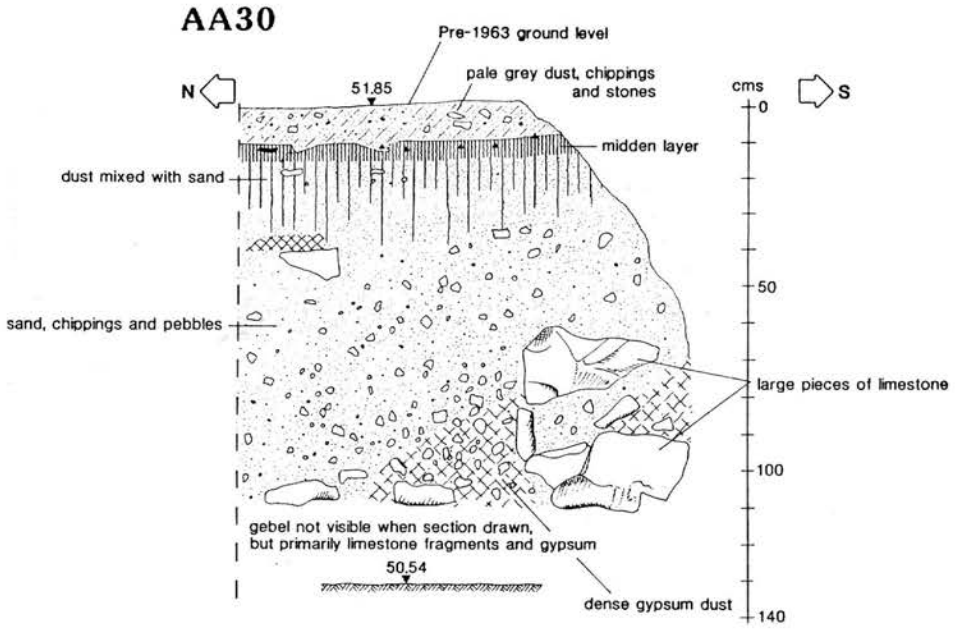

Figure 4.4. Section across small area which preserves the upper stratigraphy of the ground before modern digging.

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loose dusty sand containing fragments of stone and of broken gypsum pavement descend to *gebel*. The southern (left) side of the section is, by contrast, ground outside the 1963 pit and shows a section rather similar to the first one, though without the late Roman midden layer. The lowest part was filled with a solid mass of large fractured limestone pieces along the line of another destroyed east–west wall the removal of which, to enable the detail of the section to be drawn, would have precipitated the collapse of the overlying material. The particular interest of this section is the middle part which crosses a broad strip of gypsum-concrete foundation which lay between two major east–west walls. Heaped above it is a deposit of consolidated, clean, orangy sand containing pebbles, free of fragments of building stone. At its thickest it measured 0.80 m. When the ground to the north was excavated, this sand deposit was found to continue northwards as a ridge exactly corresponding to the continuation of the underlying gypsum-concrete foundation layer. The explanation must be that this is the remains of a fill of desert sand which was poured into the spaces between walls prior to the laying of the pavement slabs. This is a valuable piece of evidence because it enables us to calculate that the floor of the shrine (allowing for slabs about 20 cm thick) must have stood at a minimum elevation of 51.60 m. This compares with the level of the mud pavement in front of the temple exposed in squares W29 and W30 at 51.13–51.15 m, thus a difference of at least 45–47 cm. We may also conclude that at least four courses of stone blocks were needed for the foundations of the walls. The reason for the depth of the foundation pit is that the builders wished to spread the layer of gypsum-concrete as far as possible on to bedrock. The excavation has shown that, whereas over large parts of Kom el-Nana the underlying desert is composed of soft wadi sediments, the central part of the site is an island of harder and more ancient marl, with an orange crust. It lacks a flat surface, however. Even in the small area exposed beneath the site of the South Shrine it is replaced in parts by a coarse orange sand, but this was regarded by the builders as equally satisfactory.

Two additional squares, Y30 and Z30, were excavated in the latter part of the season. Having escaped most of the 1963 digging a fuller record was kept of the variations in the overlying deposits, although it became evident during the course of excavation that a good part of them had been dug over at other times, perhaps both before and after 1963. The results are summarised in Figures 4.6 and 4.7 (and cf. the photographs, Figures 4.8 and 4.9. The upper parts have been

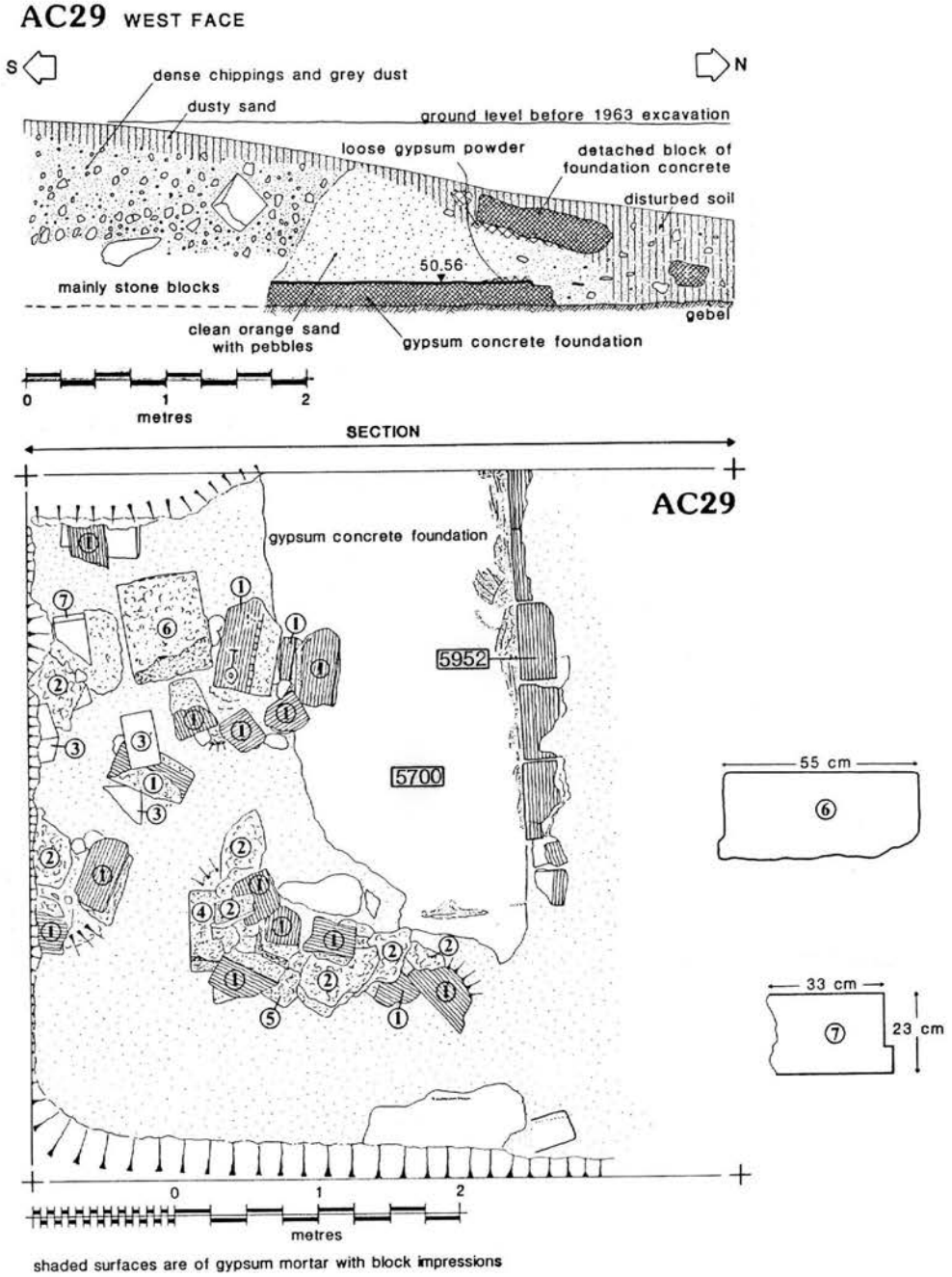

Figure 4.5. (Above) section through an undisturbed area above the gypsum concrete foundation in square AC29; (below) plan of square AC29 showing broken architectural debris. The material is numbered as follows: (1) pieces of gypsum concrete foundation bearing block impressions in mortar; (2) the same, but upturned; (3) limestone blocks; (4)–(6) blocks of gypsum concrete, (4) and (5) probably parts of the same; (7) limestone block. Inset: block (6) shown in section; block (7) shown in plan. Cf. Figures 4.7 and 4.12.

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disturbed, although not wholly so since the layer with sherds and organic material, derived from the Roman settlement, retained a separate existence. The plan of the foundation layer (Figure 4.7) shows that two holes had been dug down into it along the line of the square column supports (see below) which cross the middle of the square in a north–south direction. The more northerly hole runs into the north section (Figure 4.6). It is noticeable that the two holes have been located over

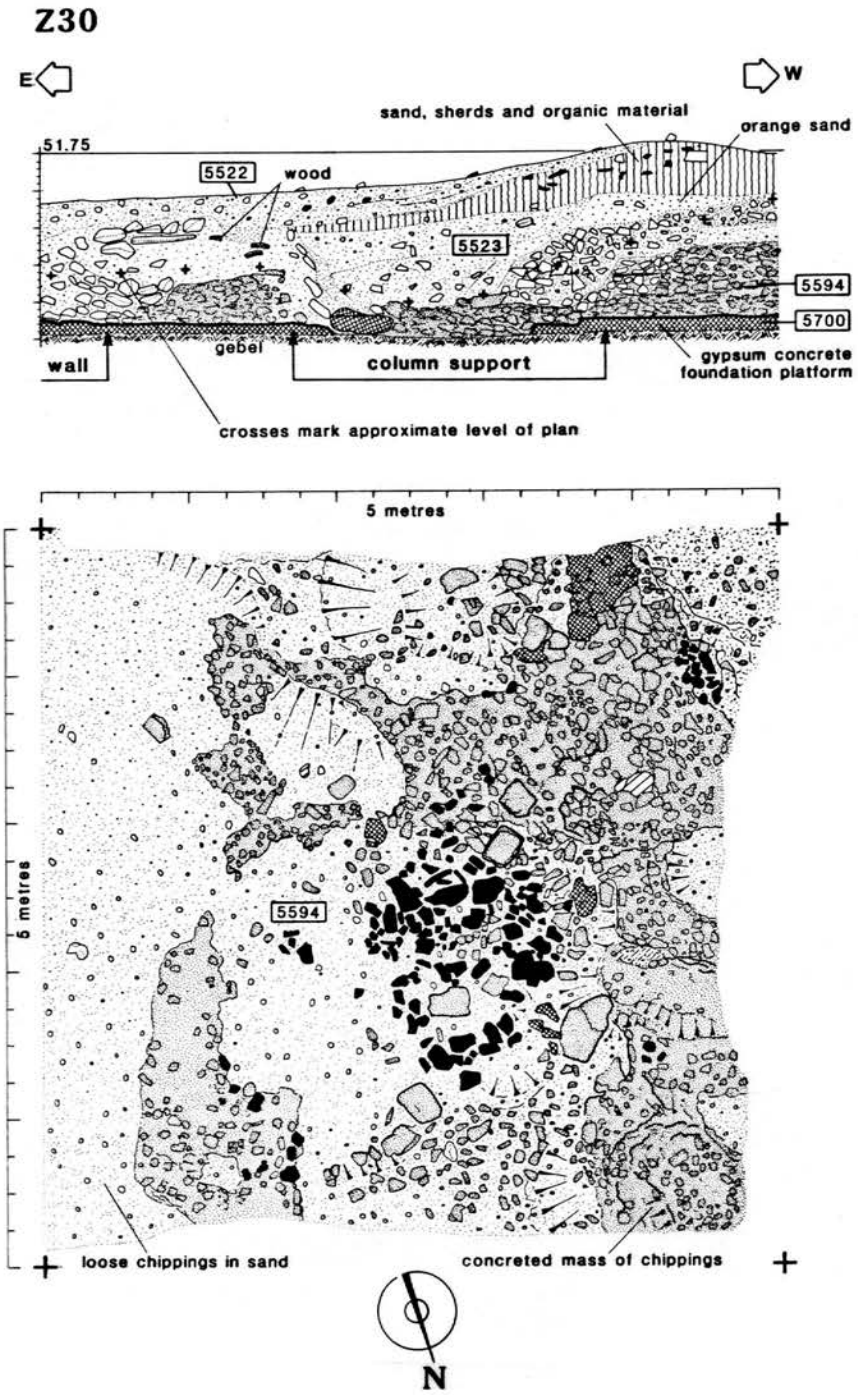

Figure 4.6. Above: section of the south face of square Z30 drawn at the conclusion of the excavation. The line of crosses marks approximately the level reached by the excavation when the plan (below) was drawn, showing the debris encountered over a relatively intact area of gypsum concrete. The plan of the foundation pavement itself is part of Figure 4.7. Originals by C. Kirby.

the square areas of the column supports, showing a degree of foreknowledge of the plan of the building which is everywhere apparent in the destruction of the gypsum foundations and will be commented upon later. This makes it unlikely that the destruction is modern for modern disturbance takes the form of arbitrarily dug pits. In any case, the section in Figure 4.6 shows the likely Roman midden layer running over the site of the destruction. In the section, nevertheless, the area above the hole in the gypsum floor shows clear signs of a stratigraphic break and slumping involving fill [5523]. The principal undamaged parts of the floor [5700] are directly covered with concreted chippings, and these may well be parts of the original fill between the foundation platform or lower floor [5700] and the pavement which was originally a good deal higher up. Thus the holes made in the gypsum floor over the column supports are quite likely to have been part of the same destruction which saw the removal of most of the stonework, an activity which would have left pits and trenches in the fill layer which here was composed largely of concreted chippings. Into one of these holes fell a mass of sandstone chippings from the breaking up of a sandstone element, perhaps an architrave above the limestone columns. This patch of sandstone chippings is marked on the plan in Figure 4.6.

At first sight the condition of the gypsum-concrete foundation layer is a disappointment, for large parts of it are missing. Some of the damage is likely to be post-ancient. It is noticeable that the worst coincides with the deepest part of the 1963 main sondage, which left the pavement exposed for local curiosity. Some of the dark soil from the recent large digging to the north of squares AB30 and AC30 rested directly on *gebel*. The robber pits dug over a long period in the past probably accounted for some destruction as well. There can be no doubt, however, that much of the destruction was contemporary with the ancient demolition of the Shrine. In order to appreciate the reasons for saying this, and for correctly reading the clues that enable the plan of the Shrine to be reconstructed, it is necessary to describe briefly the builders' initial procedures.

In the case of some Amarna stone buildings previous excavators have noted architects' laying-out lines in black ink, or as scored grooves, on the foundation layer. A very few faint traces suggest that the first method was used for the South Shrine, whilst at the North Shrine the evidence for this was quite explicit (see section below). Between the parallel lines so marked the builders spread a thin layer of gypsum mortar and laid the first course of stone blocks in it. As they bedded them down the mortar was squeezed out at the sides and the builders' final act was to run their fingers along the angle between the blocks and the foundation layer, so smoothing the surplus gypsum and pressing it into any spaces left beneath the stones. The characteristic remnant of this act is one or more finger-grooves running along the mortar beside the line where the face of the stone blocks originally was (Figures 4.10 and 4.11). Where the squeezed-out mortar was excessive little piles would be left at points representing the end of a single sweep of the builder's arm. Where two walls would meet at a T-junction the mortar for the first line of stones would be treated in this way, and then the second wall would be butted against it and the action with the mortar repeated. This the first set of finger-grooves would run beneath the mortar bed of the abutting wall.

The gypsum mortar was very effective. When the demolishers reached the bottom course and ripped it up occasionally pieces of the underside of the limestone block remained embedded in the mortar. In general, however, the bond between the mortar and the foundation layer proved to be the stronger so that the blocks came away cleanly, leaving the mortar bed in place. This is the happier circumstance for the archaeologist for the imprint of the foundation course is then beautifully preserved, the gypsum mortar taking cast-like impressions of the stonemasons' chisel-marks, and occasionally picking up some of the dusty red pigment used probably by the quarrymen for marking some of the stones. In some places, however, the bond between the mortar and the stone blocks was the stronger, so that when the blocks were lifted the mortar bed came with them. Then it could happen that virtually no trace of the wall remained at all for the mortar bed would have, in its turn, picked up the architects' powdery black ink lines.

The strength of the mortar bond was sometimes such that the demolishers found it necessary to use the equivalent of a crow-bar to prize the blocks off the foundation layer. In order to provide it with sufficient purchase a hole would be gouged in the foundation layer beside the block, probably undercutting the block slightly, the end of the bar inserted and used as a lever. The pattern of these holes (they should be distinguished from the lever-holes used in the course of laying the pavement in the gateway of the First Pylon at the Small Aten Temple, *AR* V:

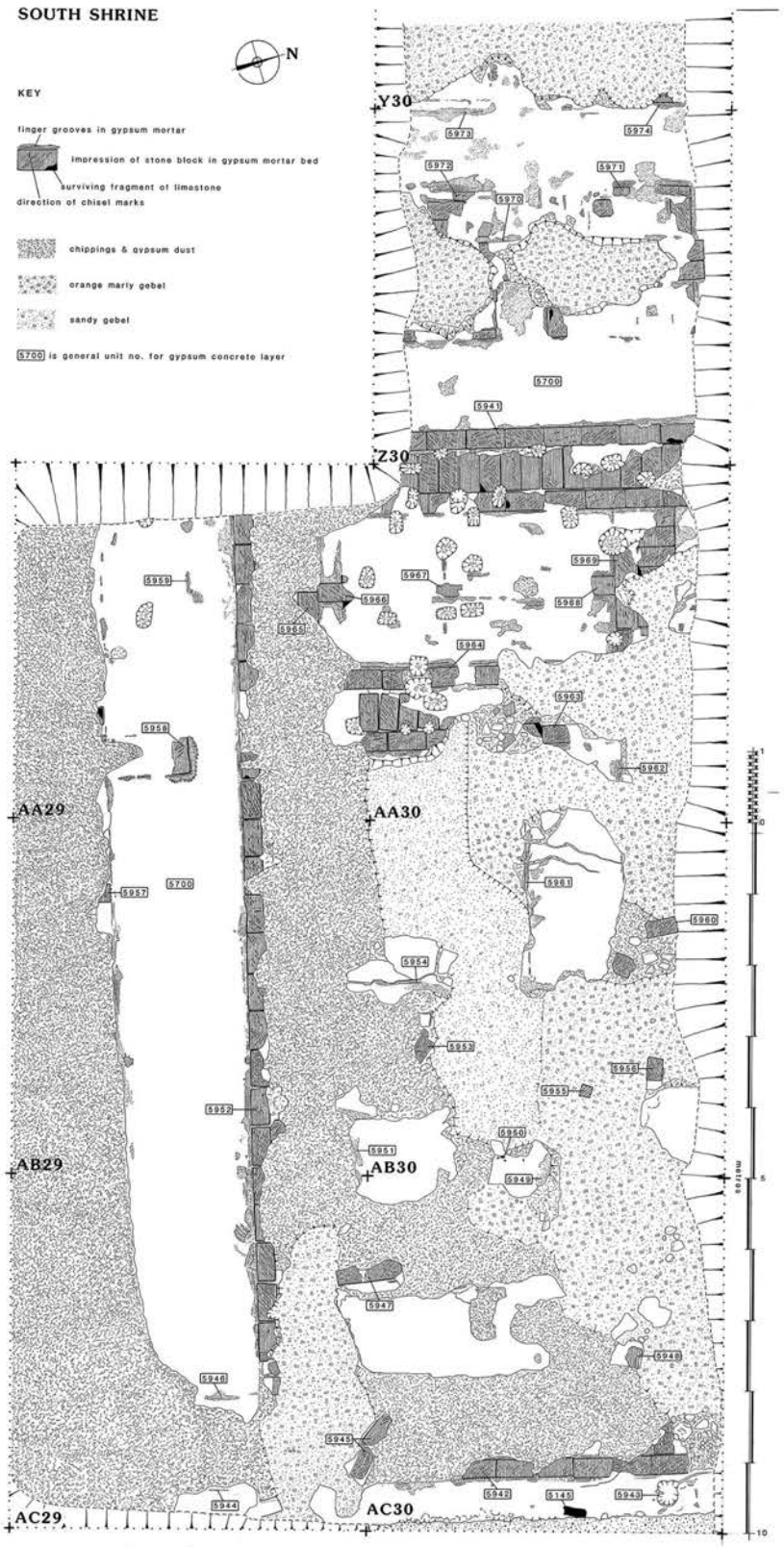

Figure 4.7. Plan of the gypsum foundation layer at the South Shrine.

Figure 4.8. View to the south of square Z30, showing the gypsum foundation layer and section of covering debris behind, cf. Figures 4.6 and 4.9.

127–130) is another clue to the original placement of stone blocks and walls.

Over some parts of the Shrine the demolishers were satisfied once they had removed the lowest course of stones and here the record for the archaeologist is tolerably straightforward if all of the clues are carefully recorded and interpreted wherever the mortar bed is missing. In other parts, however, the demolishers (or someone else working later) went one stage further and, along the lines of walls, actually broke up the gypsum-concrete foundation layer. Lumps of this, with areas of gypsum mortar from the lowest course of blocks still adhering, are common in the overlying debris, and can be seen on the surface prior to excavation. We need to consider what the motive for destruction might have been, and, indeed, to be sure that the original demolishers (presumably working in the early Nineteenth Dynasty) were the ones responsible. For the latter it is important to envisage what the state of the shrine was in the later stages of demolition. The solidity of its original construction, and perhaps the methods of the demolishers, produced an

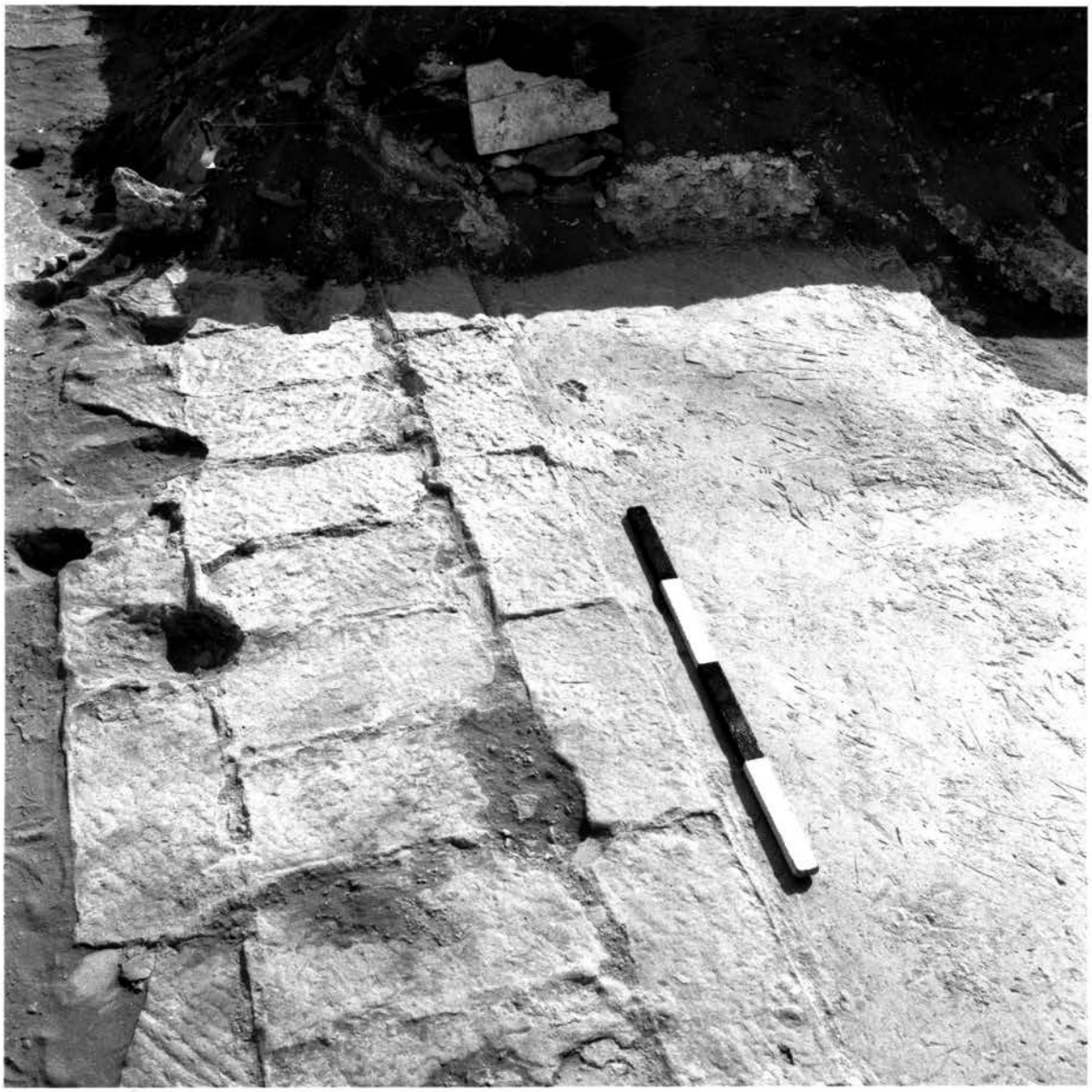

Figure 4.9. View to the south of the eastern part of square Z30 showing details of the gypsum concrete foundations and section of the covering debris behind.

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abundance of fragments broken from walls and columns which must have littered the interior of the shrine. Perhaps, for this reason, the stone paving slabs were removed first, but this is something we cannot tell. Once the paving stones had gone (an activity which seems to have destroyed very thoroughly the gypsum bedding in which they lay) the mass of fragments would have lain directly on the 80 cm or so of sand and chippings which filled the spaces between the wall foundations, and would in places have become worked in with this layer. As the bottom four courses of stones were removed the demolishers would have found themselves working beneath the top of this level, and ultimately in trenches the loose sides of which would have been constantly collapsing. Once the bottom course was lifted it would not have been long before this loose fill covered bottom of the trench, which would initially have been the gypsum-concrete foundation layer. Once the demolition was finished the partly filled trenches would have survived for some time, gradually filling up with sand, but it is likely that by late Roman times the

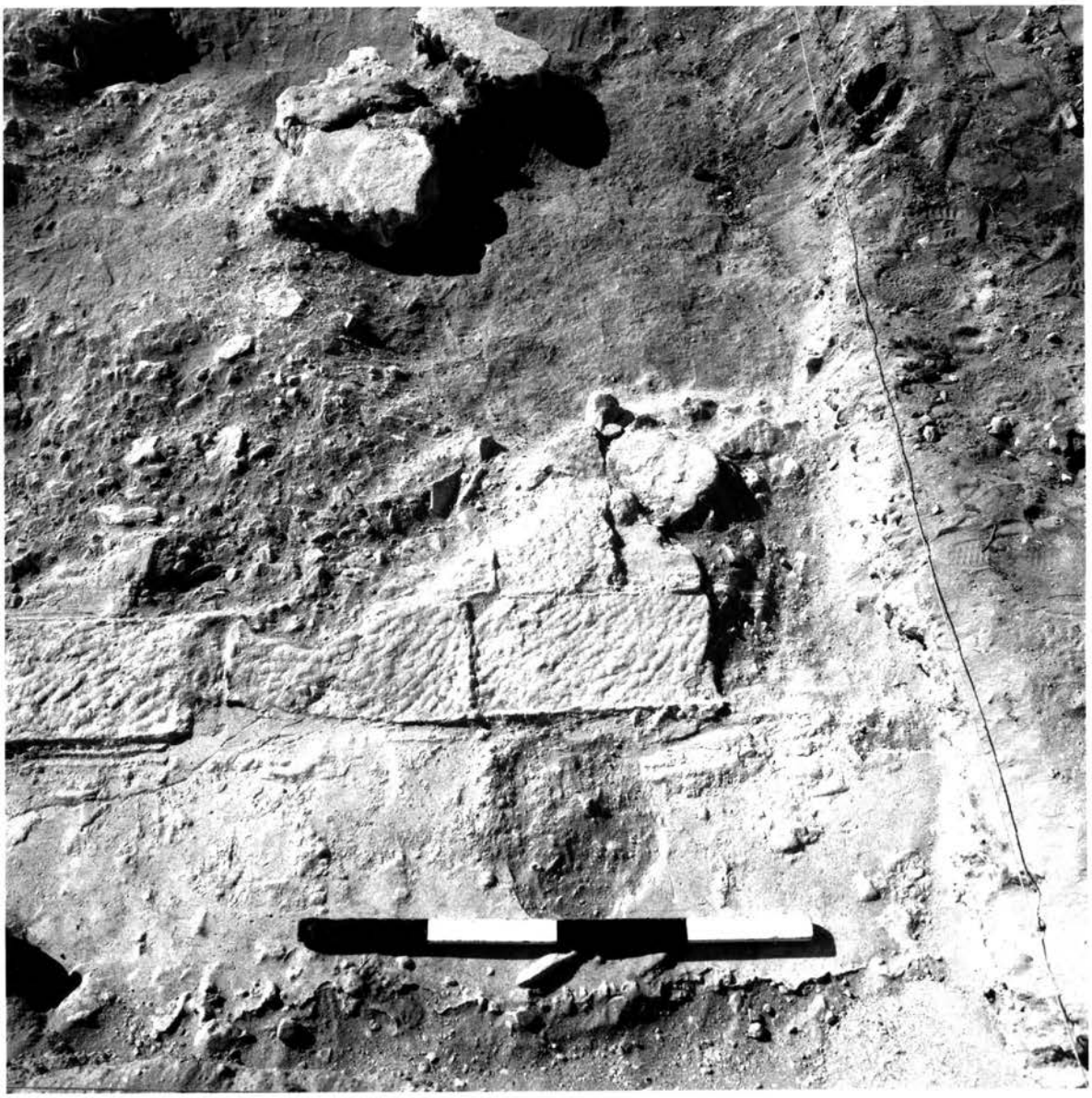

Figure 4.10. Portion of the gypsum foundation platform in the north-east corner of square AC30, viewed to the west. The original edge to the platform runs beside the metre scale. Note the impressions of limestone blocks in a mortar bed.

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accumulation would have been easily sufficient to have obliterated all trace of them.

As our own excavation proceeded it was often noted that the broken pieces of gypsum-concrete foundation layer bearing the mortar bed lay concentrated along the line of the destroyed walls, sometimes associated with gypsum debris which had set very hard, both lying directly on the underlying *gebel*. In one square, AC29, the covering sand and loose debris was carefully cleaned to enable this pattern of destruction to be photographed and planned (Figures 4.5 and 4.12). The pieces are in two groups. That on the north is a representative of the tumbled materials that tend to follow the lines of the broken-up wall foundations; that on the south, whilst being in essence no different, does also look as if it is the result of pieces being stacked up, but if so, for what purpose ? The answer that most readily springs to mind is: to expose an area of bedrock for scrutiny, the fragments also perhaps serving to hold back the loose debris in the side of the hole

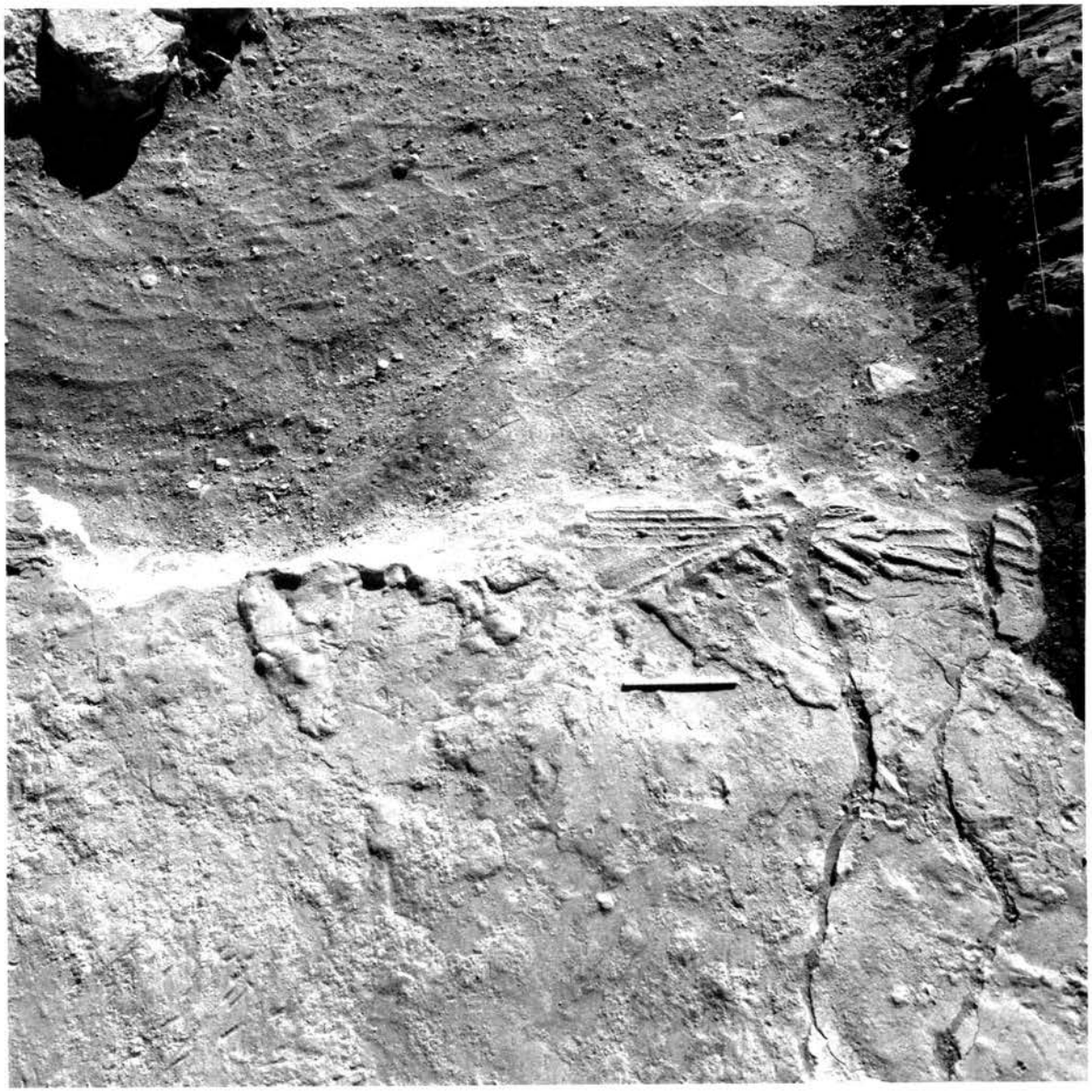

Figure 4.11. Portion of the gypsum foundation platform near the western edge of square AB30, viewed to the south. Note the finger-marks in the gypsum mortar which originally lay adjacent to a line of limestone blocks. The scale is 25 cm.

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or trench. If that is the case then it points to the motive for destruction being greed, arising from the hope that something valuable had been buried beneath the walls (and columns of the front part), rather than a deliberate and ordered destruction of the last traces of the shrine's outlines from a wish to eradicate utterly the works of Akhenaten. However, the thoroughness and, in a way, neatness of this aspect of destruction implies that it accompanied the demolition of the walls rather than that it was done long afterwards when no surface trace would have been present to guide the destroyers along the lines of the walls. The same conclusion was reached in interpreting Figure 4.6, the record of square Z30. Nevertheless, it involved considerable exertion, for in some places the gypsum concrete was much thicker and had to be levered to one side in large blocks. One notable example lies still in the south wall of square AA29, a length of the concrete fill to a hollow wall (see below). If these slabs had been prized up long after the end of the Amarna

Figure 4.12. Square AC29, viewed to the west, after removal of loose debris but with broken architectural debris left *in situ*. The plan of this area is given in Figure 4.5.

Period, perhaps even in recent times, by treasure-hunters one would not have expected to find them lying more or less horizontal, but propped up at a steep angle where they came to rest against the side of a pit.

Whether the motive was greed or iconoclasm the destruction meted out to the foundations was not thorough. Some wall lengths were hardly touched (most notably for us the north–south wall in square Z30). Did the robbers know that some walls were more likely to cover deposits than others, but were still uncertain as to exact spots so that whole lengths needed to be ripped up? Archaeologists have not reported finding foundation deposits beneath walls of Amarna buildings, but this could simply reflect the fact that robbers of one time or another knew their business well. It is, of course, equally true that archaeologists (including ourselves) have refrained from removing wall foundations to see if anything lies underneath.

The question of motive forms part of the discussion of how Egyptians of the post-Amarna Period regarded Akhenaten. Rainer Hanke has devoted an interesting chapter to this theme, focussed on the later treatment of Akhenaten's buildings (Hanke 1978: 76–84). He concludes that Akhnaton's successors did not wreak a deliberate iconoclastic destruction at Amarna, but that, after an interval during which the city was left alone, removed its stonework for reuse in a pragmatic and unemotional manner. The material recovered so far from Kom el-Nana fits this view, with one exception, namely the treatment of the stone statues of the royal family which seem to have been common elements in Amarna temples. Several fragments of statues made from hard stones are amongst the pieces recovered so far from the Kom el-Nana shrines.[1] They derive from statues which appear to have been broken up into roughly fist-sized pieces. As yet it is impossible to judge if we are dealing with a small number of statues whose pieces have been very widely scattered, or with a larger number, most of whose pieces have formed prime targets for modern robbers. But in either case the smashing of these statues, which were made from a particularly hard stone, was an act requiring some determination, and it is more natural to interpret this as iconoclasm rather than as vandalism. Similar treatment seems to have been meted out to statues and perhaps to free-standing stelae at other Amarna royal buildings.

The evidence from square AC29, including the north section (Figure 4.5), is also helpful when a reconstruction of building methods is attempted, although other parts of the platform supply better-preserved details. These latter include the fact that walls of two different thicknesses were present, the thinner kind of a single header + single stretcher in thickness, the thicker kind of two headers placed end to end in thickness, although the basal course (the only one preserved) was arranged as two stretcher walls with an intervening space filled with a single row of headers. The north wall [5941] which ran east–west across this square was evidently of the latter kind. Nowhere is there a sign of how the higher courses were laid, but there has to be a strong presumption that they courses alternated between the pattern of the lowest course and one in which two headers were placed end to end. This arrangement, as with bricks, maximises the internal cohesion of the wall by ensuring that no vertical joint is greater than the height of any single block. Above the original floor of the building the continuation of this pattern would mean that the decoration would have been divided between long and short faces of stone blocks. Few of the pieces recovered from the excavation are large enough to show whether they come from long or short faces, thus from headers or stretchers, too few to form the basis for a general judgement. The reconstructed wall of *talataat* blocks from Karnak now in the Luxor Museum is, however, a clear example of an Amarna Period wall built in this style, whilst many examples of blocks decorated on their short faces will be found amongst the Hermopolis blocks. In Figure 4.13 the north wall of square AC29 has been reconstructed in this fashion, to the minimum height of the pavement, which is given by the thickness of the sand fill which lay along the line of the foundation platform and is drawn in the section, Figure 4.5.

The parallel south wall, however, shows a striking difference in its mode of construction. Amidst the loose pieces broken up in ancient times and left piled along the line of the wall are several which are not of stone at all, but of gypsum concrete. A good example is drawn in Figure 4.5. It apparently lay upside down, the top surface rough and with slightly projecting ridges along one side and one end. The two side faces and the one end with a ridge bore the impressions of roughly tooled limestone blocks. The explanation has to be that the cavity between the outer courses of blocks in this wall was filled with gypsum concrete rather than with more blocks. This was probably done for much of the length of this wall for much longer pieces of overturned cavity concrete were found towards the northern end of the next square to the north, AA29, where they were left, half-buried in the section, to await more detailed scrutiny when the square to the south is removed (just visible in Figures 4.14 and 4.15). The concrete cannot, however, have run entirely continuously on account of the block impression running laterally, across the end of the fragment in square AC29 (no. 6 in Figure 4.5). This shows that the concrete cavity-fill was interrupted by at least one transverse block. Whether concrete was used again to fill the cavity in higher courses we do not know, although it has to be said that a greater quantity of

[1] Excluding the large quartzite piece from a composite statue of Akhenaten found on the top of the adjacent brick platform which could originally stood in one of the rooms on the platform, p. 52. This had not been smashed up in the same way as the pieces from the shrine areas.

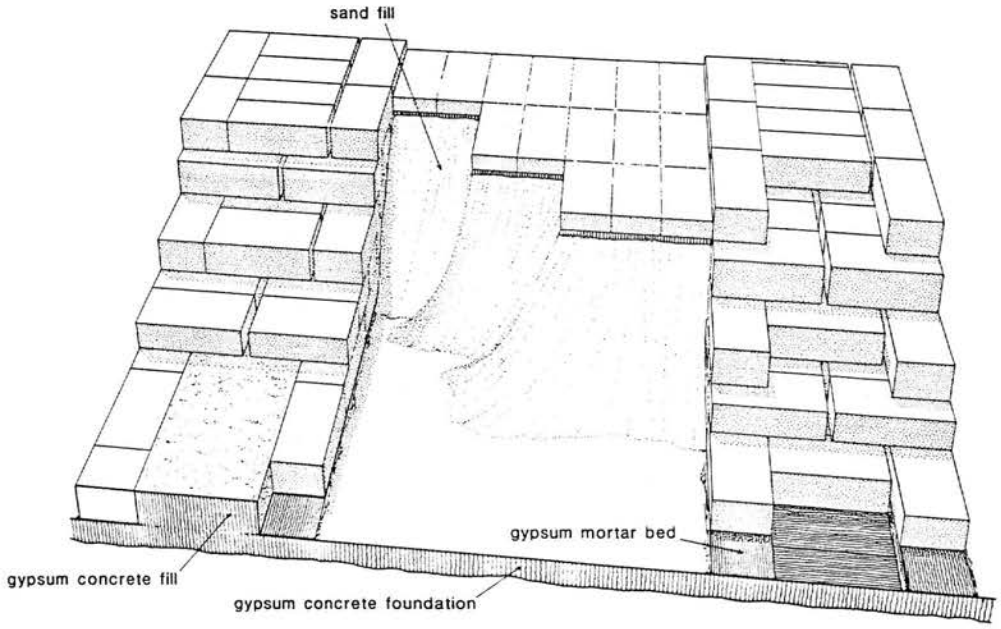

Figure 4.13. Perspective reconstruction drawing of the foundations of the north and south walls in square AC29, based on observations recorded in Figures 4.5 and 4.6.

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broken concrete lumps would have been expected in the general debris if this had been so.

Why was the gypsum concrete used at all in this way ? A modern answer might be that it was an economy measure, but to apply it here assumes that gypsum was cheaper or more available than cut-stone blocks, and that need not have been the case. It is to be hoped that, as more of both shrines are revealed, it will be possible to see the full extent of this style of laying foundations, and whether, in particular, it coincides with other features to suggest that it had a structural rather than an economic value.

4.3 Interpreting the foundation platform of the South Shrine

The degree of destruction meted out to foundation platforms at Amarna varies considerably. In some cases (notably the sanctuaries of the Great and Small Aten Temples) it has been almost total; others were largely spared and survived until the time of modern excavation (e.g. Building MII at Maru-Aten, parts of the Great Aten Temple). The South Shrine at Kom el-Nana is an intermediate case, but a careful reading and interpretation of the full range of marks left on the surface of the gypsum concrete makes up for much of the loss from damage.

It is clear that the eastern edge of the excavation (squares AC29 and AC30) coincides with the eastern edge of the foundation platform itself. Close to this side of the excavation the gypsum surface curves suddenly upwards though only to a slight extent, becomes thin and ragged, and incorporates sand and pebbles (Figure 4.10). This has to be seen as the effect of laying the gypsum to the edge of the original foundation pit and carrying it slightly up against the pit wall in the course of which some desert material became mixed in with it. This tells us that the immediately adjacent wall [5942] which runs parallel to this edge is the original back wall of the building. Its course is assured across square AC30 from the impressions of blocks and, near the south end, from finger-grooved gypsum mortar, which is picked up again [5944] towards the north end of square AC29. Two features of interest should be noted from the space between the wall and the site of the pit. One is the base of an amphora [5145] which lay in the undisturbed foundation fill. The interior of the amphora was coated with a black shiny substance. The other

Figure 4.14. General view of the South Shrine foundations, viewed towards the south–west. Squares Y30 and Z30 are in the course of excavation.

feature of interest is the circular hole [5943] towards the north end (visible in Figure 4.10 as still filled with gravel). This was carefully cleared out but the contents were found to be only desert materials. It appeared, although one could not be absolutely certain, that the hole had been cut into the gypsum, rather than that the gypsum had been poured around, say, a post. This particular stretch of the foundation layer was covered with compact layers of gravelly sand and limestone flakes in gypsum representing the undisturbed ancient fill between the rear wall of the shrine and the edge of the foundation pit. It was not, in other words, debris from the destruction of the shrine. No hole in this material was noted above the hole in the foundation platform, implying that nothing remained standing in the hole after the shrine had been completed. One possible explanation is that it was cut to receive a temporary post used in the initial laying out of the building, perhaps opposite an offset wall, or to mark one end of the actual central axis of the shrine, but this must await verification or otherwise through the clearance of more of the foundation platform.

Two major parallel walls ran east–west across the southern part of the excavation, across squares AA29–AC29. The more northerly of the two [5952] is attested by imprints of most of the blocks from the southern outer course; the northern edge is represented only by traces of extra gypsum mortar [5951] on a fragment of pavement, and by a wall junction with column foundations [5965] to the west. Of the southerly wall all that we have recovered in place are a

Figure 4.15. General view of the South Shrine foundations, viewed towards east along the southern edge of the excavations.

few fragments of block impressions in mortar, and considerable stretches of finger-grooved gypsum, but along the line of where the wall had been destruction debris was heaped, some if it (in square AC29) planned separately (Figure 4.5). It was amongst this debris that the lengths of concrete cavity-fill lay, so that we can be sure that this method of building was used for this particular wall (which we have designated as unit [5957]). Until some of the ground to the south of these squares is excavated it will remain uncertain whether wall [5957] was the southern outer wall of the temple. The area of the general spread of debris from the temple implies that the southern edge cannot be far away.

Between these two walls ran a clear length of well-preserved gypsum foundation platform [5700] along which a ridge of clean sand was heaped, the remnant of the original filling material (Figures 4.14 and 4.15). This was evidently a long, narrow, and almost uninterrupted clear space. The only features which could be detected were short offset projections from the south wall. The

impressions from one of these [5958] were well preserved. It had, presumably through carelessness, been set at an angle to its adjacent wall. The existence of a second one a short distance to the north can probably be deduced from a linear mortar trace [5959], and an adjacent hole of the kind which was made in the course of prising up the stones during the ancient destruction. The purpose of these projections is obscure. They could be supports for parts of a gateway (stone elements from which were found in the vicinity), or perhaps supports for statues.

The northern sector of the excavated part of the South Shrine, comprising much of squares AB30 and AC30, has suffered very badly from the combination of ancient destruction and modern digging. Nevertheless, some features can be reconstructed. These include two north–south walls. The easternmost of these (in square AC30) is represented primarily by gypsum mortar block-impressions [5947] at the south end and a trace of finger-groove mortar a little to the north. In the reconstructed plan (Figure 4.16) I have not thought the evidence to be sufficient to continue it as far as the northern edge of the square. The principal direct evidence for the second wall consists of a patch of gypsum mortar with finger-groove [5954], but the wide gap in the foundation platform immediately to the south was heaped over with hard cemented gypsum and pieces of broken platform (a piece with mortar and block impressions [5953] appears in the plan), the kind of debris left from the ancient breakage of wall foundations. Further to the north in square AB30, and somewhat to the east of the line of this wall, half of a mud brick [5955] was found well bedded into the orange marl *gebel*. It does not lie on any alignment that we can reconstruct from other sources, and thus has no claim to special significance. The preserved areas of foundation platform further west bear traces of two east–west walls. The position of the more southerly is determined by a long and clear section of gypsum mortar with finger-grooves [5961], the more northerly by a short patch in square AA30 [5962], and an area of compacted gypsum and pieces of mortar with block impressions to the east, in square AB30 [5960].

In square AA30 we have the start of the largest expanse of intact foundation platform to be found during these excavations. It bears the clear impressions of the lowest course of two major north–south walls [5964, 5941], and of an east–west joining wall [5969] running across the north side of the square. This pattern of blocks shows that this latter wall was thinner than the others. Within the rectangle so formed is a series of holes cut into the foundation platform, and remnants of gypsum mortar, some of them linear and with finger-grooves. The key to interpretation is provided by the single-block offsets at north and south ends [5966, 5968]. The southern [5966] also preserves the beginnings of a thickening towards its north end, part of this including a corner of a limestone block left behind still embedded in the mortar. This evidence exactly matches the foundation pattern for columns, which in Amarna buildings of stone and brick had the form of square masses joined together along one axis by a thin wall. Here that thin wall would be composed of elements [5966], [5967], and [5968], and the remainder of the marks can be resolved into two square foundation masses, as restored in Figure 4.16.

These columns would have been a smaller and inner row, behind larger ones represented by more complete foundation traces in square Z30. Here the block impressions in mortar form two large square foundation masses [5972, 5971], joined by a wall of double-block thickness [5970]. It is interesting to note the use of thinner (half-thickness) limestone blocks within the square foundations evidently intended to make up a square of exact dimensions (with the help of a magnifying glass a few examples of this practice can be seen in the plans of the foundations of the Great Palace in the Central City (*COA* III: Pl. XIIIB, e.g the statue bases south of door "L"). The excavations were continued across square Y30, but across most of the square the foundation platform had been destroyed, although small sections remained towards the west end (not included within Figure 4.16). Despite these losses enough is preserved along the western edge of the main area of preserved foundation platform to suggest that two more large square column foundations lay in square Y30. Indeed the mortar impressions towards the south [5973] probably mark the setting out of a line of half-thickness blocks.

With only a portion of the foundation platform exposed and recorded it is premature to attempt an analysis of the building itself. Some preliminary observations are, however, appropriate to our current state of knowledge. In the first place we can be fairly sure of the east–west dimension. The easternmost wall of the excavations [5942] must be, for reasons given above, the easternmost wall of the building, whilst the westernmost wall must lie within the unexcavated squares of the "X" row, giving an east–west dimension of about 27 metres. The features so far

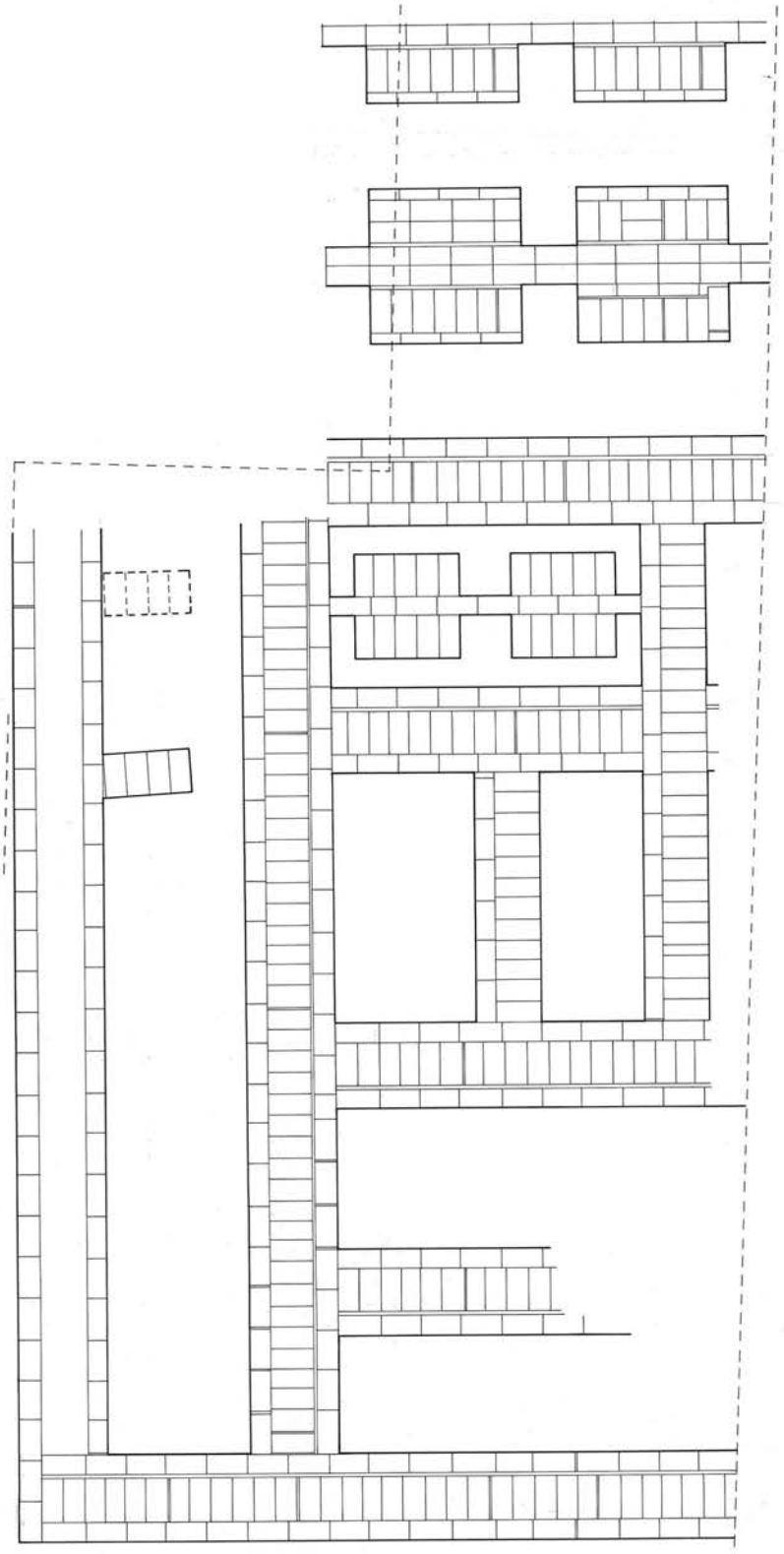

Figure 4.16. Reconstructed plan of the wall foundations of the South Shrine, based on the evidence in Figure 4.7.

found suggest a progression along an east–west axis, with columns at the west end and small rooms or courts at the east end, and since, to judge from both pictures in the Amarna rock tombs and other buildings previously excavated, Amarna temples partook of the old tradition of preferring columns in the outer part of the temple, it is very likely that here the front of the building was to the west.

A striking feature of the plan so far recovered is that the interior divisions did not stretch all the way to the south, but only as far as the conspicuous east–west wall [5952]. This bounded to the south a narrow space which was interrupted only by one or two projections from the south wall [5958, 5959], and which ran outside at least the eastern row of columns, and probably the western as well. It may therefore have served either as a corridor separating the building from the outside world on the south (but evidently not on the east), or as the edge of a broad platform on which the building would have appeared to have stood. Either view does, of course, assume that the southern edge of the temple coincided more or less with the southern edge of the excavation, making wall [5957] the southern outer wall, which would have been as tall as the others by the first interpretation, and only as high as the platform — and thus only a retaining wall — by the second. Further excavation should easily clarify the first point; indeed, it was only the depth of covering material along the south edge which, through the dangers and actuality of collapse, prevented this point from being settled this season.

A further point of some consequence is that it must be the case that half or slightly more than half of the building on its east–west axis was occupied by spaces filled with columns, with the presumption that they were supporting a roof. Thus about half of the building would have been roofed, and a corresponding amount of the interior decorated wall surfaces would have been visible only within the shade and protection of these roofed areas. This would have given to the building a fairly traditional feel in the way that the spaces were manipulated, including the use of smaller columns to form a narrow interior hypostyle hall. How far this traditional design extended depends on how the rear part of the building is restored. Clearly it was subdivided into a number of smaller cellular units, but whether roofed chambers or open courts we cannot tell from the plan alone, although one point to be made is that there is no surviving foundation trace for the altars which frequently graced the small interior courts of Aten temples at Amarna.

4.4 Squares W29 and W30

The decision to excavate these squares arose from a resistivity survey conducted by Ian Mathieson in 1988. In several places high readings suggestive of dense resistant material at a relatively shallow depth were obtained and in order to aid interpretation the two five–metre squares W29 and W30 were chosen for excavation along one of the resistivity lines, no. 29–38. The choice of these particular squares was also influenced by the course of the excavation over the southern stone building, in that they formed a continuation westwards of the main block of squares. Indeed, it was hoped that by the end of the season the intervening ground would have been excavated, too, in order to create a continuous area of excavation but time did not permit this. The line of unexcavated squares X29 and X30 had to be left for a future season.

Squares W29 and W30 lay within a broad area which had been disturbed in part by test trenches of the EAO excavations of 1963 and in part by illicit digging earlier in the century. Some of the covering debris, with a general thickness of about 20 cm, (W29 [5520, 5521], W30 [5522, 5523, 5593]) was thus a loose mixture of sand, fragments and chippings of stone, mud dust from bricks or the underlying mud floor, and organic soil derived from the turning over and mixing of layers of destruction from the Amarna Period temple, a midden from the late Roman occupation, and an intervening deposit of wind-blown sand. This loose material also formed the filling of irregular pits which had been cut down into the underlying *gebel* (W30 [5593] filling cut [5729] which extended into W29; [5598] filling [5901]; W29 [5730] filling [5731]). As the excavation proceeded it was possible to isolate an irregularly defined area of the late Roman midden which had escaped attack and contamination. As unit [5597] it occupied the centre (with maximum depth of about 50 cm) and south-western sector of W30, passing into the north-west corner of W29 as unit [5596]. It was composed of compacted sand, grey ash, and mud-brick dust and fragments, and displayed a structure of distinct layers of dumping separated by sand. The midden elements were rich in pottery and organic debris (wood, bone, charcoal, feathers, date

stones and plant remains). A sample area was removed in a series of layers [5695, 5696, 5697, 5698], part of it sieved for its organic content, and part of it retained as a large sample for future study.

In the long interval between the destruction of the temple and the establishment of the late Roman settlement a layer of sand [5595] 10–15 cm thick had blown over the site and survived in patches over both squares. It also filled two pits [5802, 5803] of uncertain age in square W30, and what was probably a modern pit [5734] in square W29. During the Amarna Period the ground (either natural or redeposited *gebel* [5733]) had been covered with a coating of mud plaster [5726] which was found to spread over both squares, except where it had been cut by later pits and in the south-west corner of W29 where it had been worn or eroded away. It represents a mud flooring which must have covered a huge expanse of open ground, for we have encountered it in front of the North Shrine (see below), at the foot of a modern digging in square W31, and around the brick platform to the south–west. The only feature in the area under consideration which might be contemporary with it is an oval pit [5735], 22 x 32 cm and 10 cm deep, floored with mud [5810]. It does not resemble the normal tree pits.

Along the western side of squares W29 and W30 the sand layer rested directly on the mud floor, but along the eastern side an irregular area of limestone and sandstone chippings [5699, 5736] intervened, lying up to 12 cm deep directly on the mud floor, or, in the north–east corner of W30, filling a pit cut through the mud floor. They most likely represent the spill of chippings from the destruction of the temple beyond the limits of the temple itself, the front of which must have lain within the line of unexcavated squares immediately to the south, for by the time that square Y30 is reached the gypsum foundation pavement of the temple has appeared. The chippings contain many sandstone fragments, some of them painted and consistent with the remains of a sandstone facade or door frame such as we know stood in the front wall of the northern temple. The overlying deposit of sand (W30 [5395]) also produced part of a painted sandstone block bearing a portion of the head of one of the Amarna princesses (Figure 4.28). Other fragments from the area included pieces from limestone columns and cornices, and a slab of gypsum mortar bearing the impression of a limestone block derived from the hacking up of wall foundations.

In order to test the ground thoroughly a 1 metre-wide trench was dug through the mud paving for the full length of square W29 along its western side. It descended to a depth of 75 cm but showed only sandy *gebel* [5733]. In appearance it seemed natural but the evidence from the excavation of the south-eastern part of Kom el-Nana leaves open the possibility that it is a redeposited layer intended to level up the ground.

In summary, the general downwards sequence of deposits was 20–50 cms of loose disturbed sandy material or compacted midden, 10–15 cm of sand intermittently present, mud floor with up to 12 cm of small stone chippings lying over it along the east side, and finally compacted sandy desert which was dug and shown to be sterile to a depth of 75 cm.

4.5 The North Shrine: introduction

The choice of this location for excavation was prompted by local interest. It is very evident from the surface appearance of the ground in both of the stone chippings areas, and from the aerial photograph of the site taken in 1922, that local people have for a long time been accustomed to dig holes in these areas looking for saleable pieces of carved stone. This has continued since the expedition began work at the beginning of 1988, the latest focus of interest being the ground to the west of the easternmost of the Roman mounds, especially in the part represented by our own grid square X38 (Figures 4.2 and 4.18). This dictated the choice of ground in this part in the 1989 season. The priority was to investigate what kind of deposit was attracting this local interest, and so restricted the excavation to the lower-lying parts where the stone chippings approached the surface. On both the east and west sides walls and deposits of the late Roman Period were visible but since these require a careful excavation of their own they were left in place, and the excavation was expanded from the starting point in square X38 northwards and southwards. It was hoped, in extending the excavation southwards in the relatively confined space between the two areas of late Roman remains, to clarify whether the two areas of stone chippings — the other one the site of the South Shrine — related to one another, and this

Figure 4.18. View, looking south-east, of the North Shrine site before excavation, with the late Roman mound standing behind the areas of modern disturbance.

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was achieved at the very end of the season by the discovery of the foundations of the inner dividing wall which, it can now be seen, crossed Kom el-Nana all the way from the eastern to the western enclosure wall and wholly separated the two areas of chippings from one another. Each area of chippings covers the site of an independent stone building, to which we have given the names North and South Shrine.

The excavation was also enlarged by one five-metre square on the west (W38), and by one on the east (Y39). The former, by exposing a length of late Roman wall, has revealed how the Roman buildings were constructed on top of whatever deposit had resulted from the centuries of abandonment following the end of the Amarna Period (Figure 4.19). In this square the deposit was primarily of sand, and so the Amarna Period level — a mud pavement — seems to run on beneath it protected not only by the sand but also by the Roman walls above. It was not possible to check if the same applies to the substantial Roman mound on the west, but the lie of the

ground certainly implies it. The extension eastwards into Y39 was an attempt to move further into the area of chippings and to give depth to the unfolding picture of the temple foundations, for the initial excavations revealed that the edge of the stone building from which the chippings derived actually ran very close to the eastern edge of the excavation.

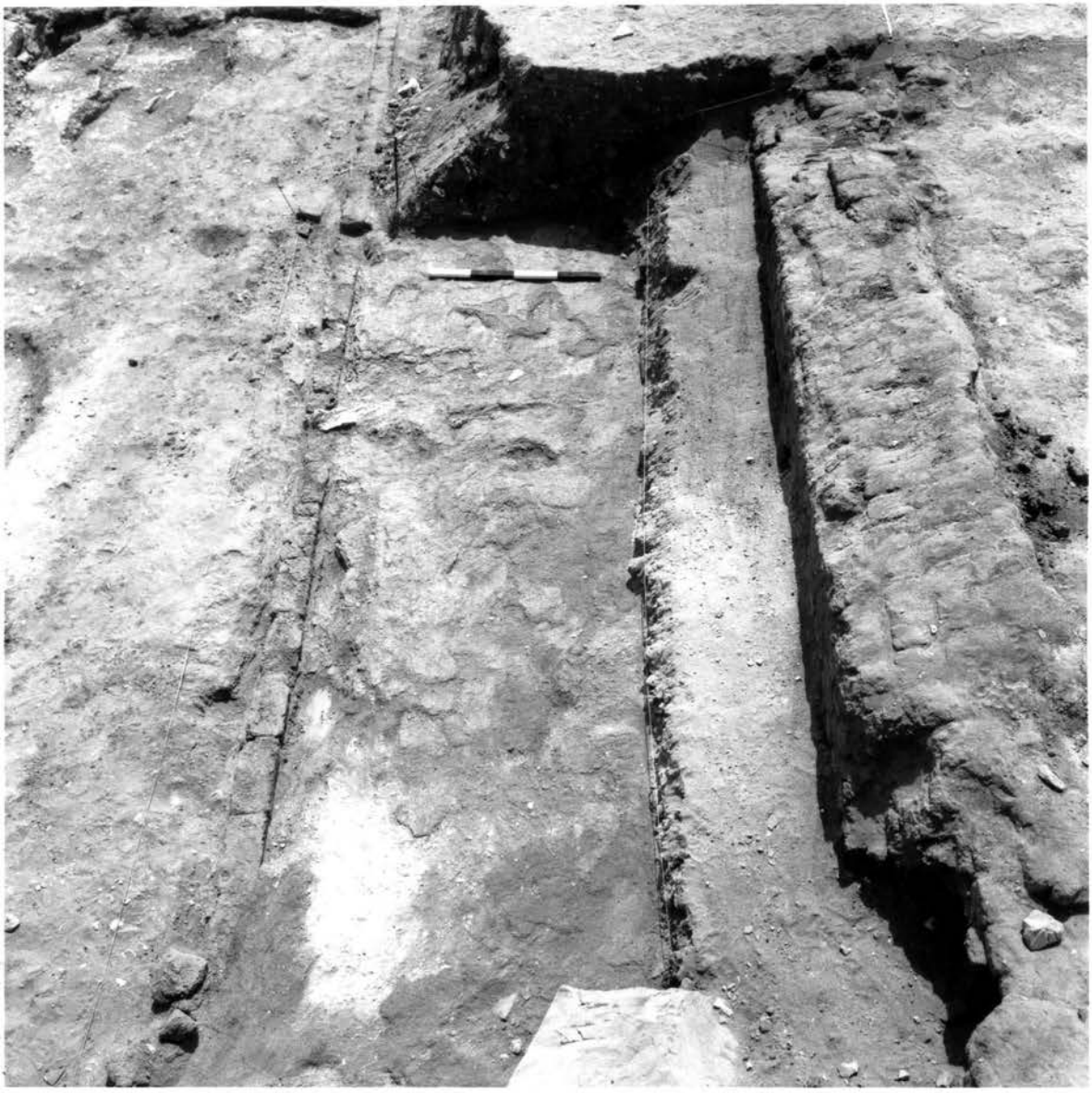

Figure 4.19. Square W38, viewed towards the south. On the right is a length of late Roman wall resting on a layer of sand which has, over the left–hand part of the area, been removed to reveal the Amarna Period pavement and brick garden edge.

Originally the whole area excavated must have had a covering of varying thickness and density of Roman debris, though not of Roman walls since this seems to have been an open space between edifices of the period within which rubbish accumulated. The general depth of soil has prevented local people from turning the whole ground over in the search for antiquities. They seem instead to have confined their activity to digging holes to varying depths. One unambiguous relic of this was a *tourieh* (an agricultural hoe) in good condition found low down towards the south side of square Y39. The result is that in some places the dark earthy layer rich in Roman

sherds has been thoroughly mixed up with the Amarna Period stone debris, whilst in others the separation between the two has remained sharp. By careful excavation is was sometimes possible, in fact, to isolate the modern holes, most notably at the southern end of the line of squares, and then to remove the undisturbed remnants of the Roman layer. The importance of maintaining as strong a stratigraphic control as possible, even in areas of considerable disturbance, is illustrated by the discussion below on the state of the foundations as left when the demolition of the shrine had been completed in Ramesside times.

4.6 The Amarna Period remains

Over the southern part of the excavation (squares X35–37) and the strip of W38 dug to this level the Amarna Period is represented by the remains of a thick mud floor or pavement [5141=5532] very similar to that encountered around the Central Platform, except for its being an accumulation of several thinner layers of mud which, where the floor was worn or cut into, could be clearly identified. The floor was evidently relaid several times, but over how long an interval we cannot tell. In one place it could be seen that it had also originally been whitewashed with a coating of gypsum; this was where it abutted the southern wall of the garden enclosure [5140] and had been protected from weathering away. In the southernmost square it is crossed by a length of the inner dividing wall [5719]. Thus the floor to the south of this is likely to be the very same one picked up in squares W29 and W30 in front of the South Shrine (see above).

The length of inner dividing wall enters the excavation from the west as a square mass of brickwork [5708] with hollowed top filled with fine dusty sand [5714]. This is probably the remains of a buttress placed against the north face of the wall, the brickwork possibly modified during the Roman Period. The edge of a second buttress [5716] seems to be present at the corresponding east edge of the excavation. Apart from the upstanding brickwork of the west buttress the remainder of this wall as it crosses the excavation is flush with the mud floor, showing that by the time that Kom el-Nana was abandoned the wall in this area must have been raised to its foundations, which were made visible in a small pit [5552] which had been dug at some time against the north face of the wall. It should eventually become apparent whether this applies to this wall along much of its length or only to a limited area where it ran close to the North Shrine.

From the middle of square X37 northwards the area exposed by excavation is characterised by parallel north–south alignments of features which must represent part of the actual front of the North Shrine. Like the South Shrine it had been built into a shallow pit cut into the orange *gebel*[5875], the foundations taking the form of lines of stone blocks laid over a continuous spread of gypsum concrete. Destruction has meant the loss not only of the *in situ* blocks but also of much of the gypsum concrete also, so that in the limited area exposed by the excavation the removal of loose debris ultimately exposes a flat floor of *gebel*. This is present across square Y39, and at the bottom of much of the deep narrow "cut" which runs along the east side of the excavation in squares X37 and X38 and is actually the edge of the large foundation pit. The real edge, where the *gebel* rises to the presumably original natural level of the desert surface which was then covered by the mud floor [5141], was revealed very clearly in square X38. As was the case at the eastern end of the South Shrine excavations (square AC30) the edge of the gypsum concrete foundation platform was preserved, with the slight lip [5234] marking where it had been poured in against the rising side of the cut into the *gebel*. Also just as at the South Shrine the edge of the outer line of stone blocks was marked, partly by gypsum mortar impressions, and partly by an underlying black ink line [5317]. At one point this was interrupted by an ink marking [5318].

The real original edge of the cut was exposed by the excavation only along this relatively short length in square X38 (Figure 4.22). As is shown here it stood back from the actual line of the stone wall by about 25 cm. When the wall had been built up this gap, which now looked like the side of a foundation trench, was filled in with a variety of loose materials to make the surface up to the local ground level. Subsequently when the temple was demolished and the stone removed, and when in modern times people have dug again looking for decorated pieces of stone, this foundation trench has never been fully cleared, and the compacted filling deposits still remain in place. When looking at the plan in Figure 4.20 it should be realised that the edge to the

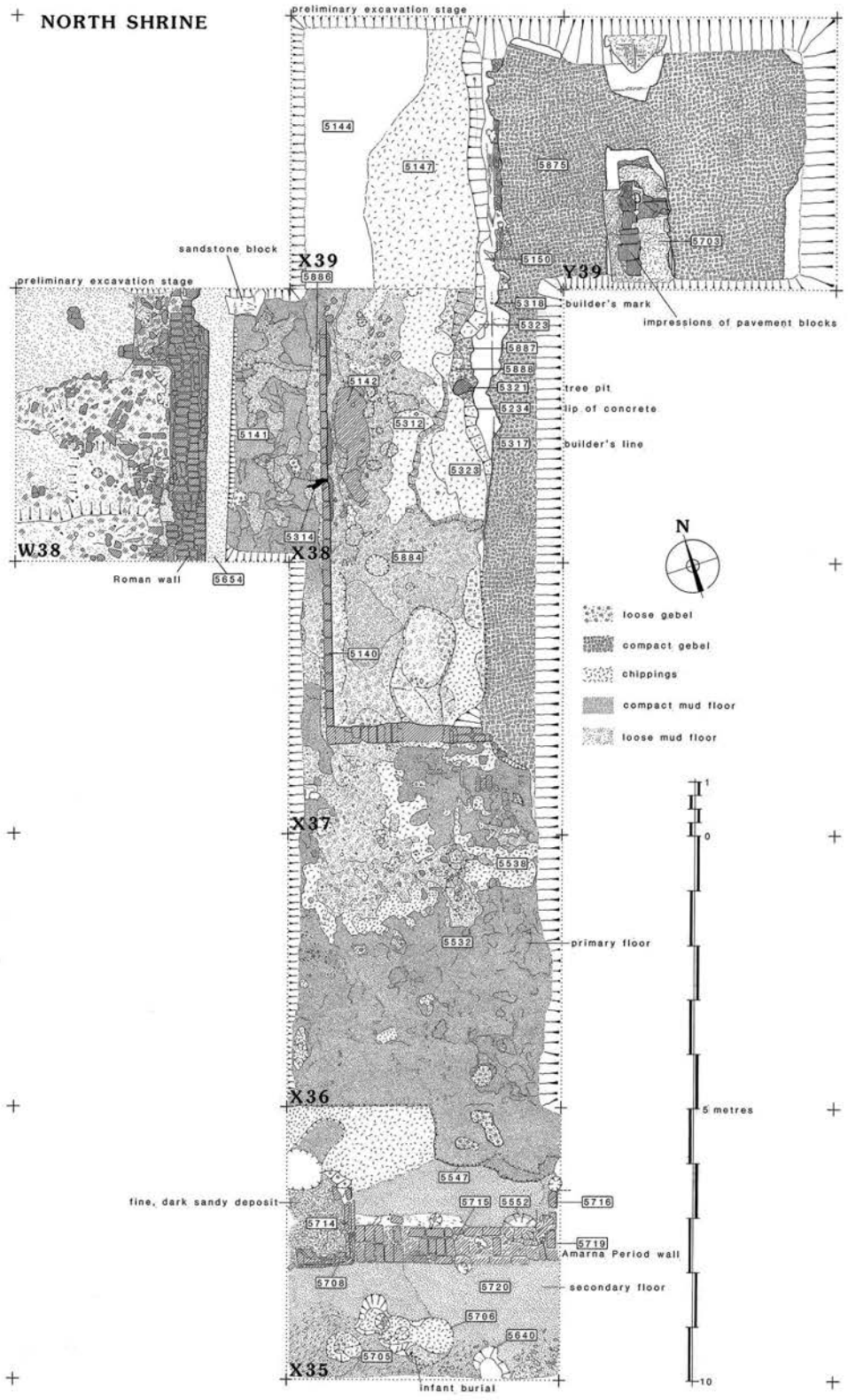

Figure 4.20. Plan of the North Shrine excavation at the end of the 1989 season.

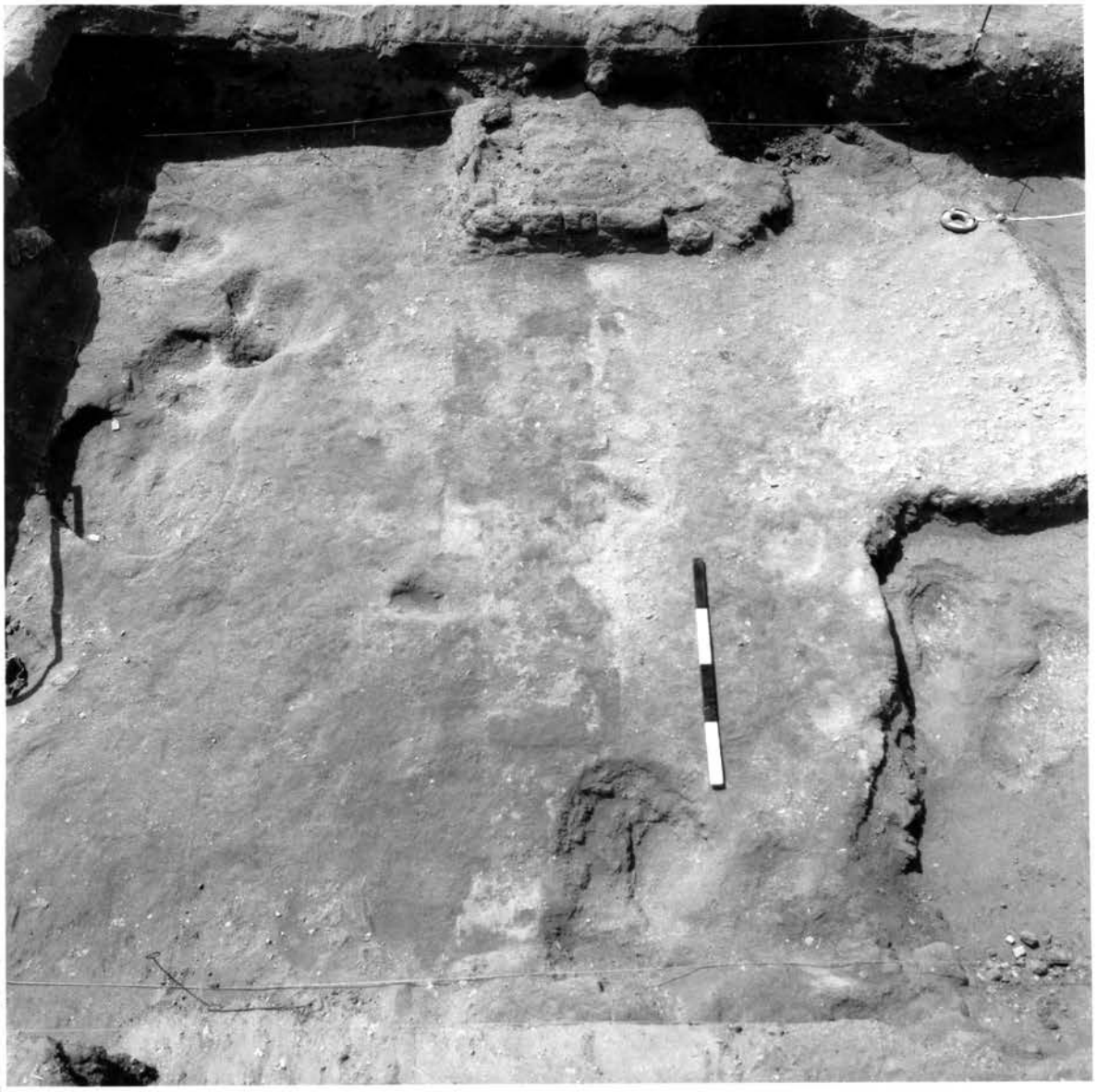

Figure 4.21. Square X35, viewed to the west along the line of the inner dividing wall which had, in the Amarna Period, been reduced to its foundations, although the square mass of brickwork [5708] in the background might be one of the buttresses.

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gypsum concrete foundation platform, its outer lip, and the *gebel* face of the cut are still not yet exposed but run on a line a very short distance to the west of the cut exposed by the excavation and are still covered by a thin facing of packed trench fill (except where removed in square X38 by modern robbers). One element used in the fill was the soft orange marly *gebel* which is briefly exposed in X38 as [5888]. The principal one, however, was composed of limestone chippings and dust. This was used not only to fill the trench but also to even out irregularities in the adjacent ground after which it was covered by the mud floor [5141]. Where the mud floor had weathered away in ancient times or has been dug out in more recent times a white chippings layer is often exposed [5323, 5312, 5538]. It was at first confusing to find that an identical layer was present over the top of Amarna Period deposits, until it was realised that it originated from an identical activity — stoneworking – but of a later date, that of the destruction of the walls and removal of

Figure 4.22. Square X38, viewed to the south. On the left is the edge of the foundation pit with the edge of the gypsum concrete preserved.

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the stonework. This produced a volume of chippings and dust which was trampled into a hard deposit along a zone beside the site of the stone building. In the incompletely excavated square X39 the layer of chippings [5147] represents this material (Figure 4.23, and seen in the section in Figure 4.24).

The point where the cut down to *gebel* ends to the south in square X37 presumably marks the south–western corner of the North Shrine. Its western (and probably front) wall ran northwards from here just inside the line of the cut for an unknown distance to the north, evidently beyond the limits of the excavation. Over this distance it was shadowed by a narrow enclosure bordered on the south and west by a mud brick wall [5140] (Figure 4.19). The southern section was a single stretcher in thickness and was preserved to a maximum of two courses in height above the mud pavement to the south [5532]. Patches of gypsum whitewash adhered to its southern face as also to a narrow strip of floor at the foot of the wall. On the west, however, it comprised only a

Figure 4.23. Square X39, viewed to the south at an early stage in excavation. The ancient robber trench on the left has been incompletely cleared, the hole at the end being a modern robbers' pit.

single header course, and had originally been no higher, acting simply as a curb or edging to the mud pavement [5141] to the west. This was shown by the way that, at the north end, a patch of the mud pavement ran without a break over the line of bricks. Thus originally whereas the south wall stood to a probably low–to–medium height, the west wall was virtually invisible and simply marked a straight edge to the long rectangular area of ground to the east, lying between it and the front of the shrine. Time did not allow for the excavation of square X39 beyond the removal of loose topsoil which exposed the hard surface of the limestone chips from the temple destruction [5147]. Thus the course of wall [5140] was not pursued beyond the northern limit of square X38. However, something probably connected with it is exposed in the side of the cut, towards the north end of square X39 (Figure 4.24). Sandwiched between the limestone chippings which filled the foundation trench and those from the temple destruction is a bed of alluvial soil which ends to the north in a pronounced ridge which presumably runs westwards. Further excavation will

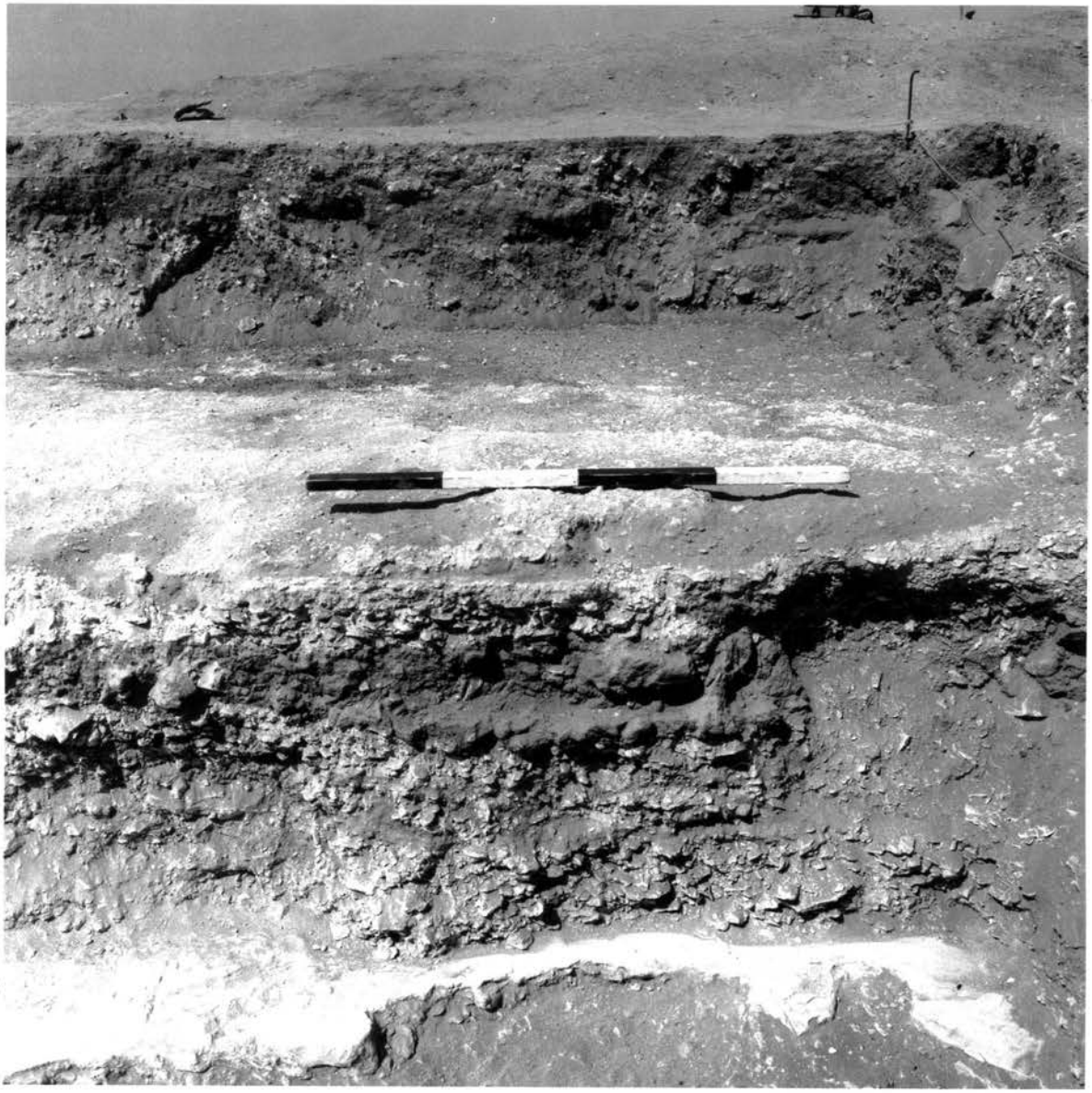

Figure 4.24. Square X39, viewed to the west showing the side of the ancient cut and its fill, with the gypsum foundation platform below. The cut sections a mud layer, probably from the garden, which terminates to the right in a low ridge.

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reveal whether this ridge forms a northern return to wall [5140]. One further feature associated with this wall remains to be noted: a patch of gypsum [5314] which interrupts its line in square X38, and continues for a short distance to the west. Although very worn it has a slight but definite depression running along it as if it had served as a runnel, but if so, no further traces could be found further to the west.

The ground inside the long narrow enclosure has been badly disturbed and pitted probably in ancient as well as in recent times. It is composed principally of alluvial soil [5884] although patches of chippings [5312] occur. Only towards the west in square X38, as it approaches wall [5140], is a significant area preserved which looks like the original surface. Here is a deposit of hard alluvial soil [5142] containing much plant material. It is separated from wall [5140] by a narrow channel with smooth bottom (cross-hatched on Figure 4.20). At present it seems worth

considering as an hypothesis that this area was a garden; not one kept fairly dry so that it could be subdivided into little square plots, but one kept permanently damp to allow a moisture-loving range of plants to grow. Within this enclosure was also at least one tree-pit, a circular pit dug along the line of the edge of the cut in the *gebel* and filled with dark soil [5321] (Figure 4.25, visible also in 4.22). The presence of others cannot be ruled out until all of the soil cover of the enclosure has been stripped off.

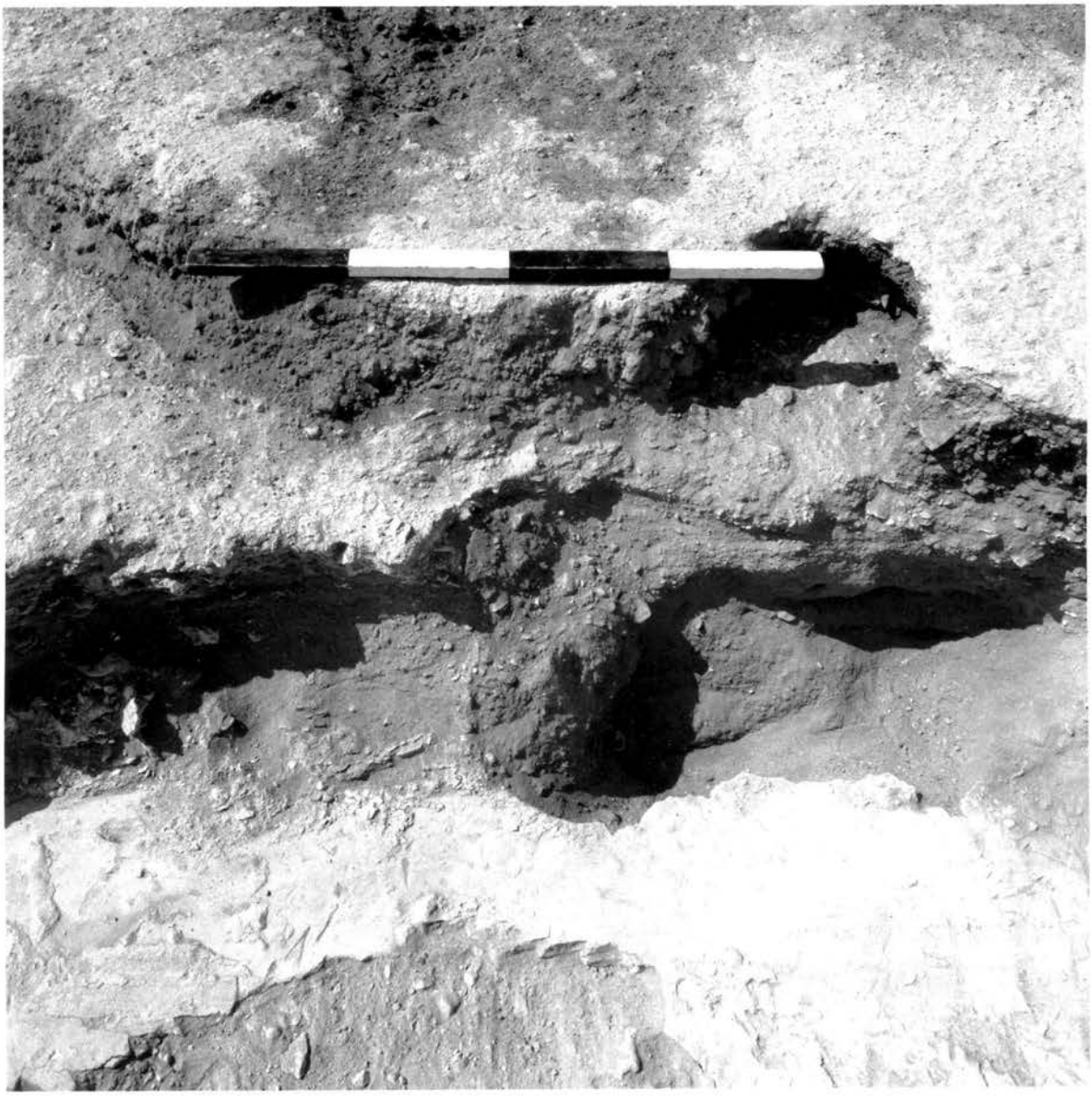

Figure 4.25. Tree-pit in the side of the foundation cut in square X38.

The excavation of square Y39 was wholly within the area of stone chippings, and by the end revealed that over most of its area the gypsum concrete foundation platform had been hacked up, pieces of it forming part of the overlying debris. Running nearly down the middle of the square in a north–south direction, however, were two massive slabs of gypsum concrete [5703] bearing the impressions of limestone blocks in gypsum mortar (Figure 4.26). They were separated by a large gap, and in both case ran into the side of the excavation so that their full length is not yet known. That on the south bore the impressions not only of two "stretcher" courses of limestone

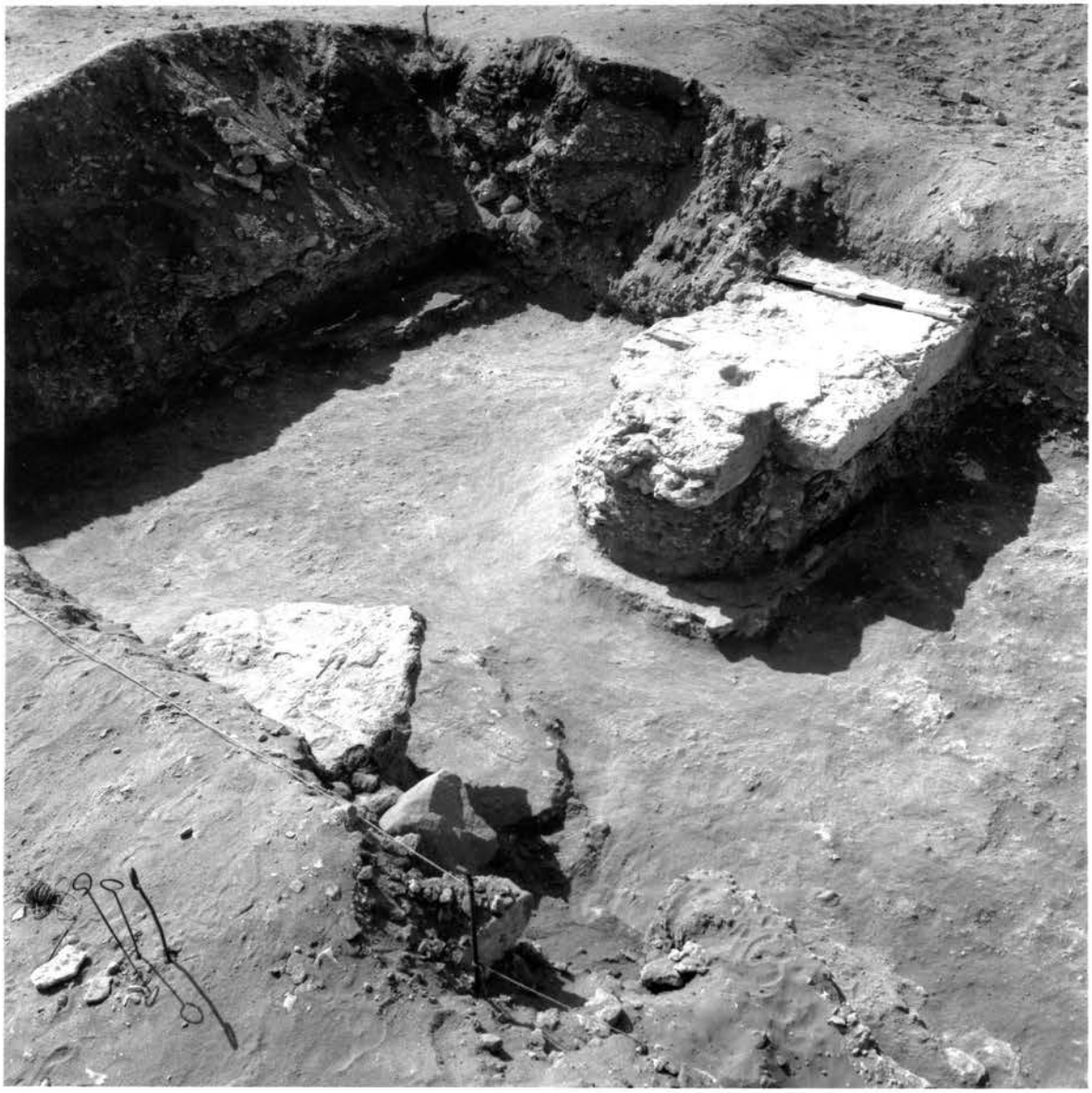

Figure 4.26. Square Y39 at the end of the excavation, viewed to the south–east. Two slabs of the original gypsum mortar for the upper floor remain *in situ* above a fill of chippings and areas of the lower gypsum concrete foundation platform.

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blocks on the upper surface but also a row of blocks which had pressed against the west side, the most northerly indented inwards by a block's width. These slabs are not pieces of *in situ* foundation platform. They sit on a thick deposit of limestone chips and gypsum which in turn rests on fragments of the real gypsum concrete foundation platform. These cover areas only slightly larger than the masses lying above and have clearly been protected by them. Where their edges are exposed are short lengths of builders' ink lines marking the position of walls subsequently to be built.

One explanation which was seriously entertained for a time is that these slabs are parts of the gypsum foundation platform from beneath the front (west) wall of the shrine and which were levered up and displaced sideways during the ancient destruction. On reflection, however, it is implausible to consider that these slabs could have been displaced without breaking into many

small pieces, for the material is fairly brittle, and although it looks very thick on the west side, where the line of blocks was pressed against it, this thickness is not maintained eastwards.[2] In any case, displacing the foundations in so careful a fashion rather than simply levering them up so that fragments were left at angles is an unlikely course of behaviour. An explanation which now seems preferable is that these slabs are remnants of the foundations for a floor of limestone slabs covering open areas of the Shrine. The western face of the southern slab marks the position of a wall which rose up from the lower foundations and against which the foundation layer of gypsum for the floor slabs was laid. This is good news, for it adds a further element of the original construction to the evidence so far recovered, and raises the hope that more survives in the areas not yet excavated (representing the greater part of the Shrine), and particularly in the area covered and protected by the nearby late Roman mound.

4.7 The decorated stonework

From the outset of the excavation extra men and boys from the workforce were assigned to examine the stony spoil from the sites of the two shrines in order to recover as many decorated fragments as possible, no matter how small. By the end of the season the total amounted to about 4000. They range from near-complete blocks to small fragments with only a smooth surface bearing paint. Several derive from elaborate columns. Despite the large number of fragments, however, it is evident, especially when considering the reconstructed plan (Figure 4.16), that we must have only a tiny proportion of the original decoration, for the most part consisting of pieces which accidentally broke off during the course of demolition. It is an attractive idea that this collection of pieces is roughly representative of the original sculptured decoration but this is something that is obviously going to be difficult, if not impossible, to verify. Nevertheless, the collection does have considerable variety, and when it has been broken down into its component types and these have been matched with the locations where they were found, at the very least a sketchy outline of how different kinds of decoration and architectural feature were distributed through these two buildings should emerge. This point of conlcusion is, however, still a long way off. Not only has the detailed cataloguing of the 4000 pieces yet to be started (this is a major task scheduled to begin in the 1990 season), but several times this number must still lie within the unexcavated ground. It is planned not to re-open excavation in these areas until fair headway has been made in cataloguing the pieces already found. Since the shrines at Kom el-Nana are almost certainly the last stone buildings remaining to be excavated at Amarna this is a task that should not be rushed, and it is possible that this is the last opportunity anywhere for matching the actual excavated ground plan of an Amarna shrine to its decoration.

At the time of writing the only information available is a listing of the totals of fragments and of a few of their basic attributes according to their excavation unit which was made by the expedition's registrar, Margaret Serpico. This has been used to compile Figure 4.32 which record the simple totals of fragments found within each grid square, and how many of them (and how large a percentage of the total) were of sandstone instead of limestone. In the case of the South Shrine the effect of the 1963 excavation is very obvious in the contrast in the totals for squares AB30 and AC30 (the centre of this work) and the squares immediately to the south (AB29 and AC29) which, for the most part, consisted of previously unexcavated ground. The loss of material from the EAO pit is partly compensated for by material from the EAO dumps to the south, recovered from a portion (but only a portion) removed in 1989. The collection of a few hundred fragments actually recorded in 1963 must represent the bulk of the remainder, and it is to be hoped that a report on these can be incorporated within the final report on this part of the site. In the case of the North Shrine the absence of pieces from the southernmost square (X35) shows how limited the spreading of the stone debris could be. This squares does, of course, lie on the other side of the major brick wall which divides Kom el-Nana into two parts, although it seems to have been destroyed to its foundations in ancient times.

The remaining information to be derived from Figure 4.32 concerns the proportion of sandstone to limestone. In the case of the South Shrine this varies considerably between the

[2] The southern slab was easily smashed to pieces by vandals during September 1989.

eastern and western halves of the building. In the eastern part sandstone fragments form less than 10% of the total (excepting square AC30, where the total of only 7 fragments is too small to provide a reliable statistic), and in the three most productive squares (AA–AC29) they represent only 2–3%. By contrast, in the western squares the percentage of sandstone fragments varies between 13 and 42, the highest figures (36% and 42%) occurring in W29 and Z30. The figures derive, of course, only from the "worked" fragments, all of which were kept for cataloguing. But an idea of the concentration of sandstone fragments generally in some of these squares is apparent from the plan of square Z30 (Figure 4.6). The information so far available suggests that sandstone was used primarily for major doorways, and was cut and laid in blocks much larger than the standardised limestone blocks. It is possible, therefore, that the sandstone concentrations derive from one or more entrances at the front (somewhere along the "X" row of squares), and an intermediate one in wall [5941], between the eastern and western parts of the shrine. A closer study of the fragments themselves should provide clarification. In the case of the North Shrine the ratio of sandstone to limestone is fairly constant over four of the squares (X37–39, Y39), but rises in W38 and X36. The former probably reflects the original presence of a gateway built of large sandstone blocks, of which several large pieces were found in this area. The 36.5% sandstone in square X36, however, calls up no ready explanation on the basis of available evidence.

Many pieces from columns were recovered, all of limestone. With the exception of the capitals and bases, which were apparently carved from single large blocks, the columns were built up from numerous blocks of the same size as those used for the walls. In general they seem to have been elaborate versions of papyrus-bundle columns, of the kind known from some of the North and South Tombs at Amarna (*RT* I: Pls. II, III; II: Pls. III, XXVI, XXVIII, XXIX, XLVI; III: Pls. I, XXXVI; IV: Pls. XXXVII, XLIII; V: Pls. II, VII, XVIII,XXIV; VI: Pls. XII, XIV, XXIII, XXXV–XXXVII; I:). Their presence raises an interesting question. Presumably they were linked by architraves at the very least, and since they appear to have stood within the confines of the walls of the building, and to have stood at least two deep in the case of the larger set of foundation traces, it is possible that around half of the building was roofed, but if so, with what ? If with sandstone slabs this could provide another explanation for the sandstone fragments found in the western half of the building, although for the present this has to remain conjectural.

The standard of original craftsmanship varies considerably. Some of the cutting is finely executed, and at this standard are a few fragments from scenes of human activity (e.g. Figure 4.30). Other pieces, however, were carved and inscribed to a much lower standard and now seem curiously crude. This is a factor which will assist in creating groups of originally related fragments. A small selection of pieces, drawn by A. Boyce, is illustrated in Figures 4.27 to 4.31, at half scale.

(1) Figure 4.27. AA30 [5132]. Limestone. Two carved design elements are present: on the left is the top right–hand edge of an architectural feature where a column capital meets the end of a roof or architrave; on the right is a pair of cartouches of the Aten beneath the design which signifies "sky". The cartouches contain the early form of the diactic name of the Aten. Some colour survives: the ground is yellow; the sky-glyph mid-blue; the cartouche background white; the column is yellow with a narrow red band and blue capital; the architrave is yellow on which red and mid-blue rectangles are painted.

(2) Figure 4.27. Surface find outside excavation area. Limestone, without trace of ground colour. At the top is the lowest part of a row of uraei, with traces of light blue paint in the intervening spaces. Below a wide dividing line runs a broad band originally painted with groups of three vertical lines now detectable only by differences in surface texture on the stone except for a tiny trace of light blue on one of them. Traces also survive of a narrow red line separating this band from the second wide dividing line beneath. Below this again runs a second broad band bearing traces of light and dark blue pigment possibly from a series of rectangles. The main decorative element is a row of bunches of grapes which had been painted dark blue but showing no sign of internal detail. These were shown suspended from a horizonal line painted red, as were the suspension "clips".

(3) Figure 4.28. W30 [5595]. Limestone, without trace of ground colour. Depiction of a head of one of the princesses, bearing traces of red overall.

(4) Figure 4.28. Y30 [5594]. Limestone. Depiction of the head of Akhenaten wearing the Blue Crown with uraeus. In front of and behind him stream diagonal Aten rays. Those in front of him end in in a series of shapes along the edge of the break which are hard to identify. Behind the king are two vertical columns of hieroglyphs which read: "Great royal wife, his beloved...Nefernefruaten Nefertiti, may she live for ever." Traces of yellow colour occur in the hieroglyphs, which could be the remains of a ground colour, for the addition shape to the left, which looks like the hieroglyph *t* was coloured red.

(5) Figure 4.28. W38 [5654]. Nummulitic limestone bearing shallow carving which is covered with gypsum plaster in places. Traces of red paint indicated by stippling. To left and right are decorative borders of two designs, one consisting of alternating groups of four horizontal lines, the other of chevrons. Red paint appears as a ground. The central column bears a cartouche and epithets of the Aten:

(6) Figure 4.28. X39 [5126]. Limestone, without trace of colour. The only design is a crudely cut sistrum and an element of uncertain meaning above it to the left.

(7). Figure 4.28. X37 [5130]. Limestone. Bottom of a cartouche of Nefertiti. Traces of blue pigment survive in the hieroglyphs and surrounding lines, as well as traces of a possible yellow ground.

(8). Figure 4.29. X37 [5130]. Limestone, very well carved. Two human hands, possibly the ends of Aten rays, are shown over the outlines of objects the nature of which is uncertain. Consequently the alignment of the fragment is also open to alteration, although within the limits created by the survival of one of the block's faces (marked as a broken line). No ground colour, but traces of red paint survive on the hands.

(9). Figure 4.29. AA24 [5132]. Limestone, well and deeply carved. A single human hand is shown, with the edge of possibly another above. They could belong to Aten rays, in which case the alignment of the fragment used fir Figure 4.29 is likely to be correct; or they could belong to a human with hands raised, e.g. in adoration, although the wrist seems very slender. Possible traces of yellow ground; red paint on the hands.

(10). Figure 4.29. X37 [5130]. Limestone, deeply cut, crudely executed. Part of the subject matter consists of flowers. The triangularly-shaped element could be the side of a bowl or basin on which the flowers lie. If this is so then the fragment is immediately aligned, as in Figure 4.29; otherwise the alignment is uncertain. Yellow paint occurs on all surfaces.

(11). Figure 4.29. X37 [5126]. Limestone. Fingers and thumb of human hand adjacent to a straight edge. No ground colour, some red paint preserved on fingers and thumb.

(12). Figure 4.29. AB30 [5132]. Red quartzite/sandstone. Deeply cut, no trace of colouring. Part of a corner of a statue base (?) inscribed on both faces with hieroglyphs in horizontal rows. The lower register on the left contains the group "Royal daughter of his body, his beloved [Meret]a[ten]." Above it are the lower parts of the signs reading Meretaten's name. On the right side Meretaten's name is written in large hieroglyphs.

(13). Figure 4.30. AB29 [5132]. Limestone. Fragment of a scene depicting the shoulder and outstretched forearm of a human figure (presumably Akhenaten's), with Aten rays descending behind. The cartouches of the Aten are crudely incised across the forearm, and are evidently of the early form, written from left to right. Traces of blue paint on the shoulder probably derive from a broad collar. Where the king's face should have been, however, the edge of a deeply cut, smooth-sided hollow occurs, which is hard to explain. Yellow ground colour; arm, cartouches, and Aten rays painted red; hieroglyphs on right painted blue, as also remains of the collar on the shoulder.

(14). Figure 4.31. Surface find. Limestone. Most of the surface is occupied by a standing male figure, perhaps a servant. The elements from a second similar figure are preserved along the right-hand edge. Traces of red paint on both figures, and on space in between.

(15). Figure 4.31. AB19 [3104]. Limestone. The fragment depicts a horizontal base line on which stand (left to right) a large pottery vessel, a male servant, probably a second male servant whose foot and ankle only are preserved. No ground colour; traces of red on legs.

(16). Figure 4.31. AC30 [5132]. Limestone, very carefully carved. Part of a scene showing a man standing probably on a cargo boat, in front of the wooden lattice of the cargo area. No colour preserved.

(17). Figure 4.31. W29 [5521]. Limestone. Fragment of a scene of a servant lifting or setting down what is probably a large pottery vessel. Yellow ground, and traces of yellow on body; also red on body and on the vessel.

(18). Figure 4.31. Y39 [5702]. Limestone, poorly carved. At the top is the lower part of a human face. The cross-hatching indicates gypsum filling the carving. The lower part of the design is perhaps a streamer.

(19). Figure 4.32. Y39 [5702]. Limestone. Fragment from the bottom–right corner of a block. Down the centre of the fragment runs, in deeply incised relief, a part of a human leg decorated with the cartouches of the Aten (a crudely carved version of the earlier form, written from right to left). Behind it, to the left, the edge of the fragment coincides with the edge of an even more deeply incised element. The leg and cartouches are painted red, and traces of red also lie on the deeply cut surface to the left. No ground colour is present, but a thin red line runs parallel and close to the bottom edge of the block.

Several examples of the didactic names of the Aten in cartouches occur. All, with one exception (Figure 4.28, no. 5), are of the earlier form.

One element which will doubtless be of much interest to Amarna Period historians is the condition and content of cartouches and royal epithets. No detailed statement is yet possible, but it is already clear that such royal cartouches as there were, both of Akhenaten and of Nefertiti, show no signs of alteration or of defacement that could be accounted for through deliberate iconoclasm.[3] Thus, when Kom el-Nana was abandoned the king and queen were still the figures honoured in the decoration. Although much significance has been attached to alterations made on other monuments to the cartouches of royal ladies, and to the appearance of names and figures of possible ephemeral successors to Akhenaten prior to the court leaving Amarna, it does seem to be the case that Kom el-Nana was not exceptional in recognising to the end the royal couple who had founded the city.

[3] There is one possible exception on a large painted sandstone architrave fragment where the cartouches of Akhenaten are intact (apart from damage to one edge of the nomen), but Nefertiti's cartouche is not. However, the damage has obliterated the entire cartouche and the edge of the neighbouring cartouche of Akhenaten and so could be damage sustained during the demolition of the building.

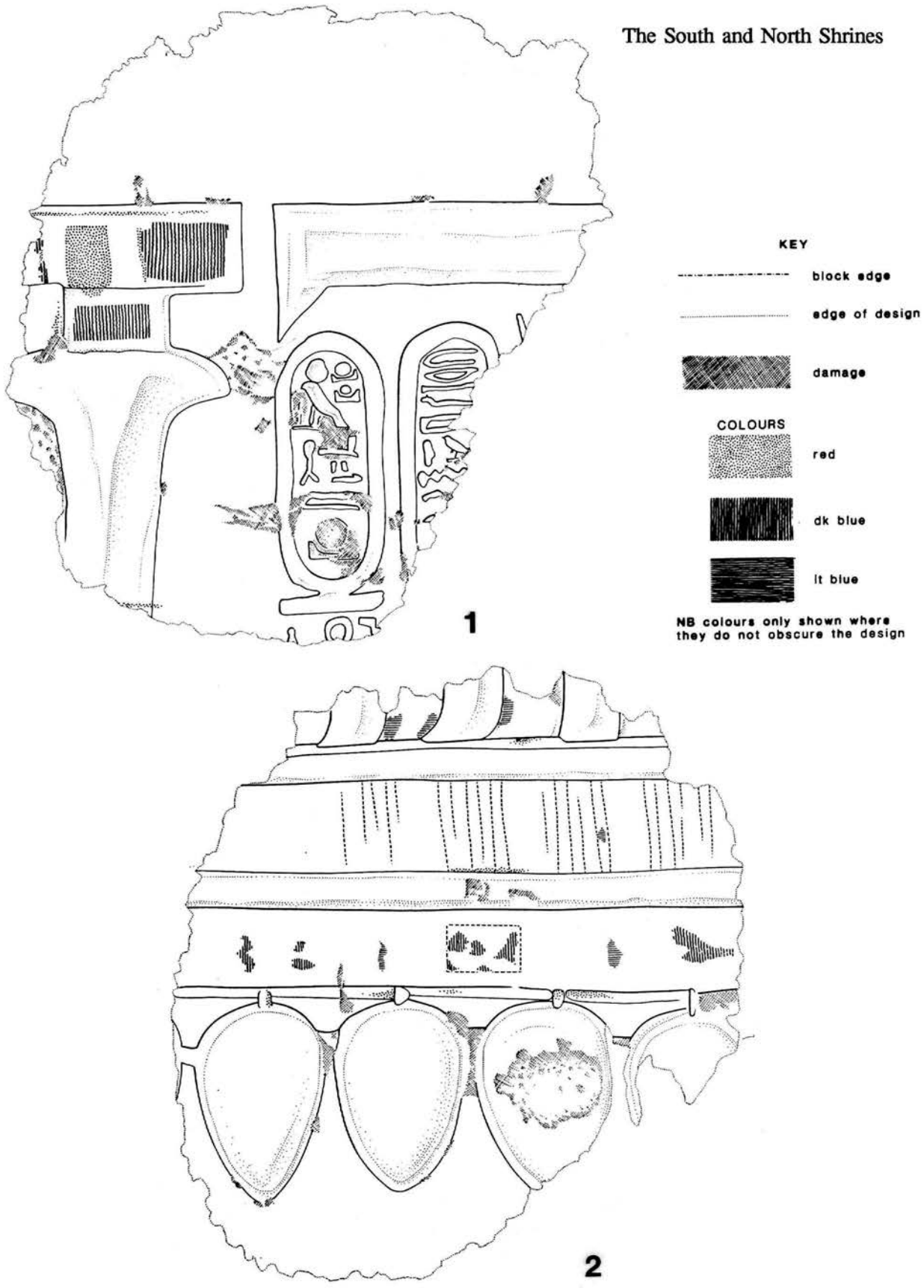


Figure 4.27. Decorated stone fragments from Kom el-Nana, at half-scale, drawn by A. Boyce.

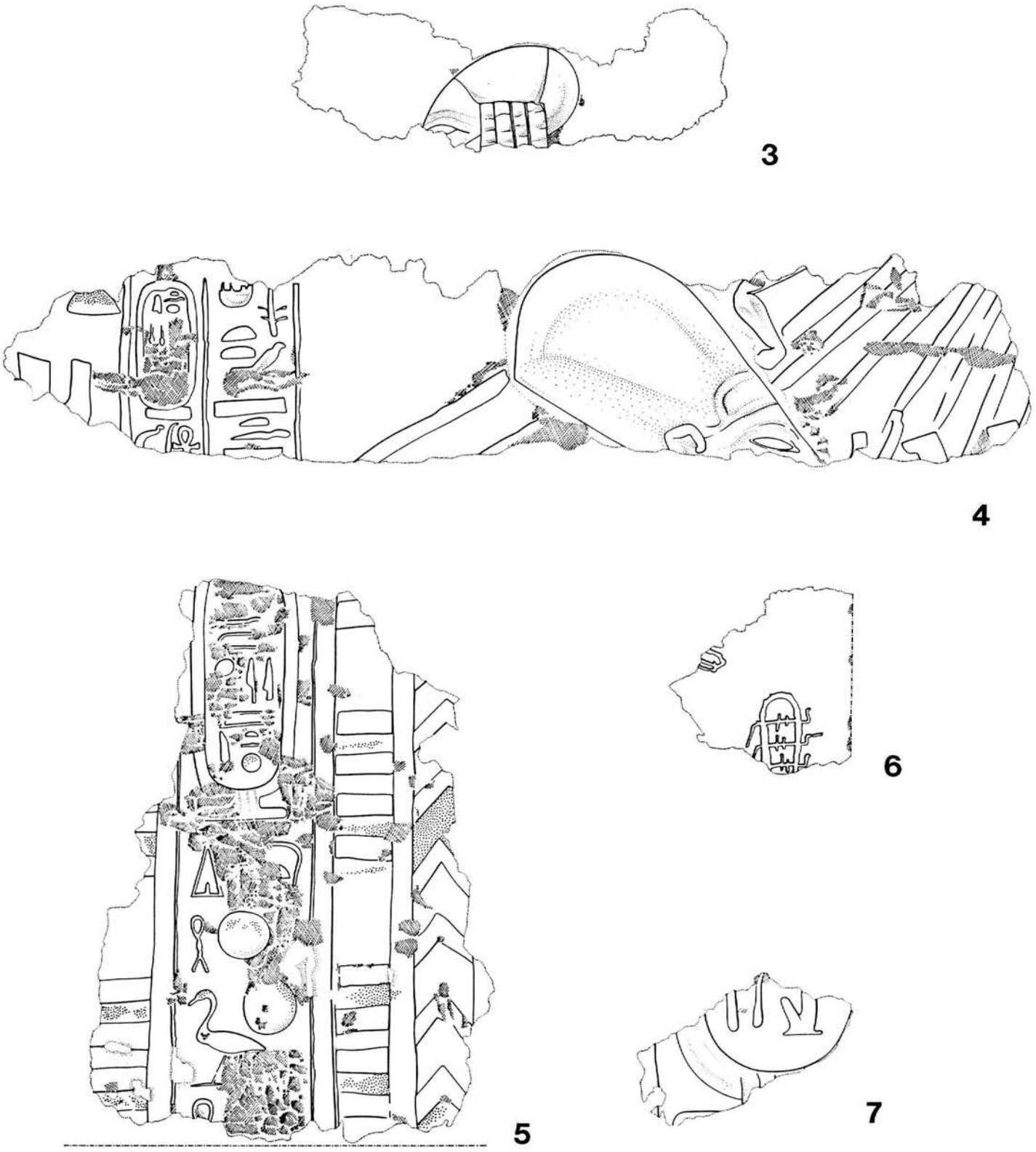


Figure 4.28. Decorated stone fragments from Kom el-Nana, at half-scale, drawn by A. Boyce.

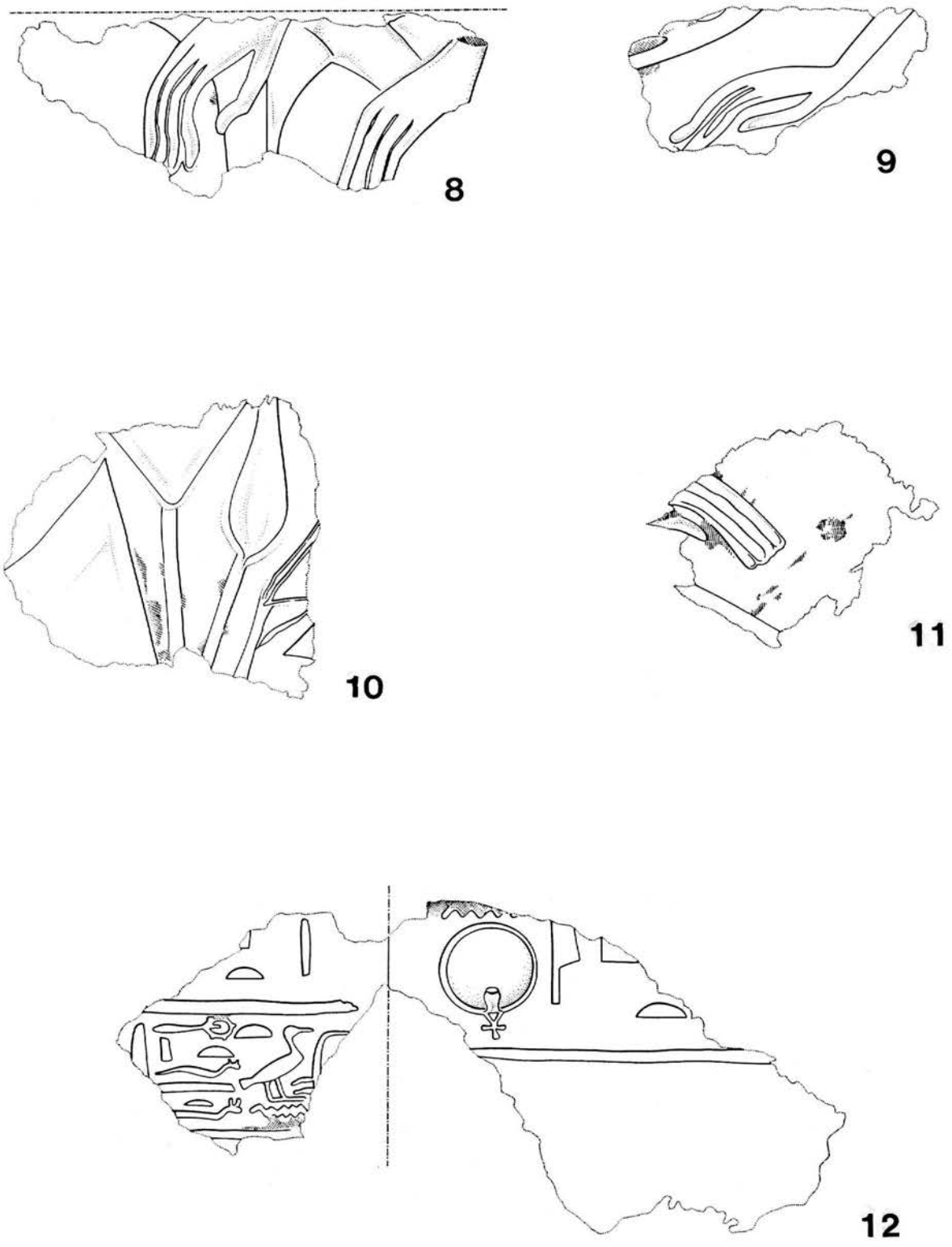
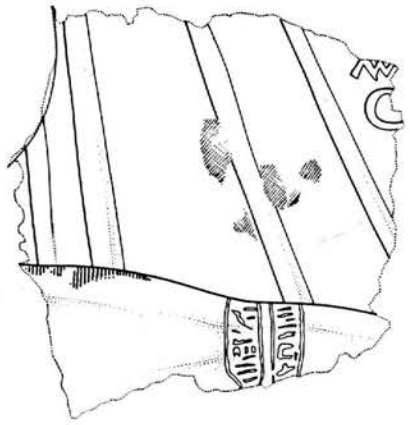


Figure 4.29. Decorated stone fragments from Kom el-Nana, at half-scale, drawn by A. Boyce. No. 12 is part of a quartzite statue base bearing the name of the eldest princess, Meretaten.



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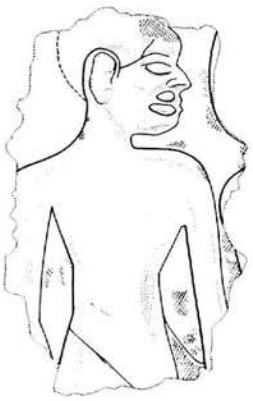

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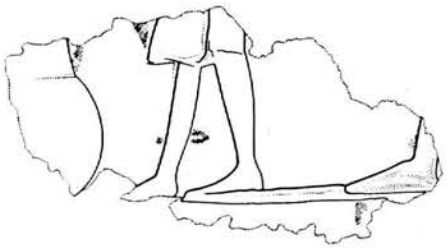

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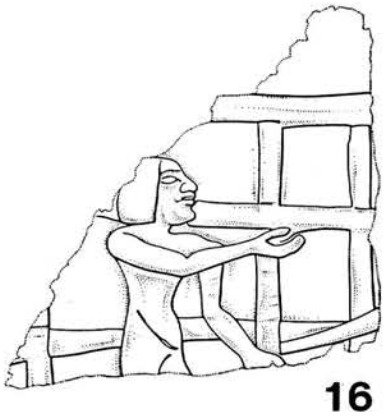

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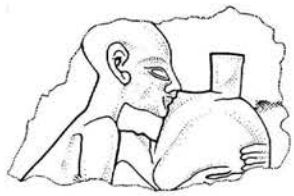

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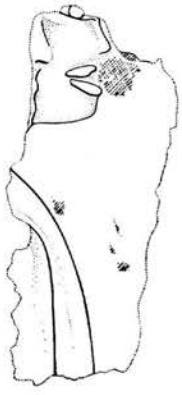

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Figure 4.30. Decorated stone fragments from Kom el-Nana, at half-scale, drawn by A. Boyce.

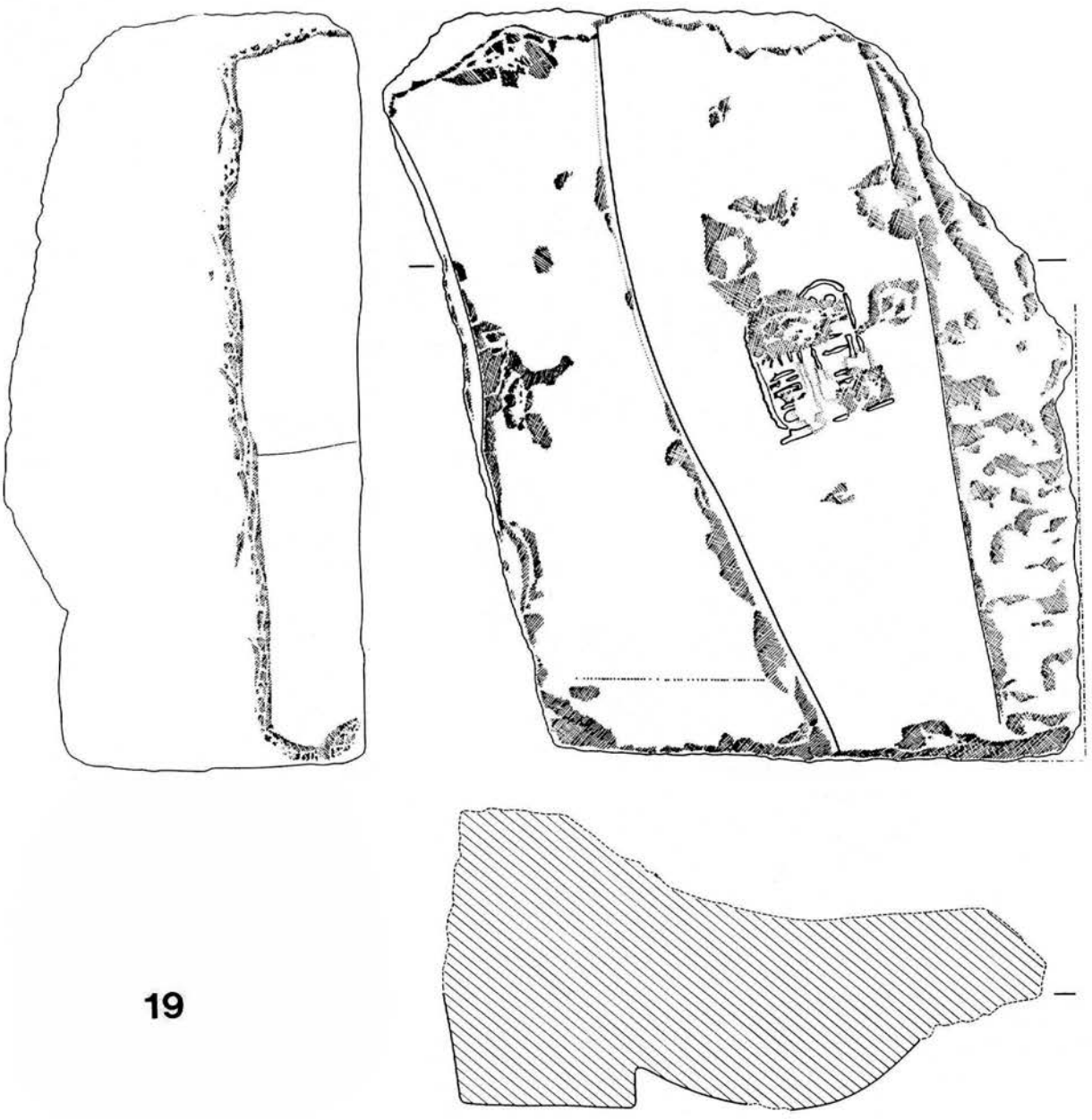

Figure 4.31. Decorated stone fragments from Kom el-Nana, at half-scale, drawn by A. Boyce.

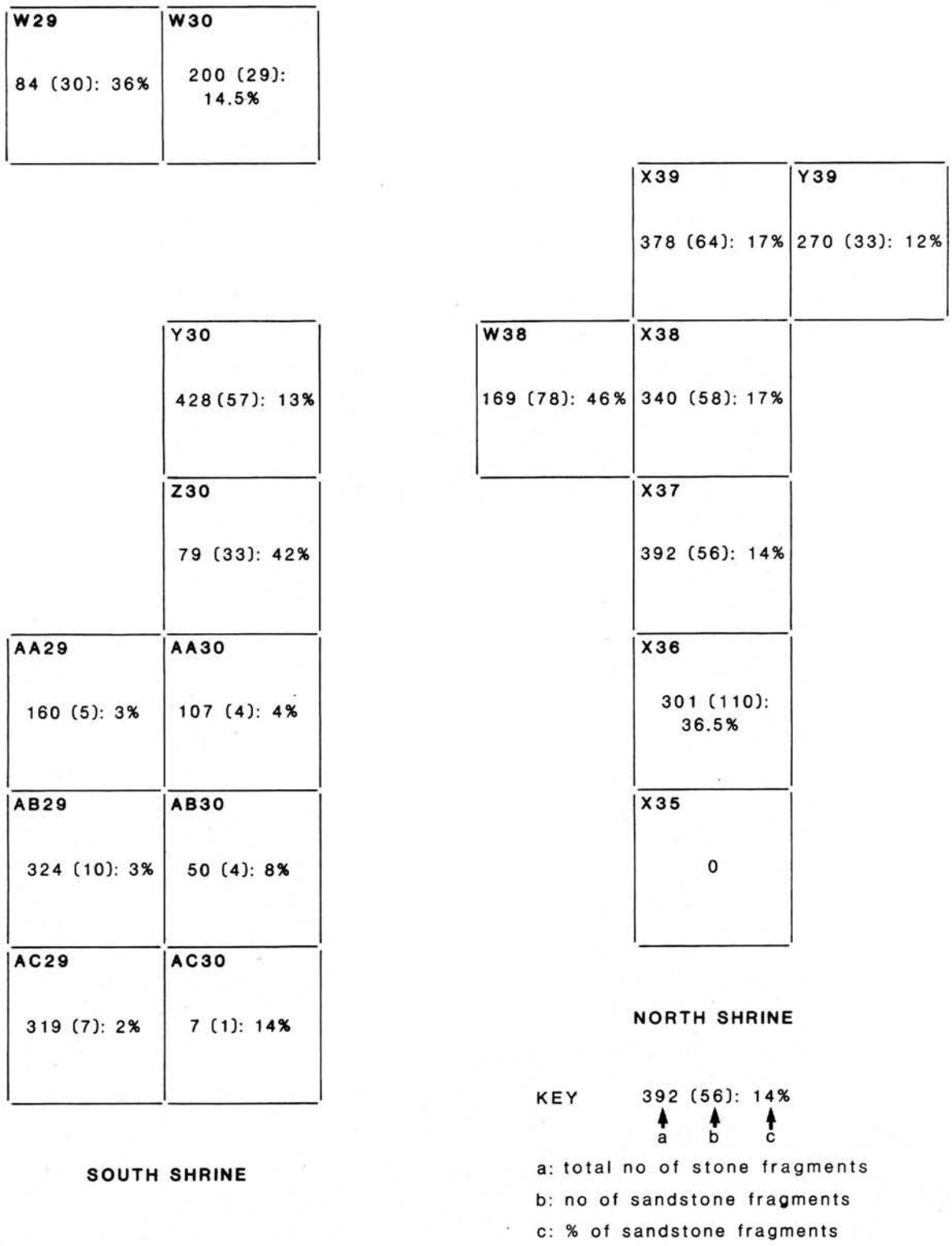

Figure 4.32. Distribution of decorated and architectural stone fragments from the two shrines: basic figures (from data compiled by Margaret Serpico).

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