

The Excavation of Khok Phanom Di

A Prehistoric Site in Central Thailand

Volume: I The Excavation, Chronology and Human Burials



By

C. F. W. Higham and R. Bannanurag

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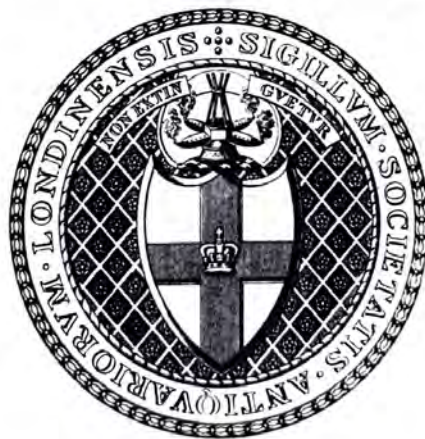
Volume I : The Excavation, Chronology and Human Burials

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PREFACE

KHOK Phanom Di is a large prehistoric site located in Chonburi Province, Central Thailand. This is the second of a series of volumes which will report on the excavations we undertook there in 1985 as part of our project on the prehistory and early history of the lower Bang Pakong valley. We are deeply indebted to many individuals and their institutions for the support which has made this project possible. First, we owe a debt to our respective institutions, the University of Otago and the Fine Arts Department, for allowing us the time and resources to devote to research in the Bang Pakong valley. To Sir Robin Irvine, Vice-Chancellor of the University of Otago, and Thaweesak Senanarong, Director General of the Fine Arts Department, we can only reciprocate with our thanks, coupled with this volume and its companions.

Financial support for the programme and subsequent analyses was provided by a number of institutions. The Ford Foundation through Dr Thomas Kessinger, then representative in the Southeast Asian Regional Office in Jakarta, provided funds to underwrite excavation costs and for Rachanie Bannanurag, Pirapon Pisnupong and Phrapid Choosiri to undertake research in New Zealand. The University of Otago also provided a research fellowship which supported Amphan Kijngam in New Zealand.

The Shell Company of Thailand Limited assisted by the provision of a vehicle, a computer and a generous subsidy to defray the costs of producing this volume. To M.R. Sarisdiguna Kitiyakara, Chairman, and Precha Phonprasert, Public Affairs Manager, we offer our thanks for such support, and for the enthusiasm of their visits to the site.

Major assistance was also provided by Earthwatch and its Research Corps, the Wenner-Gren Foundation, University of Cambridge through its Evans Fund, New Zealand University Grants Committee and the British Academy.

We acknowledge the invaluable contribution made by Hugh Chapman, Elizabeth Nichols and Margaret Sharman of the Society of Antiquaries of London in improving this volume. Leslie O'Neill and Martin Fisher prepared the illustrations. Last, but by no means least, we owe a considerable debt of gratitude to Graeme Mason for the many ways in which his advice has improved this volume, and to Graeme McKinstry of the University of Otago Computing Centre Advisory Service for his guidance and advice in using the Latex typesetting programme.

I. THE BANG PAKONG VALLEY RESEARCH PROJECT

By C.F.W. Higham

INTRODUCTION

THE Bang Pakong is the most eastern of the five major rivers which flow into the Gulf of Siam. Investigations into a number of prehistoric and historic sites located in the Bang Pakong valley up to 1984 had stressed the importance of the area over a long period. Quaritch-Wales was one of several early workers attracted to the large moated sites in the valley, of which Muang Phra Rot and Dong Si Maha Pot are best known (Quaritch-Wales 1969). He ascribed them to the Dvāravātī civilization (AD c. 600–950), but also noted the strong Angkorean influence, which one would expect in a river valley which offers direct and unimpeded access from the broad floodplain of the Chao Phraya River to the Tonle Sap plains. More recently, and largely as a result of the growing concern in Thailand for the prehistoric past, attention has been directed to earlier sites. Pisnupong has been foremost in this enquiry, and has excavated relatively small but informative squares at Khok Putsaa in 1981, and Khok Phanom Di in 1982 (Pisnupong 1982, 1984). His research at Khok Phanom Di, the site which is the subject of this report, was preceded by Suchitta's ethnoarchaeological work there in 1978, which involved the interpretation of the biological finds recovered from an exposed section (Suchitta 1984). Noksakul also became involved in the examination of this site when he excavated a 5m by 3m square, commencing in 1979. This excavation reached natural deposits at a depth of 8.8m, by which time he had encountered twelve inhumation burials and much material culture and biological remains (Noksakul 1981). In 1983, Bannanurag excavated a square measuring 5m by 3m at the large mound of Ban Khok Rakaa. Her excavation was located towards the edge of the site, and she recovered human interments in association with bronze vessels (Bannanurag 1986).

My first visit to Khok Phanom Di in February 1980 occurred when Noksakul's square was still open, and I was able to examine the deep and complex stratigraphy. Two years later, I visited the site during Pisnupong's excavation and, although at that juncture he had only reached a depth of 3m, it was clear that the site was yielding a large variety of marine species. Yet the site is now over 20km from the shore. This second visit enabled me to discuss with Mr Pisnupong, and with officials of the Fine Arts Department in Bangkok, my proposal to return and open a large areal excavation at the site. Since this met with a warm response, I enlarged the scope of the enquiry, to incorporate a long-term study of a small sector of the Bang Pakong valley, with a view to illuminating the patterns of human adaptation over the span of the prehistoric and early historic periods. As a first step, it was proposed to undertake an intensive site survey in the part of the valley chosen for long-term research.

The area was selected on several grounds. First, it was deemed wise to be sure from the outset that it incorporated a number of known sites likely to be of central importance in any assessment of the area's past. One of these sites was Khok Phanom Di and the second was Muang Phra Rot, the

large moated site which is located in a commanding position on one of the main tributaries flowing into the Bang Pakong. Beyond this basic consideration, it was also considered necessary to ensure that a cross section of the different landforms and soil types was included, and that the area was both large enough to document major environmental change, yet small enough to be manageable in terms of the logistics of site surveys. In the event, the area selected lies to the south-east of the Bang Pakong River and covers an area of 540km² (Fig. 1).

Before considering the area in terms of soil types and drainage, it is necessary to refer to its wider setting within the Bangkok lowlands. This term was employed by Takaya (1969) to distinguish the area most closely affected by the latest major period of high sea level from the Singburi plain and the Ban Phraek trough, areas which were influenced more strongly by much earlier, Pleistocene, high sea levels. The Bangkok lowlands comprise an extensive and almost flat terrain, which averages no more than 2m above mean sea level. They comprise clay laid down under brackish conditions. These clays are young, unconsolidated, and attain a depth of at least 14m in the vicinity of Bangkok. There are several major and many minor old barrier islands on the plain, one of which underlies Bangkok and another the old capital centre of Ayutthaya. These rise 2 or 3m above the level of the marine clays.

It is self-evident that any examination of the human settlement of this landscape during pre-history must take into account the higher sea level during the Holocene, when the shore was up to 100km from the present coast. Van der Kevie has addressed the problem of defining the ancient coast and dating the period when the marine and brackish water clays were deposited (van der Kevie 1971). Essentially, there are three stratigraphic units involved. The earliest comprises a whitish clay thought to belong to the Pleistocene period. This is overlain in the area closest to the modern shore by a greenish marine clay thought to have built up under a shallow sea, and then dark grey brackish water sediments which vary in thickness between 0.5 and 5.0m. As will be shown below, this sequence has been identified by Maloney in the cores he removed from the vicinity of Khok Phanom Di. It is important to appreciate the manner in which these brackish water sediments originated. Van der Kevie has stressed that, when the sea level rose, brackish water swamps may well have formed many kilometres beyond the actual coast. As rivers flow sluggishly through these swamps, thick layers of clayey sediments build up. These clays are coloured a dark grey in contrast with the green clays deposited under the sea. The characteristic flora within the brackish water belt behind the coast is dominated by mangrove and *Nypa* palm. Van der Kevie has recovered a set of five radiocarbon samples from the brackish water clays. It must be appreciated that these relate to a higher sea level than at present, when brackish waters invaded the flat terrain behind the coast. These are found up to 80km from the present shore (Fig. 2), and illustrate the extent of the land which was formerly subjected to a brackish water environment in swamp forest dominated by *Rhizophora*. A second set of radiocarbon dates from the Holocene deposits of the Gulf of Siam has been published by Somboon (1988). These, and those of van der Kevie, are set out in figure 2, against the depth of the sample below the modern ground surface.

Somboon (1988) has concluded that the Holocene transgression of the Gulf of Siam area saw a coastline form in the vicinity of Ayutthaya by about 3600 BC. Sea then covered much of the lower part of the central plain of Thailand. Van der Kevie has suggested that the brackish water sediments beyond the raised shoreline formed over at least two millennia, with the sea level stabilizing or falling back slightly, and the coastline of the Gulf of Siam prograding, not long after 1500 BC. A detailed examination of both the pollen record in association with these deposits, and a new series

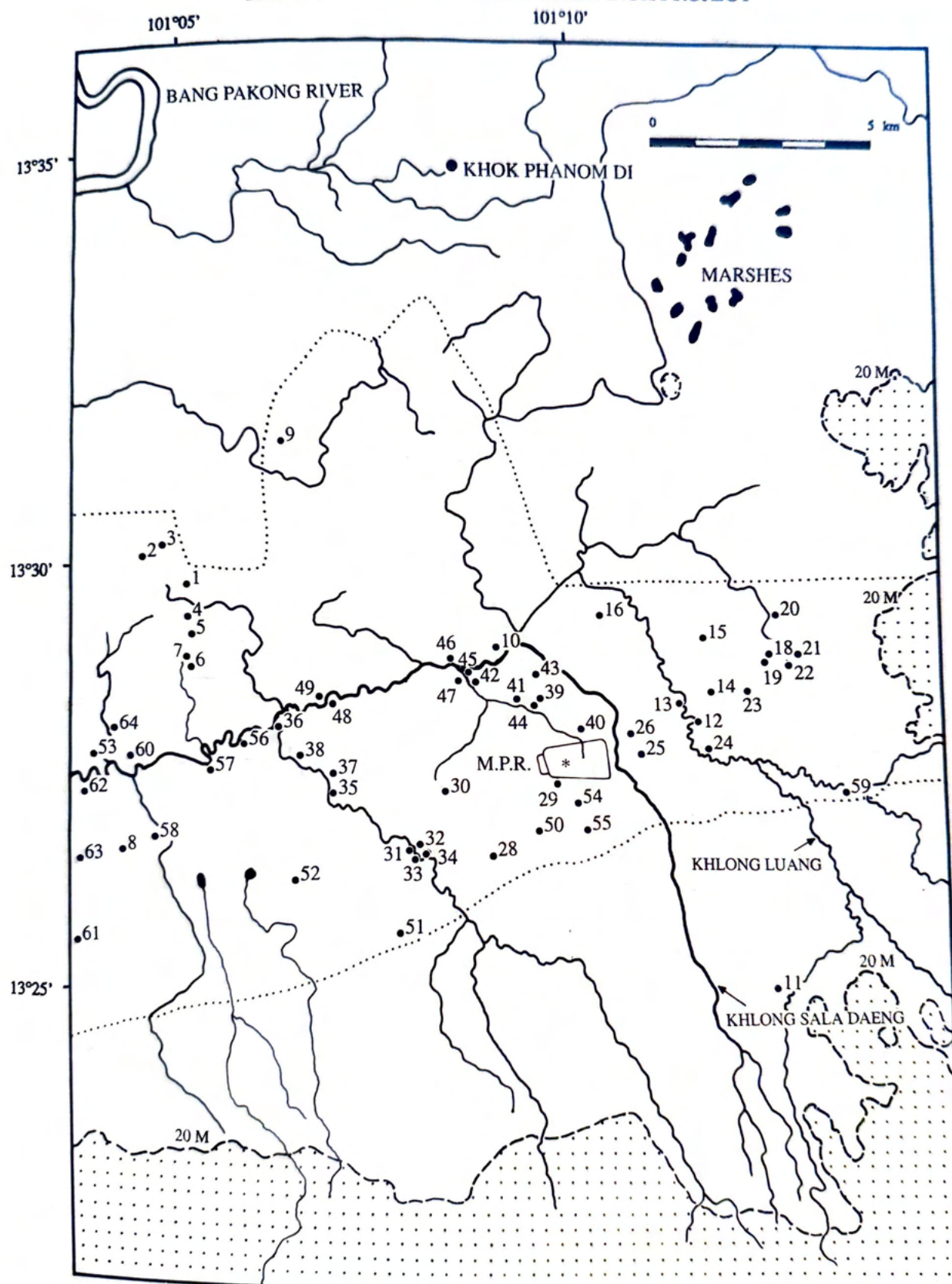


FIG. 1. The Bang Pakong study area, showing relief, drainage, the areas subjected to intensive survey (within the broken lines) and the distribution of sites. The scale is in km. MPR: Muang Phra Rot

of radiocarbon dates from the immediate vicinity of Khok Phanom Di will be provided by Maloney in a later volume on this site.

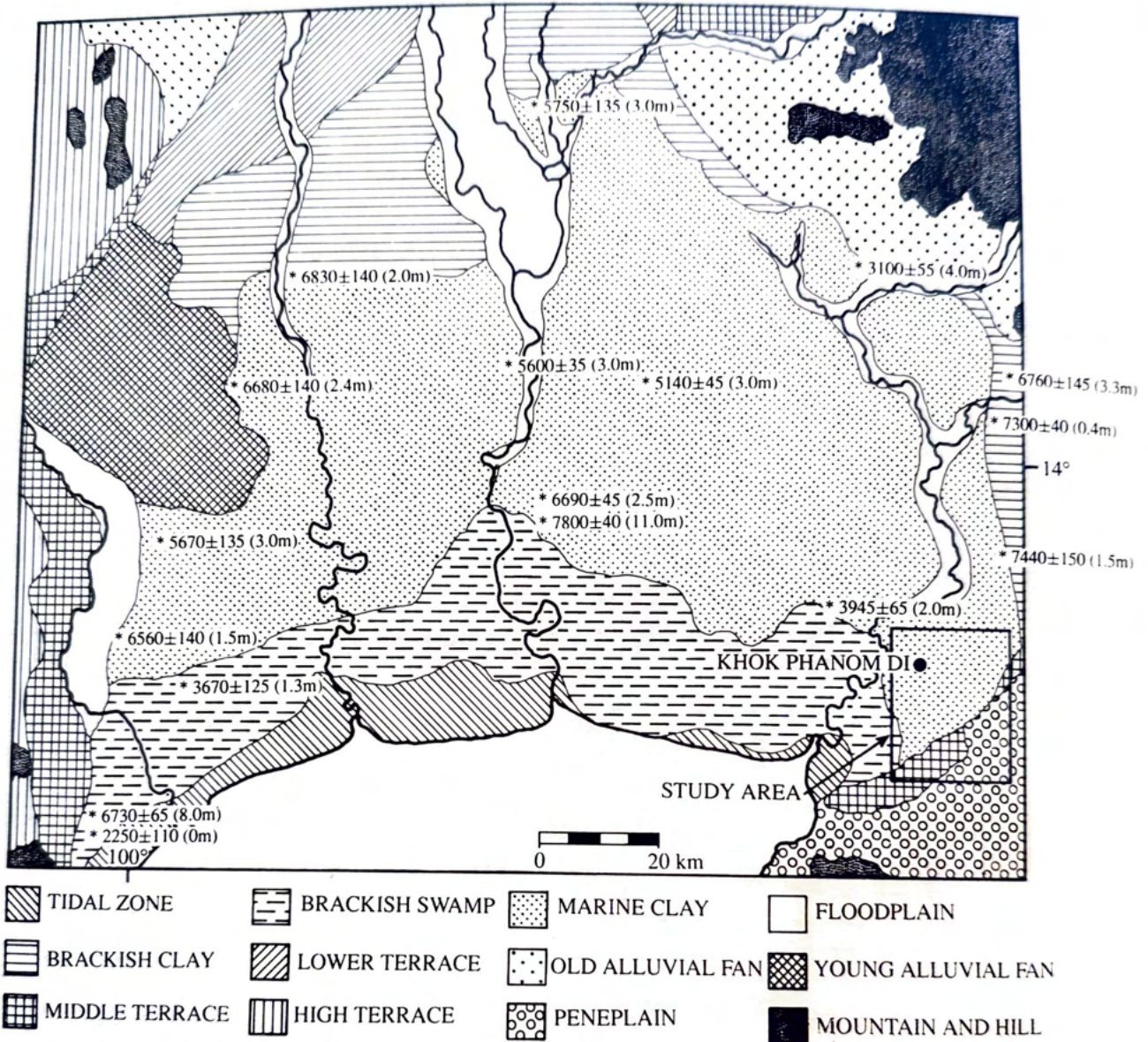


FIG. 2. The distribution of soils in the Bangkok Plain. The Bang Pakong study area is demarcated by a rectangle

As may be seen in figure 3, the area selected for intensive analysis during prehistory incorporates the eastern limit of the deposits laid down under brackish water conditions. The Bang Pakong River, which is actively moving its course and leaving ox-bow lakes at present, is located in the north-western corner of the survey area. A small tongue of tidal flat (the so-called Tha Chin-Bang Pakong complex) reaches into the survey area, but the predominant soils in the central part of the survey area are now under marine or brackish water deposits. The divide between these discloses two tongues of marine sediment impinging into the brackish water deposits in the north-western

sector. The belt of brackish water deposits varies between 2 and 11 km in width, and gives way on its eastern flank to first low, and then high terrace riverine alluvium.

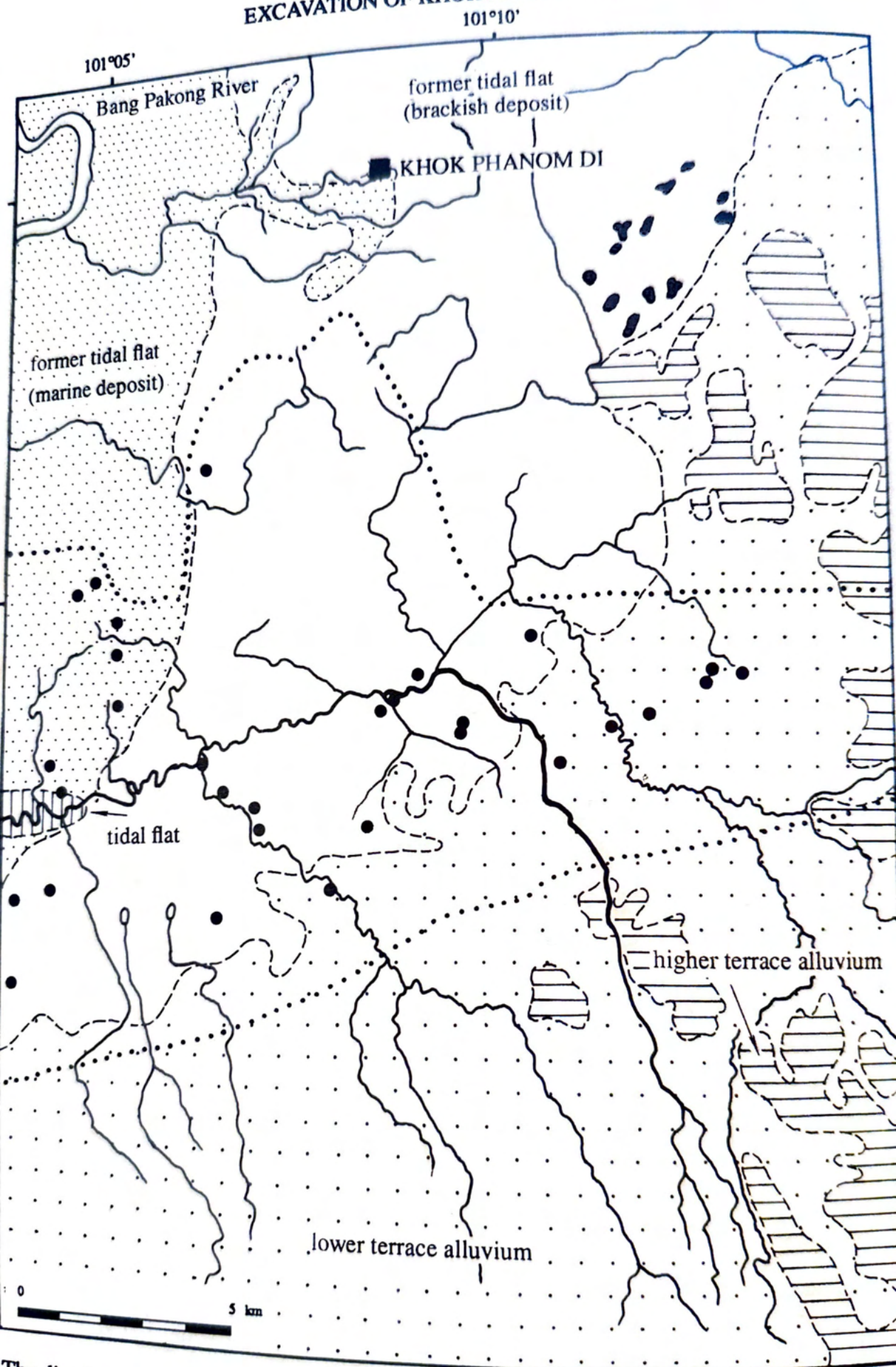
KHOK PHANOM DI IN WIDER PERSPECTIVE

We must now address the question of why it was decided to excavate this site, and describe the field procedure. One of my assumptions in 1984 was that the site was occupied very soon after the establishment of a coastline higher by 2–4 m than at present. According to the available dates, this would have been by 4000 BC (Geyh *et al.* 1979; Tjia 1980; Tjia *et al.* 1983). This assumption was supported by some of the radiocarbon dates obtained by Noksakul from his excavations. While not forming a pattern relative to the observed stratigraphy, the determinations included two from human bone found 2 m from the lowest cultural context. If correct, these dates indicate settlement by at least 4000 BC. Both Noksakul and Pisnupong encountered the remains of rice in their test squares, in addition to which inhumation burials with grave goods were found. Since the faunal remains were overwhelmingly from marine sources, the available evidence sustained several reasonable assumptions. The significance of these can only be judged when set against the archaeological objectives and discoveries of the preceding two decades in South-East Asia.

Quite apart from the establishment of a soundly based chronological and cultural framework for mainland South-East Asia, several major issues confronted the prehistorian. Archaeologists attracted to the area during the 1960s inherited a tradition originating in the foundation of the *École Française d'Extrême Orient* in 1898. This institution, which controlled archaeological research in the former French Union of Indochina, applied most of its resources to the investigation of the early kingdoms of Funan, Zhenla, Angkor and Champa. As a result, the prehistory of the area remained little known, and dependant for interpretation on a handful of widely spaced sites, of which Dong Son, Samrong Sen, Sa Huynh and the caves of Hoa Binh and Bac Son are the best known (Janse 1958; Mansuy 1902, 1923, 1924; Parmentier 1918; Colani 1927). The thin documentation of the prehistoric period accentuated beyond reasonable limits the sharp divide which heralded the formation of early states, and explanations for the latter were based almost exclusively upon Indian inspiration (Coedès 1968).

When serious prehistoric enquiry was initiated, there was an understandable reaction against the dismissal of the contribution of prehistoric societies on the part of some workers. Gorman, whose excavations at the small and remote rockshelter of Spirit Cave added to our understanding of upland forest hunter-gatherers, found his data employed to underpin claims for the world's earliest 'Neolithic Revolution' (Solheim 1972). Certainly, one of the leading issues in South-East Asian prehistory has been the origin and role of rice cultivation, a situation which is quickly appreciated by those who have witnessed the quite crucial role of rice today in sustaining dense populations. A second set of claims relates to metallurgy. In 1966 and 1968, Bayard (1972) excavated a prehistoric cemetery in north-east Thailand known as Non Nok Tha. He encountered human inhumation burials, some of which were accompanied by bronze axes and bracelets. The site also yielded small crucibles and bivalve sandstone moulds. This was the first time that such a site had been excavated since the establishment of the radiocarbon dating method, and Solheim suggested the possibility that the bronze-working tradition in north-east Thailand was among the earliest in the world (Solheim 1968).

EXCAVATION OF KHOK PHANOM DI



The distribution of prehistoric sites in the surveyed portion of the Bang Pakong valley is shown. The surveyed portion lies within the dotted lines.

This research was followed by the excavation of Ban Chiang. This site yielded the same evidence for bronze working, but also provided the remains of iron artefacts in mortuary contexts, two specimens taking the form of iron-bladed spears with cast-on bronze hafts. In the first publication of the material, the early nature of bronze working was supported and, in addition, it was suggested that the iron artefacts could be as early as the mid-second millennium BC (Gorman and Charoenwongsa 1976).

The expansion of research in related sites has seen these early claims subside (Bayard 1984a; Higham 1983; White 1986). In their place, we now have a cultural framework proposed by Bayard (1984c) which will be employed in this introductory review. He has divided the sequence in north-east Thailand into four General Periods, known as GP A, B, C and D. General Period A is dated to at least the third millennium BC and possibly for some of the fourth millennium as well, though consistent dating evidence is not yet forthcoming. It involved the initial settlement of the tributary stream valleys of the area by groups which possessed domestic cattle, pigs and dogs and probably numbered rice cultivation among their other subsistence activities. Exposures of this early period are best documented at basal Non Nok Tha and Ban Chiang. General Period B commenced between 2300 and 1500 BC and it was probably at its beginning that bronze working began. The origins of this tradition remain conjectural, although it has been argued that bronze played a role alongside such exotic goods as marine shell, fine-grained stone and ceramics as emblems of status. The mortuary data from Non Nok Tha and Ban Na Di intimate that, during GP B, north-east Thailand was occupied by small, segmentary or autonomous communities within which affiliated groups were distinguished in terms of rank (Bayard 1984b; Higham 1984; Higham and Kijngam 1984).

This situation changed towards the middle of the first millennium BC, when it is suspected that trends towards centralization occurred, particularly in the margins of some of the major rivers. This is most clearly illustrated in the valley of the Red River, where the Dong Son aristocrats are portrayed on their own ceremonial drums. In north-east Thailand this period of centralization, known as GP C, is less clearly defined, lacking the large cemeteries, boat-coffins and bronze drums of the Red River. There is, however, evidence that some settlements grew differentially large, Non Chai, for example, covering at least 18ha at some time between 300 BC and AD 200. There was also the establishment of iron working, and beads of exotic Indian origin made of glass, agate and carnelian began to enter the exchange circuits (Bayard *et al.* 1986).

It is clear that the sequence in north-east Thailand is better documented than that in the Chao Phraya lowlands. Nevertheless, there is a growing body of evidence which demonstrates that General Periods A, B and C, established for the north-east part of Thailand, were paralleled in the area to which the Bang Pakong valley belongs. We know, for example, that the surrounding uplands sustained hunter-gatherers who occupied small rockshelters at Sai Yok (van Heekeren and Knuth 1967) and at Khao Thalu and related sites (Pookajorn 1981). There are also lowland cemeteries at Ban Kao (Sørensen and Hatting 1967) and Khok Charoen (Watson 1979; Ho 1984) in which the absence of bronze, if not a set of well-provenanced radiocarbon dates, intimates a GP A equivalence. For early bronze, there is the important site of Ban Tha Kae (Natapintu 1984), as well as the recent discovery of copper mines and processing facilities in the Khao Wong Prachan valley at Non Pa Wai, Non Ma Kla and Nil Kam Haeng. Two radiocarbon dates from a basal context at Non Pa Wai, which clearly shows familiarity with copper technology, fall towards the end of the third millennium BC (Pigott 1986). Khok Phlap (Daeng-iet 1978) and, indeed, Ban Khok Rakaa within the Bang Pakong valley, are sites which evidence the establishment of a bronze-working tradition,

although the date for its inception in the Chao Phraya lowland area is still undocumented. General Period C is well known on the basis of Glover's excavations at Ban Don Ta Phet (Glover 1980, 1983). Similar finds of exotic glass, agate and carnelian beads, iron weaponry, bronze bowls and, in the case of Ongbah, drums decorated in the Dong Son style (Sørensen 1979), are now widely reported in the Chao Phraya lowland area and in many respects herald the quickening of cultural change which saw the development of GP D, which is synonymous with state formation.

In 1984, I was unable to place Khok Phanom Di into this cultural framework. It was far bigger than any known GP A site, and revealed a deep and complex stratigraphic sequence. My discussions with Noksakul and Pisinpong, and my examination of the fauna from the latter's test square, failed to reveal any remains which I could ascribe to domestic animals. If my assumptions on the chronology were correct, it antedated GP A sites and no remains of metal were found. The decoration on one of the mortuary vessels recovered by Noksakul was vaguely similar to the earliest incised wares from Ban Chiang, but the pottery from Pisinpong's excavations was not paralleled at any other site known to me. If any similar sites to Khok Phanom Di existed, they were not yet known in the Chao Phraya lowland area. Settlement on or near raised beaches in northern Viet Nam have been known for many years (Patte 1924, 1932; Ha Van Tan 1980). Patte's research at Bau Tro and Da But revealed settlement of a coastal orientation, yet without the size and depth of Khok Phanom Di. The site of Quynh Van is 6m deep and excavations there yielded thirty-one flexed inhumation burials. Two radiocarbon dates from the upper levels suggest initial occupation during the fourth millennium BC. There are, indeed, numerous coastally orientated sites between the valleys of the Red and Ca rivers, but we have, as yet, no access to the biological remains, pollen spectra or social information deduced from burials with which to assess them. Indeed, based on the recovery of pottery and polished stone axes from these sites, Vietnamese colleagues ascribe them to the 'Coastal Neolithic'. One of the axioms adopted while planning the excavation of Khok Phanom Di, however, is that there is no interdict on non-agriculturalists making pots or polishing stone tools.

This point introduces a variable of profound significance: the post-Pleistocene rise in the level of the sea. As has been demonstrated by numerous workers, the extensive area known as Sundaland would have been above sea level, albeit low and flat, until the swift rise in the sea level, which commenced about 10,000 years ago, inundated it (Geyh *et al.* 1979). As may be seen in figure 4, the area lost to the sea was considerable. It is not an unreasonable assumption that human settlement sites were abandoned as a result. Adaptation to the coast of South-East Asia, therefore, which is in essence the object of our enquiry, probably had a long ancestry. All that have survived are the settlements which were located at the high-water mark. Khok Phanom Di is one such site.

Coastal settlement might have been little known at the commencement of the Bang Pakong programme, but there was no lack of information on the potential importance of this aspect of human settlement in South-East Asia. Yesner, for example, has isolated several variables central to an appreciation of coastal settlement (Yesner 1980). One is the high concentration of food resources, especially in estuarine situations. This holds particularly for areas such as the Gulf of Siam, where warm seas and fringing mangrove belts provide outstanding conditions for the reproduction of marine species and their sustenance. The widespread intertidal mudflats of the area today, and the very gentle incline of the beaches themselves, means that a broad expanse is exposed at low tide. The shellfish adapted to them are predictably present and can survive a high rate of exploitation. The major estuaries of the Gulf of Siam also attract anadromous fish, of

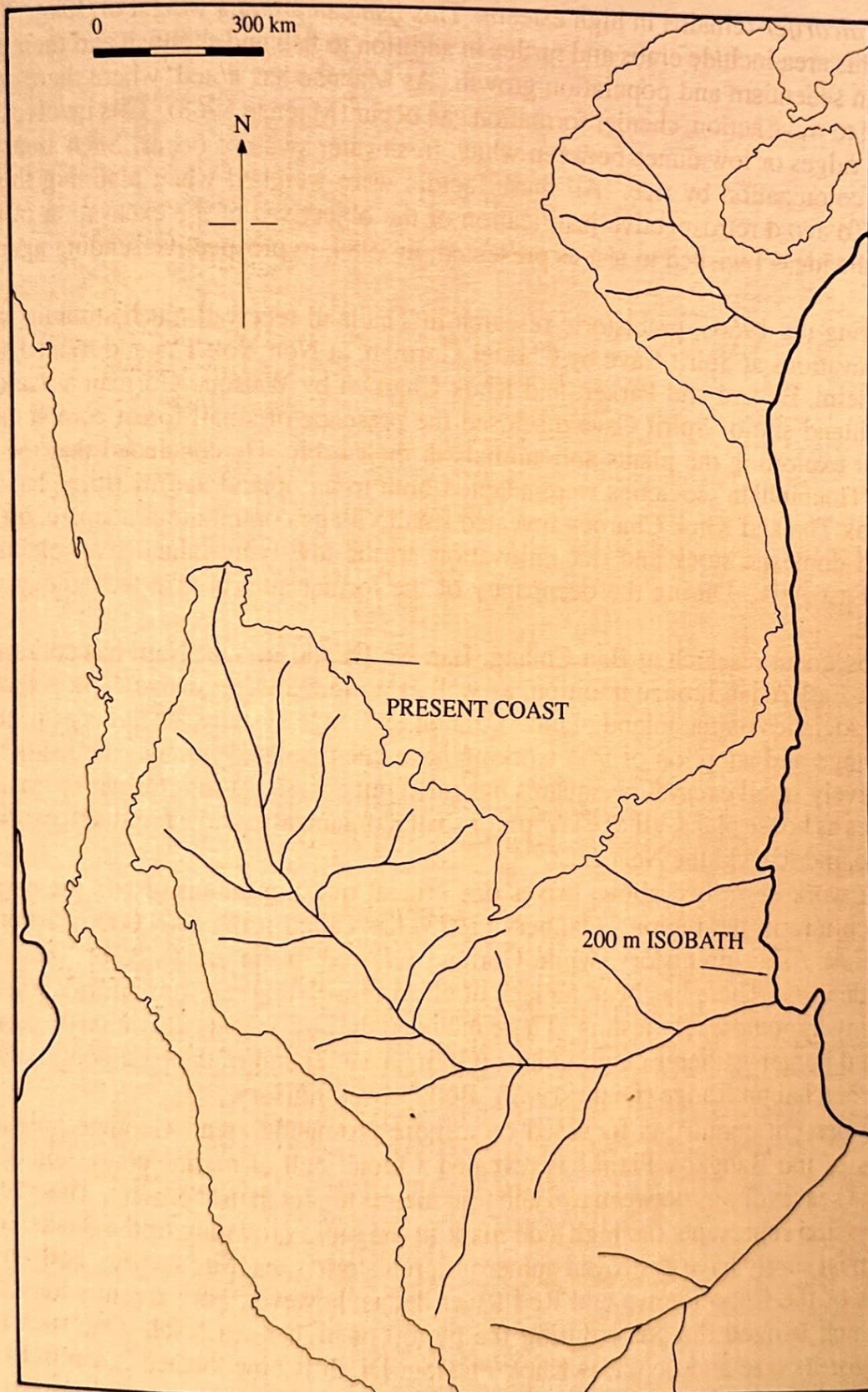


FIG. 4. The probable coastline of South-East Asia prior to the major post-Pleistocene rise in sea level

which *Lates calcarifer* remains in high esteem. This fish can attain a weight of 30kg. The coastal resources of this area include crabs and turtles in addition to fish and shellfish and their abundance favours human sedentism and population growth. As Macnae has noted, where there are shallow seas subjected to wave action, chenier formation can occur (Macnae 1968). This involves the build-up of parallel ridges or low dunes between which freshwater swamps occur. Such areas are likely locations for colonization by rice. All these factors were weighed when planning this research programme. To avoid retrospective justification of the objectives of the excavation of this site, I include here the ideas I wished to test as presented, in 1984, to prospective funding agencies.

During the 1960s, prehistoric research in Thailand received much stimulus with the excavations at Spirit Cave by Chester Gorman, at Non Nok Tha and related sites by Solheim, Bayard and Parker, and Khok Charoen by Watson. Gorman's work on the highland site of Spirit Cave disclosed the presence of small forest communities adept at exploiting the plants and animals in their orbit. He concluded that the so-called 'Hoabinhian' societies were adapted both to an upland and maritime habitat. Non Nok Tha and Khok Charoen revealed small village communities adapted, on the basis of domestic stock and rice cultivation, to the low-lying inland river plains of South-East Asia. During the occupancy of the former site, bronze technology was adopted.

Subsequent research at Ban Chiang, Ban Na Di and in Viet Nam has confirmed a South-East Asian bronze tradition, as well as a rapid and pervasive deployment of human societies on the inland plains. Data on exchange systems, social organization and change and adoption of iron working have been isolated, though the restriction to relatively small excavation squares has ruled out access yet to information on such variables as house plans, village layouts or spatial organization now familiar to workers in Mesoamerica and the Near East.

The work described above leaves one crucial question unanswered: the origins of agriculture in the region. Flannery (1973) has called it the \$ 64,000 question in South-East Asian prehistory, while Gorman referred to the existence of 'the silent two millennia'. There has been no lack of effort in isolating relevant information and advancing hypotheses for testing. These included the notion that cultivation originated in upland hunter-gatherer communities (Gorman 1977) and in the piedmont foothills of the Phetchabun Range (Penny 1982). Both proved illusory.

The present enquiry is focussed on a more promising area. Geomorphological analysis of the Bangkok Plain has revealed a broad belt of marine clays, laid down when the sea level was between two and four metres higher than at present. This marine transgression represents the high-tide mark in the rapid drowning of the Sunda Shelf which must surely have destroyed numerous prehistoric sites. Site surveys, both on the margins of the Chao Phraya and Red River deltas, however, have recently identified sites which fringed the coast during the period of higher sea level. One such site, unique for its size and depth, is Khok Phanom Di. It is now located 20km from the sea shore. It covers 5 ha and has a depth of 13m.

Two limited test excavations have provided glimpses of the site's rich potential. The preservation of biological remains is excellent, and the marine species depict a

mangrove/estuarine habitat of the type which Harlan feels would have sustained wild rice (Harlan 1977). Three metres below the mound's surface there is a cemetery in which bodies were inhumed together with whole pots, and shell and stone jewellery. Burials continue to the base of the mound, the lower ones being covered in red ochre. Pottery is found in basal levels, which radiocarbon dates suggest belong to the sixth or seventh millennia BC. The site was probably abandoned during the period 1000–2000 BC. No trace of metal has been found there.

It is self-evident that the origins of rice cultivation are of critical importance to an understanding of the processes involved in the massive expansion of human settlement now documented for the period 3000–1000 BC. At least two models for the origins of rice cultivation are feasible. One resembles that formulated for the Near East by Binford, followed by Flannery. It has the following principal features: coastal settlement in the few rich coastal/estuarine enclaves was sedentary. The occupants used pottery vessels, maintained cemeteries and exchanged goods with inland communities. Their economic base was the exploitation of marine resources. Sedentism fostered population expansion, and settlements fissioned at critical population thresholds (a figure of 300–400 people is a common ceiling for autonomous communities). When all suitable coastal terrain was taken up, new settlements were founded in the more marginal zone behind the seashore. It was in such areas that rice manipulation from a shy-seeding perennial to an annual variety was undertaken, a process which made possible the expansion of the human settlement which has been archaeologically documented.

An alternative model seeks stress in the actual coastal/estuarine sites, particularly as fluctuating sea levels impaired predictable food resources. This stress made the manipulation of rice a highly adaptive strategy, particularly as the sea level fell and coastal resources became increasingly remote. The campaign at Khok Phanom Di will commence with an areal excavation to obtain social, biological, economic and technological information at a site which, it is held, will straddle the period of agricultural origins. Analysis of the data will be multidisciplinary. As a result of fine-screening and flotation, rice remains should be obtained. The degree of cultural continuity will be considered through a fine-grained analysis of the ceramics and mortuary behaviour. The health of the people before and after the adoption of rice cultivation will be studied through the human skeletal remains. Again, the nature of the early coastal orientation which is evidenced in the basal four to five metres at the site will be closely examined both in terms of material remains and the changing environment. Dr B.K. Maloney will take pollen cores for palynological analysis and Mr B.A. Vincent will conduct preliminary pottery analysis on the site to obviate expensive transport of tons of sherds.

These different approaches have the common theme of identifying the date of agricultural origins, testing explanatory models and assessing its impact. An intensive site survey, conducted along similar lines to those described for the Valley of Mexico by Sanders *et al.* (1979), has revealed agricultural settlement impinging onto low terrace soils which flank the marine clays of the Bangkok lowlands.

Actual excavation of so deep and richly stratified a site presents awesome technical problems. It is proposed to commence with one 10m by 10m square at the highest point

(12.3m above the plain). Soils will be screened and flotation used to recover microbiological remains. Particular emphasis is placed on areal excavation, because it is considered important to seek the complete burial units and structures, parts of which have been noted in small and preliminary test squares.

This statement represents my views and plans in 1984, as the commencement of excavations neared. The following section describes the excavation method as it evolved in the light of experience. The balance of this report addresses the cultural objectives of the programme.

THE EXCAVATIONS: PREVIOUS RESEARCH

Khok Phanom Di was first recognized as an important archaeological site in 1978, when the northern edge of the mound was bulldozed in order to construct a path to the temple. As a result, archaeological material, including human remains, shell beads and bracelets, potsherds, polished stone implements, clay anvils, and the remains of fish, shell and shellfish, was encountered. A clear stratigraphical build-up containing a series of ash lenses, red soil, charcoal lumps, potsherds and shell remains, especially those of *Anadara* sp., could be seen at both exposed walls. Suchitta (1980) and Noksakul (1981) investigated the site and reported that Khok Phanom Di was formerly a prehistoric settlement with a coastal orientation. In the same year, Suchitta (1984) conducted an ethnoarchaeological investigation. Three sampling areas were chosen, two along each side of the bulldozed walls and the other at the base of the nearby mound. They were designated Sections A, B and C. Each was 3m wide but the depth varied from 4.10, 3.40 and 3.10m respectively. This was measured from the mound's surface to the road level. None was dug down to the natural soil (Suchitta 1980:38-47). A single radiocarbon date of 3530 ± 280 BP (1950 ± 350 BC MASCA corrected) was obtained from a charcoal sample extracted from Section A at a depth between 380 and 390cm (Suchitta 1980:117a). As represented in his sections, food remains comprising shell and shellfish adapted to mangrove and marine conditions were abundant at the bottom and their numbers reduced upwards. Comparing those archaeological findings with the ethnographic information, Suchitta (pp. 110-15) concluded that the prehistoric inhabitants adapted themselves to their coastal habitations and relied on marine resources when the sea was located near the site. On the other hand, the present occupants have no direct relationship with the sea but exploit their immediate surroundings. The preliminary study of the past versus the present use of Khok Phanom Di by Suchitta is significant in that it reveals a clear reference on human adaptations to local environments through time.

Subsequently, two separate test squares were opened. The first, by Noksakul, involved a 3m by 5m square, excavated in 1979. The second was directed by Pisnupong in 1982, when he excavated a 3m by 7m square (Noksakul 1981; Pisnupong 1984). Both excavations have yielded similar cultural remains, which implied an overall pattern of site use as both a habitation and a cemetery within a stratigraphic depth of about 8.5m. The lower strata contained numerous remains of fish, shell and shellfish which became less common in the upper 2m, as was found by Suchitta in his stratigraphic sections. Both excavations have confirmed Suchitta's hypothesis that the prehistoric inhabitants had a maritime adaptation. Other cultural materials including fragments of pottery vessels, clay anvils, polished stone implements, clay net sinkers, bone fish hooks and harpoons. These were represented from the basal layers. Human materials were also encountered from these

excavations, thirteen burials from 1979 and nine from 1982. They were found concentrated in the upper layers with the exception of burial 11 from the 1979 excavation which was found at a depth of 6.90–7.00m below datum (Noksakul 1981:30–42, Pisnupong 1984:155–73). Ten human skeletons from Noksakul's test pit were selected for radiocarbon determinations at the Atomic Energy for Peace Authority, Bangkok (Patarungsee 1980:53–5). The earliest burial (burial 11) was dated to 6800 ± 420 years BP (uncorrected date). The latest, burial 2, which was found at 2.30–2.40m below datum, was dated to 2100 ± 290 BP (uncorrected date).

KHOK PHANOM DI: THE 1985 EXCAVATION

The top of Khok Phanom Di is shaped rather like a shallow saucer (Fig. 5). There is a palpable rise round the perimeter, one part being over 5m higher than the centre of the mound. At first it was decided to excavate at the highest point, but this was changed for three reasons. First, the edges of the mound have been severed by the access road, and careful consideration of the stratigraphy at the exposed edge suggested a late and deep accumulation of the remains of pottery firing. These layers are very unstable and prone to slumping. It would clearly have been dangerous to expose a square up to 13m deep with the uppermost few metres being so liable to erosion. It was therefore resolved to open a square as close as feasible to the centre of the mound. This reflected the wish to excavate near Pisnupong's test square, so that we could predict with confidence forthcoming stratigraphic changes in the light of his section. Moreover, it was considered likely that the centre of the mound would have the longest cultural sequence. In the final analysis, the choice of the site within the central area was determined by the Abbot of the temple which is located on the site, for he did not wish us to fell certain trees. Our square was therefore set between the trees and reasonably close to the site of Pisnupong's earlier excavation.

My previous experience of excavating in South-East Asia involved a linear arrangement of squares normally no more than 3m wide. This is the width most easily covered by a roof supported by bamboo poles and covered in rice thatch. When inhumation burials are involved, this configuration dictates that most of the burials will be only partially present in the excavated area, with a consequent reduction in their value for assessing social organization. Moreover, controlling an excavation comprising four or more small squares, each up to 4 or 5m deep, is not straightforward and much time is spent ascending and descending ladders. My decision to dig one square measuring 10m by 10m involved a roof constructed of 13m steel trusses raised on hardwood supports. A low brick wall was constructed round the confines of the excavation area as a safeguard against flash floods. Since the excavation lay in a depression, it was necessary to provide a drain running 80m to the edge of the mound. This incorporated 60cm concrete pipes with brick-lined sludge traps every 5m of its length. Even with this substantial drain in place, monsoon downpours threatened to inundate the square and collapse its edges on several occasions.

Having constructed the roof and walls, four concrete posts were surveyed into position at the corners of the square, which was laid out on the cardinal points of the compass. Iron hooks were embedded into each post and set to overlie the corners. Each hook was provided with a tape measure. The location of the position of finds within the square was then ascertained with the use of a small computer programmed to take the four individual measurements from each corner to the findspot and calculate the depth of the point and its distance from the walls of the square. This

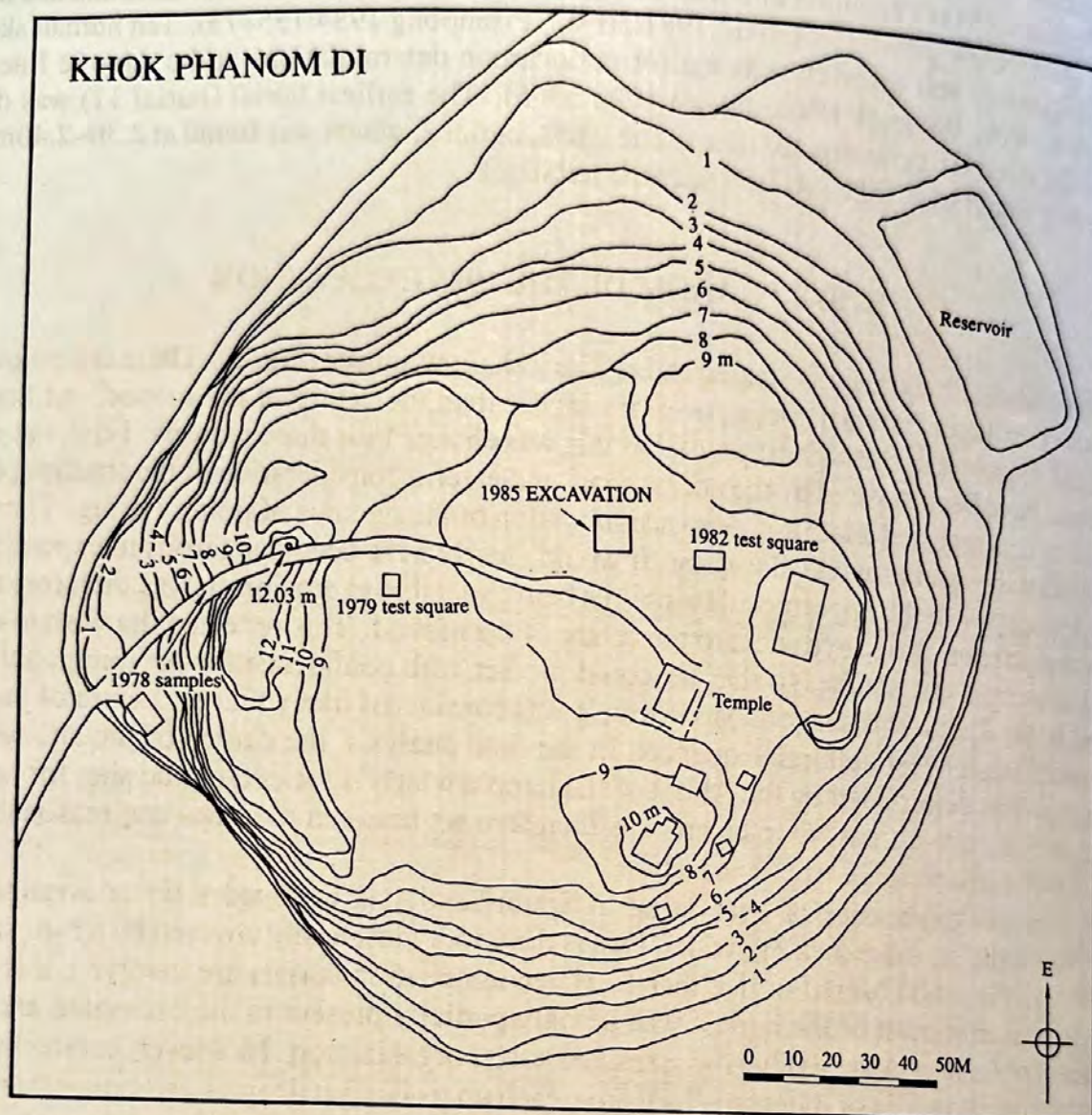


FIG. 5. Plan of Khok Phanom Di, showing the areas excavated

proved increasingly valuable the deeper we penetrated the site. In order to guarantee vertical edges in so large and deep a square, we strung tightened metal wires over each side of the square and suspended from each a heavy metal plate by means of a pulley. As this was lowered, it was designed just to touch the edge of the square and so provide a sure guide to the verticality of the walls.

The square was then divided into four quadrants designed as manageable operational units in the excavations to follow. There were many potential areas of confusion, not only because of the magnitude of the operation, but also because those working there were either English or Thai speakers, with only a handful being bilingual. Consequently, each quadrant was colour-coded.

Small coloured tabs were prepared for attachment to buckets, screens, washing basins and drying racks. Since only one context in a quadrant was excavated at any given time, a colour could only refer to one source. In practice, it was possible to excavate and process material from two quadrants simultaneously. Only when one such context was completely processed and bagged was a further one in the same quadrant opened to excavation.

The provision of the infrastructure for the excavation continued with particular attention being paid to the analysis of materials and their conservation on site. The door from the enclosed area round the excavation was positioned so as to give access to the screens. These, each with a mesh of 5mm, were suspended from a scaffold for easy movement and the screener removed any pottery, shell or bone not recovered in the square itself and put it in a colour-coded bucket for washing. Water was obtained from the temple's pump and reticulated via pipes and a tap to each washing point. All materials from a given context were sorted. Fragile materials were sent to the on-site conservator for initial treatment. The vast majority of finds, however, comprised potsherds, animal bone and shellfish remains. These were washed separately and sent to different drying racks. Once dried, the shells were sorted into species, counted and bagged. All animal bone was bagged. Brian Vincent, who was in charge of pottery analysis, undertook a detailed sorting of the cleaned material in terms of fabric and finish. The cord-marked and plain body sherds were classified according to fabric on site, counted and weighed, and then set aside. All other pottery remains were bagged for further laboratory analysis.

Having put in place the screens, drying racks, tables for conservation and on-site analysis and the necessary roofing, attention was paid to illumination in a square destined to become deep and dark, particularly during the monsoon. Electricity lines were run from the temple switchboard, each of the four main cables feeding a shaded 500 watt bulb over the quadrants. This provided ideal laboratory conditions for excavating. Power points were provided for the light-table to facilitate the copying or tracing of plans. It was also necessary to manufacture and locate the flotation equipment. Jill Thompson, who was in charge of this aspect of the research, designed and oversaw the local manufacture of a stainless steel container with ancillary screens. Anat Bamrungwongse then undertook the necessary plumbing from the temple tank. Having located the facility on the sloping edge of the mound, there was a sufficient head of water to process the soils set aside for flotation. Two rows of racks were also provided to dry the 'flot' prior to sorting and bagging. After this two month preparatory stage, much of which was undertaken by Amphan Kijngam and Anat Bamrungwongse, excavations commenced on 29 December 1984, and continued without a break until 28 July 1985.

The excavation began with the removal of successive quadrants. If the layer being excavated appeared homogenous, then a 10cm 'spit' was removed and the exposed surface scraped clean to reveal any discontinuities, postholes or pits. These surfaces were planned and the discontinuities, if any, removed separately before proceeding. As a glance at the sections of the site reveal, there were numerous superimposed lenses. These varied in composition. The origin of some was clear: shell 'middens' and ash lenses were easily recognized and excavated and recorded separately to their margins. Whenever these lenses were recognized, however, whatever their origin or degree of clarity, they were accorded special status in excavation and recording on plans. This naturally involved separate screening, washing and bagging. In the more complex stratigraphic contexts, particularly in the basal 3m-4m, it was not unusual to have forty or fifty such special contexts in one quadrant. Each structural feature, such as postholes, pits or hearths, was provided with a unique

number incorporating the quadrant, layer and/or spit at which it was first diagnosed. The depth of each was recorded once its contents were removed.

When excavations began, it was found that the soils were exceptionally hard. Despite valiant efforts, trowelling the deposits proved impossible, and with reluctance, it was decided first to break the deposits with a heavy iron mattock. Despite the power of these implements, in the right hands they can be used with circumspection in loosening the matrix prior to trowelling. Equally hard concretions were encountered at greater depths, again demanding recourse to the mattock. Whenever possible, however, the trowel was used and in the removal of burials, dental probes, brushes and air-bellows were employed. When an artefact other than a potsherd was encountered, it was accorded a unique catalogue number, and its location was ascertained with the three-dimensional recording system already described. The object of this system was to record the spatial distribution of different classes of artefact. It was only partially realized. This reflects the build-up of concreted soil over artefacts which prevented their identity being appreciated until they had been cleaned. In a number of cases, for example, worked bone and shell were not recognized until the material was subjected to special cleaning procedures in New Zealand.

The clear stratigraphy meant that graves were usually recognized well above the level of the skeleton. In the case of burial 15, the depth of the grave cut attained almost a metre. On recognizing a potential grave on the basis of the distinction between the mixed grave soil and layers through which it was cut, the fill was removed and human remains exposed before proceeding deeper. The human skeleton and any associated grave goods were photographed and drawn after cleaning, and soil samples from different parts of the body retained for future analysis. The human remains were cleaned as far as possible and packed for shipment within the square to avoid possible damage and needless exposure.

The site revealed numerous ash lenses rich in charcoal as well as hearths in which charcoal was particularly abundant. Radiocarbon samples were taken from all such contexts by placing the charcoal directly into aluminium foil, taking care not to touch it. Smoking was strictly forbidden in the square or its enclosed environs. The aluminium foil, double wrapped, was then placed into two plastic bags. These were not opened until the material was prepared for laboratory analysis.

Sections were drawn during the last three weeks of the excavation. The roof had sheltered the lenses from direct sunlight, and colour retention was excellent. This task was undertaken using standard levelling and recording procedures, the colour of each context being recorded with Munsell colour charts. A sample of each context was taken from each of the sections against the need for subsequent analysis. A representative column of the deposits 50cm wide was taken, wrapped in polythene and boxed for protection in transit. When natural sediments were reached at the base of the square, an attempt was made to take a deep core boring, but this proved impossible because the sediments were too hard to admit the end of the borer. Samples of the basal material were taken instead.

When the excavation was completed, burials which extended only partially into the square remained and a very difficult decision was taken. Rather than leave the exposed bone to the serious risk of looting for the associated artefacts while the square remained unfilled, we excavated the remaining bones and grave goods. As a result of this unsatisfactory but unavoidable procedure, all the burials available for analysis are complete.

Only after all the ancillary samples were taken, including the stratigraphic column, was the square filled. All the items approved for overseas analysis and shipment were then crated and

loaded on site into a container for removal to Dunedin. The container arrived in January 1986, just one year after excavations commenced. The balance of this report will describe the subsequent analyses.

II. CULTURAL ASPECTS OF THE SEQUENCE

THE RADIOCARBON CHRONOLOGY

THE dating of the cultural sequence at Khok Phanom Di as identified during the 1985 excavation is based on eighteen radiocarbon determinations spanning layers 11-6. Six samples were processed in the Laboratory of the Institute of Nuclear Sciences, Department of Industrial and Scientific Research, Wellington, New Zealand. The other twelve samples were processed in the radiocarbon dating laboratory of the Australian National University. No dates have been obtained for layers 5-1 because no sufficiently well-provenanced charcoal was recovered. The environmental sequence in the area of the site was dated by nine determinations undertaken by the AMS facility at the University of Oxford. All the twenty-seven dates are set out in Table 1, but the AMS series is considered in a later volume on Khok Phanom Di by B.K. Maloney.

Each sample of charcoal was taken from a clearly *in situ* context, mostly involving hearths or discrete spreads of ash and charcoal. The dates supplied by the laboratories have been corrected for the secular effect after the tables supplied by Pearson and Stuiver (1986). Two of the eighteen dates obtained from cultural contexts within the site are so inconsistent with the balance that they are ruled out from further consideration. NZ-7020 is clearly too late, while NZ-7063 is much earlier than the other sixteen determinations from cultural contexts. These sixteen dates are held to indicate a rapid build-up of cultural remains over a period of between about 2000 and 1500 BC. The chronological context of layers 5-1 is speculative, but a short duration is suggested, perhaps covering no more than a century after 1500 BC.

THE DISTRIBUTION OF BURIALS

The distribution of human interments at Khok Phanom Di, both in terms of chronology and spatial distribution, must be appreciated within the context of the overall stratigraphic build-up, before we proceed with a description of the various groups of burials which have been identified. Part of the mortuary ritual involved the cutting of a grave. Clearly, it is important to identify the level from which the grave was cut, in order to place graves in a relative sequence. At Khok Phanom Di, the survival of prehistoric stratigraphic contexts was so consistently good that it was nearly always possible to recognize an interment from the grave silhouette long before the human remains themselves were encountered. We therefore know that the earliest grave at the site was cut at a depth of 6.51m below datum, and the latest was recognized at a depth of 1.20m below datum. Human inhumation burials therefore cover the period during which 5.31m of cultural deposits accumulated. Only very rarely did any of the 154 *in situ* burials intercut and disturb earlier ones.

Part of the excavation procedure was a regular cleaning, by scraping with a trowel, of freshly exposed surfaces. When the square or quadrant under active excavation was cleaned over its entire surface, the colouration and texture were examined for patterned differences. By this procedure, postholes and pits, the margins of shell lenses, hearths and ash spreads were identified and drawn. This technique also revealed the outlines of graves. Each grave, and indeed all distinct contexts

so identified, were then excavated individually. The first objective after recognizing a possible grave, therefore, was to remove the grave fill as a unit and expose human remains. Once these the human remains and any associated offerings, soil samples were taken from various parts of the grave to permit subsequent laboratory analyses and the bones were cleaned to allow both photographic recording and detailed drawings to be made. At the same time as the burial itself was under investigation, the analysis of the pits, postholes and midden spreads in its vicinity were recorded to enable any structures or grave-side ritual activity to be identified.

Even during the excavation itself, it became evident that the distribution of burials (abbreviated 'B') was far from random. Indeed, interments were encountered in clear spatial relationships to others. This is clearly apparent by an inspection of figures 7 to 13. In considering the chapters which follow, it is important for the reader to appreciate that we are dealing essentially with two variables. First, there is the cultural variable: during the build-up of deposits comprising layers 10-11, burials were distributed in nuclei which we have designated clusters (Figs. 17-20). In layer 10, we have clusters A to G. These clusters comprise burials packed close to each other and distinguished from other clusters by space devoid of interments. Clusters A, C and F are defined by such open spaces. In the case of clusters B, D, E and F, however, interments were situated near the edges of the excavation square and there is a strong likelihood that other burials belonging to these clusters remain undiscovered.

During the build-up of layers 5-9, the mortuary ritual showed new developments. One of these was the preferred disposal of the dead in a row with no close proximity between individuals. This is clearly seen in figure 12. Two women belonging to this period were interred under a raised structure. At the same time, the ritual attending the dead also evolved: while graves still pointed towards the east, there was an elaboration of structures built over groups of graves and an increase in the disparity between rich and poor sets of grave goods. There are two groups of graves set out in a row within this part of the sequence, designated clusters H and I. There are also groups of two or three burials set apart from all other burials found at the site. The first, comprising burials 14, 15 and 16, are splendidly rich and elaborate interments (Fig. 11). Secondly, there are the three burials associated with the raised structure (6, 18 and 19, figure 12).

In terms of cultural variables, then, we have recognized eleven groupings, designated in the main by the prefix 'cluster'. There is also the chronological variable, which has made it possible to sub-divide these clusters into sequential, smaller sets. In the first instance, when we examine the depth of the grave cuts below datum, it is evident that there were hiatuses in mortuary activity. This is seen in figure 6 where the depths of graves belonging to our designated groups are set out. On the basis of such periods of burial activity at this part of the site, we have recognized seven successive so-called 'mortuary phases', abbreviated below as 'MP'. We now come to a further variable which concerns both chronological and cultural issues. When we examine the fine details of the stratigraphic succession of burials within each of the culturally and spatially defined clusters, it is evident that small numbers of individuals were buried as a group, to be followed in many instances by further small groups. At times, the hiatus between the burial of a small group was brief, almost imperceptible. At other times, the hiatus was quite lengthy, measured in terms of the build-up of intervening deposits, but the subsequent return to burial activity unsparingly brought people back to the same place to make their interments. It is concluded that the occupants of the site were well aware where their predecessors were buried. Only very rarely

indeed were earlier graves disturbed by any form of excavation, be it pits, postholes or further graves.

The subdivision of clusters into successive burial events has been recognized with the term 'stage'. In the case of cluster C, there are ten such stages. For cluster B, there were only two. The interrelationships between these clusters, with their component stages, are set out in figure 6. When we come to offer a social interpretation of the mortuary remains in the final volume of this excavation report, it will be found that it is possible to refine these stages even further, and to identify what we feel are successive generations of the same lineage.

In the descriptive section which follows, we will commence with a consideration of MP1. This phase incorporates the six earliest graves, which were located without any clustering. We will then consider clusters A-G, which belong to phases 2-4. There follows consideration of the interments belonging to MP 5, 6 and 7. Mortuary phase 5 incorporates a handful of outstandingly rich individuals; MP6 involves the three burials found associated with a raised structure and cluster H, which lies in front of the building. Finally, MP7 comprises the few interments assigned to clusters I and the isolated B12. One of the principal objectives of the chapters which follow is to illustrate as economically as possible the characteristics of each burial in terms of layout, sex, orientation and grave goods. Further illustrations set out the burials within each stage of every cluster and the associated evidence for structures and mortuary ritual. It should, therefore, be possible to offer alternative interpretations to that presented in the analysis of this site.

The burials of Khok Phanom Di were placed in conjunction with a wide range of other activities, including the deposition of middens, the build-up of ash lenses and the cutting of pits. The interpretation of the mortuary remains can only be made effectively in the context of these associated deposits. Consequently, there follows a description of the stratigraphic sequence at Khok Phanom Di.

FIG. 6. The relationships, in terms of metres below datum, of the various stages within each of the burial clusters which have been identified. Abbreviations are as follows: the prefix A-1 refers to the cluster, the number following being the stage within each cluster. RS refers to the burials under the raised structure.

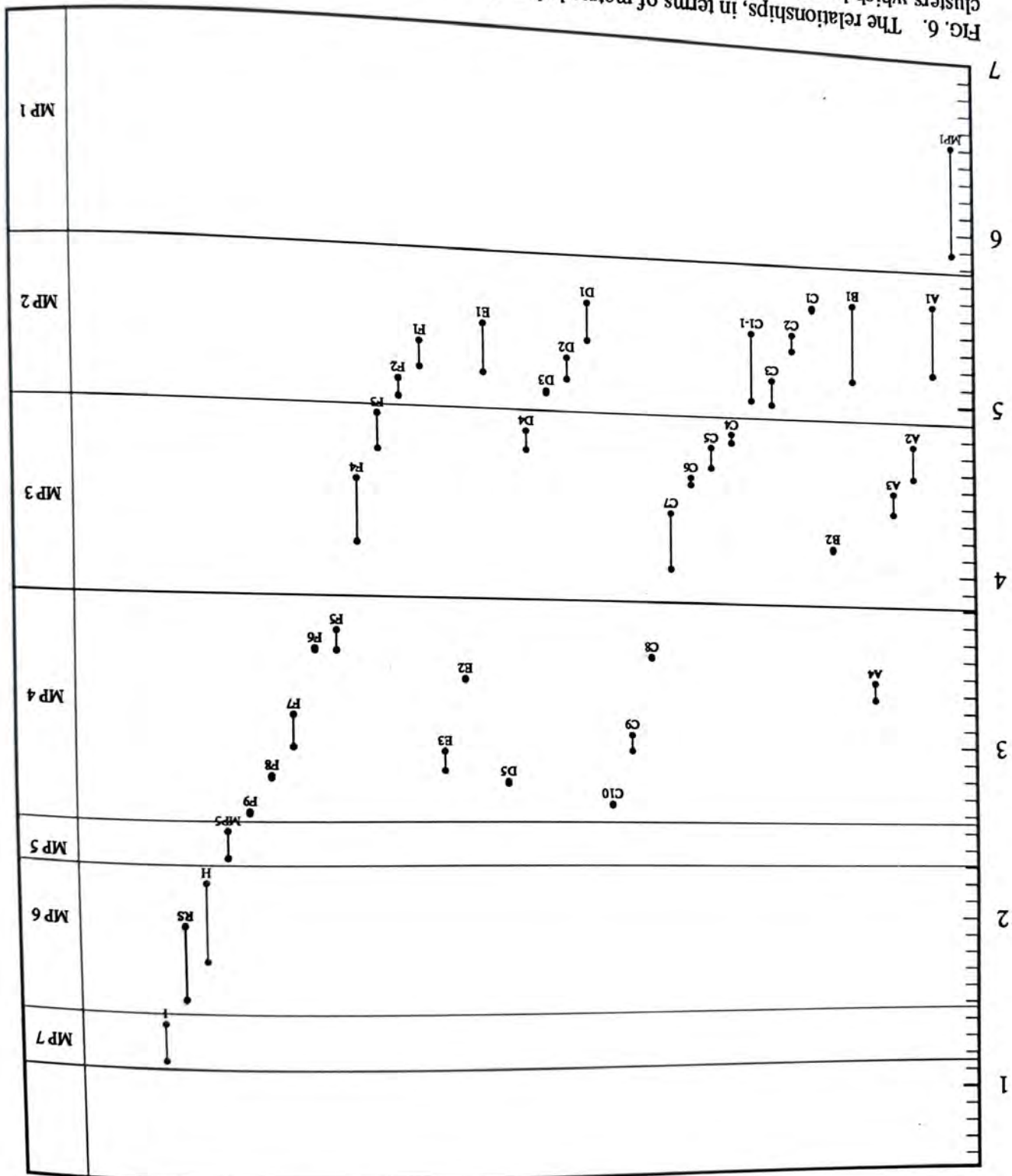


TABLE 1: Radiocarbon dates from Khok Phanom Di and associated pollen cores

Context	Source	Lab. no.	Radiocarbon age (BP, $\pm 1\sigma$)	Calibrated date years BC/AD
Layer 6:6	charcoal	ANU-5482	3310 $\pm$ 128	1930-1310 BC
Layer 8:2	lens 4 ash lens	NZ-7020	1910 $\pm$ 235	590 BC-AD 665 (92%)
Layer 8:2	lens 4 ash lens	755 BC-AD 680 (2%)		
Layer 8:2	lens 4 ash lens	ANU-5483	3430 $\pm$ 80	1930-1525 BC
Layer 8:3	lens 6 ash charcoal	NZ-7021	3780 $\pm$ 120	2565-1895 BC
Layer 8:7	lens 10 charcoal	NZ-6973	3280 $\pm$ 140	1925-1225 BC
Layer 9:1	white ash lens	NZ-7033	3290 $\pm$ 110	1812-1310 BC (94%)
Layer 9:1	white ash lens	1871-1842 BC (2%)		
Layer 9:6	charcoal under lens 9	NZ7060	3680 $\pm$ 90	2390-1780 BC
Layer 9:7	hearth	NZ-7063	4410 $\pm$ 300	3685-2275 BC
Layer 10:6	lens 3 hearth	ANU-5484	3280 $\pm$ 140	1925-1225 BC
Layer 10:13	lens 10 charcoal lens	ANU-5485	3410 $\pm$ 110	1975-1545 BC
Layer 10:15	lens 11 ash lens	ANU-5486	3610 $\pm$ 90	2270-1740 BC
Layer 10:19	hearth 7	ANU-5487	3490 $\pm$ 110	2130-1525 BC
Layer 10:21	hearth 15	ANU-5489	3420 $\pm$ 90	1950-1515 BC
Layer 10:22	hearth 19	ANU-5488	3580 $\pm$ 100	2200-1680 BC
Layer 10:24	charcoal in ash lens	ANU-5491	3530 $\pm$ 80	2125-1680 BC
Layer 10:25	hearth 27	ANU-5492	3480 $\pm$ 110	2120-1525 BC
Layer 10:25	charcoal	ANU-5490	3730 $\pm$ 100	2450-1905 BC
Layer 11:2	hearth 1	ANU-5493	3560 $\pm$ 80	2130-1700 BC
KL2	0.87-0.91m	Ox-A-1354	3360 $\pm$ 120	1955-1410 BC
KL2	1.46-1.50m	Ox-A-1355	560 $\pm$ 150	1125-AD1665
KL2	2.25-2.29m	Ox-A-1356	5560 $\pm$ 160	4770-4040 BC
KL2	3.50-3.54m	Ox-A-1357	6060 $\pm$ 200	5370-4515 BC
KL2	4.82-4.86m	Ox-A-1358	6280 $\pm$ 130	5475-4940 BC
KL2	4.91-4.95m	Ox-A-1359	6400 $\pm$ 300	5870-4685 BC
BMR2	0.88-0.92m	Ox-A-1449	3960 $\pm$ 100	2770-2145 BC (88%)
BMR2	3.96-4.00m	Ox-A-1360	6560 $\pm$ 100	5635-5310 BC (94%)
BMR2	6.60-6.64m	Ox-A-1361	6610 $\pm$ 140	5735-5240 BC

All are based on a 5570-year half life. Dates in the range 500-2500 BC are based on the Pearson and Stuiver (1986) calibration. Klein *et al.* (1982) has been used to correct all the others. All dates are expressed at the 95% confidence interval except where stated. KL2 and BMR2 are core locations respectively 170m and 200m north of Khok Phanom Di

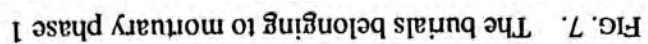
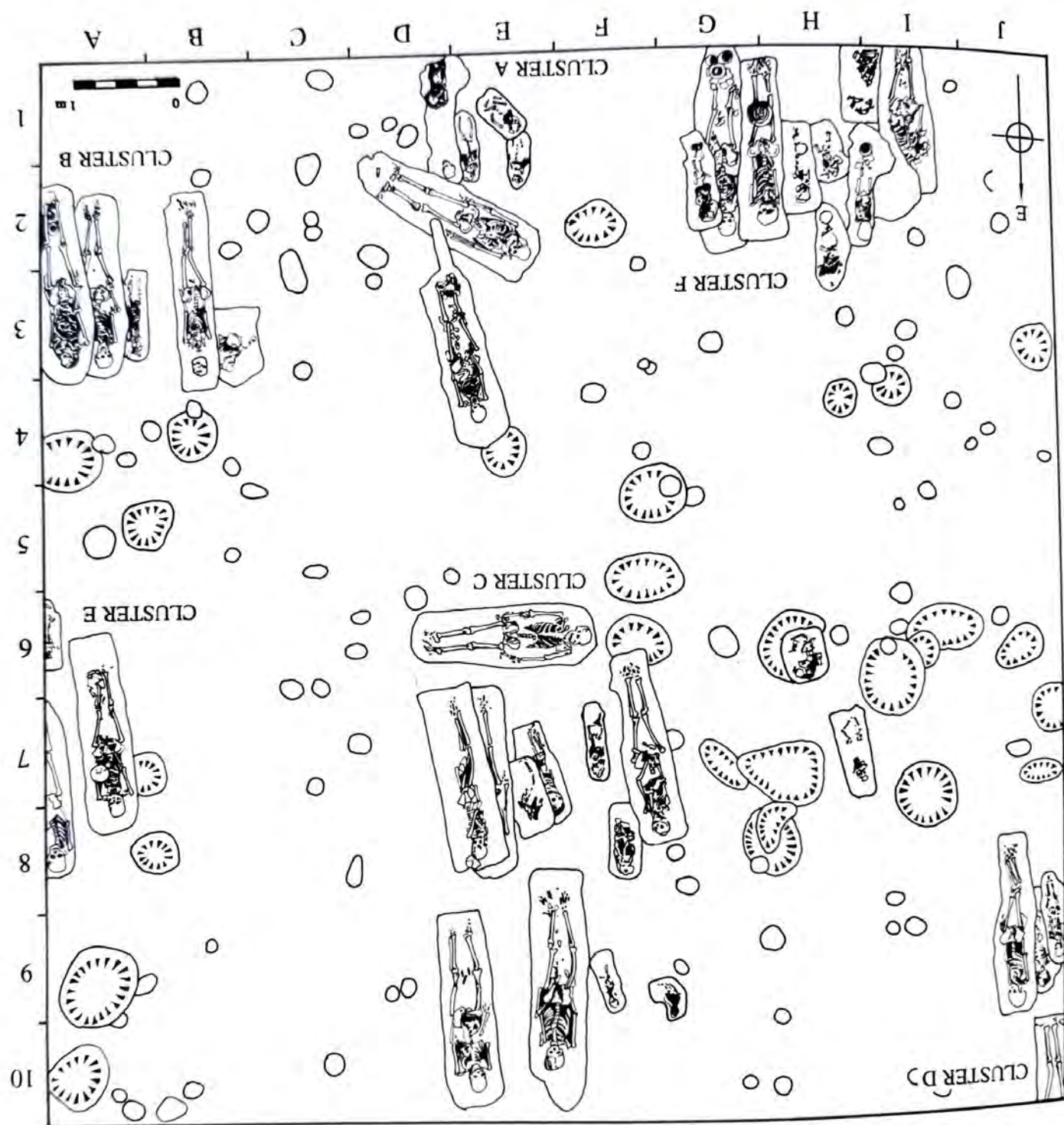
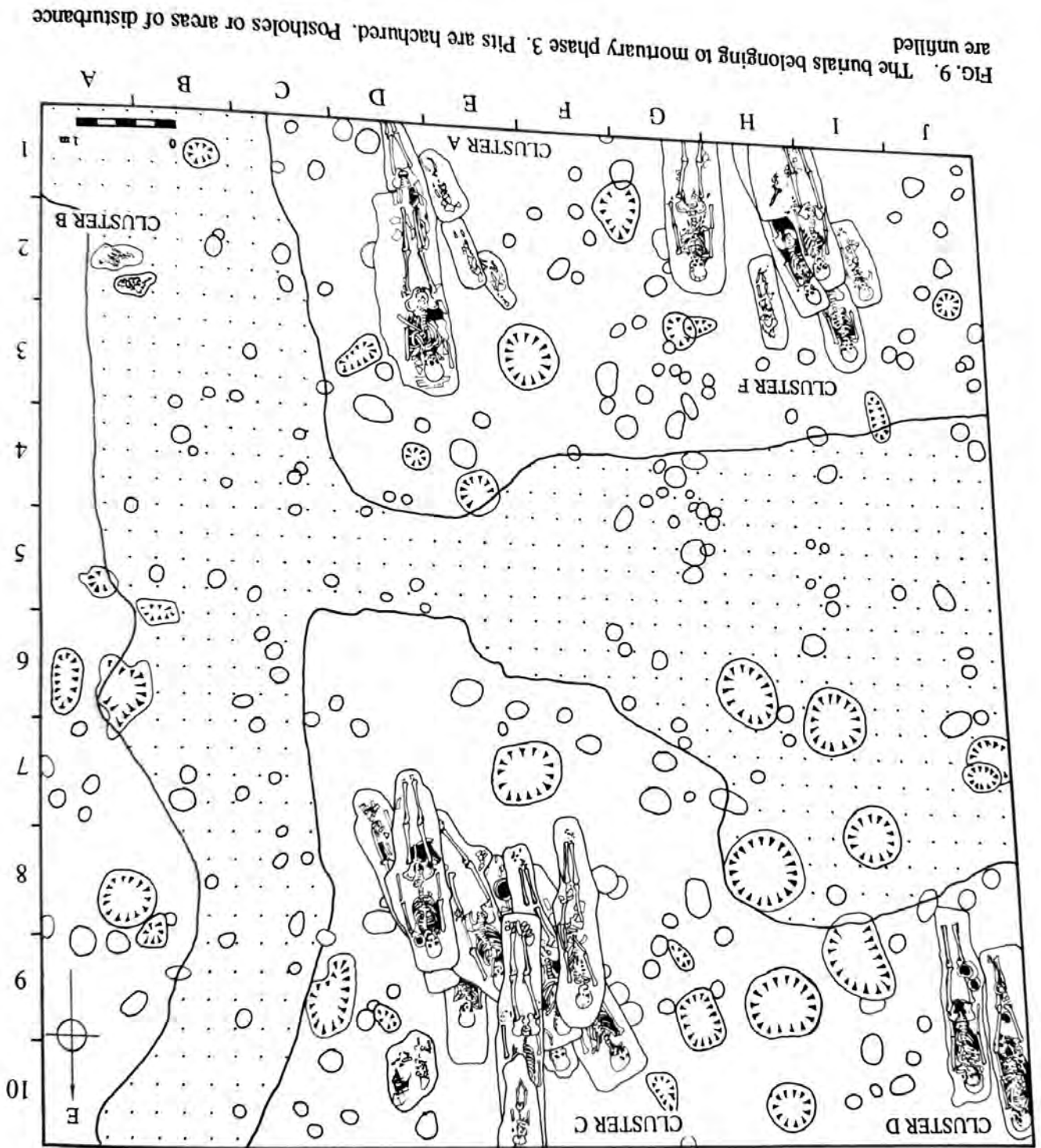


FIG. 8. The burials belonging to mortuary phase 2. Pits are hachured. Postholes or areas of disturbance are unfilled





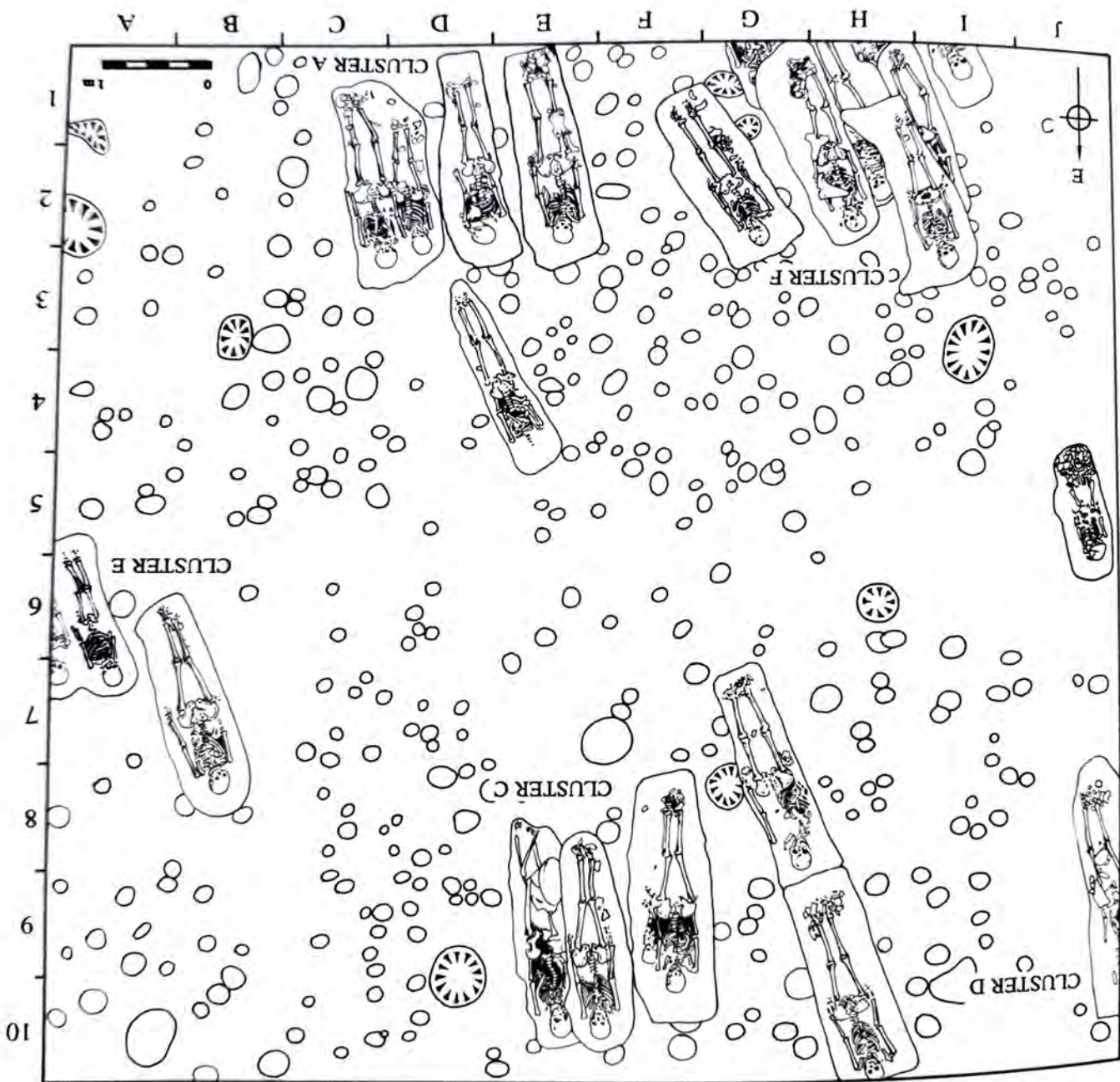
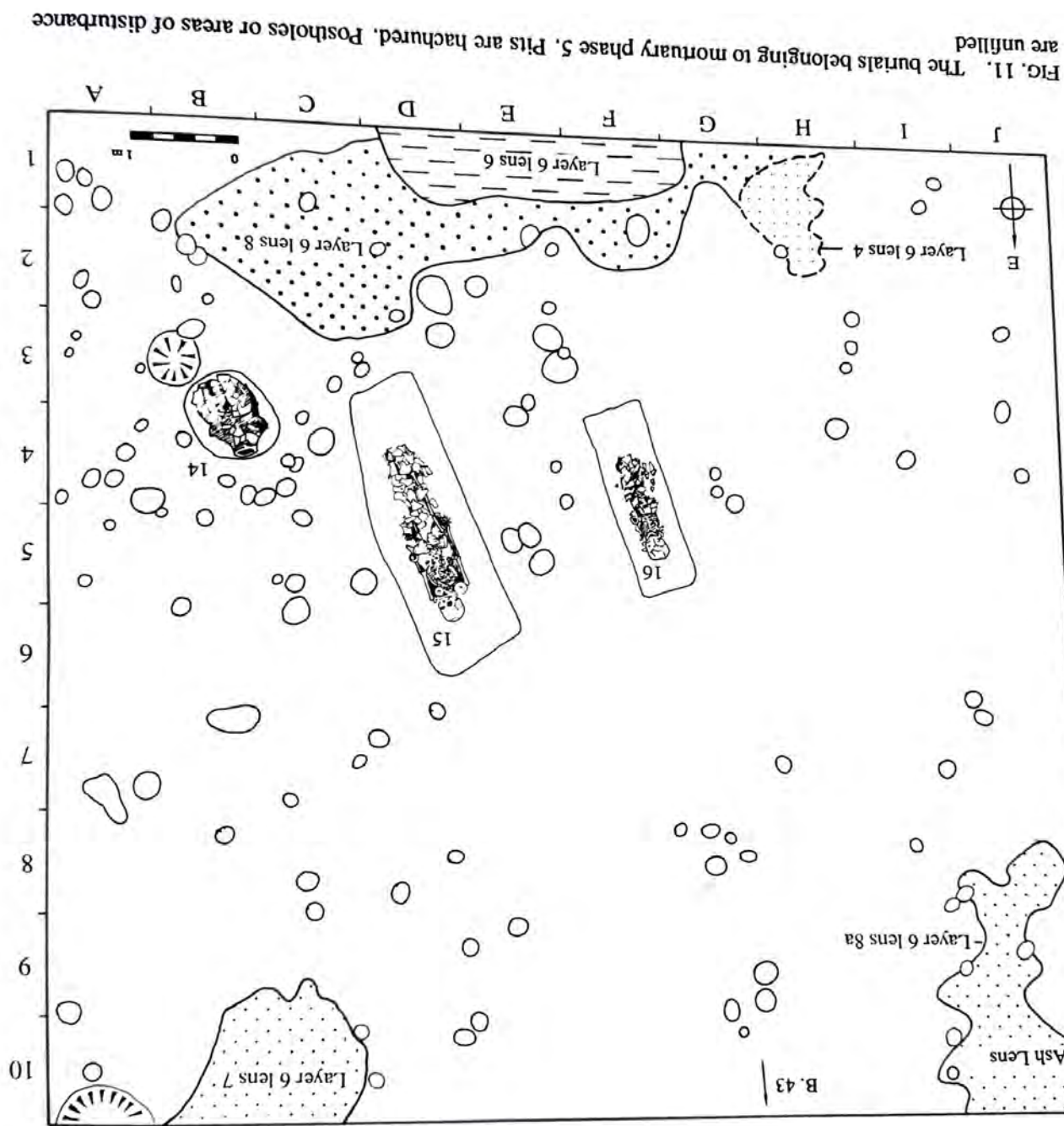


FIG. 10. The burials belonging to mortuary phase 4. Pits are hachured. Postholes or areas of disturbance are unfilled



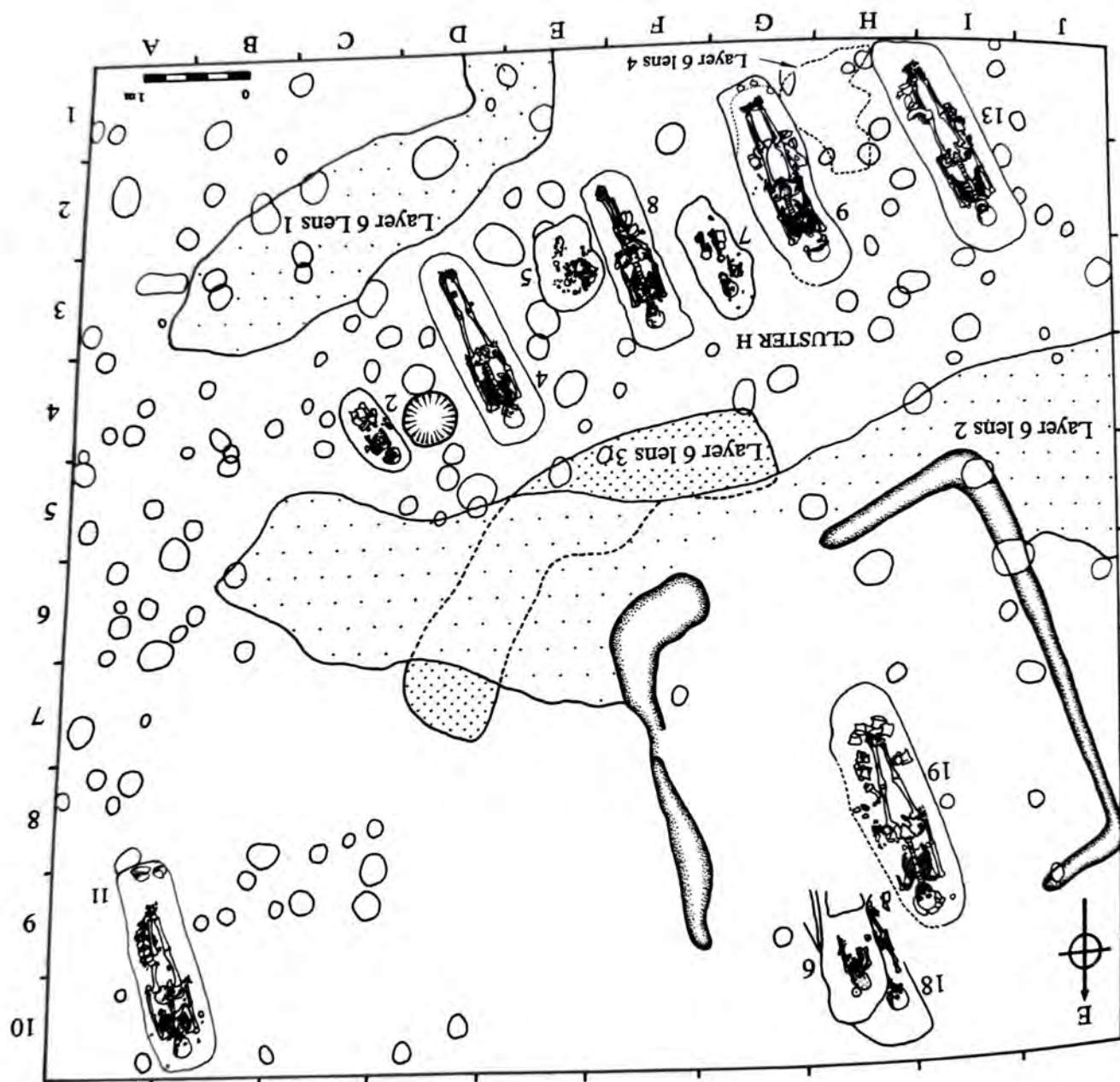
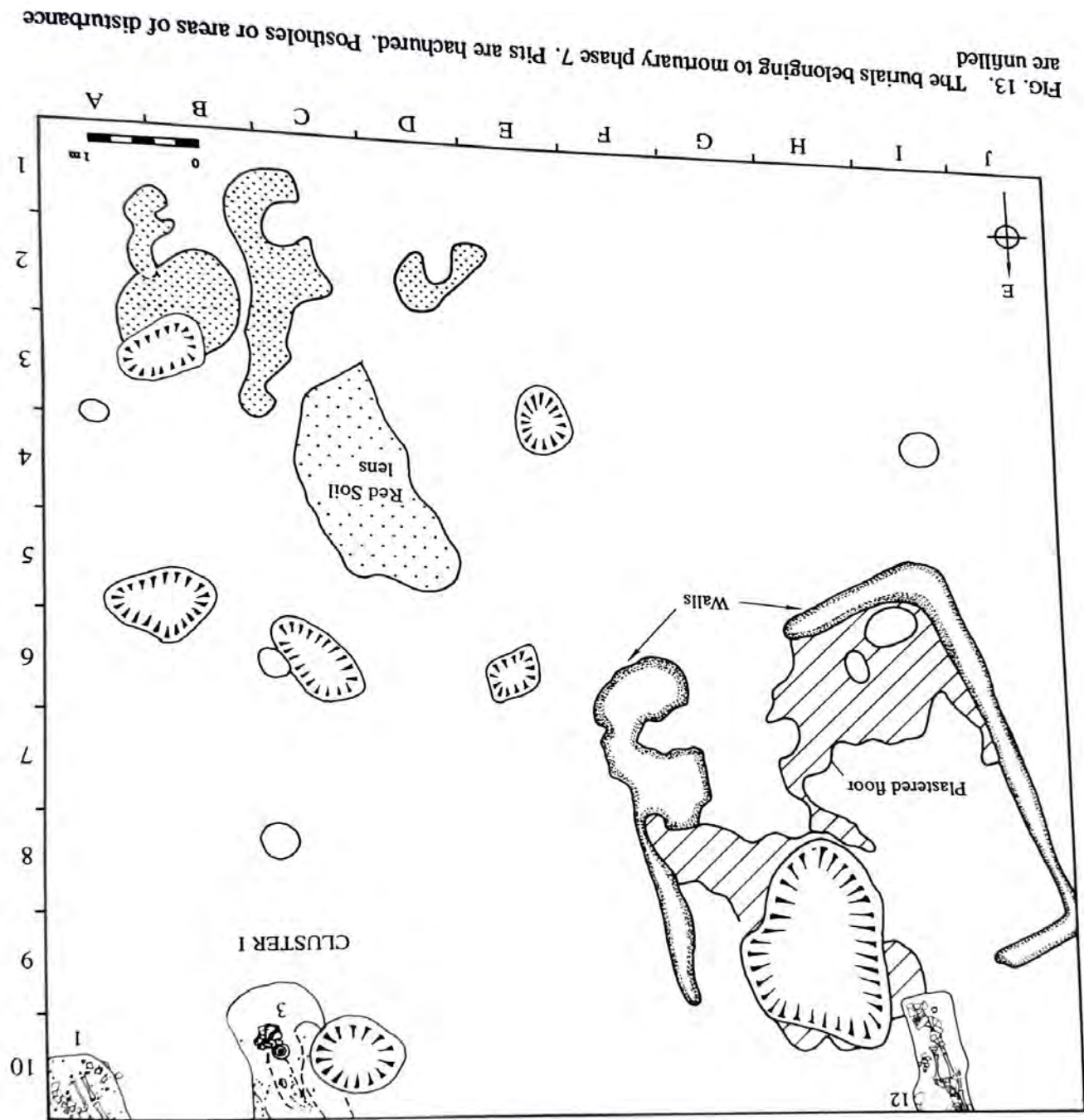


FIG. 12. The burials belonging to mortuary phase 6. Pits are hachured. Postholes or areas of disturbance are unfilled



THE CULTURAL REMAINS FROM LAYER 11

The cultural deposits at Khok Phanom Di attained a maximum depth below datum of nearly 7m. The sections are illustrated in figures 17, 18, 19 and 20. In preliminary references to the stratigraphic sequence, the eleven layers at Khok Phanom Di were divided into three major units: zones A (layers 11-10), zone B (layers 9-4) and zone C (layers 3-1). These zones recognize major discontinuities in the nature of the depositional sequence, but they are not employed in this report. The lowest cultural context at Khok Phanom Di was identified between 6.55 and 6.81m below datum. It comprised a grey, ashy material with much charcoal. Lens 1, at a depth of 6.62m in quadrant B, intruded partially into the square, and was a particularly clear concentration of ash and charcoal. A hearth was identified in quadrant C which provided a radiocarbon determination of 2130-1700 BC (ANU-5493). There were two caches in quadrant D. The first (feature 1) was recognized at a depth of 6.70m and contained a clay anvil ringed by twenty-one burnishing stones and three stone adze heads. The second, feature 2, included two pottery vessels, a burnishing stone and seven stone adze heads. These caches were located in small pits dug into the natural layer (12) and beneath, and must represent the earliest cultural activity in this part of the site (Fig. 21). Other artefacts found in layer 11 included grinding stones, bone bobbins, a barbed bone fishhook and several further stone adze heads, burnishing stones and clay anvils (Table 2).

TABLE 2: *The principal artefacts found in layer 11 contexts*

Layer		CA	FH	BS	PA	WH	CP	BB
11:2	1	1	1	23	11	-	2	2
11:1	8	1	4	8	2	2	1	1

CA: clay anvil, FH: fishhook, BS: burnishing stones, PA: adze head, WH: whelstone, CP: clay peller, BB: bone bobbin

A large grey, ashy lens was identified at 6.60m below datum, extending over about half of quadrants A and B. It was only 3-5cm thick. No postholes were found in this layer, suggesting that there were, as yet, no structures on this part of the site. This pattern of ash and midden spreads continued within layer 11 at depths of between 6.52 and 6.60m below datum (Fig. 22). Here we find B154, in a grave cut from lower layer 25 into an ash and charcoal spread, just to the west of an extensive midden (lens 31) containing 2,557 valves of *Anadara* and numerous other examples of shells favouring a mangal-mudflat environment.

THE CULTURAL REMAINS FROM LAYER 10

On encountering a deep stratigraphic unit designated layer 10, it was noted that it differed markedly from the layer 9 material. It apparently had much more lensing, with ash and shellfish the principal

components of the different lenses. While artefacts tended to increase, it was observed that post-holes became rarer (Table 3). The layer 10 deposits cover from 4.16 to 6.55m below datum. It is necessary to visualize it as a complex and at times quite bewildering series of interlocking lenses and, in the brief summary which follows, only the main trends will be noted through a series of 'peels' taken across the excavated area. The colouration of the successive lenses is very variable, ash lenses being noted as Munsell 7.5YR/4/6, 7.5YR/7/2 and 7.5YR/6/4, and so-called red and pink lensing as Munsell 5YR/5/3, 5YR/6/4 and 5YR/4/6.

TABLE 3: The principal artefacts found in layer 10 contexts

Layer	CA	FH	BS	PA	H	WH	CP	NW	WSH	BB	ST	CT	BH	SK	AW
10:25	7	1	2	3	-	1	-	-	-	-	-	-	-	-	1
10:24	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
10:23	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
10:22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
10:21	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
10:20	1	-	1	1	1	1	2	-	-	-	-	-	-	-	1
10:19	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-
10:18	-	1	1	2	-	-	1	1	-	-	-	-	-	-	-
10:17	2	2	2	-	-	-	2	3	-	-	-	-	-	-	-
10:16	2	-	4	3	-	2	-	-	-	-	-	-	-	-	-
10:15	1	1	7	16	1	1	2	4	1	-	-	-	-	-	-
10:14	5	3	16	14	3	1	1	2	3	4	1	-	-	-	-
10:13	2	3	14	14	-	-	2	3	2	2	-	-	-	-	-
10:12	-	3	18	18	-	-	2	3	4	3	-	-	-	-	-
10:11	4	1	14	14	-	-	2	2	2	4	-	-	-	-	-
10:10	-	1	11	-	-	-	-	-	-	-	-	-	-	-	-
10:9	1	-	5	5	-	-	-	-	-	-	-	-	-	-	-
10:8	3	-	8	5	-	-	1	-	-	-	-	-	-	-	-
10:7	2	-	5	5	-	-	-	-	-	-	-	-	-	-	-
10:6	-	-	5	5	-	-	2	-	-	-	-	-	-	-	-
10:5	4	-	3	3	-	-	1	-	-	-	-	-	-	-	-
10:4	4	-	5	5	-	-	2	-	-	-	-	-	-	-	-
10:3	10	1	51	5	-	-	6	-	-	-	-	-	-	-	-
10:2	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-
10:1	-	-	7	-	-	-	4	-	-	-	-	-	-	-	-

CA: clay anvil, FH: fishhook, BS: burnishing stones, PA: adze head, H: hoe, WH: whetstone, CP: clay pellet, NW: net weight, WSh: worked shell, BB: bone bobbin, ST: stone disc/bangle, CT: crocodile-tooth pendant, BH: bone harpoon, SK: shell knife, AW: bone awl

1. 6.52-6.56m below datum (lower 10:25). This, the lowest context within layer 10, comprised a series of shell, ash and charcoal lenses. A hearth was found in quadrant B, and a sherd concentration in quadrant D (Fig. 23).
2. 6.40-6.52m below datum (upper 10:25). This context in layer 10 comprised a series of quite clearly defined ash and charcoal spreads, together with a hearth and a small concentration of charcoal. Both have provided radiocarbon dates, that of the hearth being 2120-1525 BC (ANU-5492), and of the charcoal concentration, 2450-1905 BC (ANU-5490). Several patches of burnt clay were identified. The material culture included several stone adze heads and clay anvils, the locations of which are seen in figure 24. There were also some clay pellets as are still used with the pellet bow to hunt birds, and pierced *Anadara* valves. The remains of an infant burial (B153) were found at the edge of lens 29 at a depth of 6.51m.
3. 6.34-6.40m below datum (10:24). The same pattern of extensive ash and charcoal spreads continued at this slightly higher level (Fig. 25). One rich charcoal spread was sampled for radiocarbon dating, and yielded a result of 2125-1680 BC (ANU-5491). The lens in question contained large pieces of charcoal, and it was cut into by B152. It is an extensive lens, and in quadrant A it contained a straight row of eight postholes which appear to turn a right angle and continue for a further three postholes. These are uniform in diameter (c. 10cm), and do not contain anything other than very fine soil. A nucleus of four hearths, three of which intercure each other, was identified in quadrant D. Lens 28, which contained 8,714 specimens of *Anadara*, was located directly over this extensive sheet of ash and charcoal. The lens measured 4.6m by 2.8m. Three deposits of fire-hardened clay were present in this context.
4. 6.22-6.34m below datum (10:23). The pattern of charcoal spreads, ash lenses and hearths continued. A further four hearths were located over those just described, and the grave of B151 was cut down from a depth of 6.29m (Fig. 26).
5. 6.10-6.22m below datum (10:22). In addition to the continuation of charcoal and ash lensing, this context included a new feature in the form of shallow pits containing organic refuse (Fig. 27). A set of four hearths in quadrant A provided a C14 determination of 2200-1680 BC (ANU-5488). There were now numerous postholes with diameters of between 5 and 10cm, but these do not reveal a structural pattern. Material items include a stone adze head, a clay pellet and bone fishhook.
6. 6.01-6.10m below datum (10:21). This horizon included a lens (no. 23) containing 7,660 *Anadara* valves, many of which were charred. Burial 150 was cut into this lens. At least eight hearths were present, the diameters ranging from 20 to 70cm, although in some cases hearths intercure and merge with others. In the main, they are oval and have a depth of 15-20cm. They have a central core packed with charcoal under a layer of white ash. One of these, hearth 15, yielded a C14 date of 1950-1515 BC (ANU-5489). A complete lens of fire-hardened clay is present in quadrant C. It measures 2.4m by 1.5m (Fig. 28).
7. 5.89-6.01m below datum (10:20). Again, there was a series of charcoal and shell lenses within this section of the site. Burial 147 was cut into it from a depth of 5.88m. It was noted that, within the spreads of ash and charcoal, sherds were disposed horizontally on apparent occupation surfaces, which were in turn sealed by the ash lenses. The corner of quadrant D

has a thick deposit of burnt clay. Among artefacts were clay pellets, a whetstone, a clay net weight and a stone adze head.

8. 5.79-5.89m below datum (10:19). This part of the area excavated included lenses of white ash. Pits and postholes continued to be in evidence, while there were also three hearths. Hearth 7 provided a C14 determination of 2130-1525 BC (ANU-5487). This hearth, rich in charcoal, was cut into lens 19, a lens dominated by white ash (Fig. 30).

9. 5.70-5.79 below datum (10:18). There were no more large lenses in this part of the section, though there was still much ash and charcoal. It is possible that original lenses were re-deposited in antiquity and lost some of their integrity. A particular feature in this part of the sequence, however, is a row of five hearths which appear to have been severed when a 24cm-wide trench was dug through them (Fig. 31). This provides some evidence for structures, as both the hearths and the trench lie on the same axis as the great majority of graves. Clay pellets, net weights, anvils and a stone adze head were recovered.

10. 5.60-5.70m below datum (10:17). There is much evidence for burning at this depth. Lenses 13, 14, 16 and 17 comprise charcoal-rich ash lenses. The other two are only partially present in the excavated area. These four lenses lie round an extensive midden lens, 15, which contained 61,116 *Anadara* valves, of which fully a third were unopened. No small hearths were present, but a group of five postholes were dug in quadrant A, and there were one or two other postholes in the excavated area (Fig. 32). Artefacts continued to be dominated by net weights, adze heads and anvils.

11. 5.54-5.60m below datum (10:16). The first groups of MP2 burials were interred at this depth, there being seven in all. Two belong to cluster C (140 and 145), one to cluster B (141), one to cluster D (146) and the other three to cluster A (100, 143 and 144). Some conical activity is represented by the digging of postholes near the graves, and hearth 1 was located a metre north of B145. Only one ash and charcoal lens, 12, was found in this context (Fig. 33).

12. 5.44-5.54m below datum (10:15). Lens 11, which was cut into by the excavation of the grave for B109, comprised much ash and charcoal. It has supplied a C14 date of 2270-1740 BC (ANU-5486). Five pits in the vicinity of cluster C were dug. They were filled with shellfish remains in which *Anadara* predominated. Three similar pits were also dug to the north of the cluster A graves. No other lenses or hearths were found (Fig. 34). The material culture includes net weights, whetstones, adze heads and burnishing stones.

13. 5.38-5.44m below datum (10:14). Despite the fact that the matrix excavated at this level was very rich in ash and charcoal, and included the remains of rice chaff, shellfish and bone, few structures were identified. Some postholes were dug, and three pits containing shellfish remains, but no hearths or discrete lenses were recognized.

14. 5.29-5.38m below datum (10:13). There was an increase in posthole activity in this part of the sequence, together with a continued rarity of ash lensing and hearth use. Two further pits were dug in quadrant C to the north of cluster C. A further pit was found in quadrant D. One of these pits was almost perfectly circular. An ash lens was found severed by B91 (Fig. 36).

- It produced a C14 date of 1975-1545 BC (ANU-5485). A sandstone whetstone and two clay pellet-bow pellets were found in the general cultural matrix.
15. 5.25-5.29m below datum (10:12). The same trends continued: a further nine pits were dug, and posthole excavation continued, particularly in the two northern quadrants. Pit groups tended to occur in the vicinity of clusters C and between clusters B and E. Ash lens 9 laps up to the very edge of B115. This is the only such lens in this part of stratigraphic build-up (Fig. 37). A clay net weight was found in the fill of the grave for B109, but not as a primary grave good.
16. 5.13-5.25m below datum (10:11). Intermittents, posthole construction and the digging of circular pits continued. It is notable that there was an increasing concentration of burials and pits in their respective parts of the site. At this depth we encounter the first interments of cluster F, which was thereafter a long-established one with a total of nine stages. At the same juncture, three pits were excavated just to the south of the graves. A further three pits were also provided in the area of considerable concentration of these features between clusters C and D. About ten new postholes were also dug (Fig. 38).
17. 5.01-5.13m below datum (10:10). It was at this juncture that a shell midden of considerable extent, known as layer 10 lens 2, began to accumulate. By this stage in the development of the excavated area, all the phase 2-4 clusters were in position and most were being augmented by fresh interments on a regular basis. Within this context, the distribution of this thick shell midden is intriguing, because it skirts each of the burial clusters in a configuration which is never more than 3m wide, but still attains a maximum depth of almost a metre. When the section of this midden is taken into account, it is evident that it was built up against a pre-existing structure or structures which effectively confined it to the area between burial clusters. While postholes do not provide unimpeachable evidence for structures over burial clusters because of the lack of clear patterning, the disposition of this midden supports this contention. It is likewise notable that the base of the shell midden in quadrant A lies along a straight line parallel with the graves in nearby cluster A; while in quadrant B, the base of the same midden also runs in a straight line, at right-angles to the line of the midden in quadrant A. The distribution of this lens 2 is, at this juncture, complementary with that of the pit complex between clusters C and D. A further six pits were added to it during this phase of the build-up. Two further circular pits were placed between clusters A and B. Several further postholes were added (Fig. 39).
18. 4.94-5.01m below datum (10:9). At this depth, the layer 10 lens 2 was continuous from east to west and from north to south baulks. Its edges again remained straight for much of their length. At the junction of quadrants A and D, the lens turns an almost perfect right-angle and skirts the western edge of cluster C. There may well be a relationship between the straight edges of this lens and some of the postholes dug at this juncture. A straight row of three circular pits was dug in the area of pit concentration between clusters C and D in quadrant C (Fig. 40).
19. 4.83-4.94m below datum (10:8). Pit digging continued vigorously during this part of the sequence, four pits encircling cluster A graves, and two in the vicinity of cluster C. An ash lens was identified over lens 2 in quadrant D, and a hearth was found by the feet of B67 in

- cluster C (Fig. 41). A series of postholes was dug in quadrant A to the south of cluster A and running parallel with lens 2 in layer 10.
20. 4.72-4.83m below datum (10:7). During this part of the build-up, five further pits were excavated to the north of cluster C, three being set out in a straight line. Pits were also dug due north and east of B74. A charcoal lens (6) was found within the area of cluster A, and seven postholes were excavated (Fig. 42).
21. 4.62-4.72m below datum (10:6). A north-south disposition of postholes just to the west of layer 10 lens 2 was put in place at this juncture. Three pits were excavated, one to the south, of and the other side from, cluster C of layer 10 lens 2, another close to cluster C, and the third due east of B68 in cluster A (Fig. 43).
22. 4.54-4.62m below datum (10:5). This part of the stratigraphic build-up saw much activity. A series of five postholes trending on a line east-west skirted the southern edge of layer 10 lens 2. Three further postholes on the same orientation were found on the northern margin in quadrant A. Four postholes ran along the southern edge of layer 10 lens 2. A nearly circular pit was dug to the north of B79 in cluster C, and a pit was dug just to the south of B60 in cluster F. Three small ash spreads were found, one lying within the cluster C area, directly to the west and contemporaneous with B64, another under B57 in cluster A and a third under and just east of burials 63, 56 and 58 in cluster F. Lens 3, that cut by B57, provided a C14 date of 1925-1225 BC (ANU-5484). This lens continues into 10:6 below, from which the charcoal was taken. Layer 10 lens 2 continued to maintain a roughly straight series of lines between the various mortuary clusters. It is notable that lens 5 in quadrant D lies within one of the right-angled corners of this midden (Fig. 44).
23. 4.46-4.54m below datum (10:4). Five postholes were encountered during this stage in the stratigraphic accumulation and two pits were dug in the area of clusters A and F. A shell lens (no. 7) was found in quadrant C to the north of cluster C interments. At this stage, the accumulation of layer 10 lens 2 began to taper off (Fig. 45).
24. 4.36-4.46m below datum (10:3). The midden known as layer 10 lens 2 became further attenuated, being restricted in its distribution to quadrants A and D. One further pit was dug to the north of B77 in cluster C, and seven further postholes were excavated (Fig. 46). A small ash lens (no. 1) was partially present in quadrant D.
25. 4.31-4.36m below datum (10:2). At this juncture there was a temporary hiatus in mortuary activity, representing the transition from phase 3 to phase 4. We find that there was one further pit in this context, lying between the areas devoted to the interments of clusters A and F. The principal structural evidence during this phase was the presence of postholes. It is notable that, although burials were absent, the postholes follow a course round the former burial areas, and there is some hint at a trend in an east-west direction as well as north-south along the between the areas of clusters A and C (Fig. 47).
26. 4.16-4.31m below datum (10:1). Two infant interments were found in quadrant A (Bs 51-2). Apart from six postholes and a hearth, there were no other major structural features in this context and the quadrant is not illustrated.

THE CULTURAL REMAINS FROM LAYER 9

The hiatus in mortuary activity between phases 3 and 4 is represented stratigraphically by layer 9. This layer was recognized in the field by the number of its ash (Munsell 10YR/3/4) and midden lenses, the richness of biological remains in the general cultural matrix and the number of postholes and pits which were dug (Table 4).

TABLE 4: The principal artefacts found in layer 9 contexts

Layer	CA	BS	PA	WH	CP	NW	SB	SK	ST
9:7	3	3	-	-	-	1	1	2	-
9:6	5	-	-	-	1	-	1	22	1
9:5	2	-	-	-	-	-	-	2	-
9:4	6	3	3	1	1	-	-	3	-
9:3	7	1	2	-	1	-	-	6	1
9:2	1	-	-	-	-	-	-	9	-
9:1	-	2	-	1	-	-	-	3	-

CA: clay anvil, BS: burnishing stones, PA: adze head, WH: whetstone, CP: clay pellet, NW: net weight, SB: shell disc/bangle, SK: shell knife, point, ST: stone disc/bangle

1. 4.10-4.16m below datum (9:7). This is the earliest context within layer 9. The most obvious feature is a large lens in which shellfish predominate (layer 9 lens 9). It contains 80,522 specimens of *Anadara* valves, and its distribution is very similar to that of layer 10 lens 2 below. It does not, however, have quite the same regularity of linear edging. This shape almost precisely complements the earlier location of the mortuary clusters, and it is very hard to avoid the conclusion that, during the build-up of basal layer 9, some mortuary structures remained in place and therefore determined where shell deposits were placed. An infant was, in fact, interred during this context, being found over the burial area for cluster F. Nine postholes were encountered at this juncture (Fig. 48). A hearth in quadrant A yielded a radiocarbon date of 3685-2275 BC (NZ-7063). This seems far too early when compared with the other samples from layer 10 below.
2. 3.95-4.10m below datum (9:6). The extensive shell midden, layer 9 lens 9, continued to build up at these depths. Again, its distribution complements that of the phase 2-3 interments. Two shell pits were dug, one in the vicinity of those located to the north of cluster C, and the second between the areas devoted to clusters A and F. Thirteen postholes were dug, though no obvious visual patterning is apparent (Fig. 49). A radiocarbon sample under lens 9 yielded a date of 2390-1780 BC (NZ-7060).

3. 3.89-3.95m below datum (9:5). This part of the sequence saw a spread of ash and charcoal laid down which, while restricted to quadrant A, lies directly over layer 10 lens 2 and layer 9 lens 9. A shell midden, known as layer 8 lens 8, is found at the eastern end of this burnt area, and, though small, it too overlies the preceding two midden deposits and curves round the area of cluster C burials. Three circular pits were dug into the mortuary area of cluster A, and four pits were dug in the pit area which lies to the north of cluster C. To the south of lens 8 and the burnt area, there are two areas of marked burning activity and a further circular pit. Twelve postholes were dug during this part of the stratigraphic build-up (Fig. 50).
4. 3.87-3.89m below datum (9:4). Apart from a hearth in quadrant D and the edge of a shell midden in the north-west corner of quadrant B, only thirteen postholes were identified in the material at these depths (Fig. 51).

5. 3.73-3.87m below datum (9:3). Two lenses were laid down at this juncture. One, layer 9 lens 7, lies between the former mortuary areas for clusters F and D and comprises white ash. The second, lens 6, is found in quadrant A. Eleven postholes were identified, and a circular pit was dug in the mortuary area of cluster C in quadrant D (Fig. 52).
6. 3.65-3.73m below datum (9:2). Nine postholes were dug at this stage in the stratigraphic build-up. Layer 9 lens 5 was present in the centre of the square (Fig. 53).

7. 3.60-3.65m below datum (9:1). At this part in the sequence, lens 4 of layer 9, which comprised in the main white ash and shellfish, accumulated in the space between clusters A and C. Another two ash lenses, layer 9 lenses 1 and 2, were identified lying to the south of the mortuary area reserved for cluster A in quadrant A. The latter has produced a radiocarbon date of 1812-1310 BC (NZ-7033, 94 per cent). Lens 3, which is nearly contiguous with lens 4, was found between the former mortuary areas for clusters A and F in quadrant B. Four postholes were excavated at this juncture (Fig. 54).

THE CULTURAL REMAINS FROM LAYER 8

Layer 8 has two principal determining features. After a hiatus during layer 9, there was a further major episode of burial activity described as MP4 (Table 5). When this occurred, the same areas reserved for interments during MP3 returned to use. The mortuary ritual underwent modifications, and this is reflected in the type of deposits found. Circular pits fell from favour, although some were still found. Instead, one finds lenses of ash (Munsell 10YR/3/4) and small lenses containing shellfish. There are hints that the ash lenses reflect burning of the ground just before mortuary activity recommenced.

1. 3.47-3.60m below datum (8:7). The presence of an ash lens in a mortuary area prior to a series of MP4 interments is seen in the case of layer 8 lens 10, which is located in quadrant A. This ash lens was subsequently cut through with the digging of the double grave for burials 31 and 32. At about the same time, mortuary activity recommenced in the old area of cluster F with the burials 39-42 and 46. Lens 11, which is small and has virtually straight sides, is to be found in quadrant B between the areas for clusters A and F. Lens 12 is the largest lens

TABLE 5: The principal artefacts found in layer 8 contexts

Layer	CA	BS	H	WH	NW	SB	SK	TB	ST	AW	CP	FH
8:7	-	4	-	2	1	-	8	1	-	-	-	-
8:6	-	-	1	-	-	1	3	-	-	-	-	-
8:5	-	2	-	2	-	-	5	-	-	-	-	1
8:4	-	-	1	1	-	4	1	1	-	-	-	-
8:3	2	4	1	-	-	4	1	1	1	1	-	-
8:2	3	2	-	1	-	1	1	1	-	-	-	-
8:1	1	4	-	-	-	1	-	-	-	-	1	-

CA: clay anvil, BS: burnishing stones, H: hoe, WH, whelstone, NW: net weight, SB: shell disc/bangle, SK: shell knife, TB: turtle shell disc/bangle, ST: stone disc/bangle, AW: awl, CP, clay pellet, FH: fishhook

in this stage of the stratigraphic build-up. It lies in quadrants A and D, with slight projections into the other two quadrants, and skirts the burials areas for clusters A, C and E. That part of the lens which was located in the excavation square contained 74,082 valves of *Anadara*. Ten postholes and two small pits were dug during this period (Fig. 55). Lens 10 has produced a radiocarbon date of 1925-1225 BC (NZ-6973).

2. 3.43-3.47m below datum (8:6). One small hearth was formed during this part of the sequence, but no burials or pits were encountered. Twenty postholes were dug, and there is a faint suggestion that some trend in a north-south direction between the areas of cluster A and C (Fig. 56).

3. 3.36-3.43m below datum (8:5). It was at this point that mortuary activity in the cluster A area recommenced with the interment of burials 30, 31 and 32. Burial 34 in cluster E was also interred at this time. Lens 7, rich in shellfish, was laid down in quadrant B, the edge running parallel with the burials in cluster F. To the east, an extensive ash lens (no. 8) was deposited. While comprising hard ash, it also included 1,137 valves of *Anadara*. Two pits, lacking the circularity of earlier ones, were found in quadrant D. Twelve postholes were identified (Fig. 57).

4. 3.28-3.36m below datum (8:4). The dominating feature at this depth is layer 8 lens 4, which comprises white ash. It lies over the area of cluster C, and was severed by burials 36, 44, 45 and 47 when mortuary activity in this part of the site recommenced. A second but smaller ash lens (no. 6) was found in quadrant D in the area of cluster E. It, in turn, was to be severed by B26. In cluster A, B28 was interred. Lens 7 remained active in quadrant B and a further ten postholes were added (Fig. 58).

5. 3.21-3.28m below datum (8:3). In this part of the sequence, we see the effective recommencement of cluster C interments with the cutting of the grave for B47. This followed the

accumulation of lens 4. Lens 2, comprising shellfish and ash, was laid down in quadrant A. Although relatively small, it directly overlies layer 10 lens 2 and layer 9 lens 9. Its northern edge is virtually straight, and it lies parallel with the graves of cluster A, MP4. Lens 3 is a small ash lens which lies just east of lens 2. Two circular pits were dug in quadrant C, the smaller of the two overlying the area of pits which accumulated in this quadrant during mortuary phases 2 and 3. Eight further postholes were dug (Fig. 59). Lens 6 has provided a radiocarbon date of 2565-1895 BC (NZ-7021). Lens 4 has been dated twice: 1930-1525 BC (ANU-5483) and 590 B.C. - AD 665 (NZ-7020).

6. 3.15-3.21m below datum (8:2). At this juncture, B45 was interred in cluster C. Feature 46, a rich but small shell lens, was laid down between the cluster C and D areas. Lens 2 was still present, and a circular pit was dug into it. A further shell lens, feature 23 in quadrant B, was laid down on the northern edge of the cluster F area. It was subsequently partially cut through by B27. A most unusual burial, B33, was interred at this depth (the grave cut was noted at 3.00m below datum). The layers were higher at the northern end of the square than at the southern, where the above depths were recorded. This burial contained the remains of a child with very rich grave goods. It does not fall into the area of any of the clusters. Of the nine postholes dug, six seem to lie on the eastern edge of the cluster A and F areas (Fig. 60).

7. 3.07-3.21m below datum (8:1). This part of the stratigraphic sequence incorporates the uppermost part of layer 8. Burial 27 was interred at the same time as a circular pit was excavated about a metre beyond the head. A further circular pit was dug in the area of cluster C. In the area of cluster E, burning activity left a thin ash lens (no. 1) which just skirts the western edge of B26, which was interred at this juncture. Five of the seven postholes dug at this time lie between clusters C and E (Fig. 61).

THE CULTURAL REMAINS FROM LAYER 7

Layer 7 was seen as distinctive during the course of the excavations on account of its charcoal-rich and very ashy matrix (Munsell 10YR/3/4) interspersed with burnt red soil (Munsell 5YR/4/4; Table 6).

1. 2.94-3.07m below datum (7:7-8). This, the lowest context of postholes is present in quadrant D, and these fall outside the area of cluster E (Fig. 62).

2. 2.88-2.95m below datum (7:6). Burial 20 in cluster F was interred at the same time as an ash lens was laid down 30cm to the north and along the same axis as the grave (lens 6). This same lens was later to be severed by B17. Burials 21 and 23 in cluster E were also interred at this juncture in a double grave, and ringed by what looks suspiciously like a circular or oval set of postholes (Fig. 63). A further characteristic of the posthole distribution is the possible demarcation between the areas for clusters C and F.

3. 2.81-2.88m below datum (7:5). Burials 35 and 36 were interred and represent stage 10 in cluster C. Two postholes were dug to the north of these two burials. A pit was dug to the north of the cluster F area. Three postholes were dug round cluster E, and when their layout

TABLE 6: *The principal artefacts found in layer 7 contexts*

Layer	CA	BS	PA	NW	BB	TB	ST	IV	CL	SK
7:8	1	-	-	-	-	-	-	-	-	-
7:7	-	1	-	-	-	-	1	-	-	2
7:6	-	-	1	-	-	-	1	-	1	1
7:5	-	-	-	-	-	-	2	-	-	3
7:4	2	1	-	-	-	-	-	-	-	-
7:3	-	3	-	-	-	-	-	1	-	-
7:2	-	-	-	-	1	-	1	1	-	3
7:1	1	-	-	-	-	-	-	1	-	-

CA: clay anvil, BS: burnishing stones, PA: adze head, NW: net weight,
 BB: bone bobbin, TB: turtle shell disc/bangle, ST: stone disc/bangle,
 IV: ivory disc/bangle, CL: clay ladle, SK: shell knife

is considered in conjunction with those described under 2 above, they seem to complete the circle round the graves in this cluster (Fig. 64).

4. 2.71-2.81m below datum (7:4). Burial 17 in cluster F was interred, and a small shell and pottery lens (feature 23) was laid down in quadrant A. Two further postholes were dug round the area of cluster E and in quadrant A, an accumulation of potsherds (feature 21) was formed (Fig. 65).

5. 2.63-2.71m below datum (7:3). Three ash lenses were laid down at this juncture, two of which were subsequently to be severed by burials 15 (lens 4) and 16 (lens 3) respectively. Lens 2 was deposited over the general area of cluster C in quadrant D. Twelve postholes were excavated, though there is no apparent form to their relationships (Fig. 66).

6. 2.56-2.63m below datum (7:2). Lens 3 in quadrant A is an extensive but shallow midden of ash and the remains of shellfish (1,254 *Anadara* valves), which was laid down just before the interment of B15. The grave for this outstandingly rich burial cuts through the lens. About 7cm higher in the section, B16 was interred alongside and to the north of B15. This grave contained the remains of a 15-month-old child buried with a rich array of grave goods. Eleven further postholes were added, but, again, there is no apparent form to their distribution (Fig. 67).

7. 2.39-2.56m below datum (7:1). Lens 1 in quadrants A and D partially covered the lower part of B15. This lens is made up of ash and charcoal. Layer 6 lens 8 and feature 14 in quadrant B present a most interesting distribution, as they both run at about 90° to the axis of the phases 5 and 6 burials, and in fact skirt the east and west ends of the interments assigned below to cluster H. Fourteen further postholes were dug, some being rather larger than most of the earlier ones, with diameters approaching 14 cm. There is an interesting configuration

of postholes in quadrant D, apparently forming an oval enclosure round what was to become the burials area for cluster I during phases 6-7 (Fig. 68).

THE CULTURAL REMAINS FROM LAYER 6

Layer 6 was recognized with the transition from a reddish sandy matrix in layer 5 to one in which a solidified white ash deposit predominated (Munsell 10YR/5/3; Table 7). The layer was found to be rich in shellfish and pottery sherds when compared with the succeeding contexts.

TABLE 7: *The principal artefacts found in layer 6 contexts*

Layer	CA	BS	PA	SB	CP	ST	BO	SP	IV
6:8	-	1	-	-	-	-	-	-	-
6:7	-	-	-	1	-	-	-	-	-
6:6	-	1	-	1	-	-	-	-	-
6:5	-	1	-	3	1	-	-	-	-
6:4	-	3	1	1	2	1	-	1	1
6:3	-	4	-	3	2	6	-	-	-
6:2	1	2	-	1	4	2	-	-	-
6:1	-	1	-	-	3	1	-	-	-

CA: clay anvil, BS: burnishing stones, PA: adze head, SB: shell disc/bangle, CP: clay pellet, ST: stone disc/bangle, BO: bone disc/bangle, SP: shark tooth pendant, IV: ivory disc/bangle

1. 2.32-2.39m below datum (6:6). Four postholes, two ashy lenses and a charcoal spread were distinctive features at these levels (Fig. 69). The last context provided a radiocarbon date of 1930-1310 BC (ANU-5482).
2. 2.27-2.32m below datum (6:5). There was further mortuary activity at these levels. Burial 13 was interred and was located in the area of cluster F, but at the same time it anticipates the alignment and linear arrangement of cluster H. At about the same time, lens 6 in layer 6, which contained 2,083 *Anadara* valves, was laid down at the western edge of quadrants A and B, its eastern margin running at 90° to the subsequent graves belonging to cluster H. Lens 5, which comprised ash, was laid down in quadrant A, and was later to be severed by the digging of burials 2 and 4. Twenty-two postholes were dug, four being on an east-west axis in quadrant C (Fig. 70).
3. 2.23-2.27m below datum (6:4). This was another time of intense mortuary activity. A raised structure was built in quadrants C, on the same orientation as the MP6 graves. This structure

was made up of approximately 28 successive levels, each comprising fill laid down horizontally. The top of the structure bore clay wall foundations. There are three interments under it. As will be discussed below, it is felt that B19 was the primary burial. Burial 18 was also probably buried under the structure, but the head lies just beyond its eastern wall. Burial 6 is seen as a secondary burial interred at some time after the completion of the building. It is found over B18. All graves are rich in terms of shell jewelry. At the same time as the structure was built, a lens containing ash and shellfish was laid down in front of it. This lens, no. 3, lies precisely between the structure and the burials ascribed to cluster H. There was also a burst of posthole digging, some of which look as if they might form a row to the east of the cluster H burials (Fig. 71). Four pits containing shells were located to the south and west of the cluster H burial area.

4. 2.05-2.23m below datum (6:3). At approximately the same time as the raised structure was built over burials 18 and 19, there was a major incidence of burials with the interment of burials 2, 4, 5a and 5b, 7, 8, and 9. These were disposed in a linear manner to the west of the raised structure. Thirty-five postholes were dug at the same juncture, four of which clearly run between burials 2 and 4. There is also a possibility that a row of postholes ran along the other three sides of the cluster, a finding which suggests that a structure was placed over them. A circular pit, feature 56, was placed between burials 2 and 4. It contained thirty-five valves of *Anadara*. We are unsure when B6 was interred through the raised structure, but it may well have been at about this time (Fig. 72).

5. 1.89-2.05m below datum (6:2-1). Two midden lenses (layer 6 nos. 1 and 2) were laid down within these levels, one lying to the west and the other to the east of cluster H. It is notable that the latter, which runs north-south across the square and in front of the raised structure, follows the approximate line of the postholes identified on the eastern edge of the cluster H burials. This strengthens the possibility that there was a structure in place over those burials (Fig. 73).

THE CULTURAL REMAINS FROM LAYER 5

Layer 5 was initially recognized through its reddish, uniformly sandy matrix (Munsell 5YR/3/4). It was very soft, homogeneous and compared with the layers above it, material cultural items were rare (Table 8).

1. 1.80-1.87m below datum (5:5). No further burials or postholes were found at this depth. Six pits were dug, all in quadrants A or D, and a lens of red, burnt soil was found in quadrant A. The matrix of layer 5 built up at the margins of the raised structure in quadrant C, ultimately to cover it (Fig. 74).

2. 1.60-1.80m below datum (5:4). Again, three pits were cut between these depths. A lens of solidified ash was found in the north-west corner of the excavated area and a small shell midden accumulated in quadrant A (Fig. 75).

3. 1.43-1.60m below datum (5:3). Three further pits were dug at this stage, one of which was cut into the surface of the raised structure in quadrant C. Mortuary activity recommenced

TABLE 8: The principal artefacts found in layer 5 contexts

Layer	CA	BS	PA	H	SB	BB	ST	AW	CP
5:5	-	1	-	-	1	-	4	-	2
5:4	-	1	1	-	2	1	-	1	2
5:3	1	-	-	-	1	-	-	-	-
5:2	-	-	1	-	3	-	-	-	1
5:1	2	-	1	1	2	-	3	-	2

CA: clay anvil, BS: burnishing stones, PA: adze head, H: hoe,
 SB: shell disc/bangle, BB: bone bobbin, ST: stone disc/bangle,
 AW: awl, CP: clay pellet

- with the interment of B3 (MP7) in quadrant D. The group of graves in this corner of the excavated area is referred to as cluster I (Fig. 76).
4. 1.37-1.43m below datum (5:2). The surface of the raised structure was further mutilated when three pits were cut into it. Two other circular pits or large postholes were dug at this juncture (Fig. 77).
5. 1.32-1.37m below datum (5:1). This part of the sequence only saw the interment of B12 in quadrant C. It is not illustrated.

THE CULTURAL REMAINS FROM LAYER 4

Layer 4 comprises a soft and sandy matrix (Munsell 5YR/5-4-5YR/3/4), giving way in its upper part to a clear mixture with much darker (Munsell 5YR/4/3) deposits which characterize layer 3 (Table 9). This mixing was probably the result of bioturbation and the disturbance to existing deposits on reoccupation of the site. Before this degree of mixing was evident from examination of the section, the transition from layer 3 to 4 proved extremely difficult to define. Effectively, layer 4 occupies the stratigraphic build-up for about 25cm. It is characterized by a series of pits, each of which was assigned a number and excavated separately. These pits contained a wide variety of organic remains, the general contents of which are set out below. Numbers, dimensions and context within layers 4 and 5 are set out in Table 10.

It is evident that, during the build-up of layer 4, the cemetery which had endured for at least five centuries was no longer used. This part of the site saw an activity which involved digging fairly substantial pits and filling them with food remains. An examination of the bones and shellfish recovered indicates that there was a marked preponderance of marine species of shellfish. Crabs adapted to the mangrove fringe were also abundant, and there were numerous fish and turtle remains. Mammals were relatively rare, but included the langur, macaque, pig and both a large and

TABLE 9: *The principal artefacts found in layer 4 contexts*

Layer	CA	PA	H	SB	BB	ST	BO	IV	AN	AW	MA	CP
4:5	-	-	-	-	-	-	-	-	-	-	-	1
4:4	2	-	-	-	-	1	-	-	-	1	10	8
4:3	3	3	-	1	-	4	-	-	1	-	7	4
4:2	6	2	1	1	1	3	-	-	-	-	13	5
4:1	12	2	-	-	2	9	2	2	-	1	-	-

CA: clay anvil, PA: adze head, H: hoe, SB: shell disc/bangle, BB: bone bobbin, ST: stone disc/bangle, BO: bone disc/bangle, IV: ivory disc/bangle, AN: worked antler, AW: awl, MA: micro-awl, CP: clay pellet

small species of deer. To the latest contexts within layer 4, therefore, there remained access to marine resources (Table 12). In more detail, the stages in the build-up of layer 4 included the following features:

1. 1.17–1.32m below datum (4:4–5). Ten pits were dug, all but one being in quadrants A and B. The uppermost part of the northern wall of the raised structure was still evident, although the rest was by now covered by the accumulating deposits of layer 4 (Fig. 78). An area of material burnt to a red colour was present in quadrant A.

2. 1.10–1.17m below datum (4:3). Only one pit was found, but the uppermost section of the northern wall of the raised structure appeared in this part of the stratigraphic build-up (Fig. 79).

3. 1.01–1.10m below datum (4:1–2). This context saw the digging of numerous pits, the number being difficult to ascertain because they intersect each other (Fig. 80). A considerable increase in the number of artefacts was noted. Four other features were identified on the surface of layer 4 (Fig. 81). These comprise caches of ivory, antler and clay cylinders.

- (a) QD surface of 4 feature 1 (Fig. 14) comprises a cache of ivory. It is apparent that the pieces have been split and broken by percussion. None reveals further processing into artefacts. It may be that the activity involved an initial stage in the preparation of ivory for subsequent modification.

- (b) QD surface of 4 feature 2 (Fig. 15) comprises half a complete set of antler from *Cervus unicorn*, together with an astragalus and part of a metacarpal. The antler was found in a fragmented but anatomically correct position. There is no sign that it was processed or cut in any way.

- (c) QA surface of 4 feature 4 (Fig. 16) comprises a shallow pit containing the complete carapace of a turtle in association with two pieces of a clay cylinder, some sherds and specimens of *Anadara* valves.

TABLE 10: *The dimensions of layer 4 and 5 pits (in m)*

Layer	Quadrant	Feature	Depth below datum	Maximum width	Maximum depth
4:1	A	4	1.05	1.00	0.47
4:1	A	7	0.98	4.00	0.70
4:1	B	7	0.48	1.10	0.27
4:1	B	1	1.05	1.00	0.28
4:1	B	5	1.18	2.60	0.59
4:2	A	2	1.01	1.60	0.77
4:3	A	1	1.10	-	0.55
4:3	A	7	1.10	1.50	0.30
4:3	A	9	1.17	1.80	0.36
4:3	D	1	0.94	-	-
4:3	B	1	1.05	1.12	0.21
4:3	B	2	1.39	1.40	-
4:3	B	8	1.13	1.16	0.30
4:3	D	2	0.96	-	-
4:3	B	3	1.43	-	-
4:3	D	3	0.95	0.98	0.34
4:3	B	4	1.25	-	0.51
4:3	A	5	1.10	-	0.26
4:3	D	5	0.90	0.88	-
4:3	D	6	0.93	1.16	0.15
4:3	D	7	0.96	4.00	0.80
4:3	A	8	1.13	1.14	0.30
4:5	C	1	1.20	0.86	1.05
5:3	D	4	1.40	0.88	0.36
5:4	A	1	1.60	1.26	-
5:5	A	1	1.80	-	0.90
5:5	B	2	1.63	1.06	0.11
5:5	A	4	1.63	1.02	0.21

(d) QD surface of layer 4 feature 3. The last of the four features, which are located with about 1m between them in quadrants A and D, incorporates two clay cylinders. It is felt that these items, which measure up to c. 200mm in length, represent stored clay.*

These features lie at the very surface of layer 4. It is hard to avoid the impression that the area was used for the preparation of a variety of raw materials for later modification.

*Dr B.A. Vincent has suggested this interpretation, and he will report on these artefacts in a later volume of this report.



FIG. 14. The ivory cache on the surface of layer 4



FIG. 15. The antler cache on the surface of layer 4

THE CULTURAL REMAINS FROM LAYERS 2 AND 3

Layers 2 and 3 form the uppermost prehistoric context at Khok Phanom Di. They are found at a depth of *c.* 50–90cm below datum, with a slope from south to north. They were distinguished in the field by a slightly redder colour in the latter (Munsell 5YR/4/3), but this is not uniformly

obvious, and the two layers share both the same dense concentration of potsherds and range of artefacts. These include stone adzes, clay anvils for shaping pots during the manufacturing stage, stone disc/bangle fragments and cylinders of unfired clay. The last type of artefact provides insight into the use to which this area was put at the very end of the prehistoric occupation of the site (Table 11).

TABLE 11: *The principal artefacts found in layer 2 and 3 contexts*

Layer	CA	BS	PA	H	WH	CP	NW	BB	TB	ST	BO	IB	AN	CL	SP	CP	MA	AW
3:5	3	1	-	1	-	-	-	-	-	1	-	-	1	-	-	3	1	-
3:4	13	-	1	1	-	-	-	-	-	8	2	4	2	-	-	9	6	1
3:3	5	6	1	-	-	-	-	3	-	10	3	7	1	-	-	5	17	2
3:2	18	2	6	-	-	-	-	-	-	11	1	4	3	-	-	8	7	2
3:1	8	7	8	-	-	-	-	5	-	7	1	-	1	-	1	-	21	2
2:3	8	1	2	-	-	-	-	-	6	5	-	-	-	1	2	-	-	-
2:2	25	-	4	-	3	2	-	-	-	10	2	-	2	2	1	12	5	4
2:1	15	5	8	-	1	7	7	-	6	9	-	2	-	-	-	9	1	1

CA: clay anvil, BS: burnishing stones, PA: adze head, H: hoe, WH: whetstone, CP: clay pellet, NW: net weight, BB: bone bobbin, TB: turtle shell disc/bangle, ST: stone disc/bangle, BO: bone disc/bangle, IB: ivory disc/bangle, AN: worked antler, CL: clay ladle, SP: shark tooth pendant, CP: clay pellet, MA: micro-awl, AW: awl

Within layers 2 and 3, at a depth of 50cm below datum, there was an oval feature comprising unfired clay. It measured 3m by 1.6m and attained a maximum thickness of 20cm. This feature was ringed by cylinders of clay and anvils (Fig. 82). The former are thought to represent stored clay. The anvils are used in conjunction with a wooden paddle to shape the walls of pots. There is a notable absence of postholes or other structural features in these two layers, and the probability that, in its final prehistoric occupation, the excavated area was used as an open-air pottery workshop is hard to rule out.



FIG. 16. The turtle carapace and associated material on the surface of layer 4

KHOK PHANOM DI: WEST SECTION

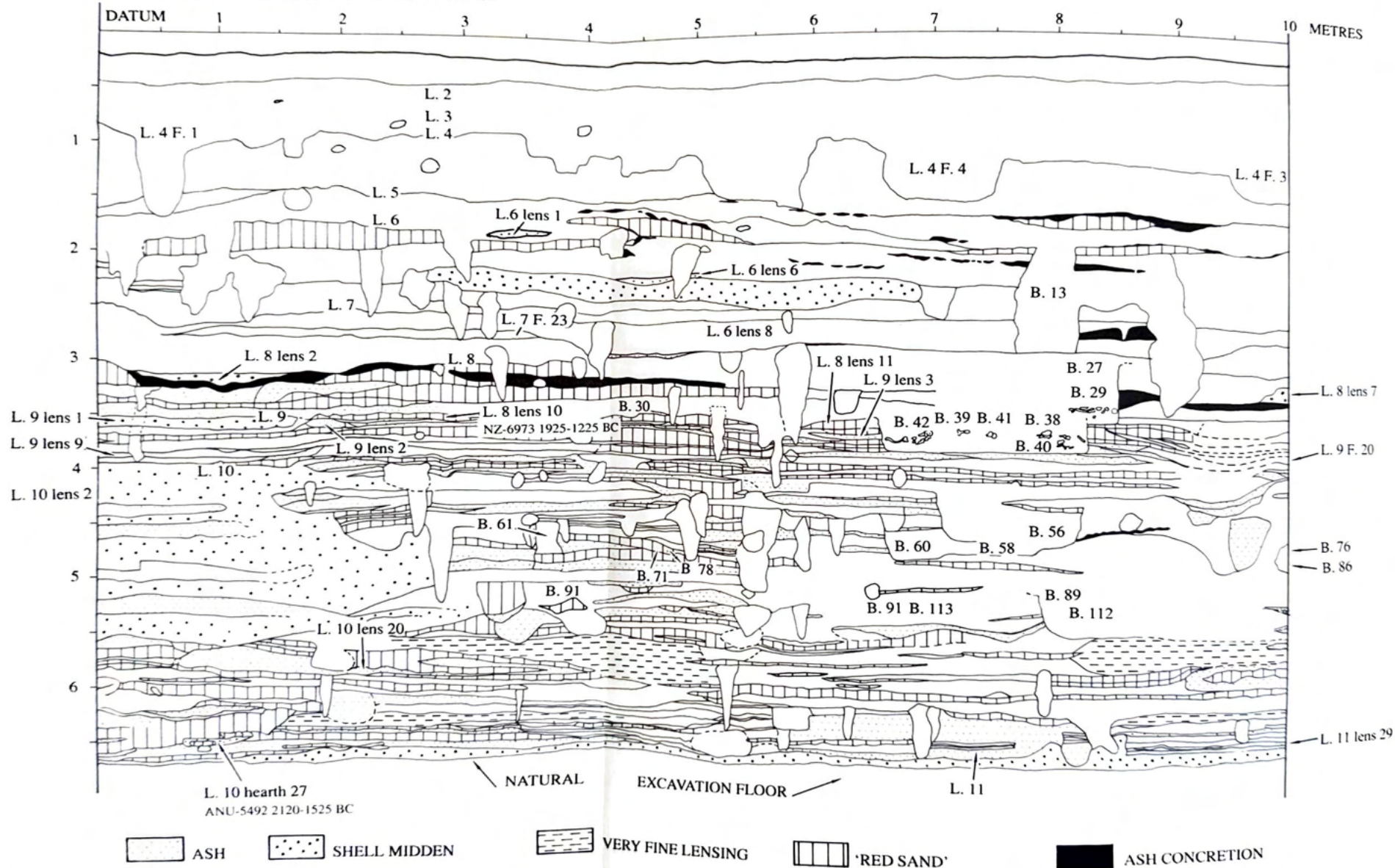


FIG. 17. The west section at Khok Phanom Di

CULTURAL ASPECTS OF THE SEQUENCE

KHOK PHANOM DI: EAST SECTION

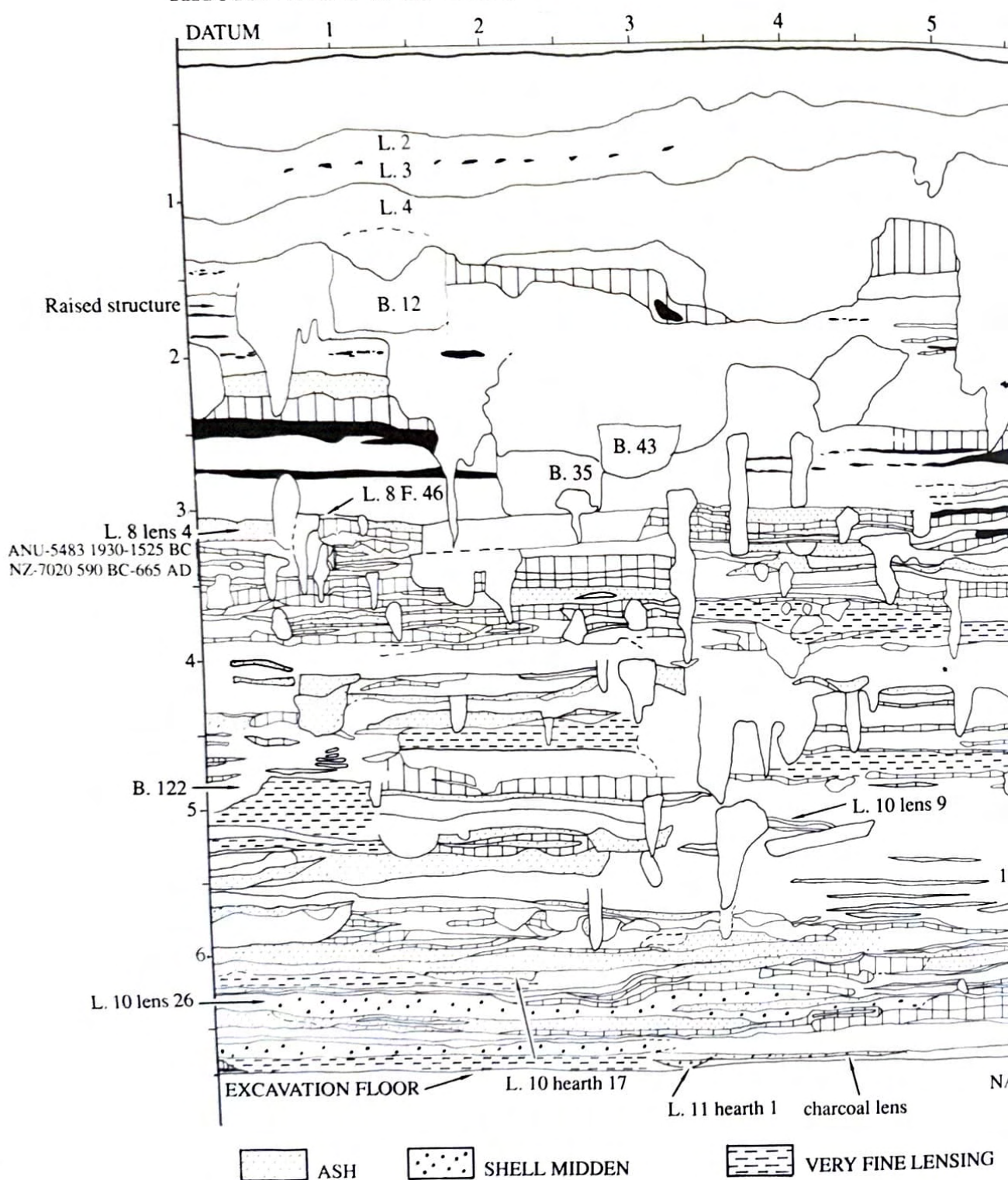


FIG. 18. The east section at Khok Phanom Di

EXCAVATION OF KHOK PHANOM DI

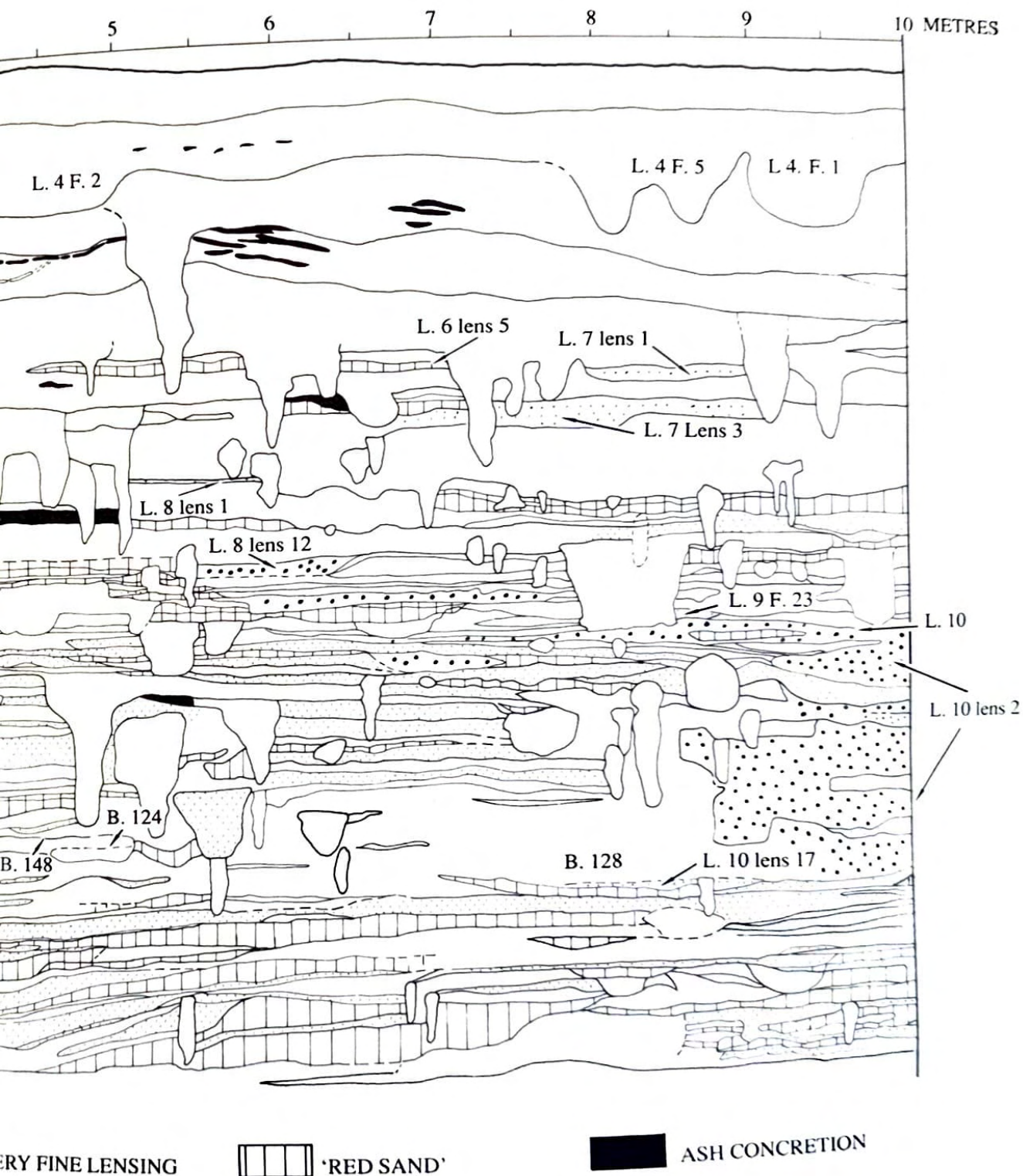


FIG. 19. The south section at Khok Phanom Di

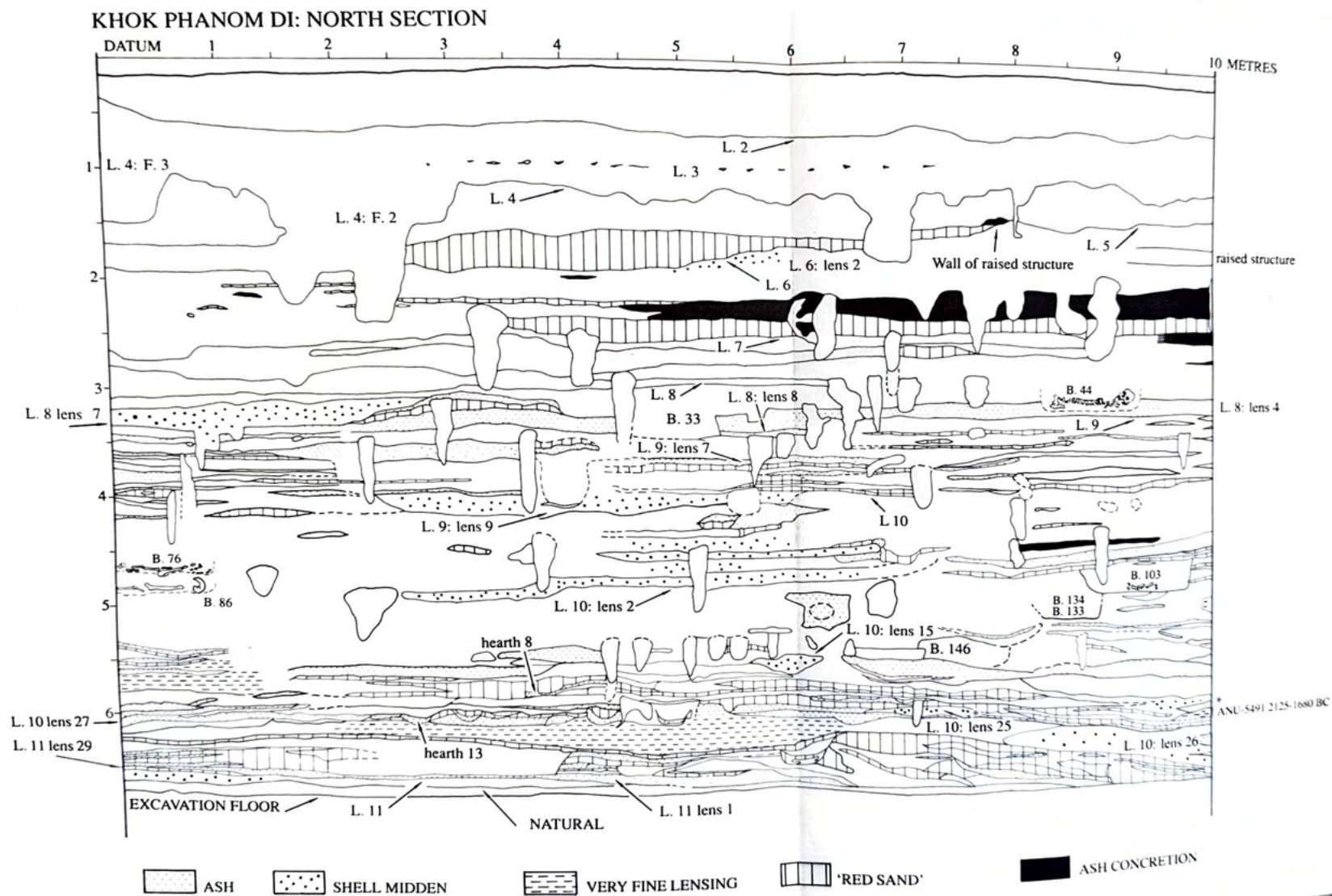


FIG. 20. The north section at Khok Phanom Di

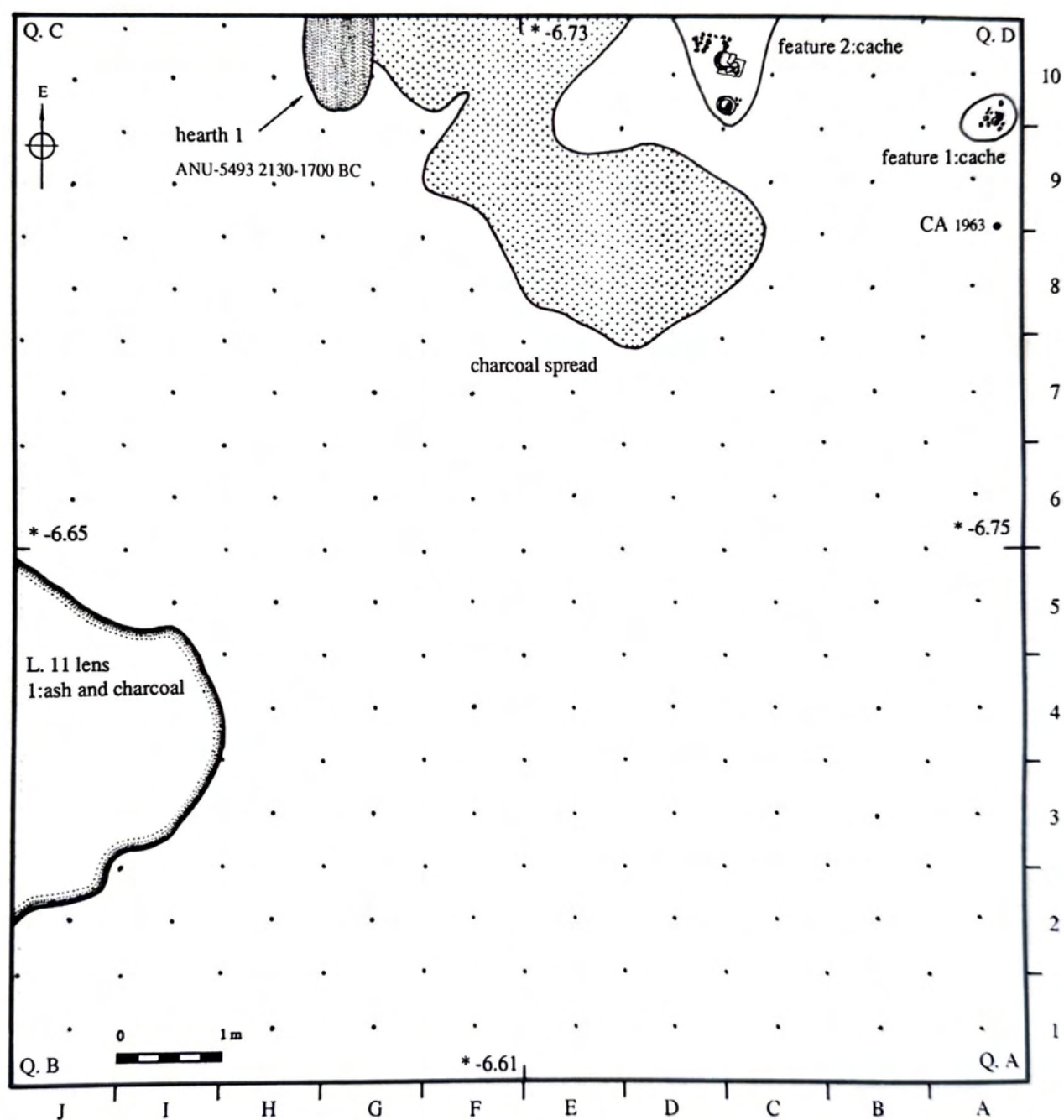


FIG. 21. The distribution of the features identified in layer 11:2. *Abbreviations:* *: depth at this point below datum, Q: quadrant, L: layer, CA: clay anvil. The number after each artefact is its catalogue reference

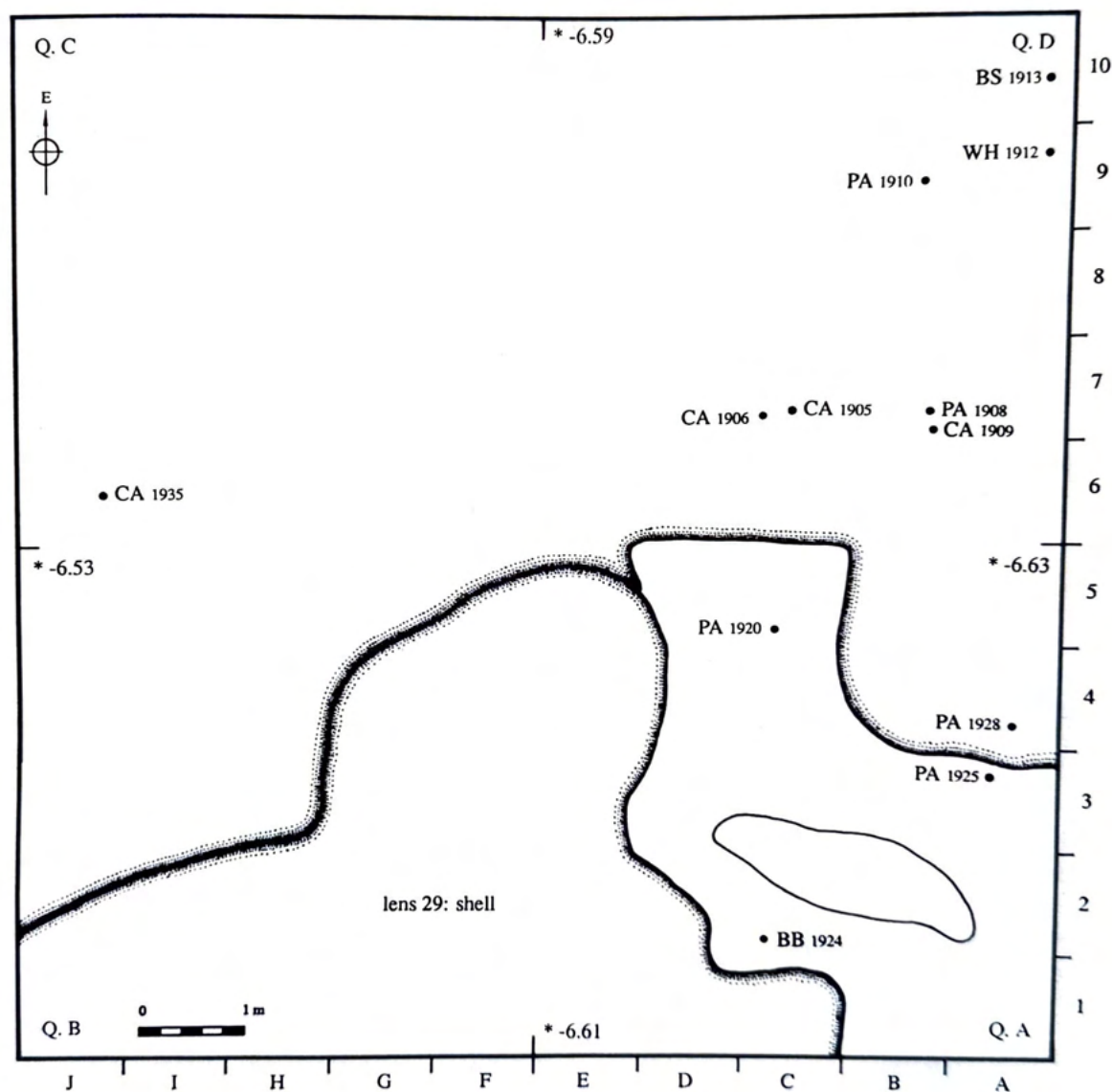


FIG. 22. The distribution of the features identified in layer 11:1. *Abbreviations:* Q: quadrant, *: depth at this point below datum, CA: clay anvil, PA: adze head, WH: whetstone, BS: burnishing stone, BB: bone bobbin. The number after each artefact is its catalogue reference

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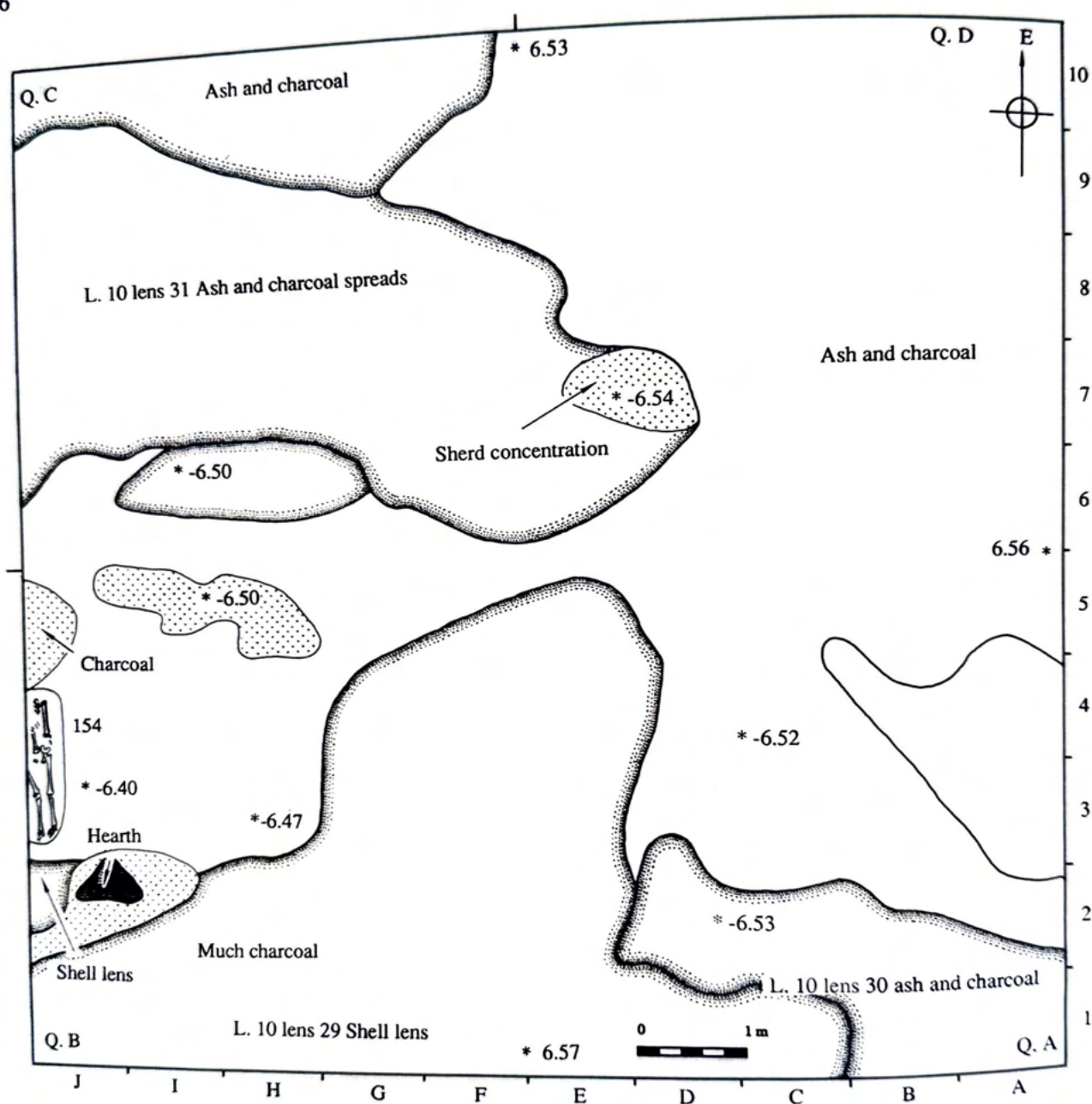


FIG. 23. The distribution of the features identified in lower layer 10:25. Abbreviations: Q: quadrant, L: layer, B: burial, *: depth at this point below datum

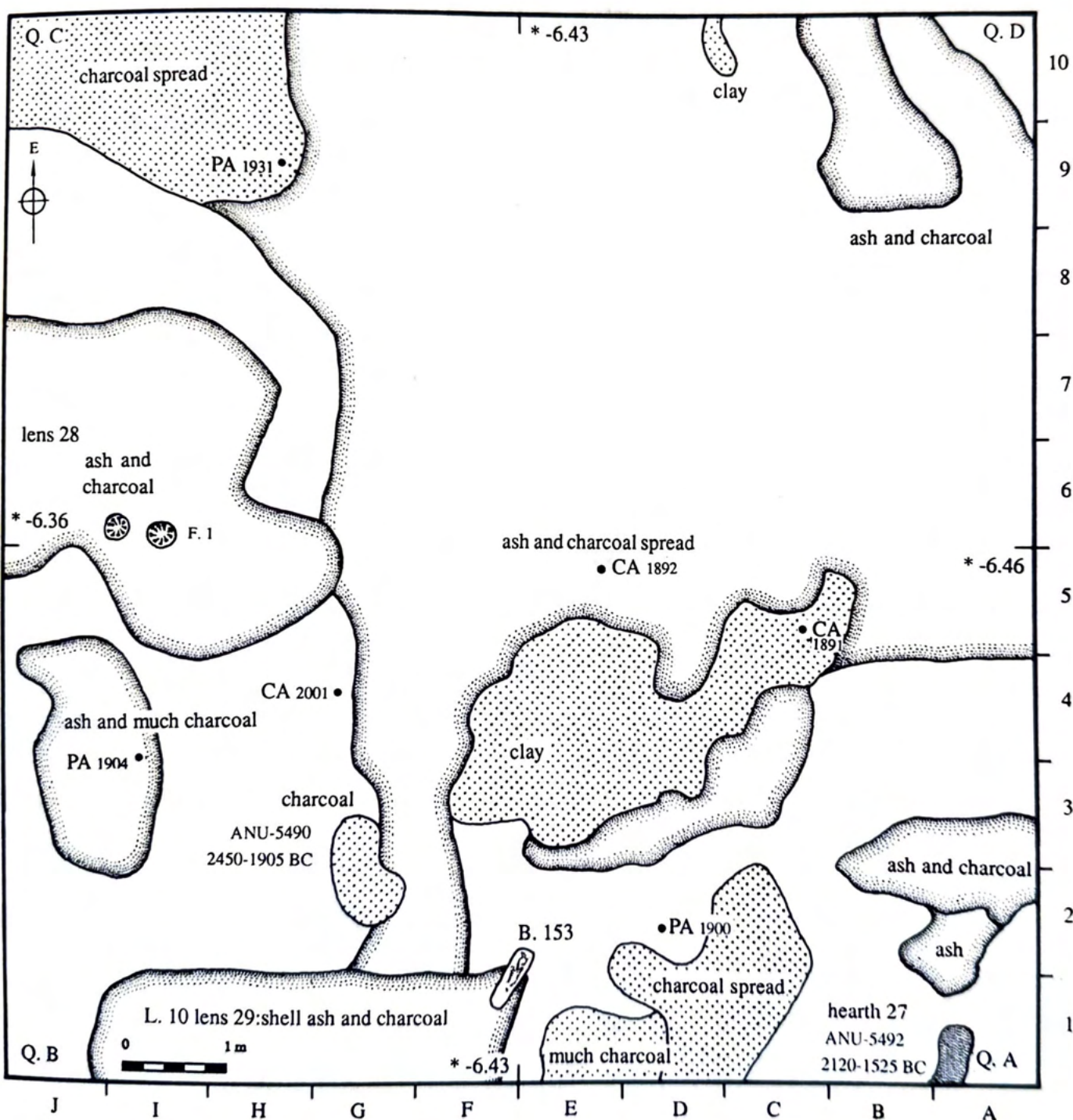


FIG. 24. The distribution of the features identified in upper layer 10:25. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, CA: clay anvil, PA: adze head. The number after each artefact is its catalogue reference

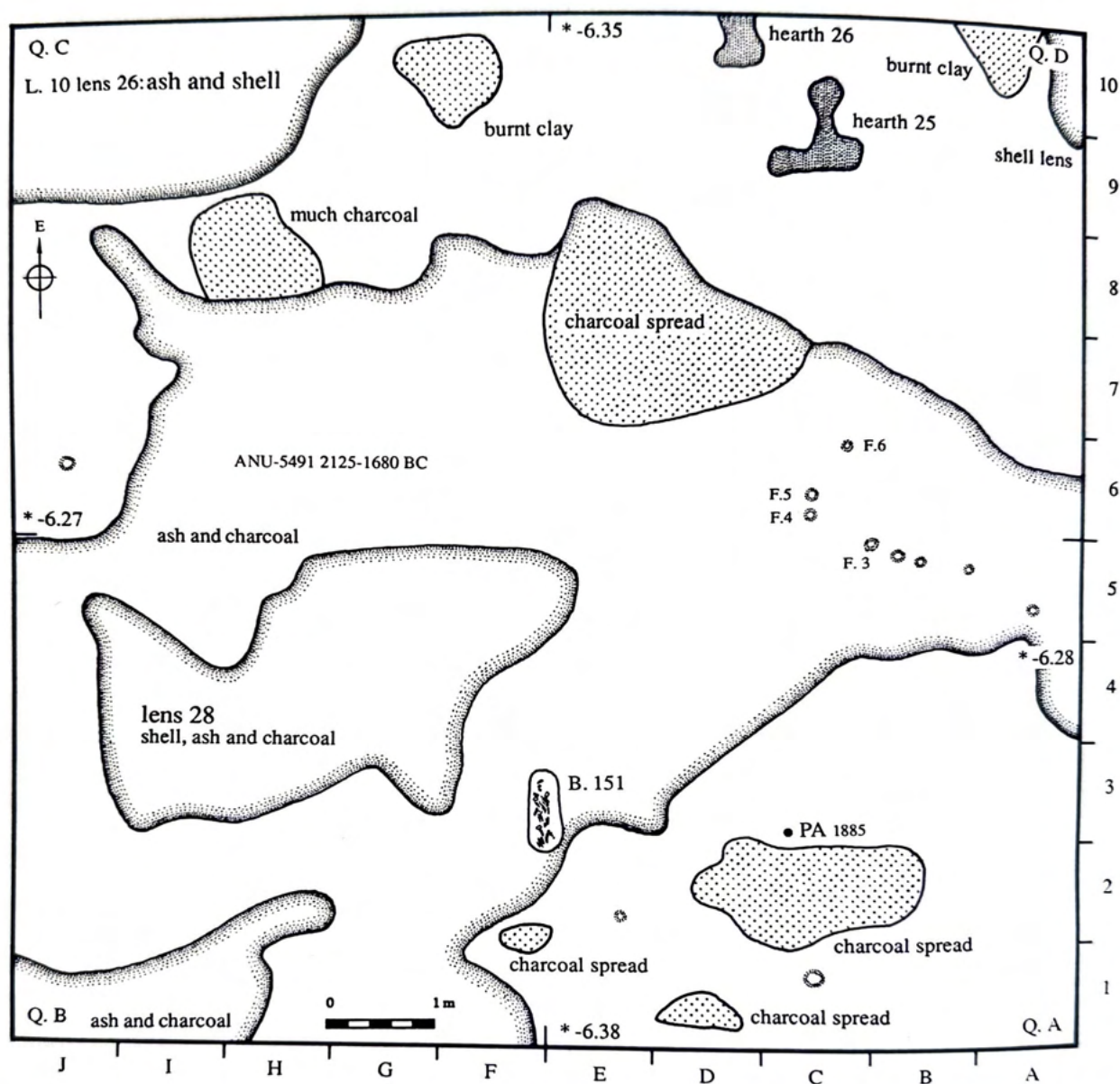


FIG. 25. The distribution of the features identified in layer 10:24. Abbreviations: Q: quadrant, F: feature, B: burial, L: layer, *: depth at this point below datum, PA: adze head. The number after each artefact is its catalogue reference

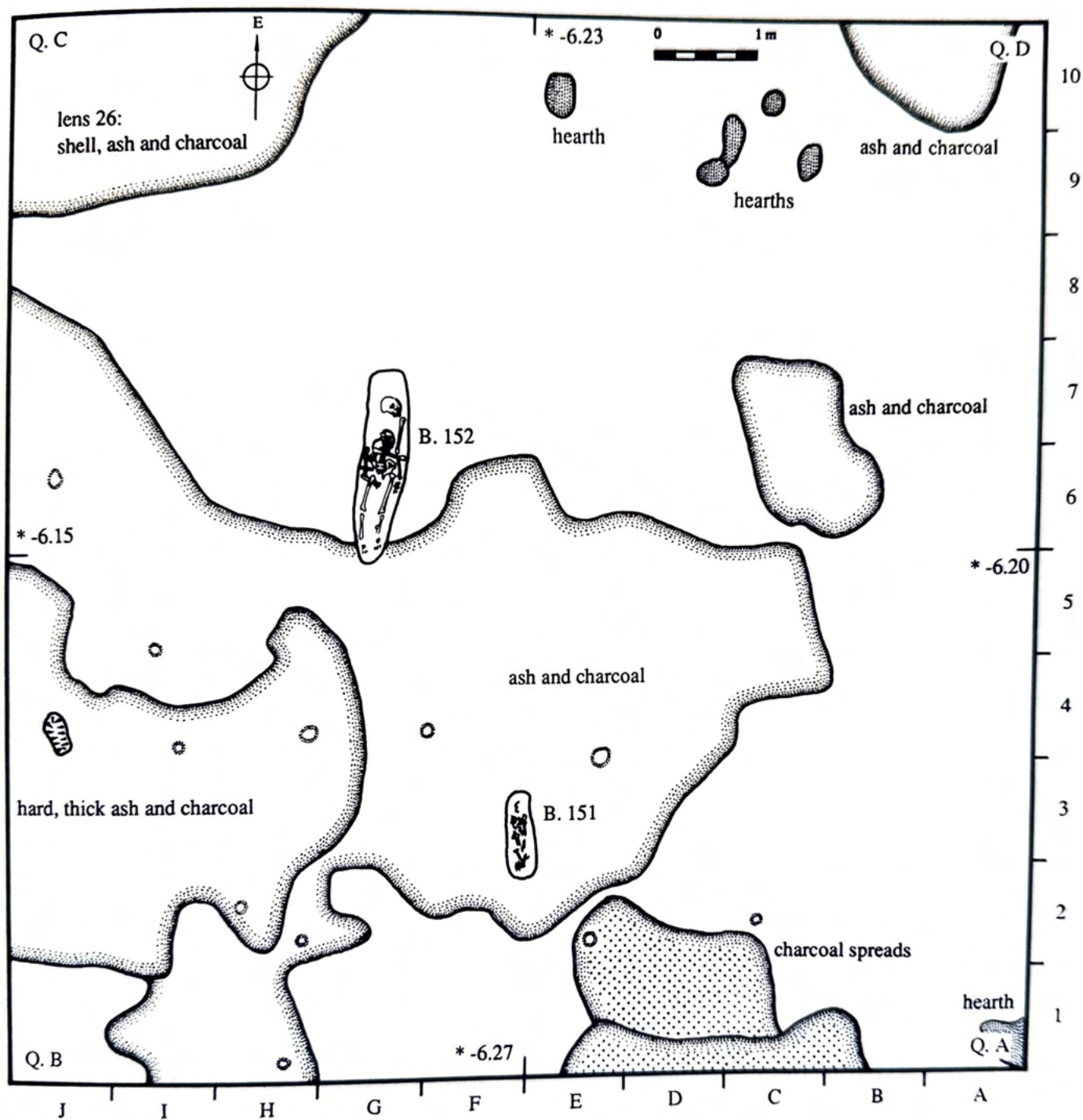


FIG. 26. The distribution of the features identified in layer 10:23. Abbreviations: Q: quadrant, B: burial, *: depth at this point below datum

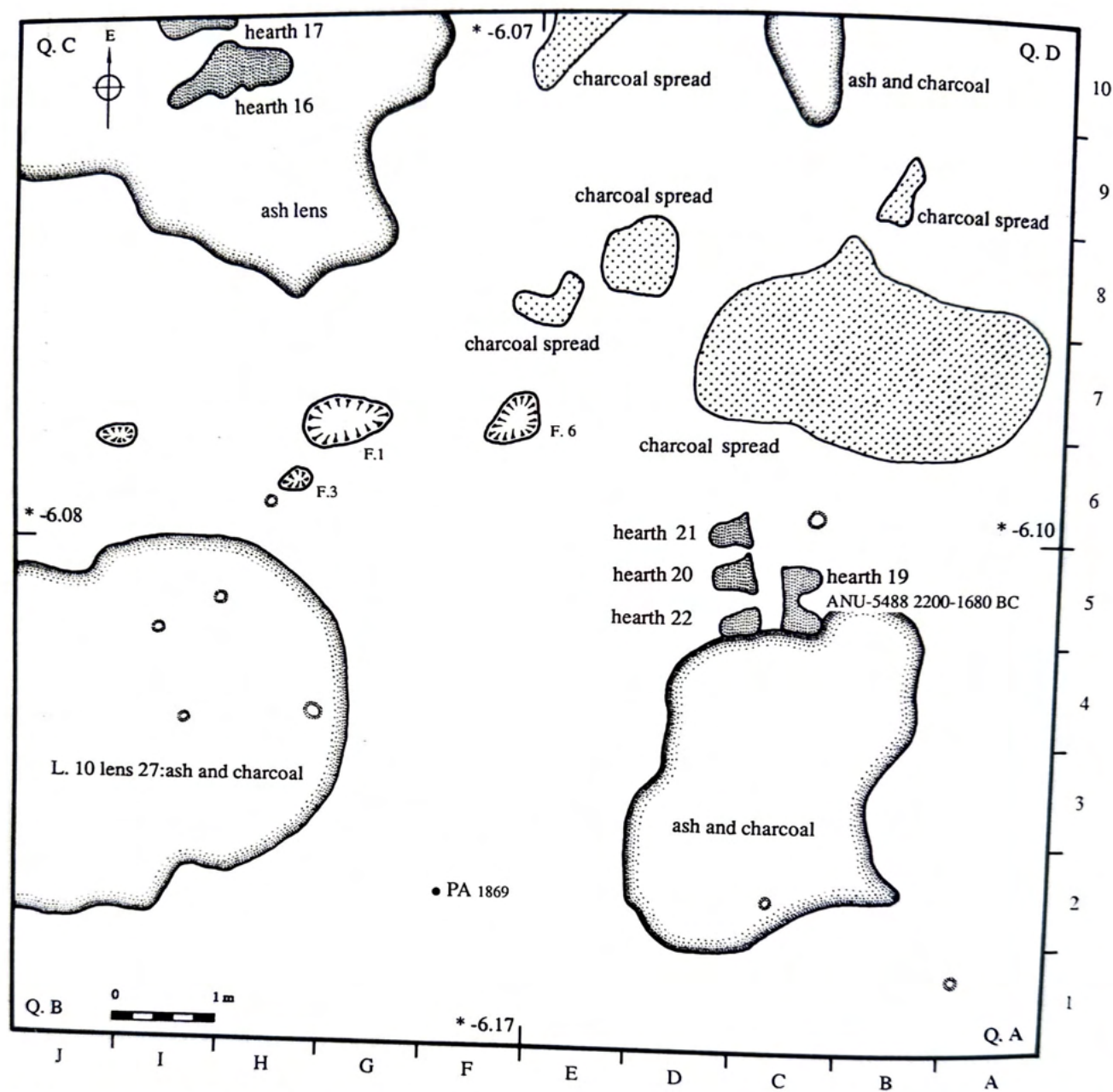


FIG. 27. The distribution of the features identified in layer 10:22. Abbreviations: Q: quadrant, F: feature, L: layer, *: depth at this point below datum, PA: adze head. The number after each artefact is its catalogue reference

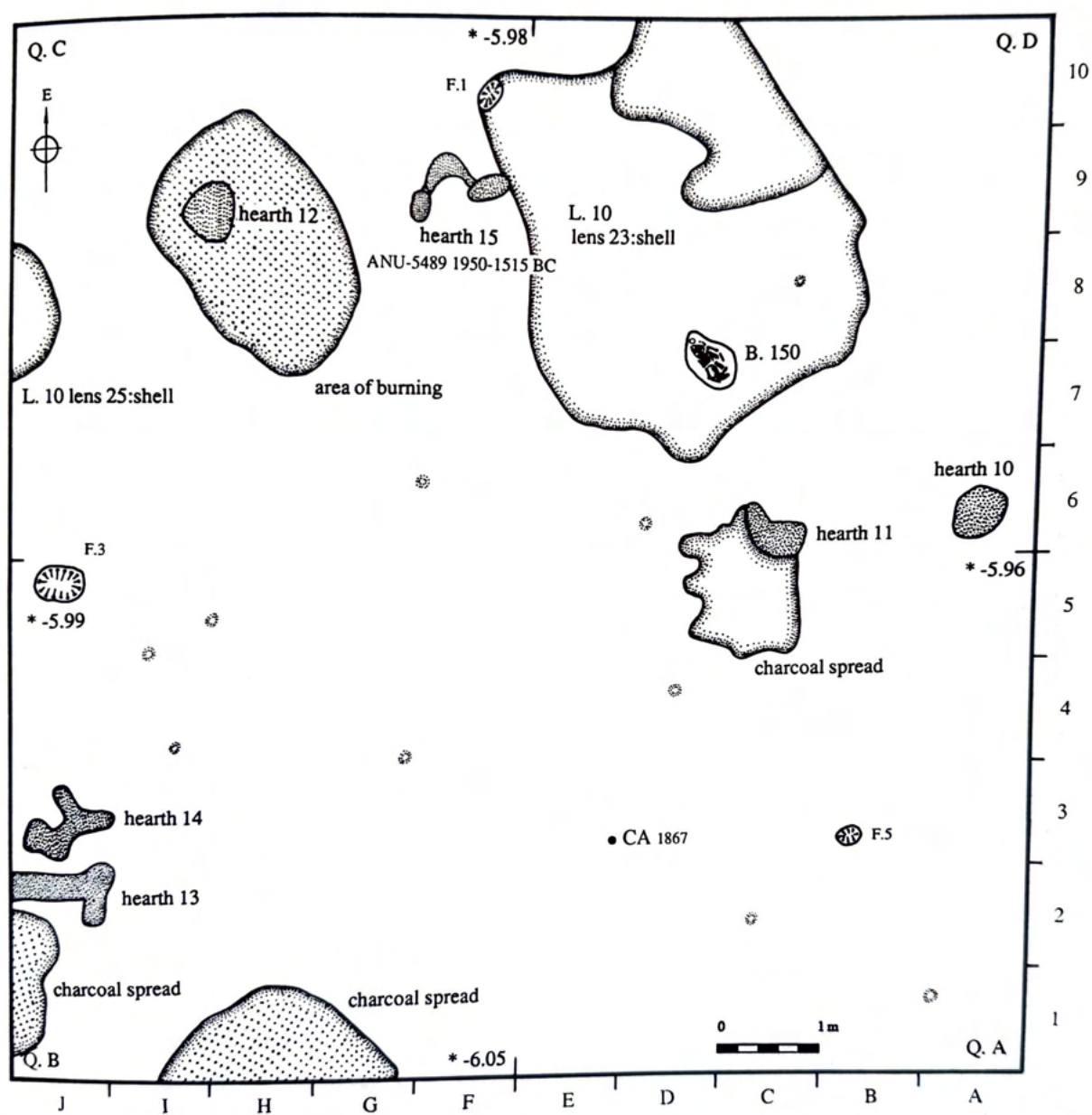


FIG. 28. The distribution of the features identified in layer 10:21. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, CA: clay anvil. The number after each artefact is its catalogue reference

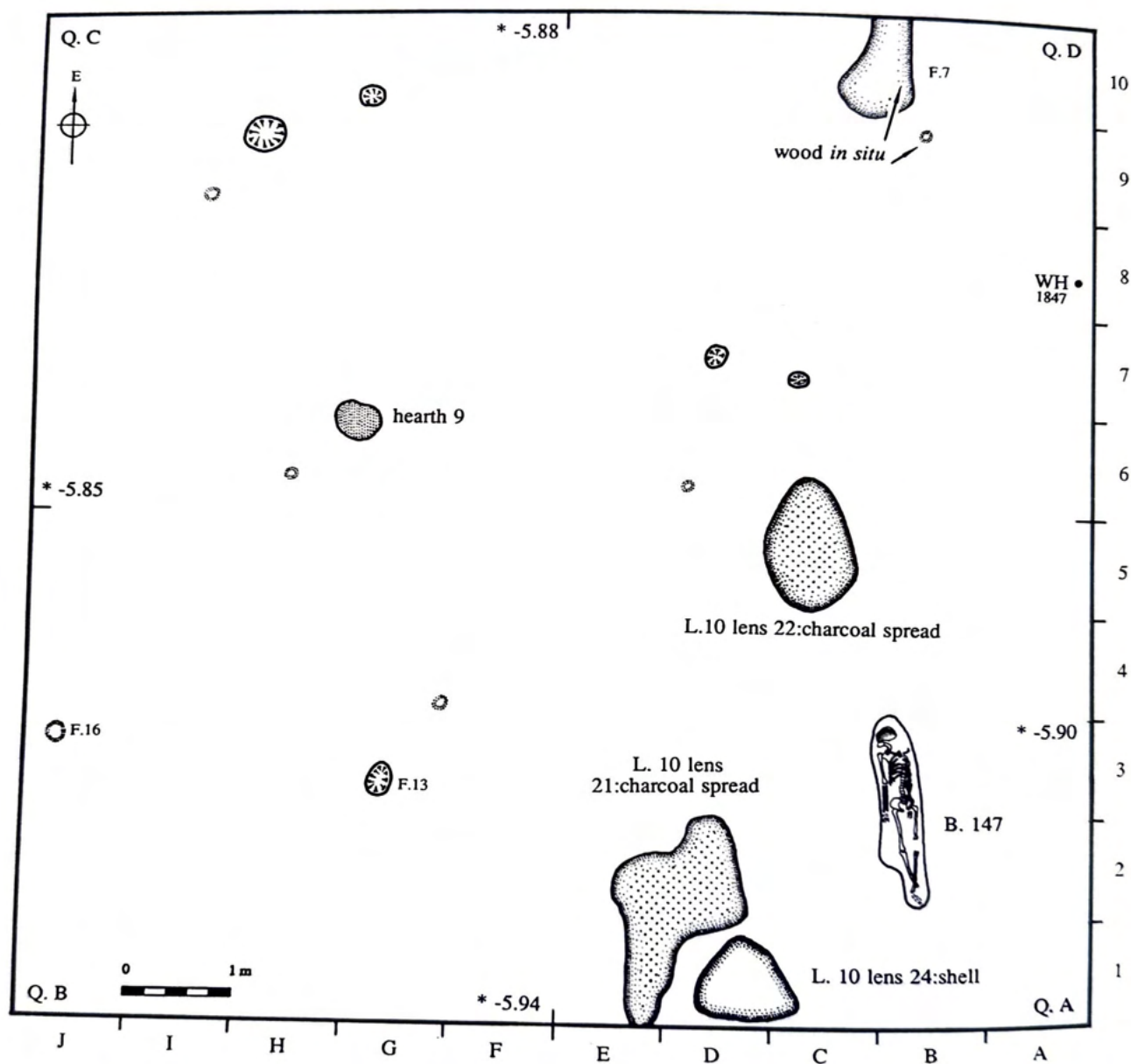


FIG. 29. The distribution of the features identified in layer 10:20. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, WH: whetstone. The number after each artefact is its catalogue reference

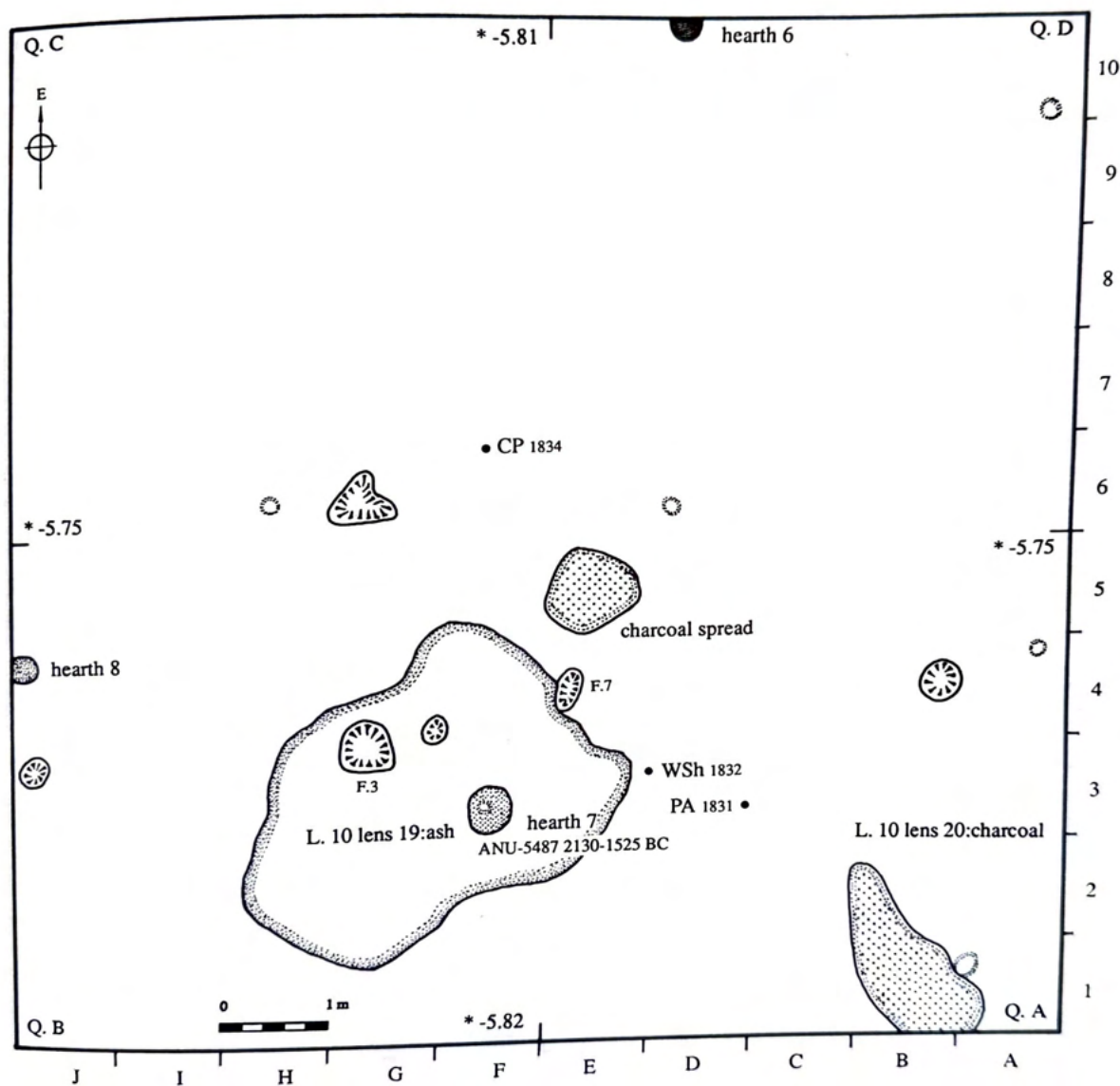


FIG. 30. The distribution of the features identified in layer 10:19. *Abbreviations:* Q: quadrant, F: feature, L: layer, *: depth at this point below datum, PA: adze head, WSh: worked shell, CP: clay pellet. The number after each artefact is its catalogue reference

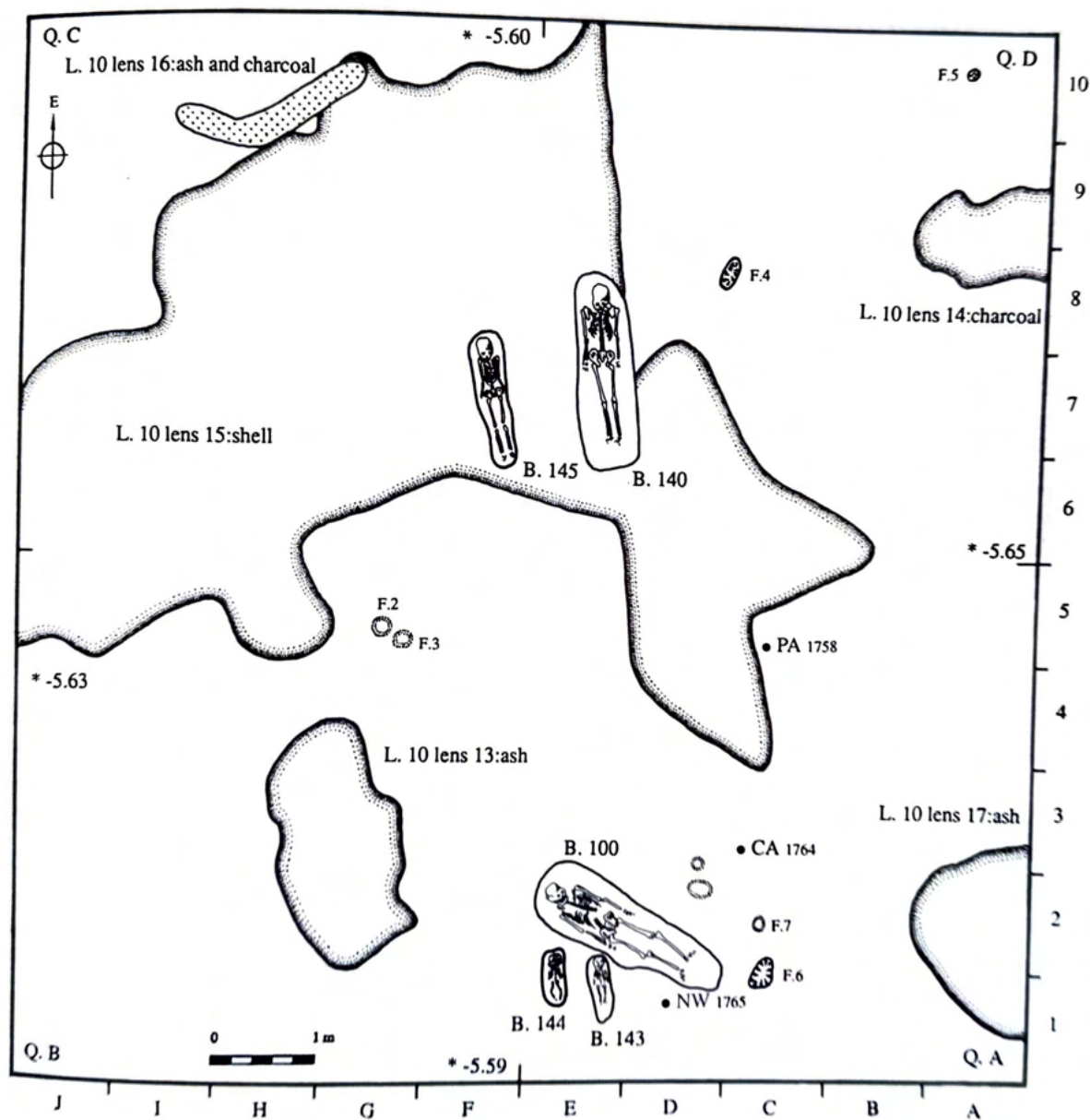


FIG. 32. The distribution of the features identified in layer 10:17. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, CA: clay anvil, PA: adze head, NW: net weight. The number after each artefact is its catalogue reference

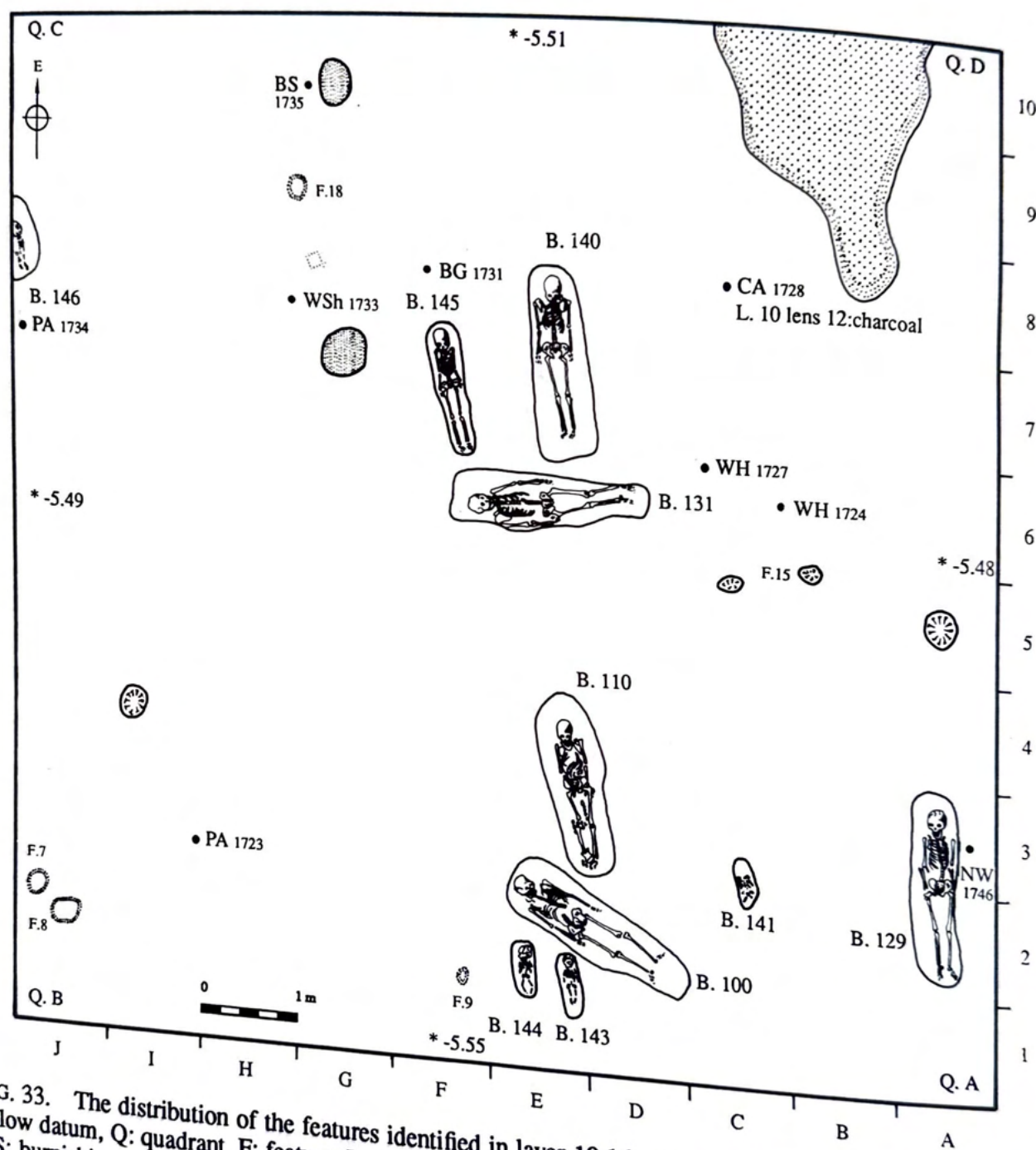


FIG. 33. The distribution of the features identified in layer 10:16. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, CA: clay anvil, PA: adze head, WH: whetstone, BS: burnishing stones, NW: net weight, BG: bone groover, WSh: worked shell. The number after each artefact is its catalogue reference

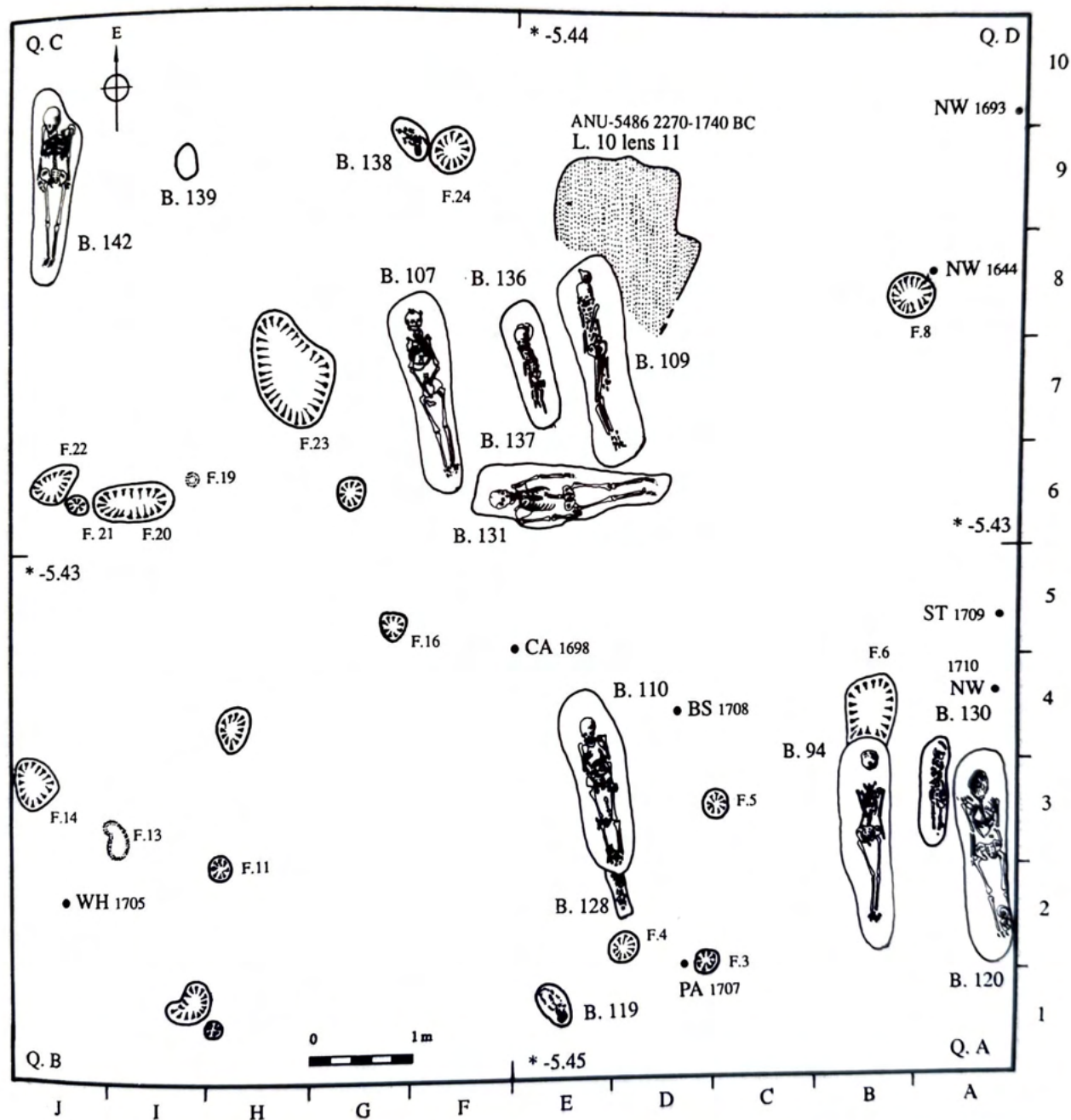


FIG. 34. The distribution of the features identified in layer 10:15. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, CA: clay anvil, PA: adze head, WH: whetstone, BS: burnishing stones, SH: stone poulder, GS: grinding stones, NW: net weight. The number after each artefact is its catalogue reference

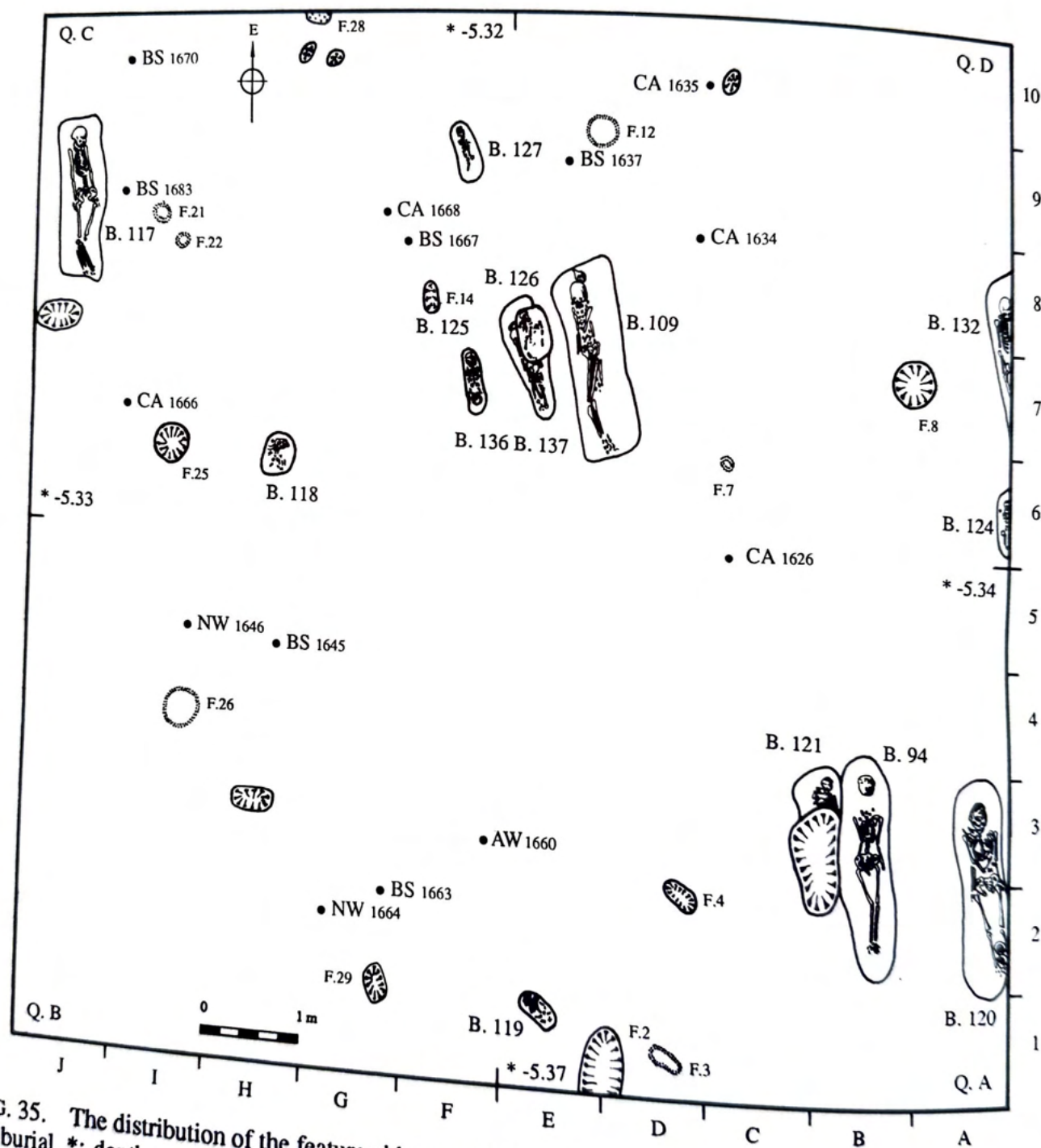


FIG. 35. The distribution of the features identified in layer 10:14. Abbreviations: Q: quadrant, F: feature, B: burial, *: depth at this point below datum, CA: clay anvil, BS: burnishing stones, NW: net weight. The number after each artefact is its catalogue reference

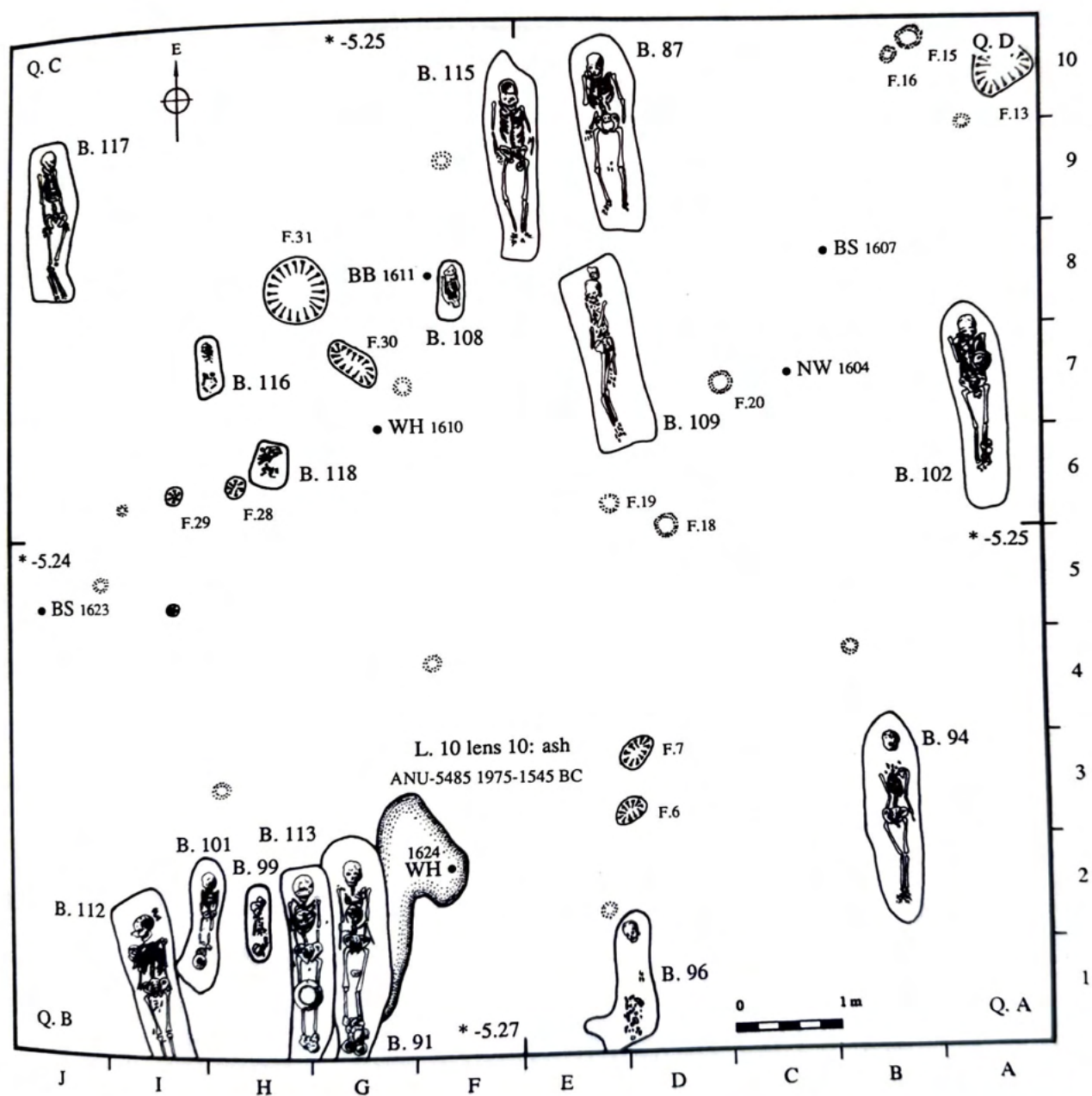


FIG. 36. The distribution of the features identified in layer 10:13. *Abbreviations:* Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, PA: adze head, WH: whetstone, BS: burnishing stones, GS: grinding stones, BB: bone bobbin, NW: net weight. The number after each artefact is its catalogue reference

EXCAVATION OF KHOK PHANOM DI

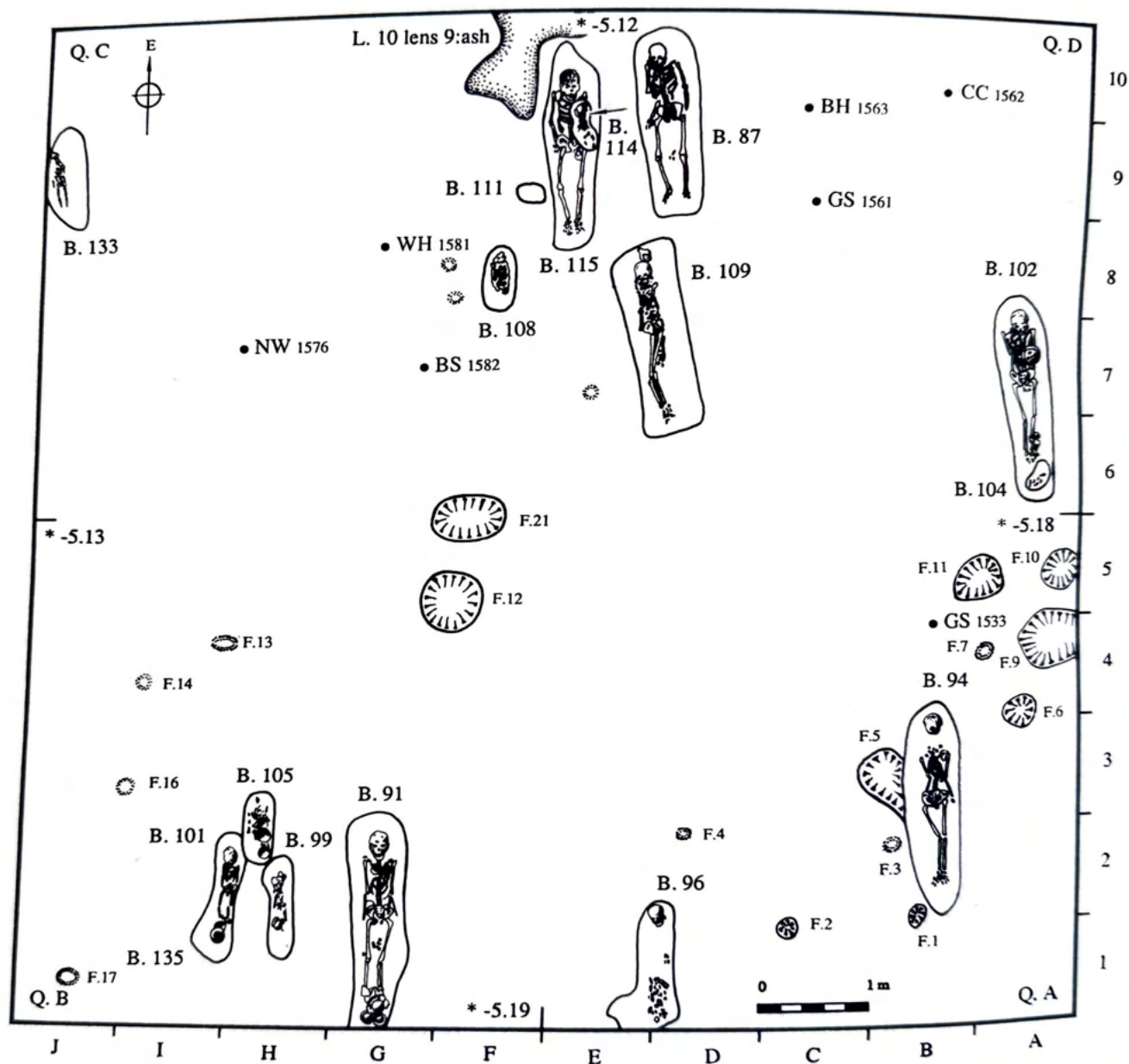


FIG. 37. The distribution of the features identified in layer 10:12. *Abbreviations:* Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, WH: whetstone, BS: burnishing stones, GS: grinding stones, NW: net weight, CC: clay counter, BH: bone harpoon. The number after each artefact is its catalogue reference

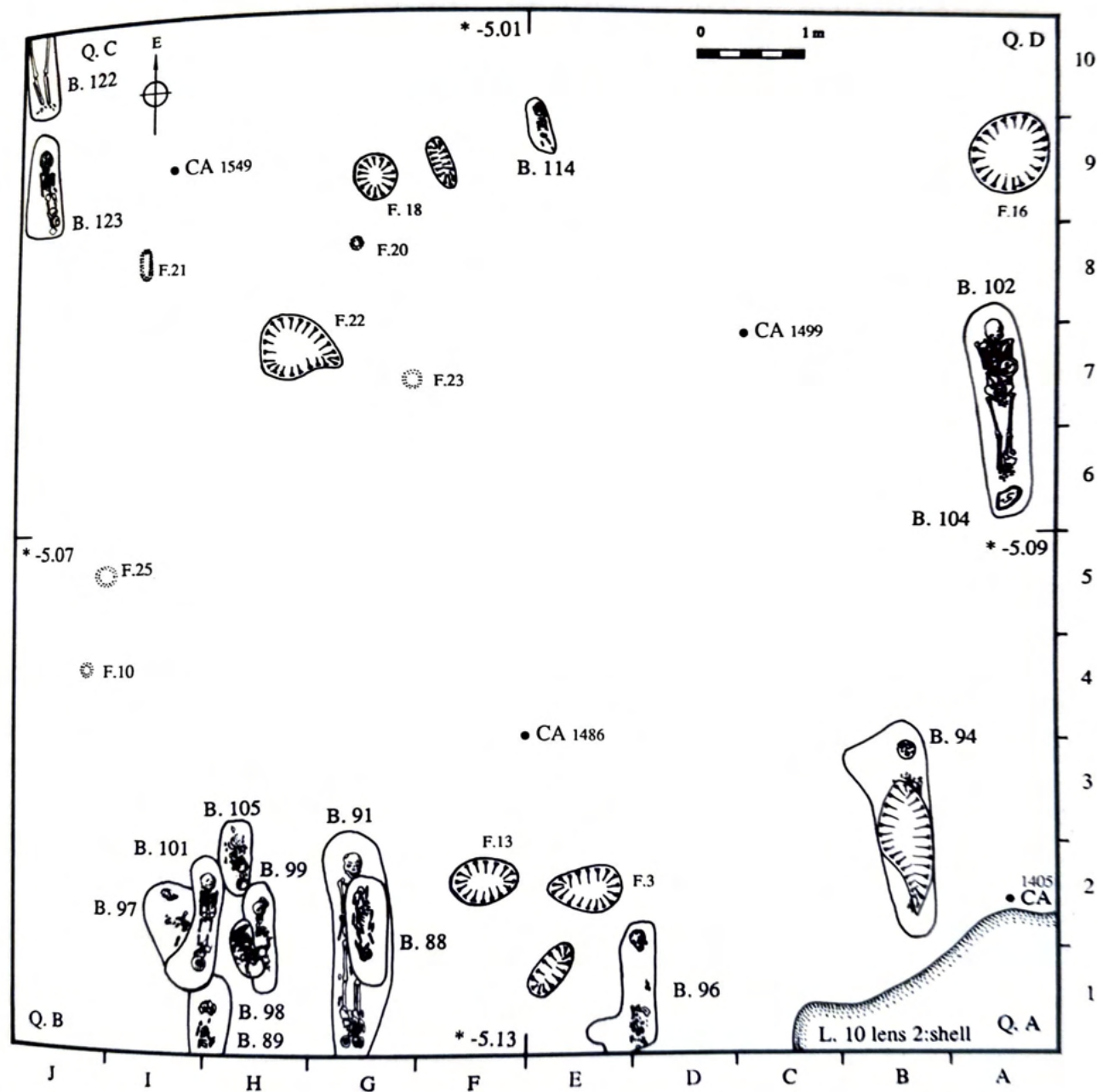


FIG. 38. The distribution of the features identified in layer 10:11. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, CA: clay anvil. The number after each artefact is its catalogue reference

EXCAVATION OF KHOK PHANOM DI

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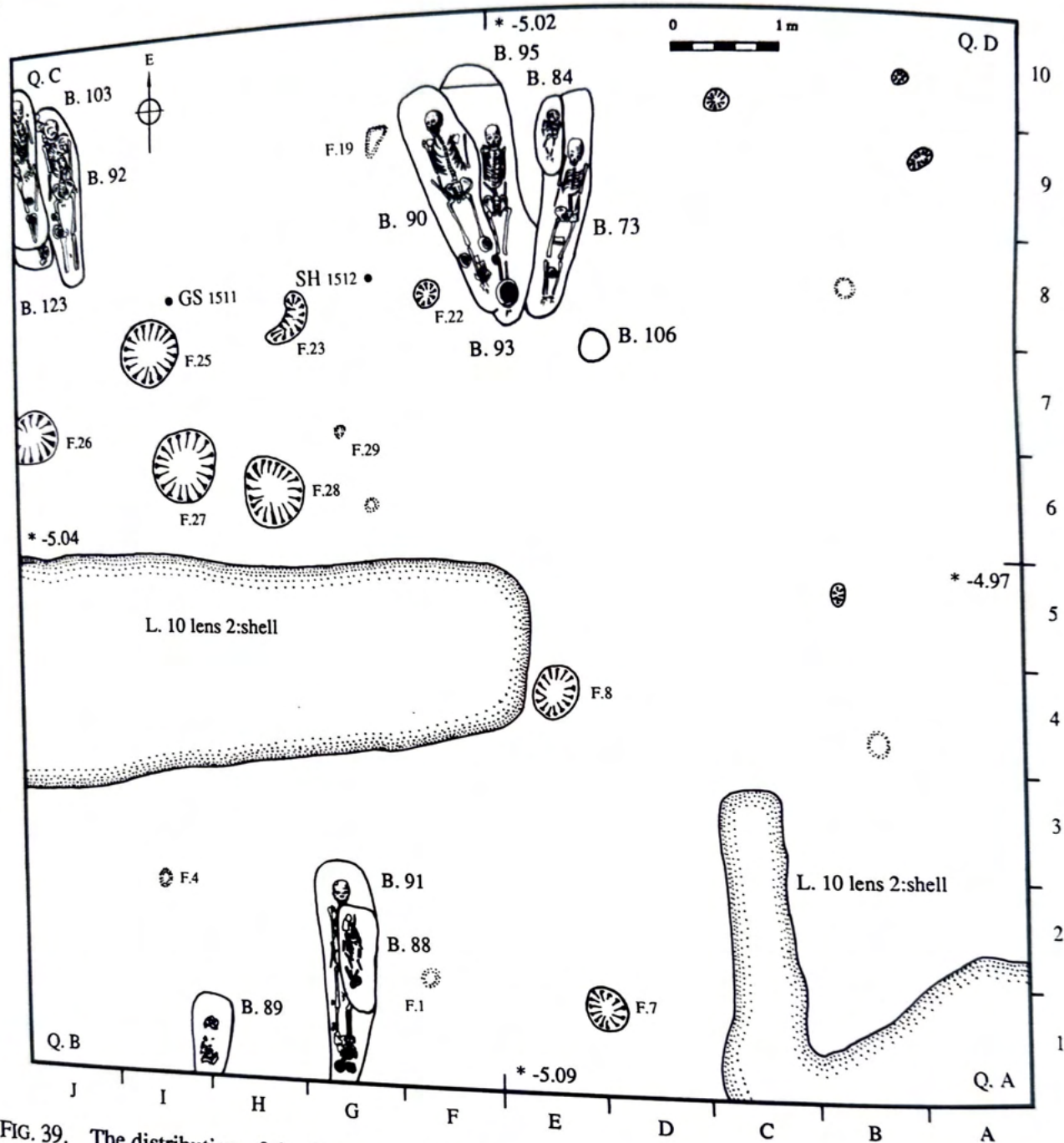


FIG. 39. The distribution of the features identified in layer 10:10. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, SH: stone pounder, GS: grinding stones. The number after each artefact is its catalogue reference

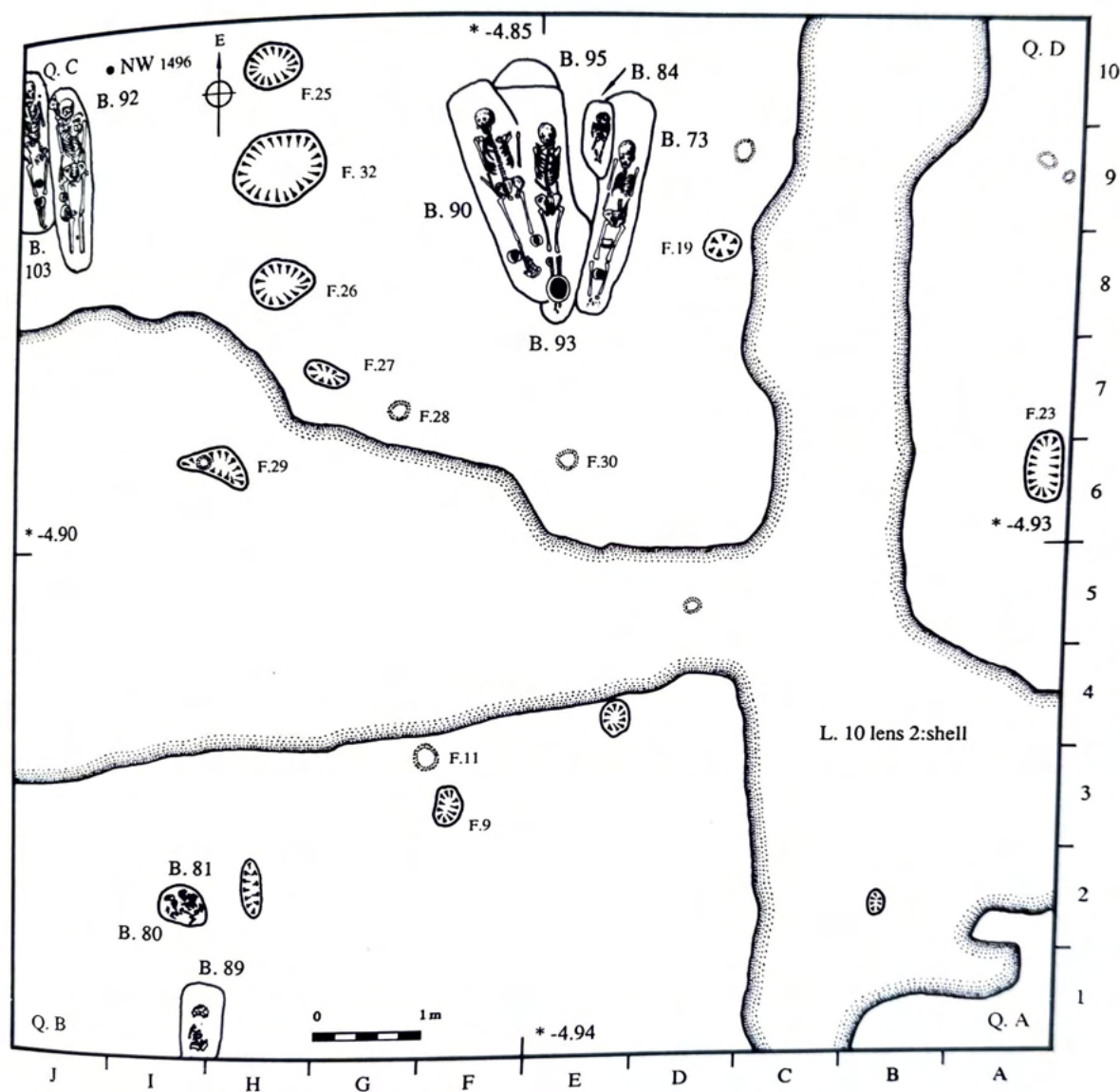


FIG. 40. The distribution of the features identified in layer 10:9. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, NW: net weight. The number after each artefact is its catalogue reference

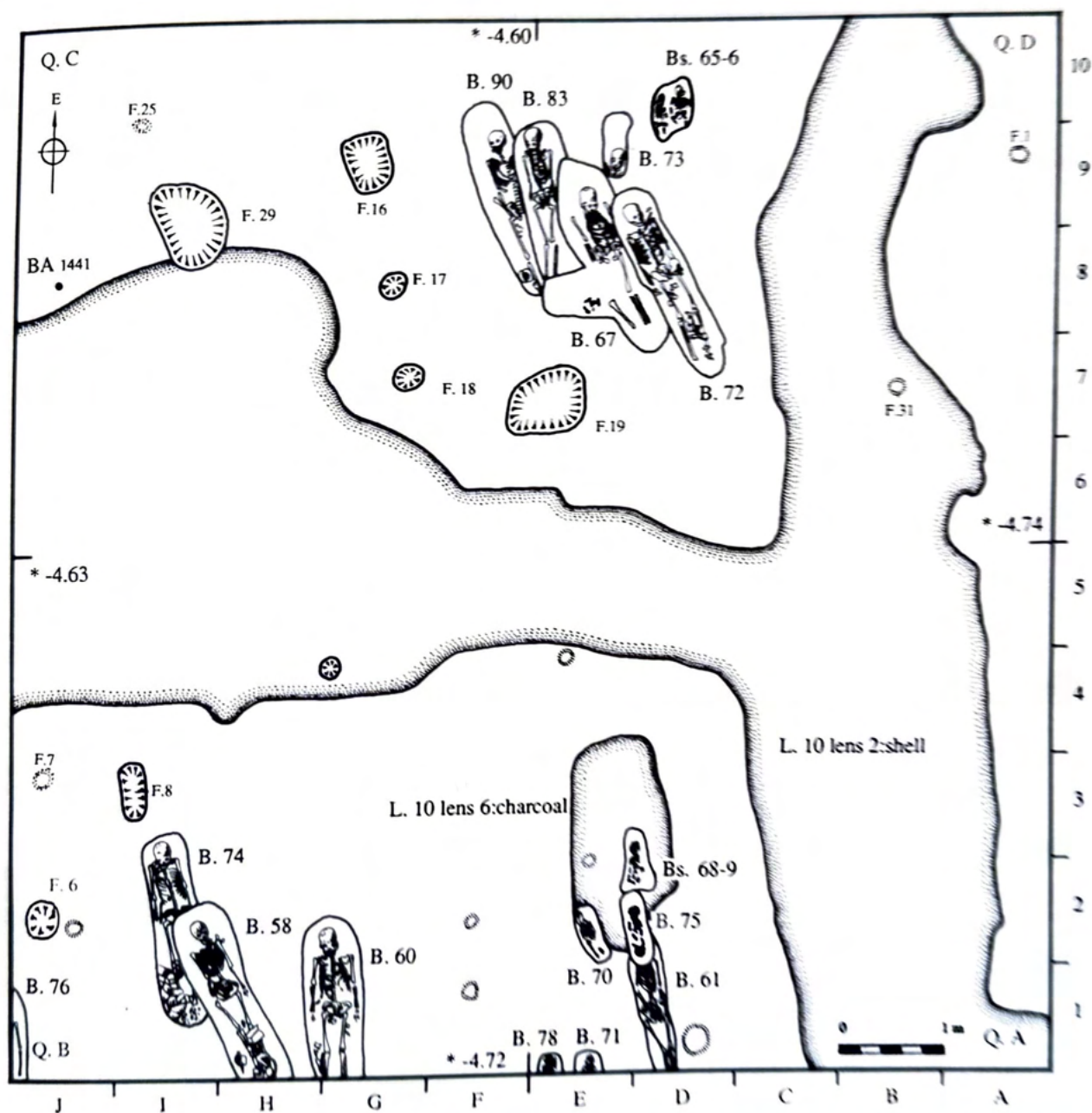


FIG. 42. The distribution of the features identified in layer 10:7. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, BA: bone awl. The number after each artefact is its catalogue reference

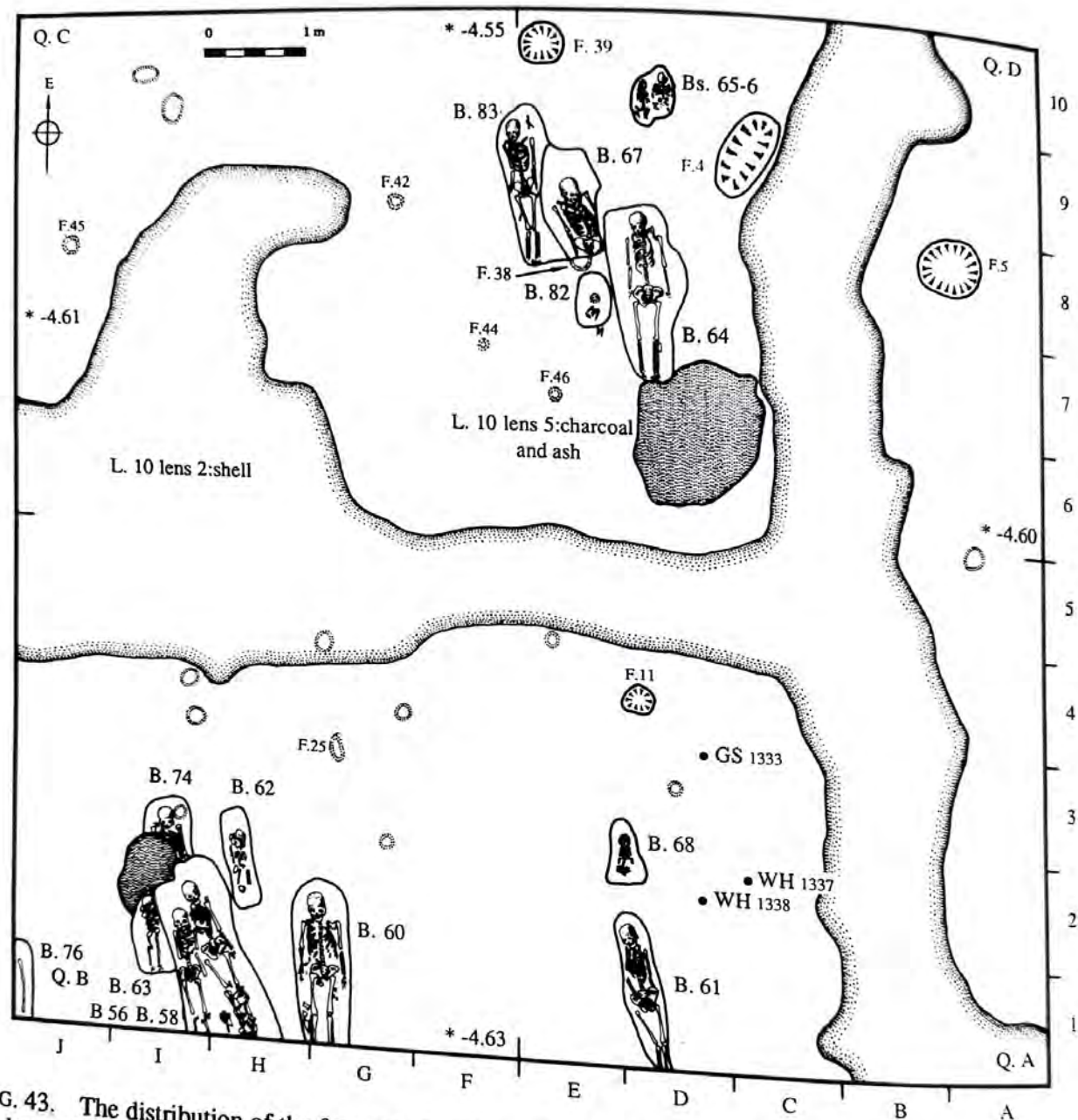
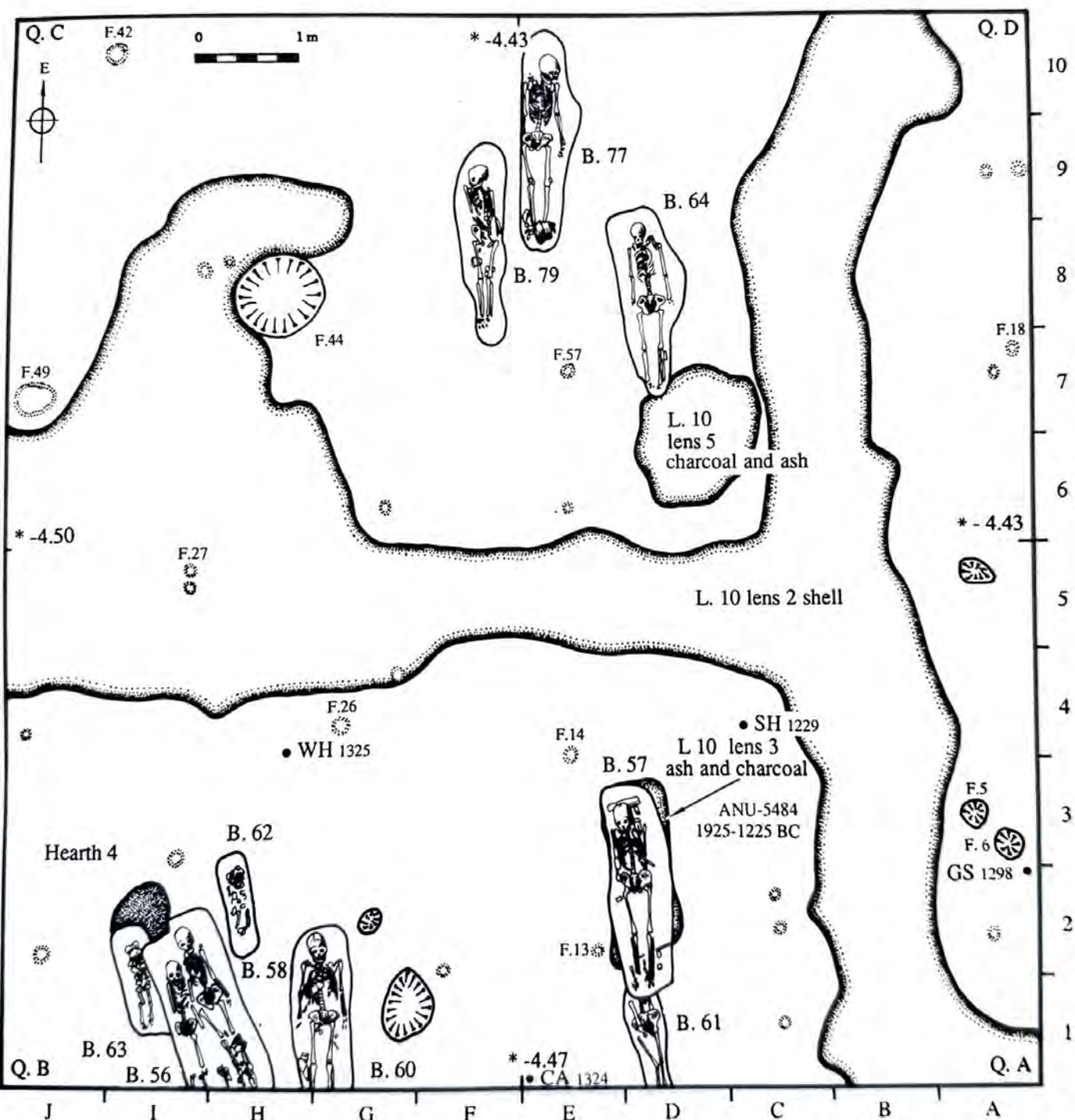


FIG. 43. The distribution of the features identified in layer 10:6. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, WH: whetstone, GS: grinding stones. The number after each artefact is its catalogue reference



G. 44. The distribution of the features identified in layer 10:5. *Abbreviations:* Q: quadrant, F: feature, layer, B: burial, *: depth at this point below datum, CA: clay anvil, WH: whetstone, SH: stone poulder, S: grinding stones. The number after each artefact is its catalogue reference

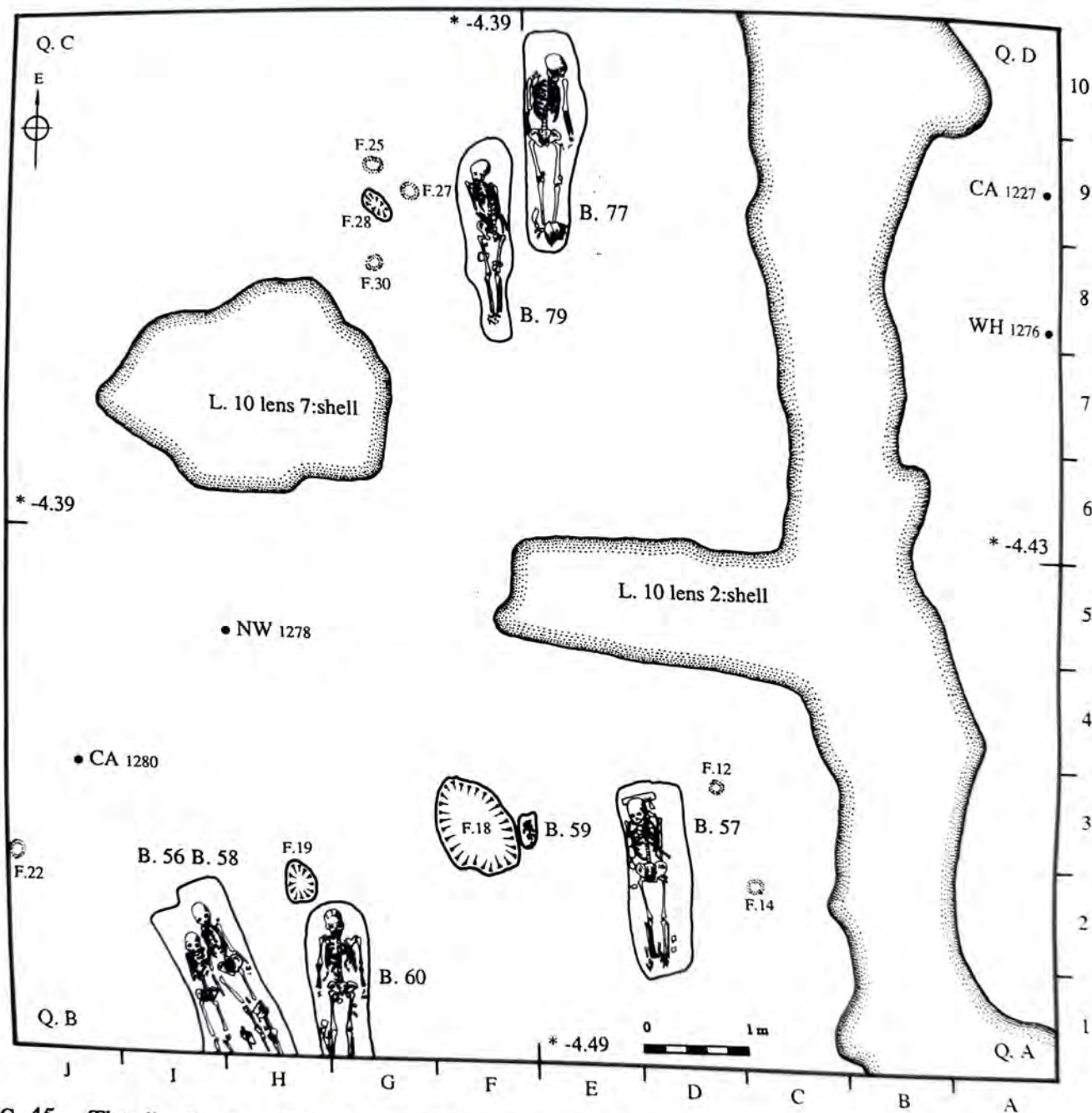


FIG. 45. The distribution of the features identified in layer 10:4. *Abbreviations:* Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, CA: clay anvil, WH: whetstone, NW: net weight. The number after each artefact is its catalogue reference

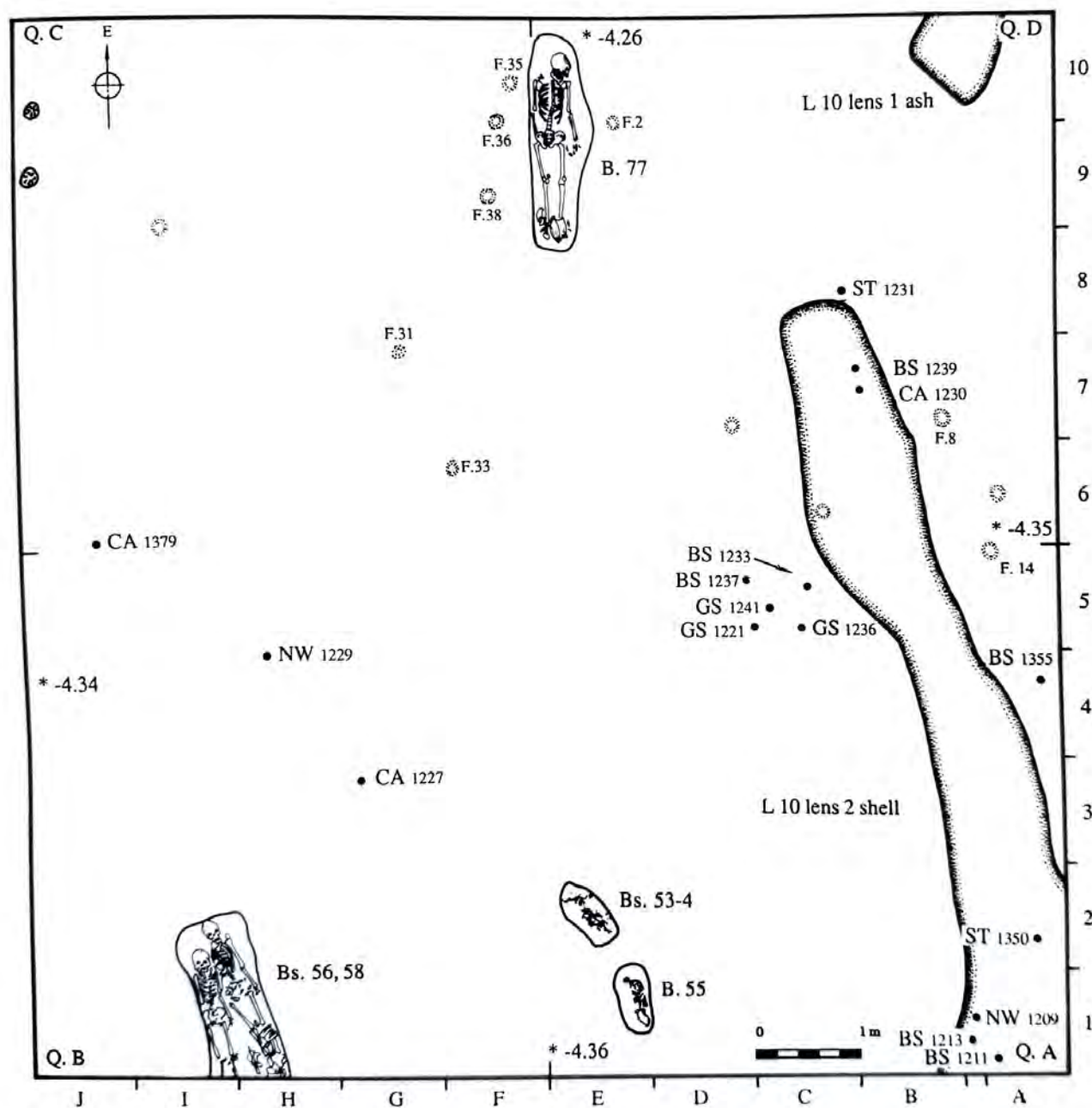


FIG. 46. The distribution of the features identified in layer 10:3. *Abbreviations:* Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, CA: clay anvil, BS: burnishing stones, GS: grinding stones, NW: net weight, St: stone tool. The number after each artefact is its catalogue reference

EXCAVATION OF KHOK PHANOM DI

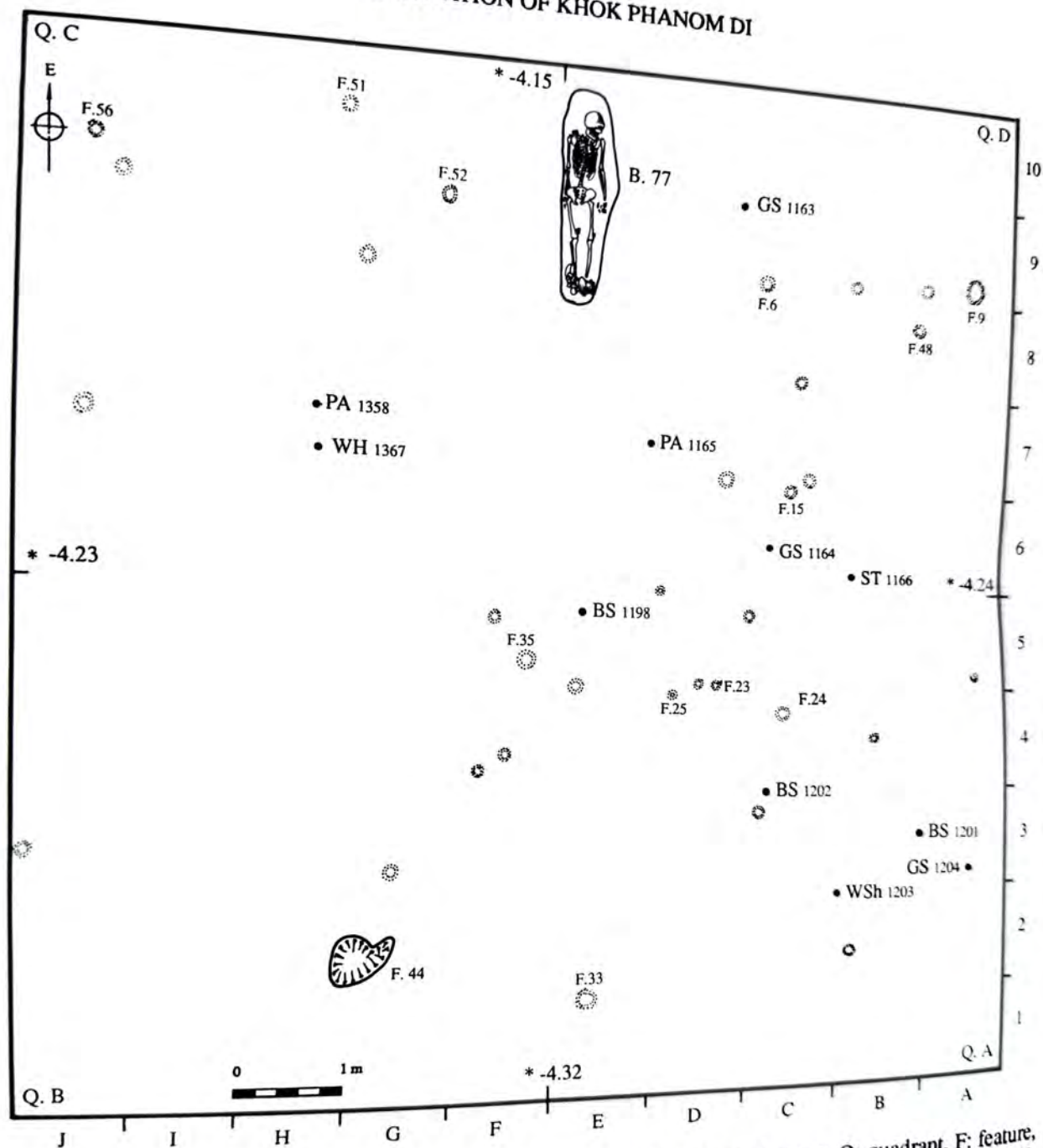


FIG. 47. The distribution of the features identified in layer 10:2. Abbreviations: Q: quadrant, F: feature, B: burial, *: depth at this point below datum, PA: adze head, WH: whetstone, BS: burnishing stones, ST: stone tool, GS: grinding stones, ST: stone disc/bangle, WSh: worked shell. The number after each artefact is its catalogue reference

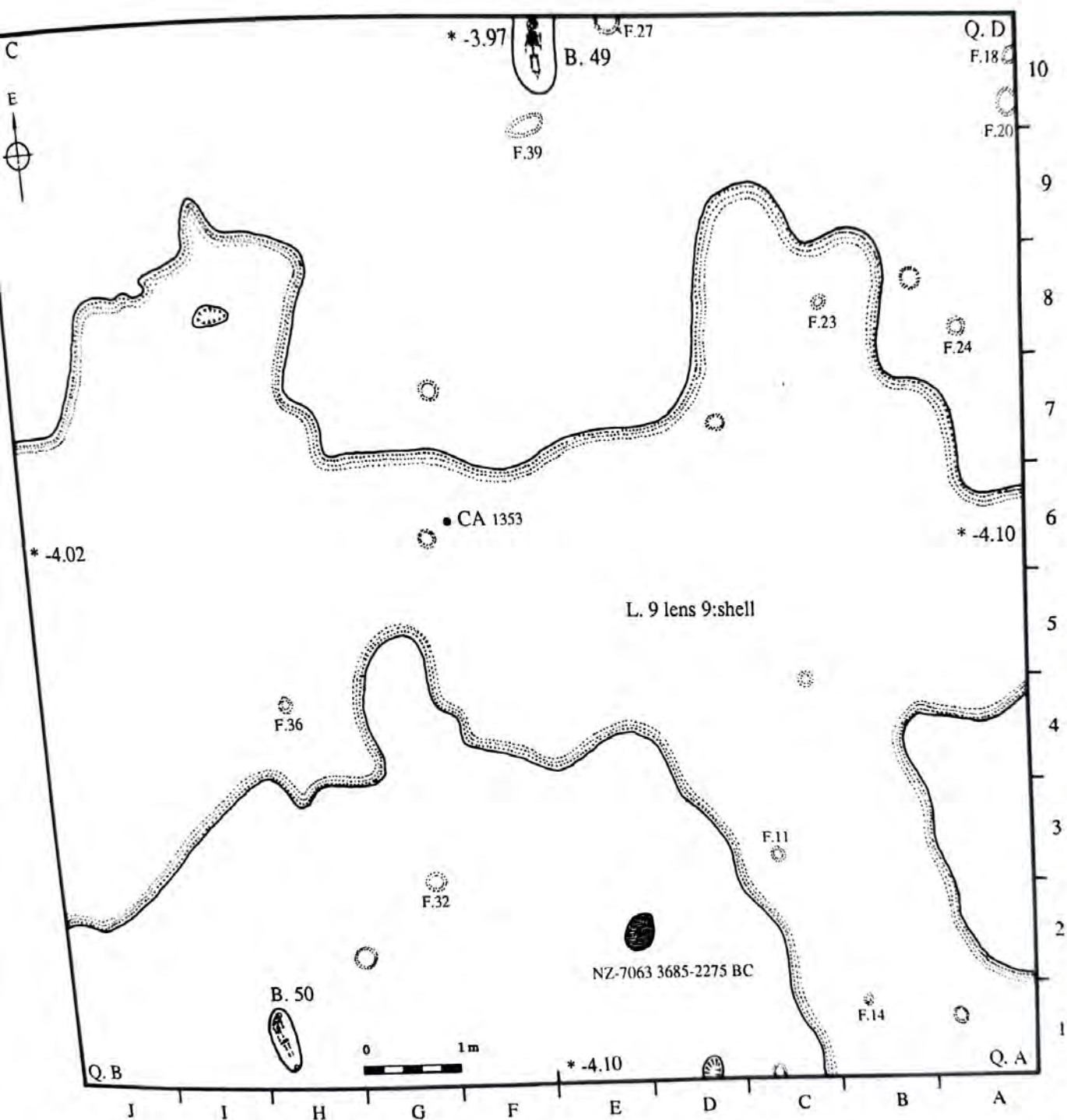


FIG. 48. The distribution of the features identified in layer 9:7. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, CA: clay anvil. The number after each artefact is its catalogue reference

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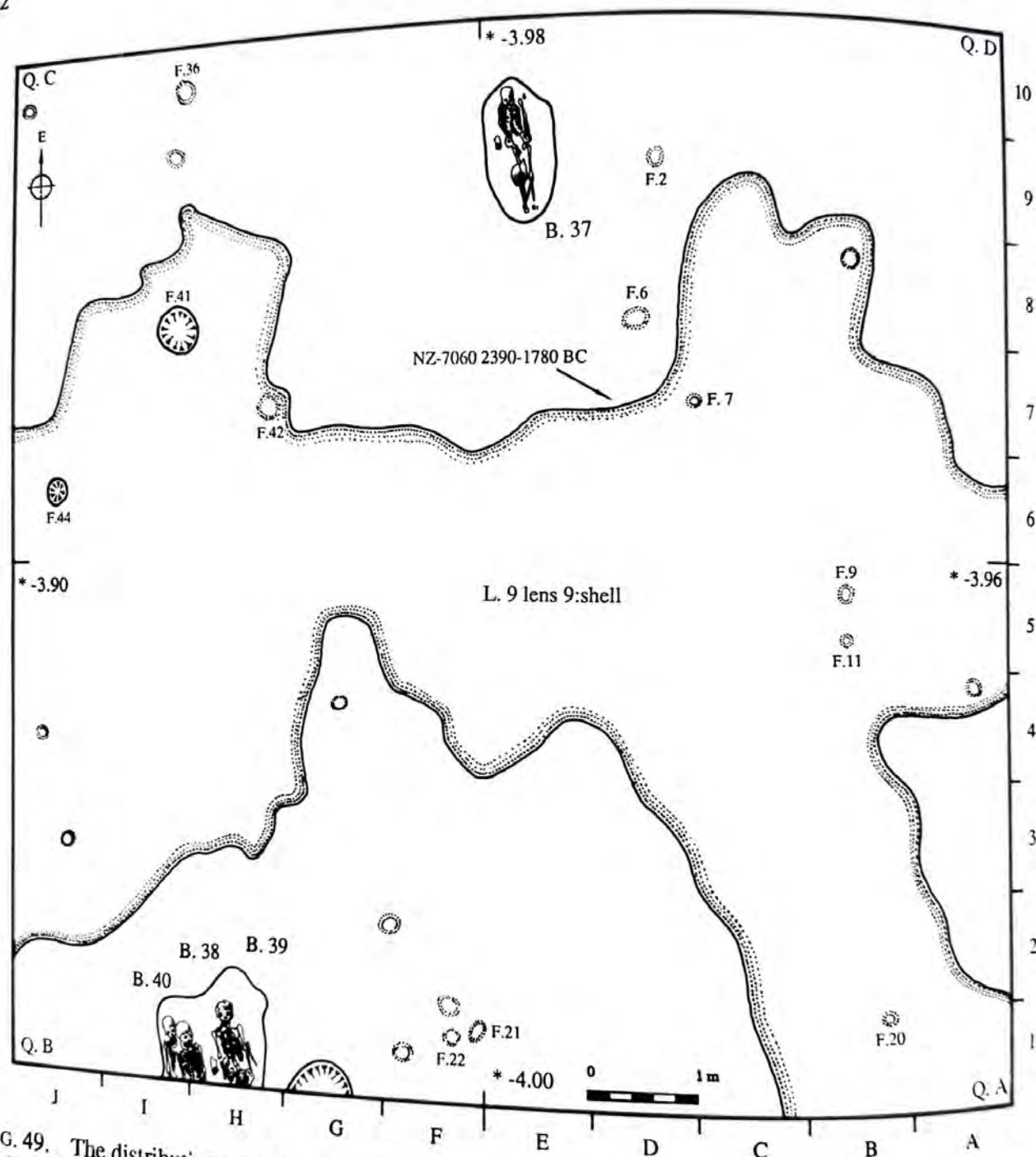


FIG. 49. The distribution of the features identified in layer 9:6. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum

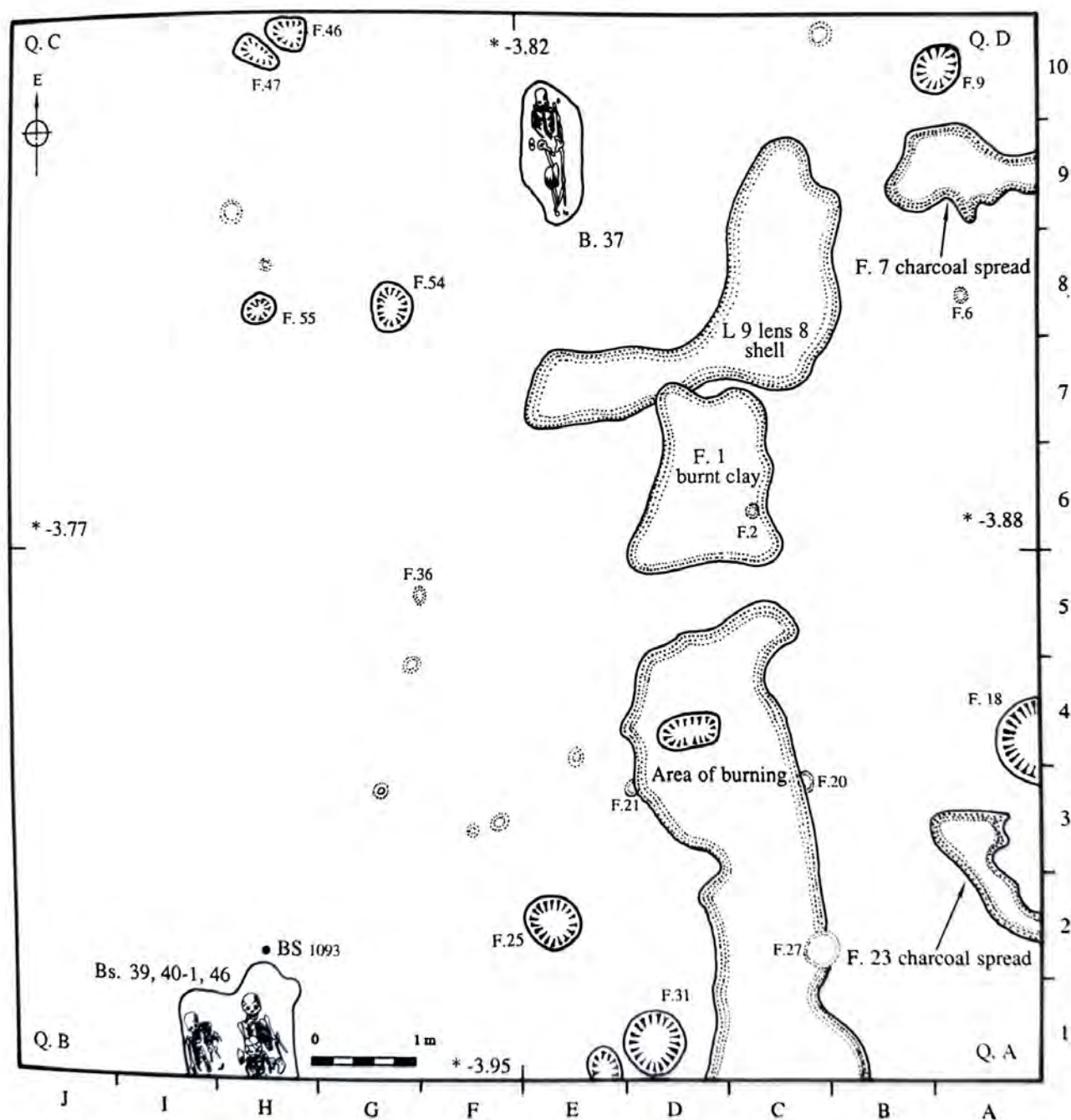


FIG. 50. The distribution of the features identified in layer 9:5. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, BS: burnishing stones. The number after each artefact is its catalogue reference

EXCAVATION OF KHOK PHANOM DI

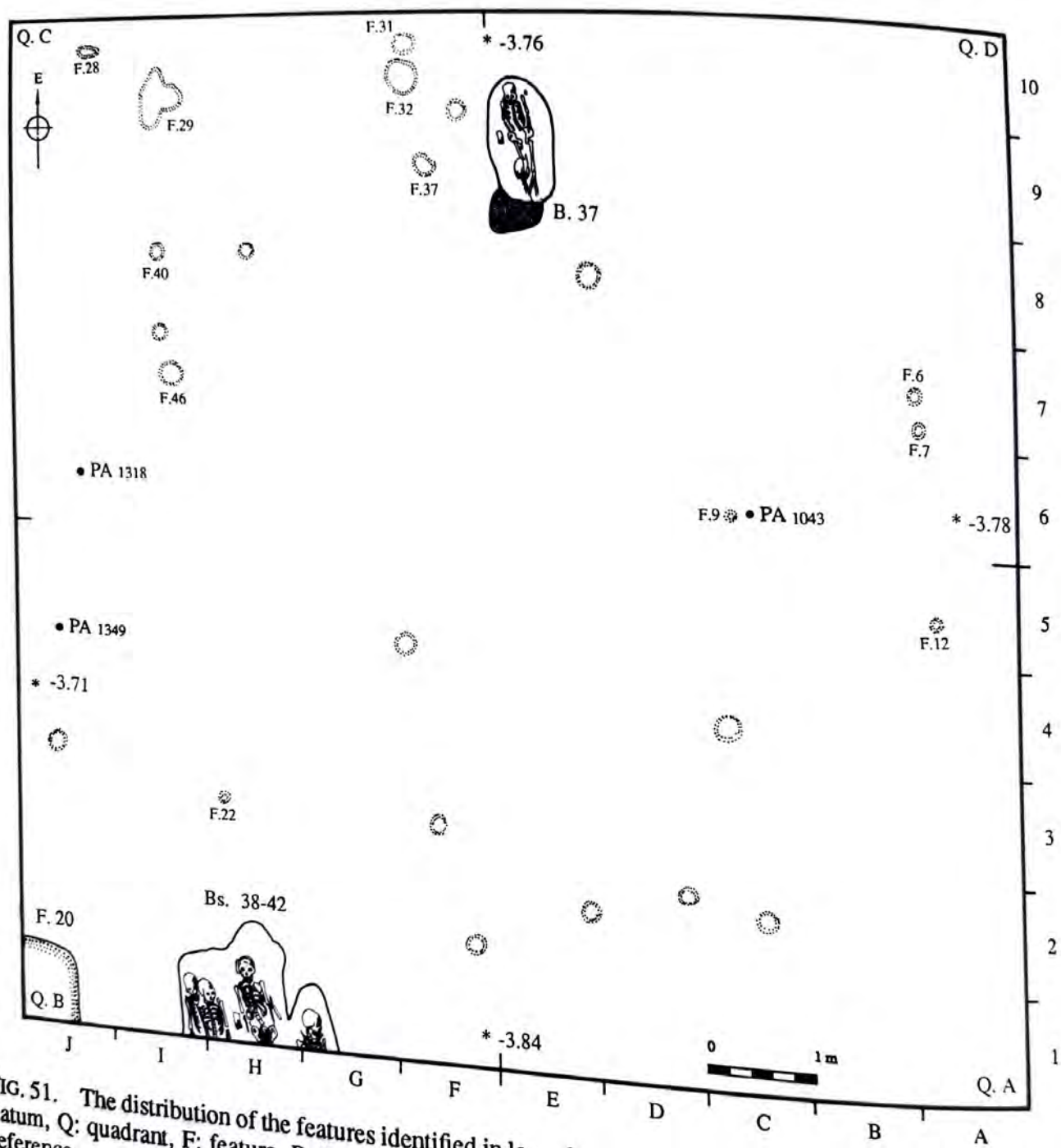


FIG. 51. The distribution of the features identified in layer 9:4. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, PA: adze head. The number after each artefact is its catalogue reference

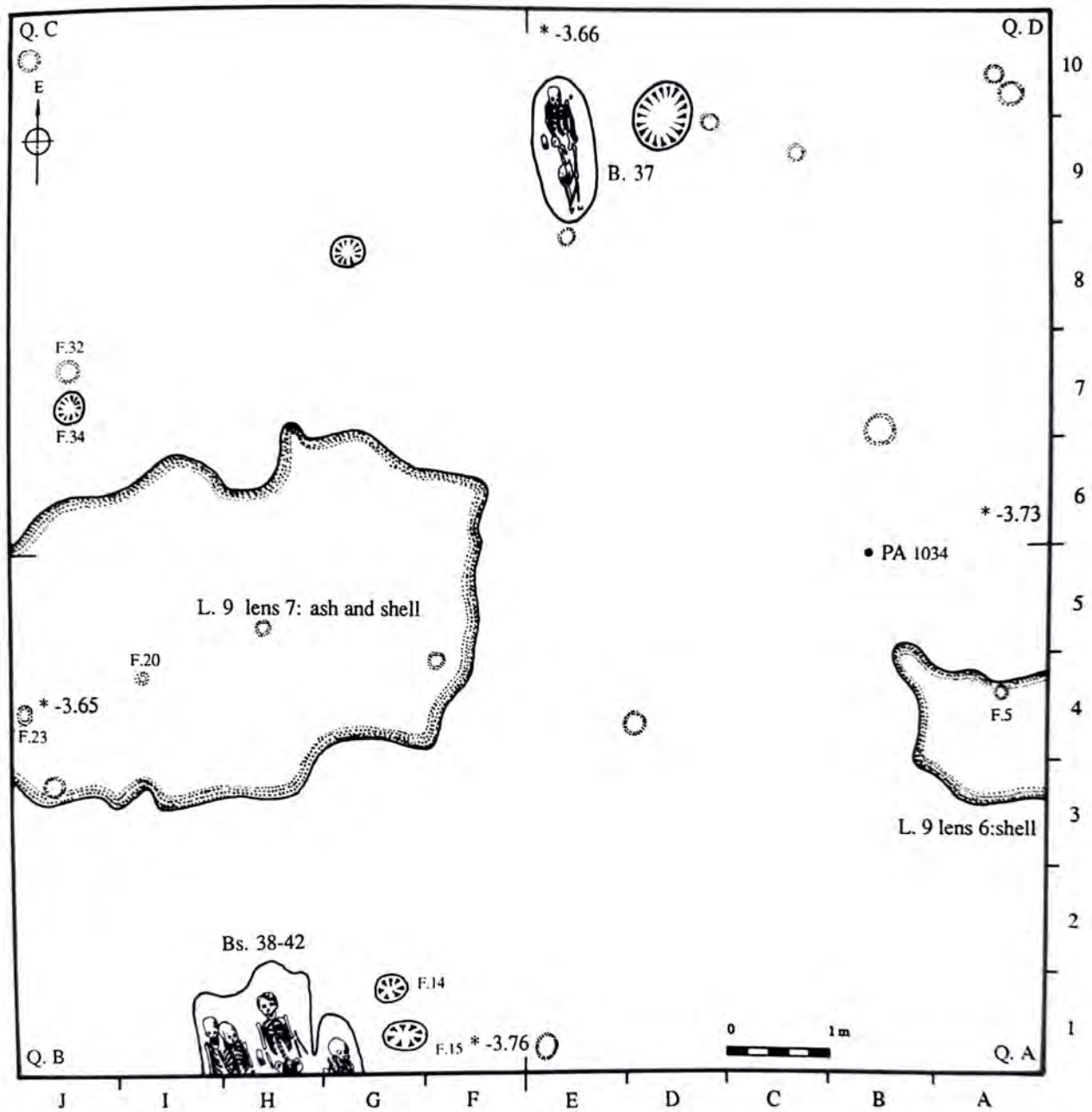


FIG. 52. The distribution of the features identified in layer 9:3. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, PA: adze head. The number after each artefact is its catalogue reference

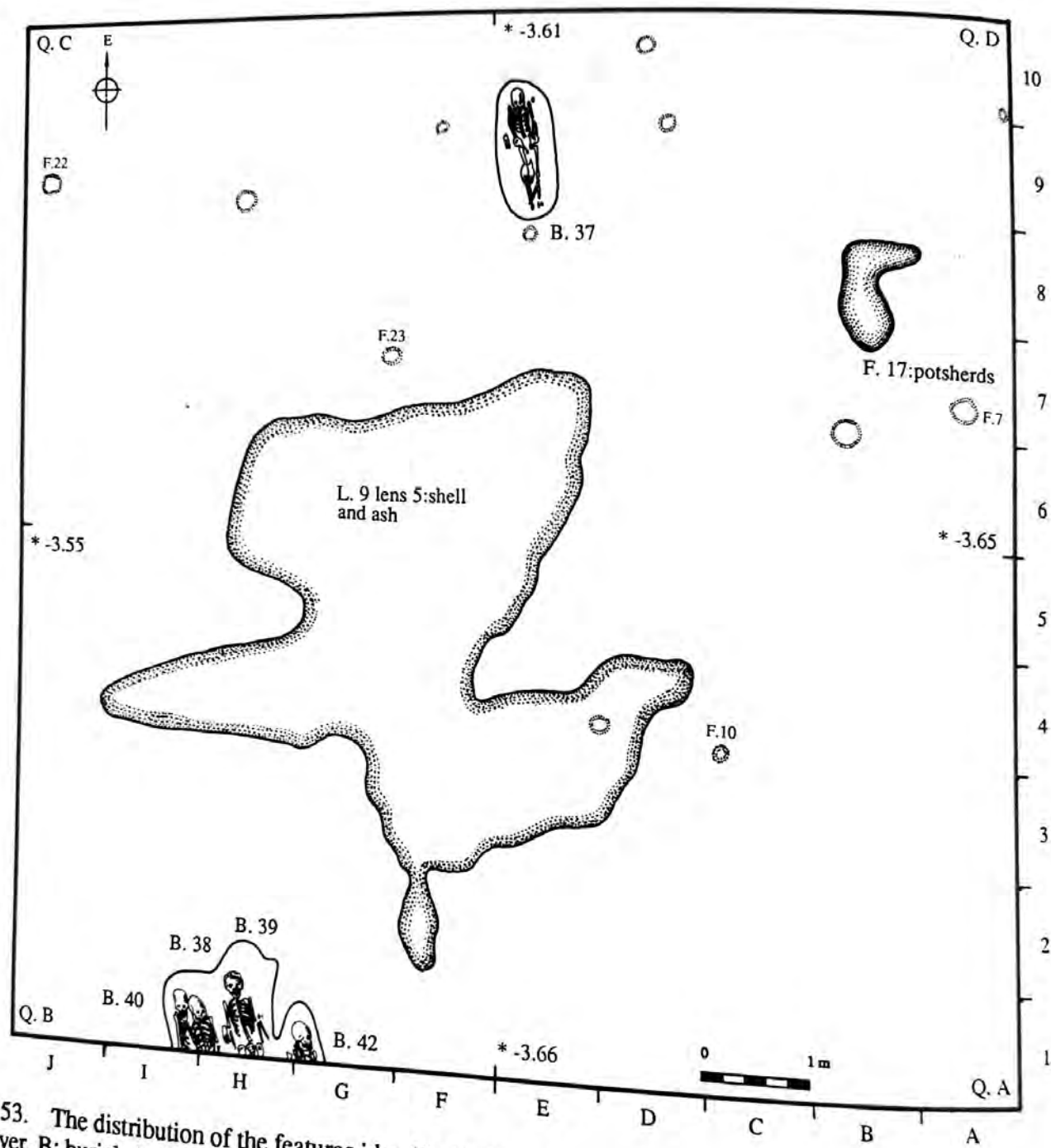


FIG. 53. The distribution of the features identified in layer 9:2. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum

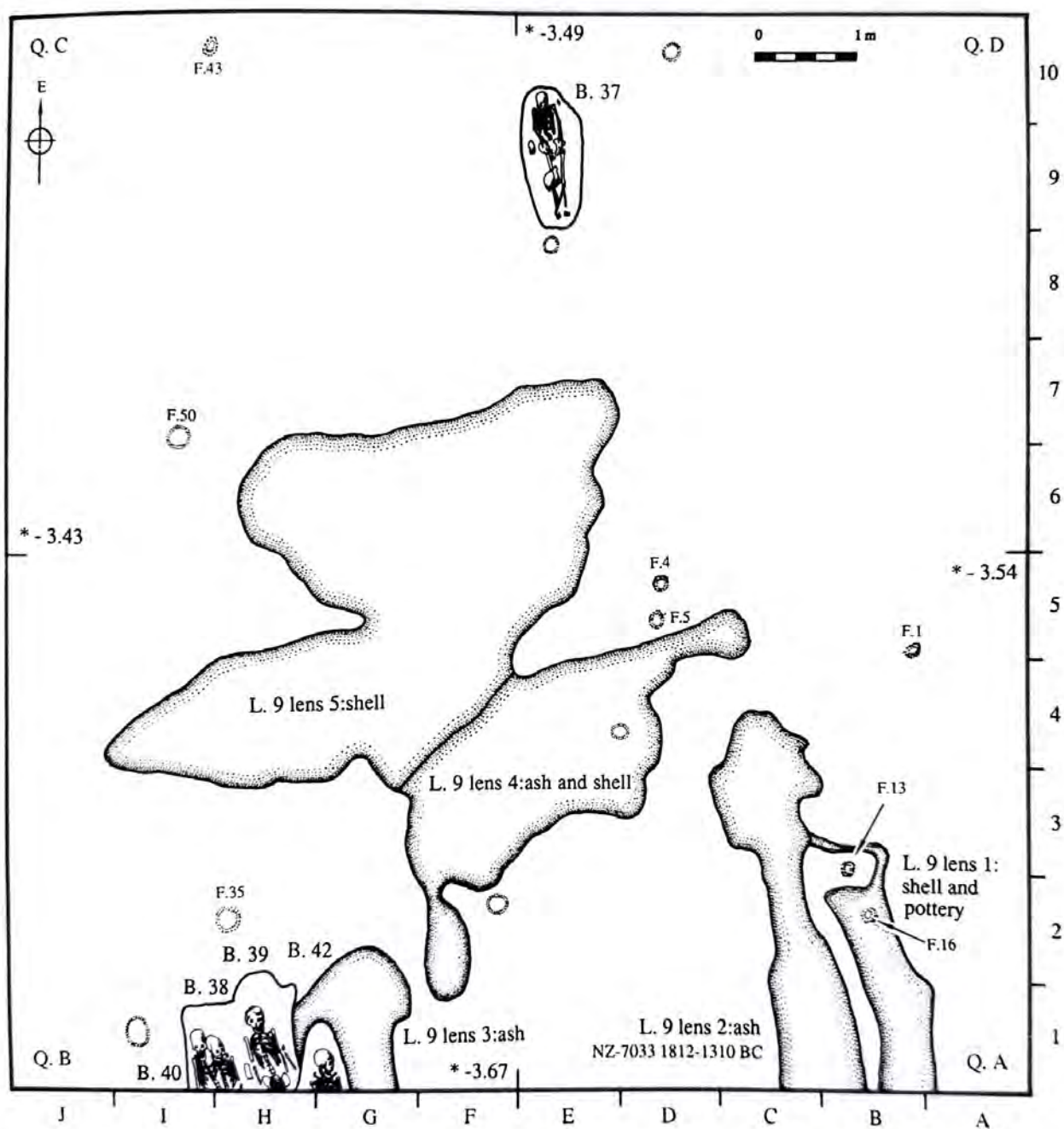


FIG. 54. The distribution of the features identified in layer 9:1. *Abbreviations:* Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, GS: grinding stones

EXCAVATION OF KHOK PHANOM DI

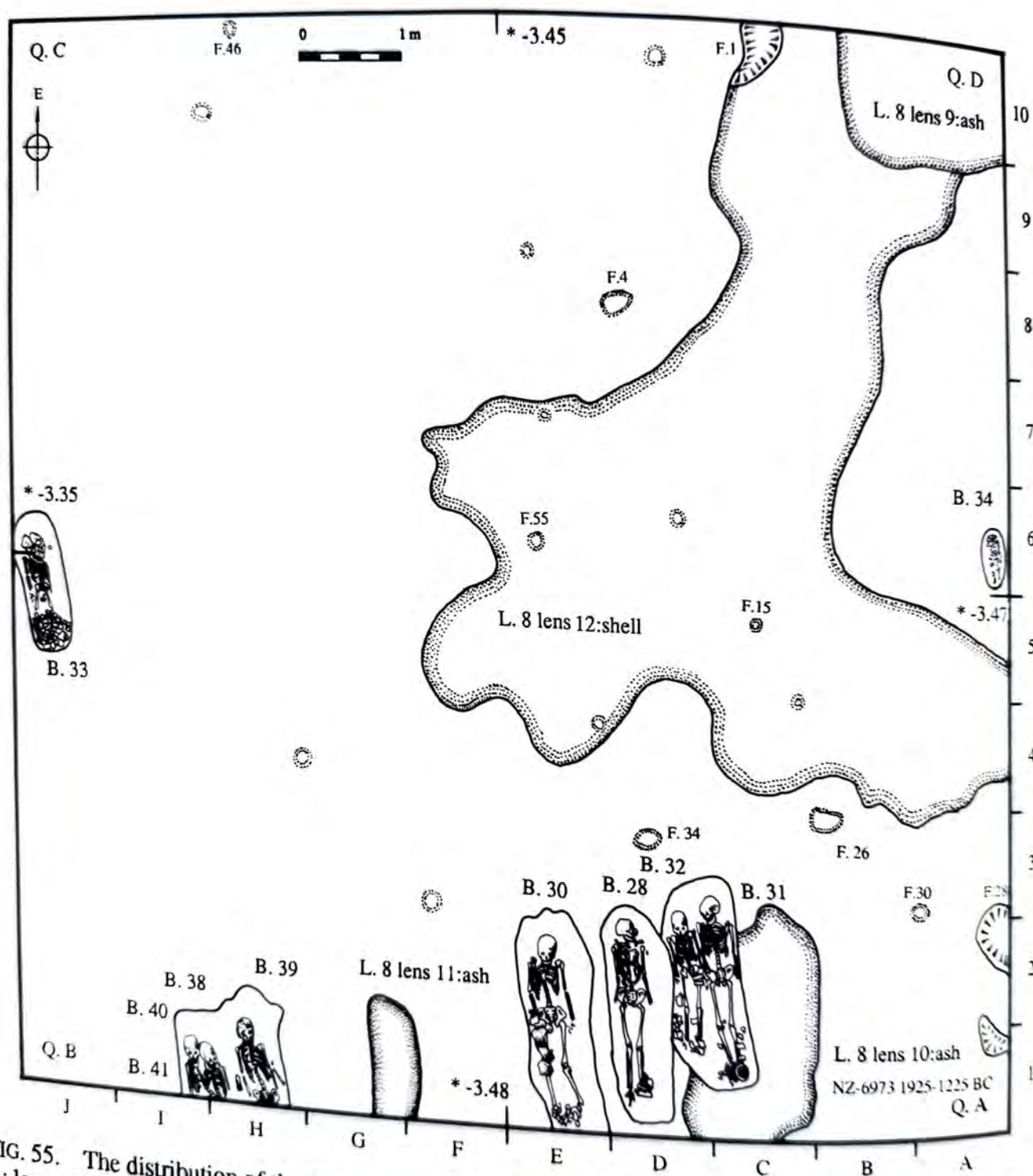


FIG. 55. The distribution of the features identified in layer 8:7. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum

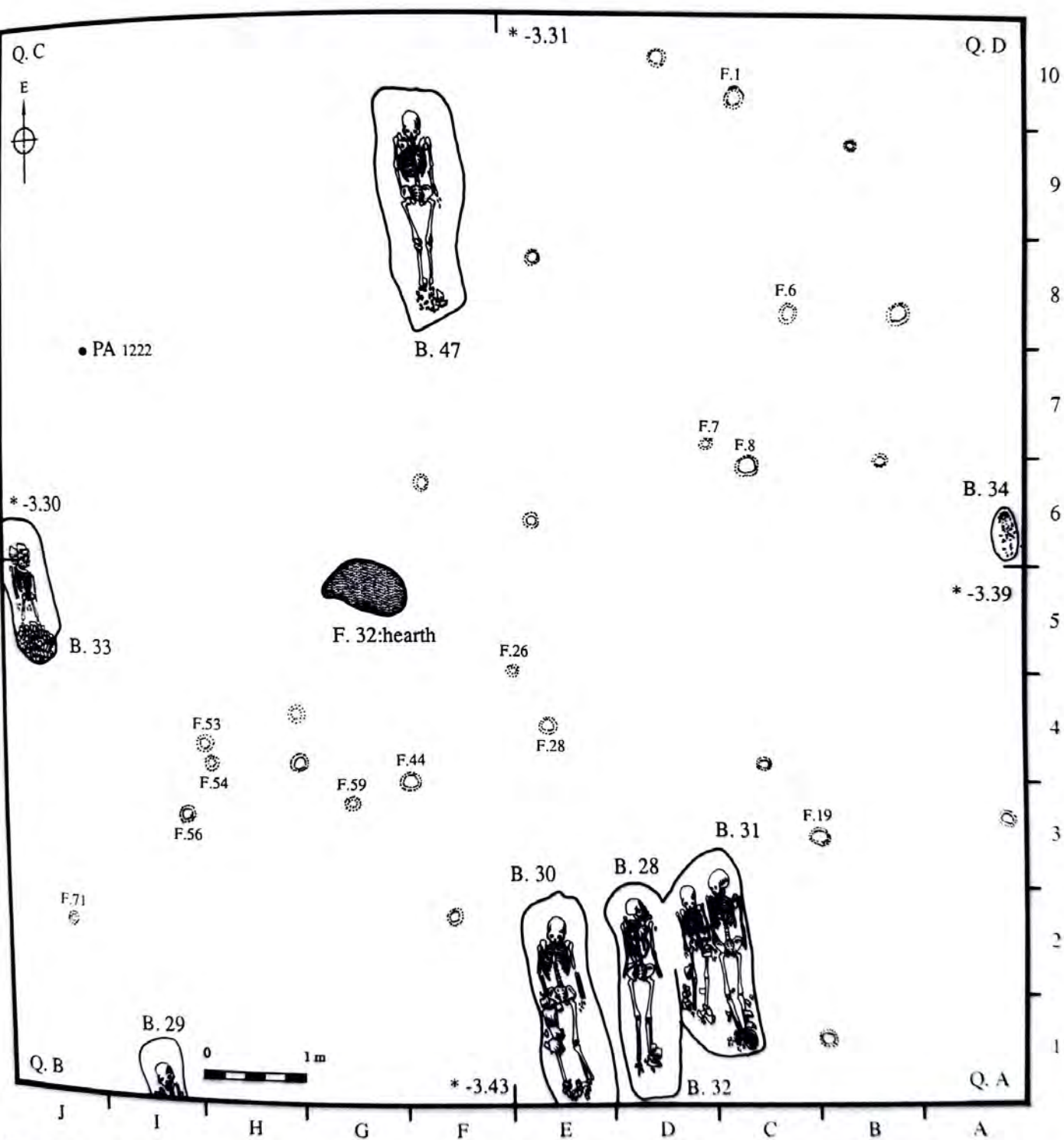


FIG. 56. The distribution of the features identified in layer 8:6. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, PA: adze head. The number after each artefact is its catalogue reference

EXCAVATION OF KHOK PHANOM DI

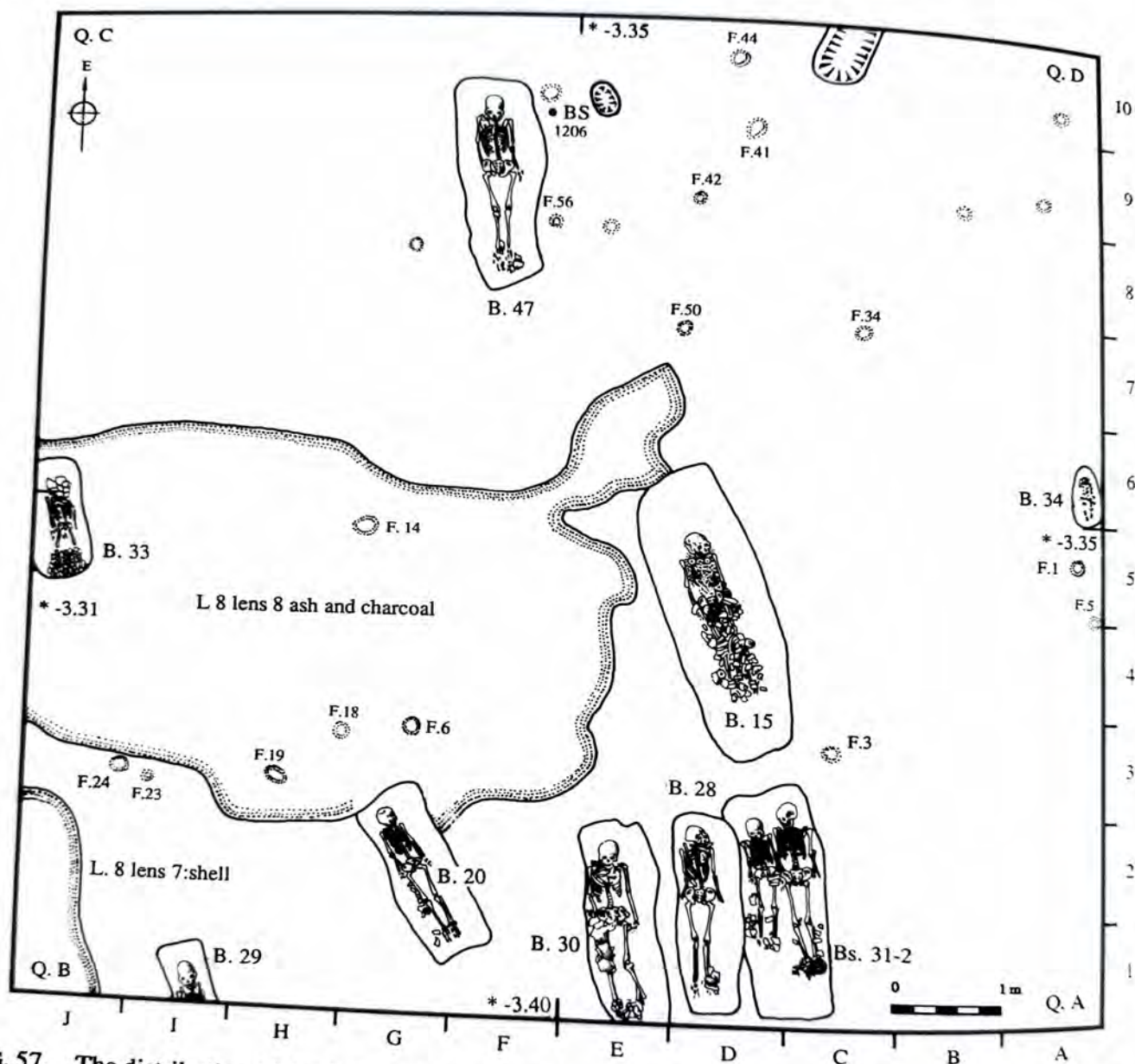


FIG. 57. The distribution of the features identified in layer 8:5. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, BS: burnishing stones. The number after each artefact is its catalogue reference

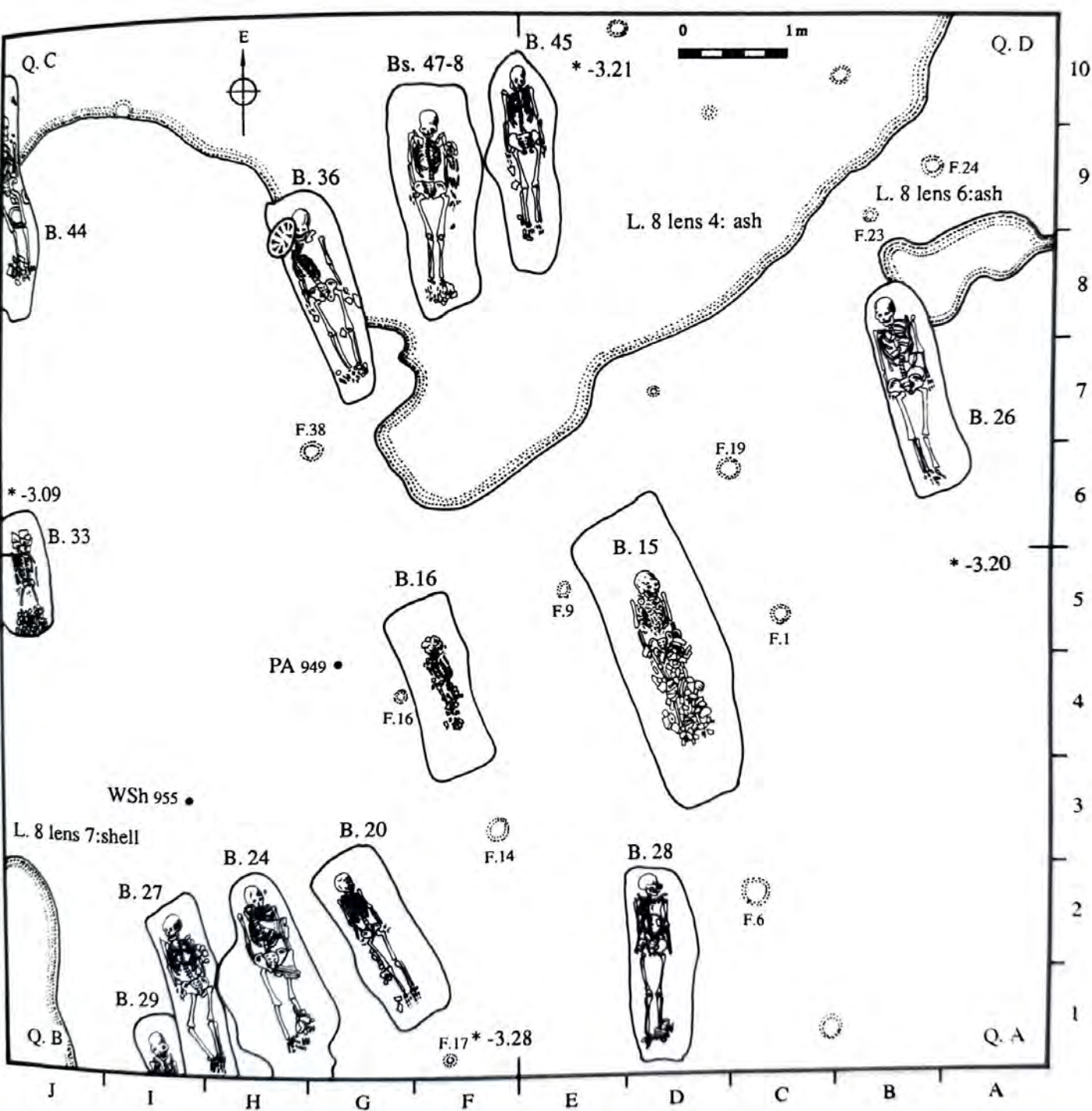


FIG. 58. The distribution of the features identified in layer 8:4. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, PA: adze head, WSh: worked shell. The number after each artefact is its catalogue reference

EXCAVATION OF KHOK PHANOM DI

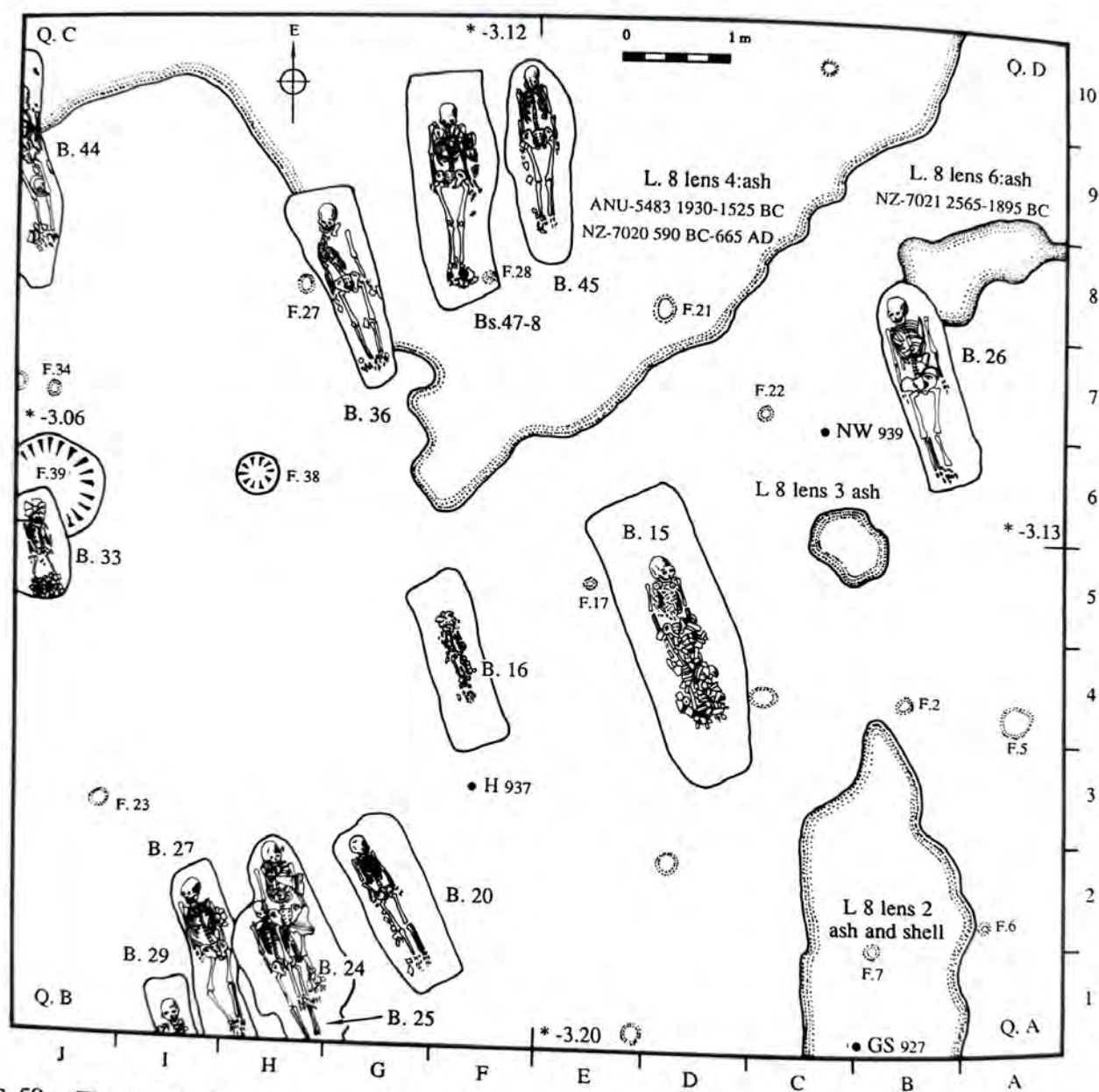


FIG. 59. The distribution of the features identified in layer 8:3. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, PA: adze head, H: hoe, GS: grinding stones, NW: net weight. The number after each artefact is its catalogue reference

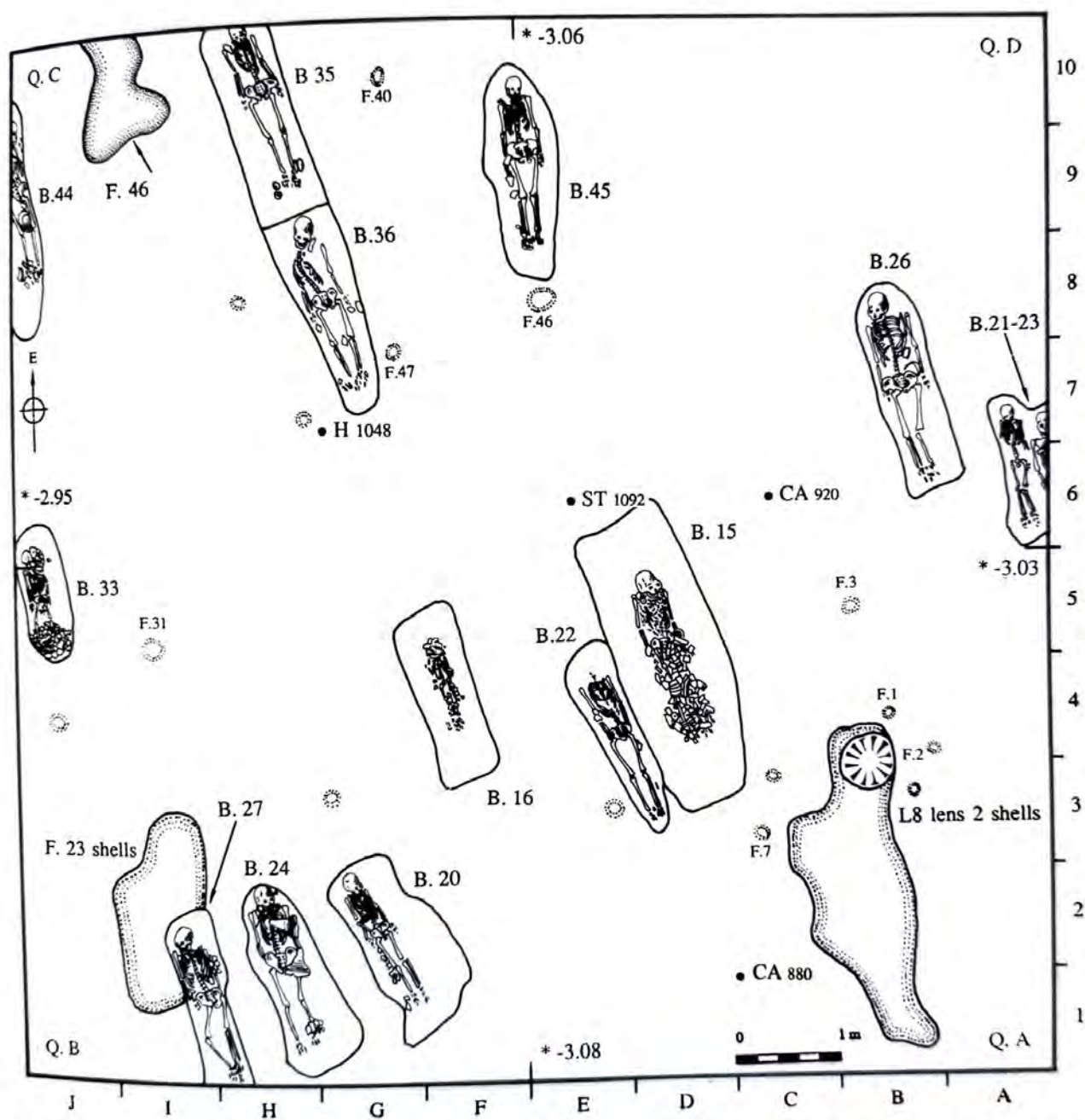


FIG. 60. The distribution of the features identified in layer 8:2. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum, CA: clay anvil, H: hoe, PA: adze head, ST: stone disc/bangle. The number after each artefact is its catalogue reference

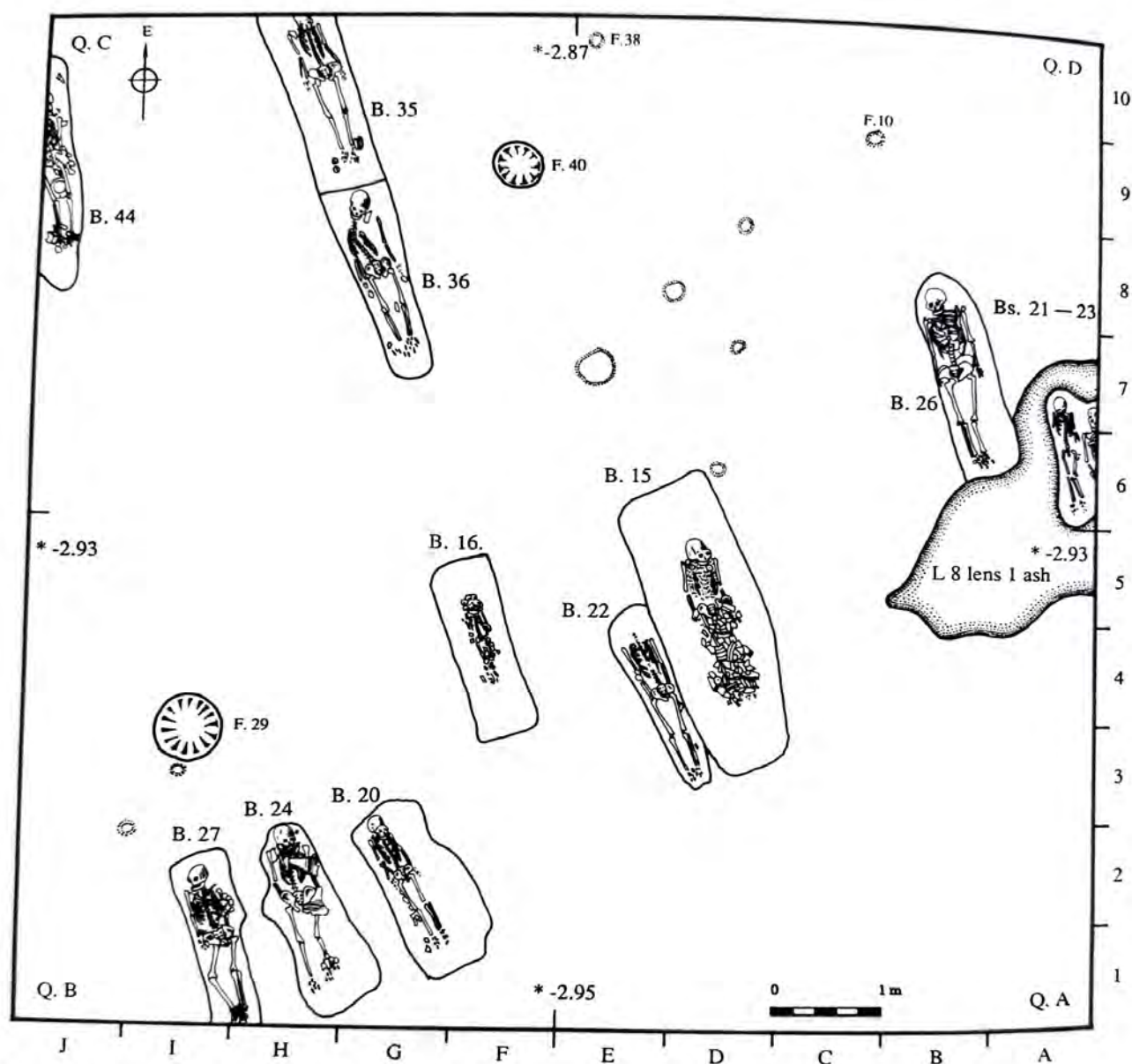


FIG. 61. The distribution of the features identified in layer 8:1. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum

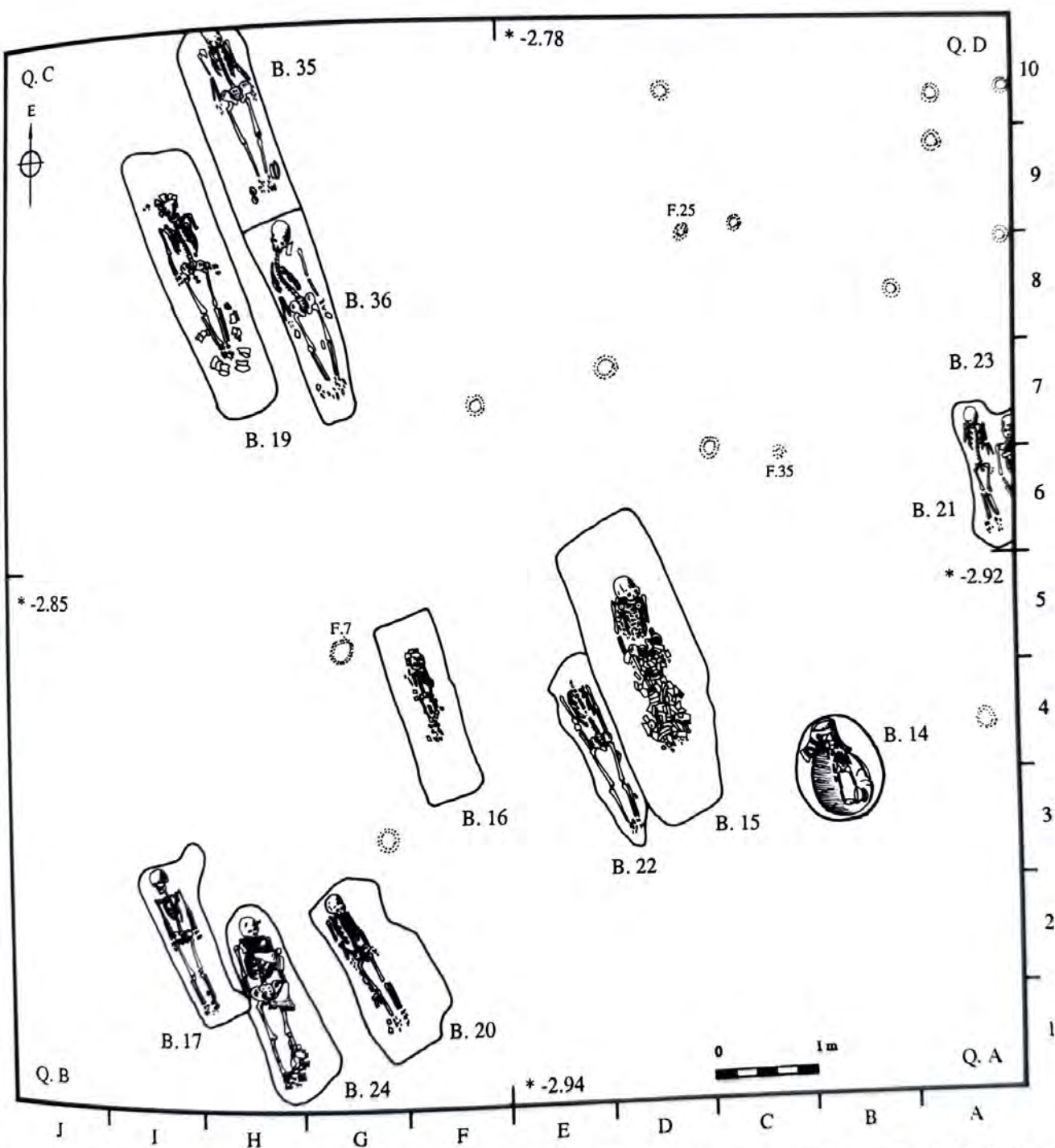


FIG. 62. The distribution of the features identified in layer 7:7. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum

EXCAVATION OF KHOK PHANOM DI

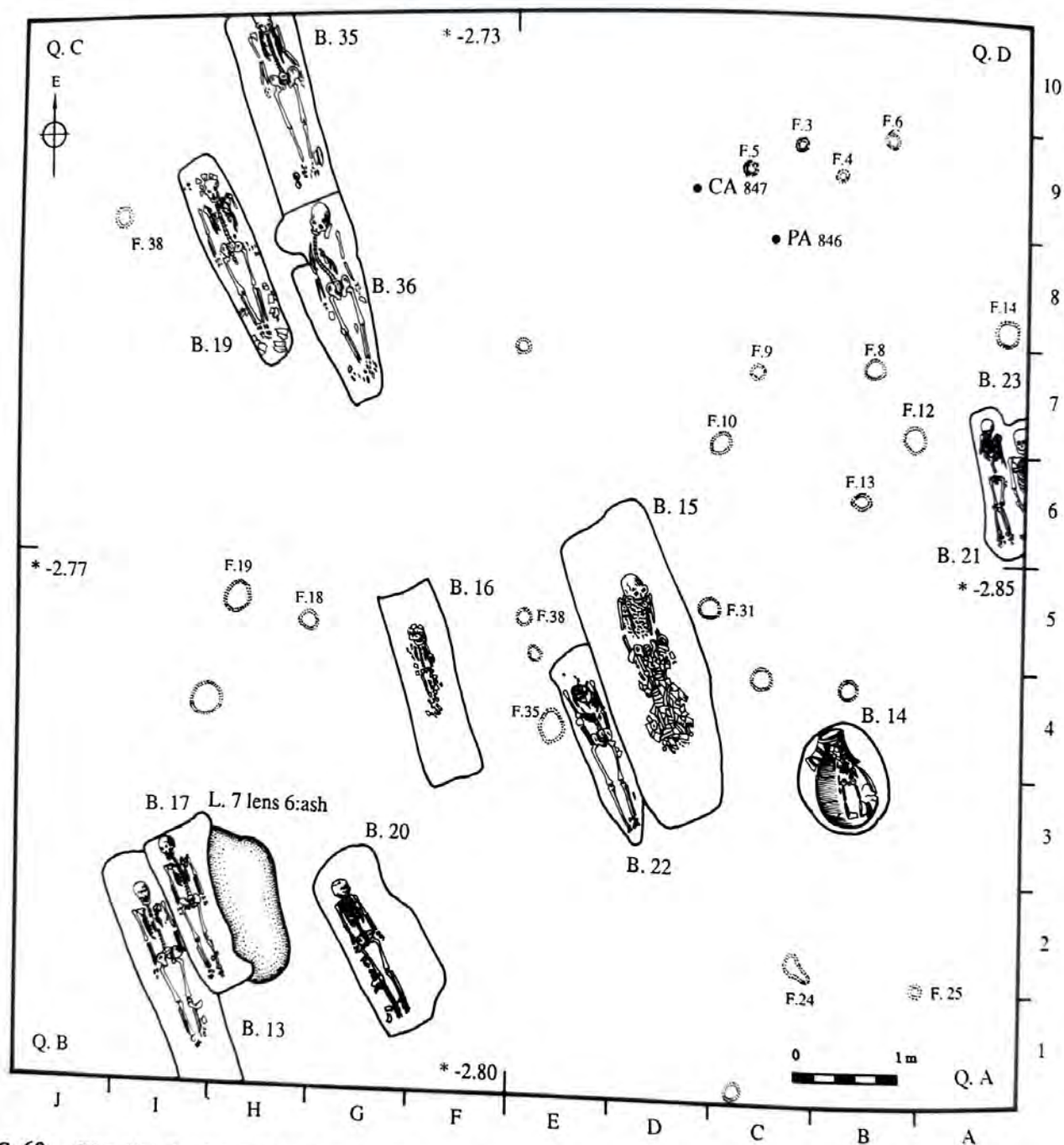


FIG. 63. The distribution of the features identified in layer 7:6. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, CA: clay anvil, PA: adze head. The number after each artefact is its catalogue reference

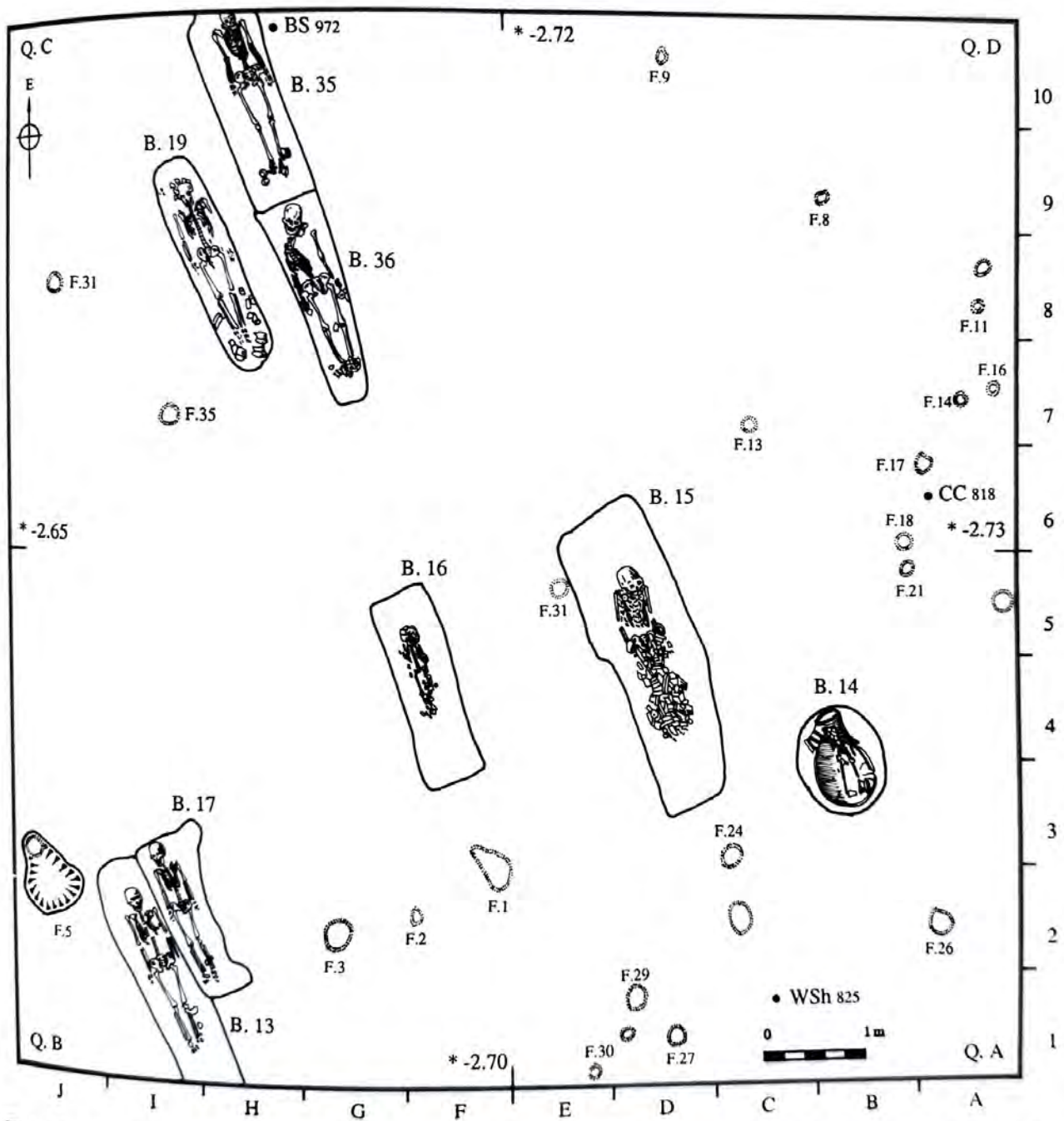


FIG. 64. The distribution of the features identified in layer 7:5. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, BS: burnishing stones, WSh: worked shell, CC: clay counter. The number after each artefact is its catalogue reference

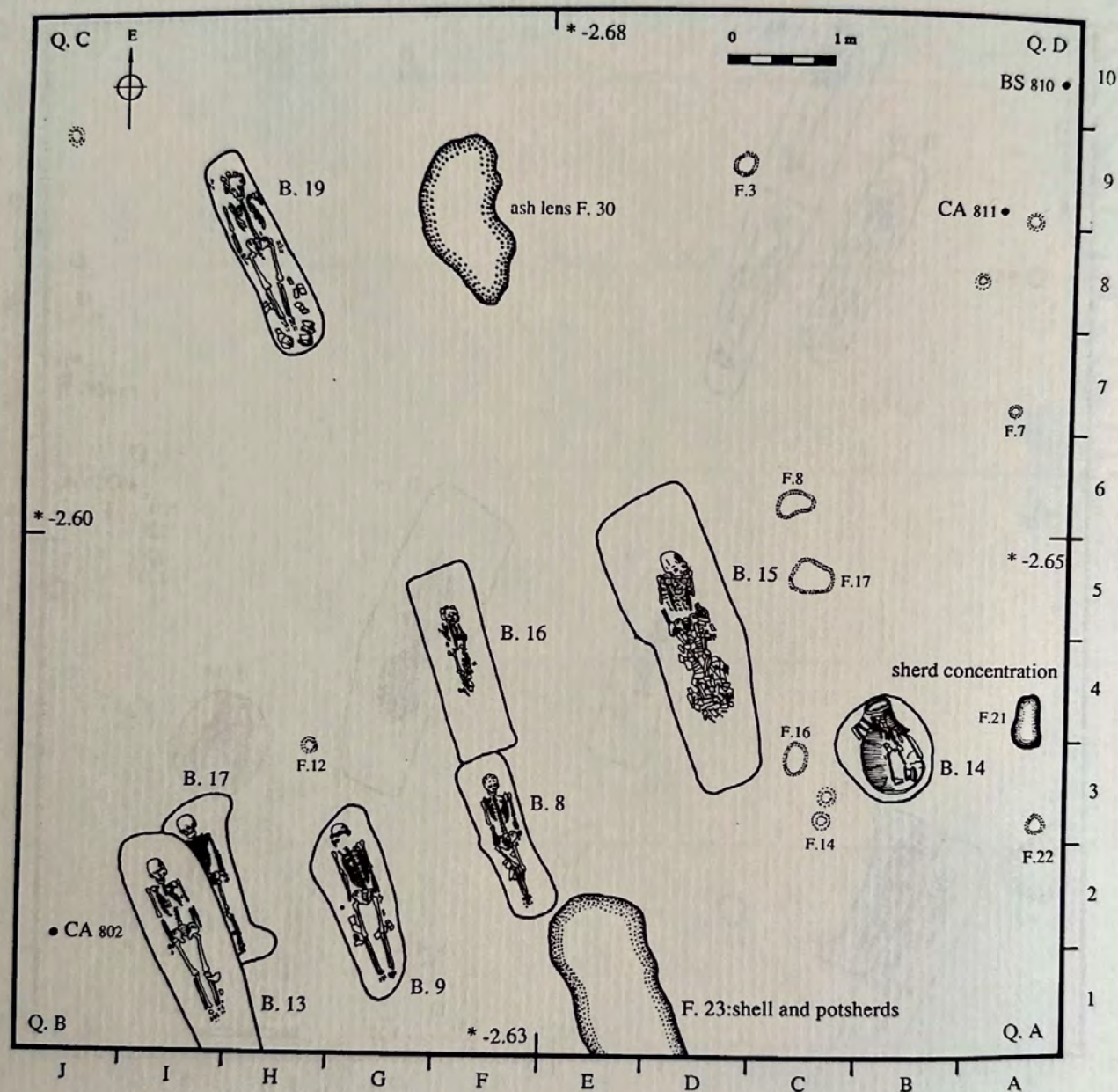


FIG. 65. The distribution of the features identified in layer 7:4. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, CA: clay anvil, BS: burnishing stones. The number after each artefact is its catalogue reference

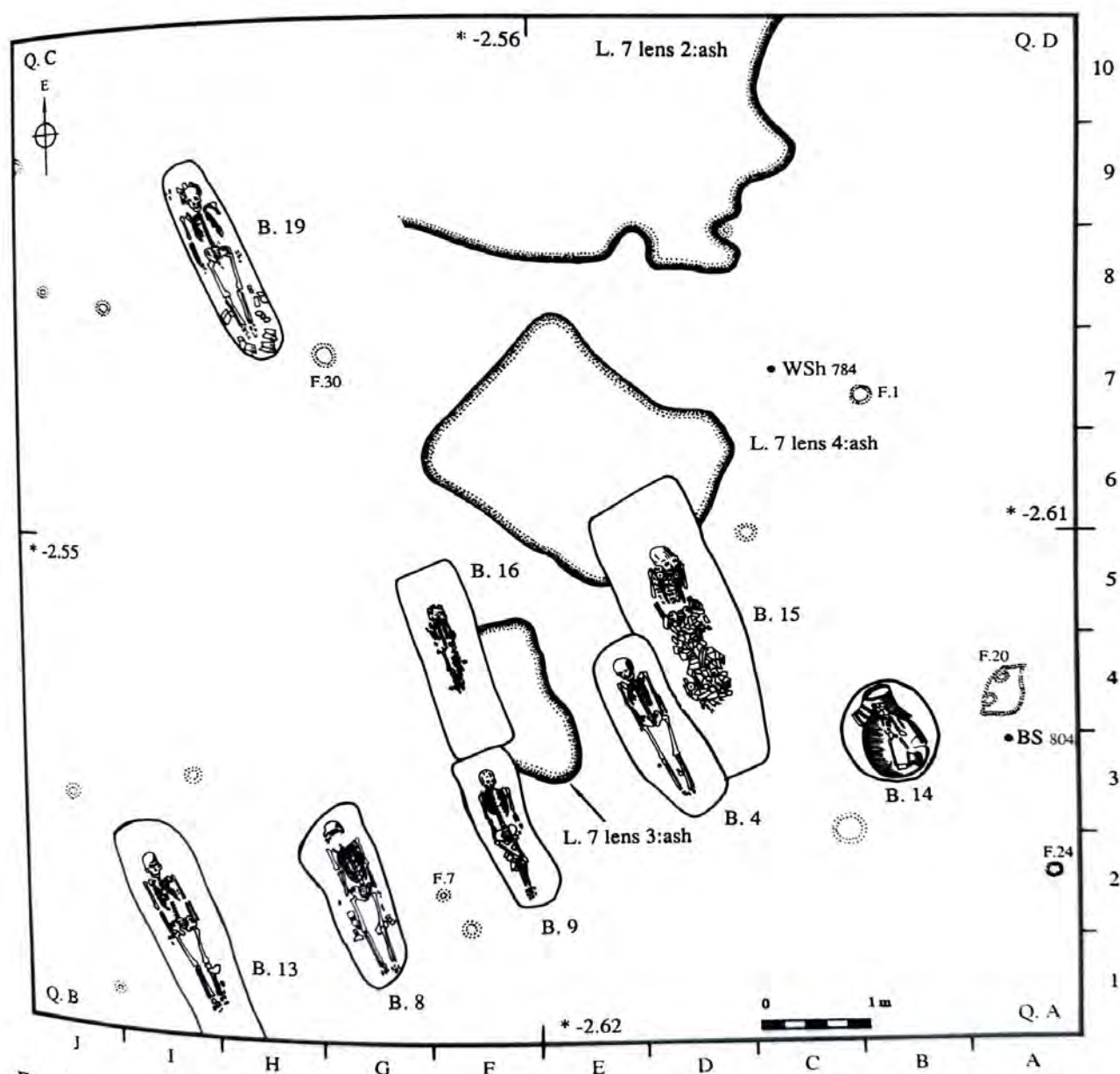


FIG. 66. The distribution of the features identified in layer 7:3. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, WSh: worked shell, BS: burnishing stones. The number after each artefact is its catalogue reference

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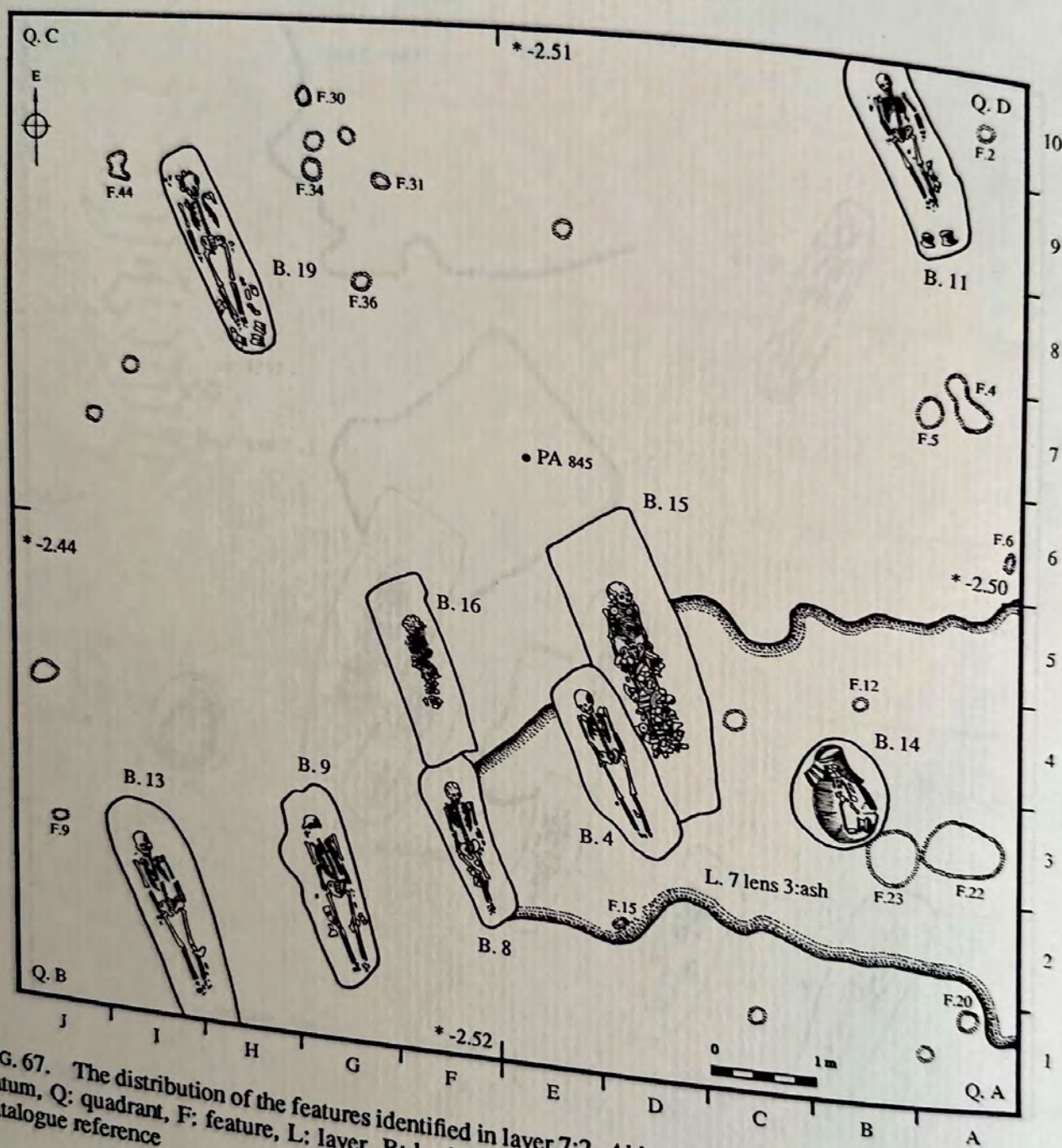
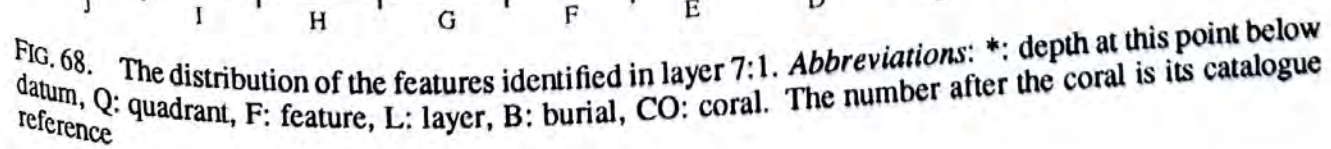


FIG. 67. The distribution of the features identified in layer 7:2. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, PA: adze head. The number after each artefact is its catalogue reference



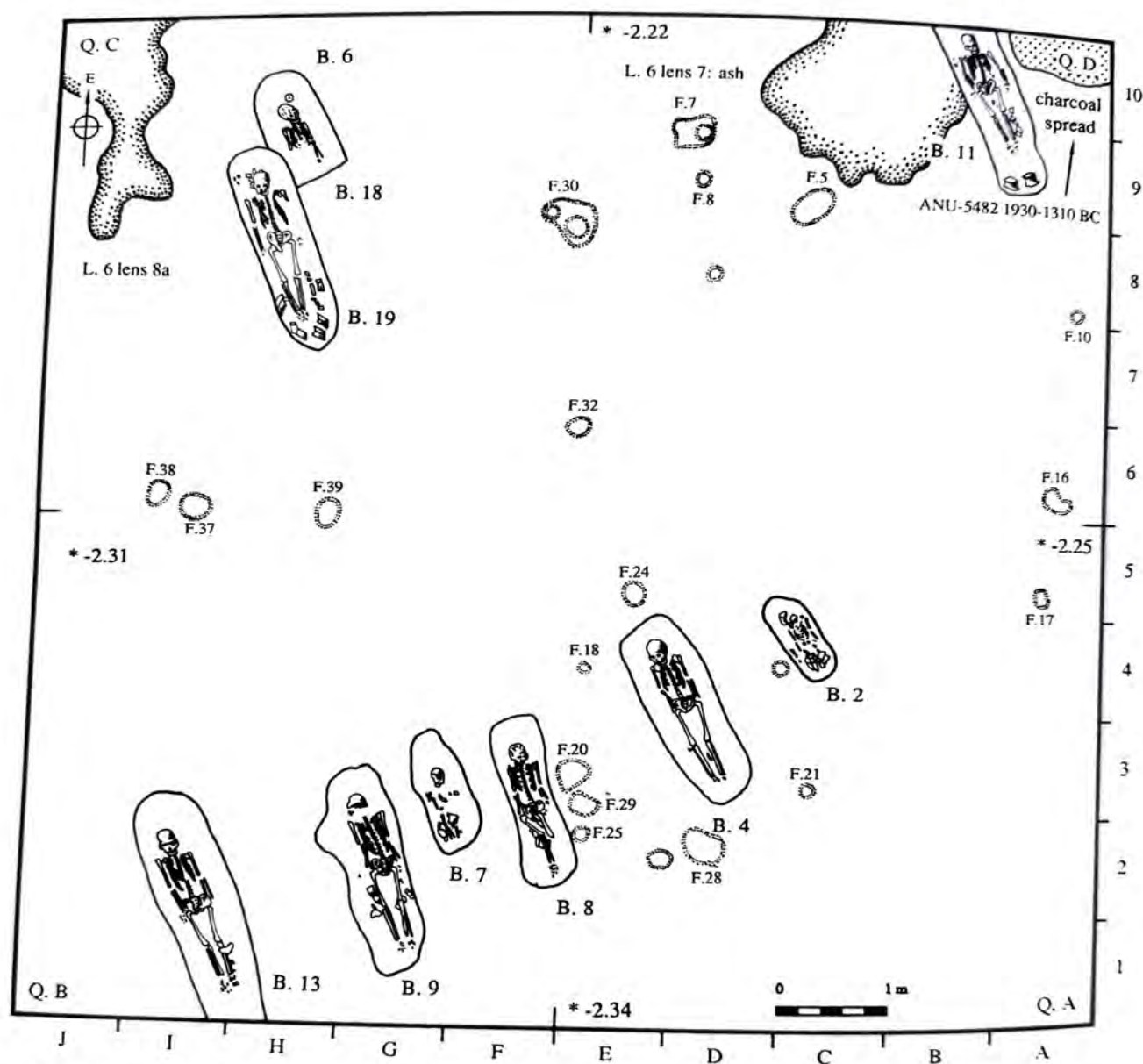


FIG. 69. The distribution of the features identified in layer 6:6. Abbreviations: Q: quadrant, F: feature, B: burial, *: depth at this point below datum

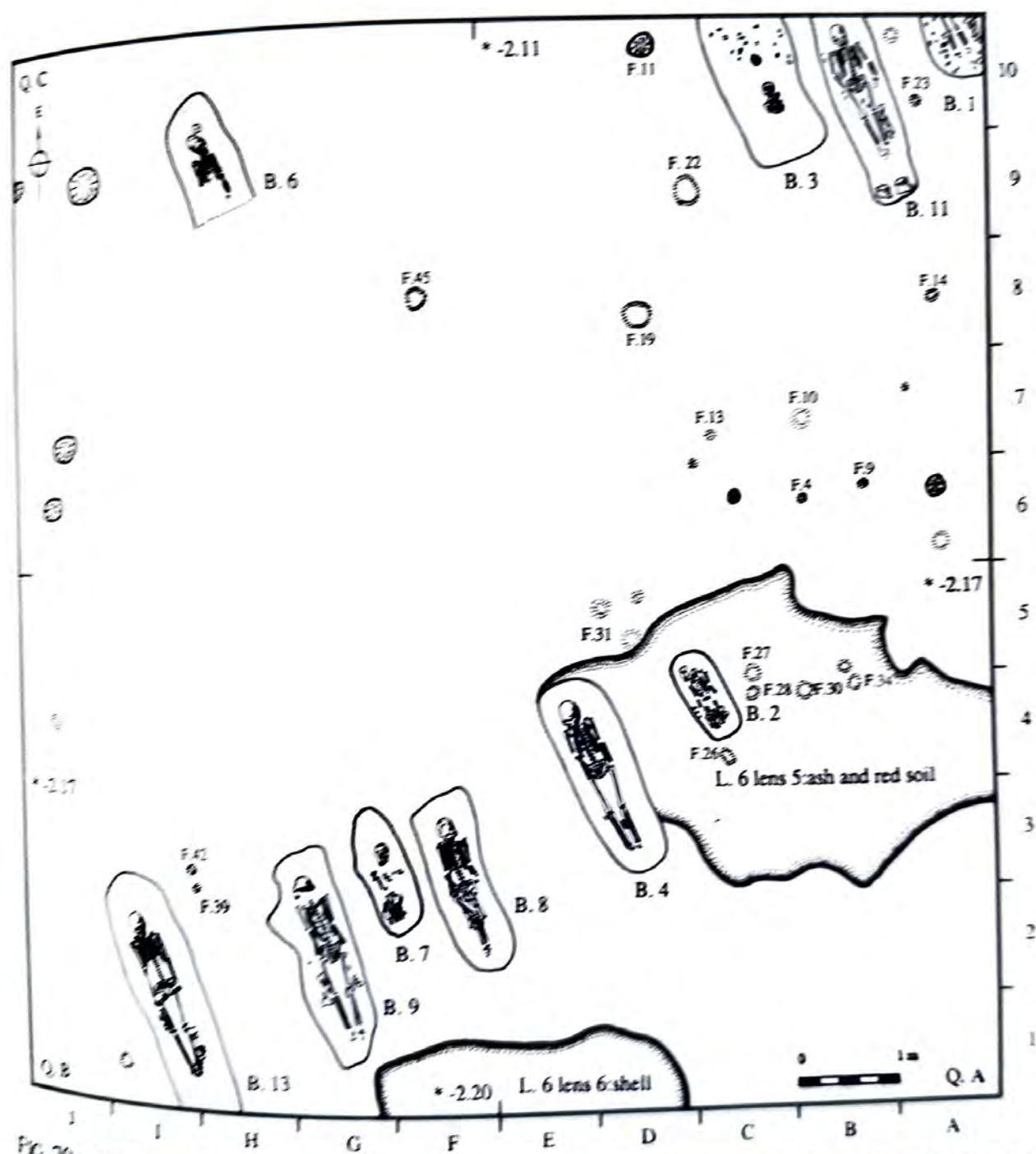
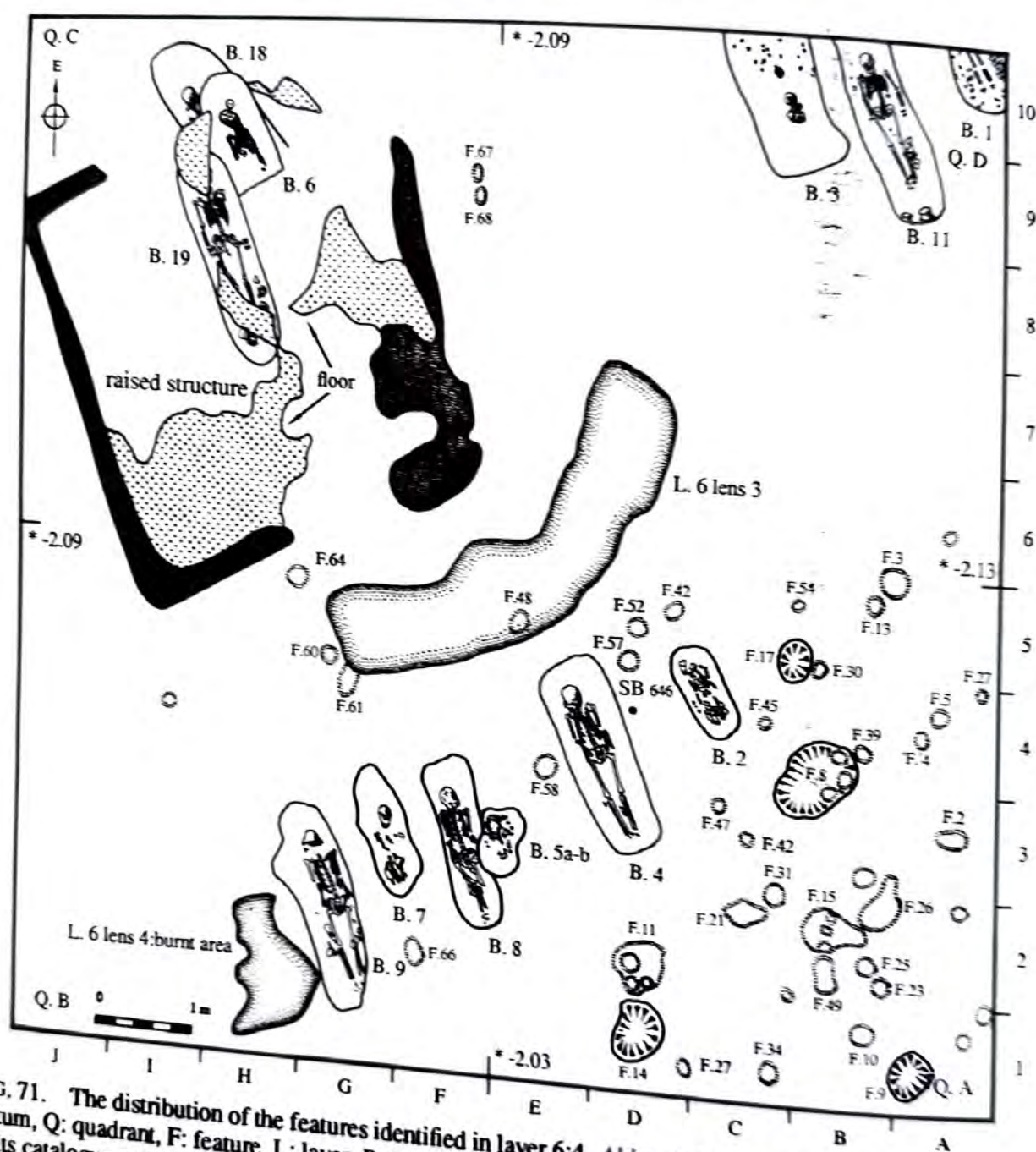


FIG. 70. The distribution of the features identified in layer 6:5. Abbreviations: Q: quadrant, F: feature, L: layer, B: burial, *: depth at this point below datum



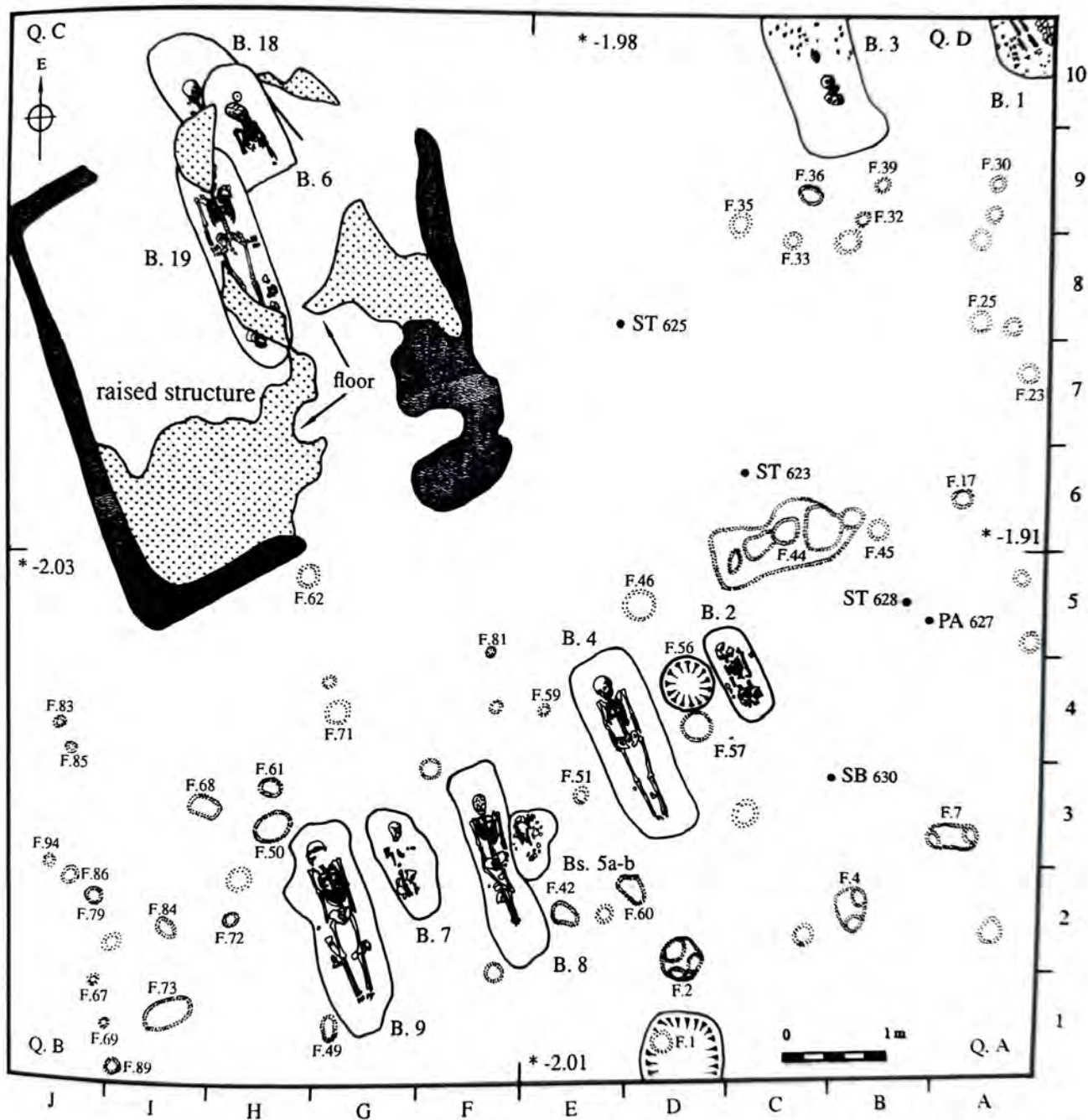


FIG. 72. The distribution of the features identified in layer 6:3. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, PA: adze head, ST: stone disc/bangle, SB: shell disc/bangle. The number after each artefact is its catalogue reference

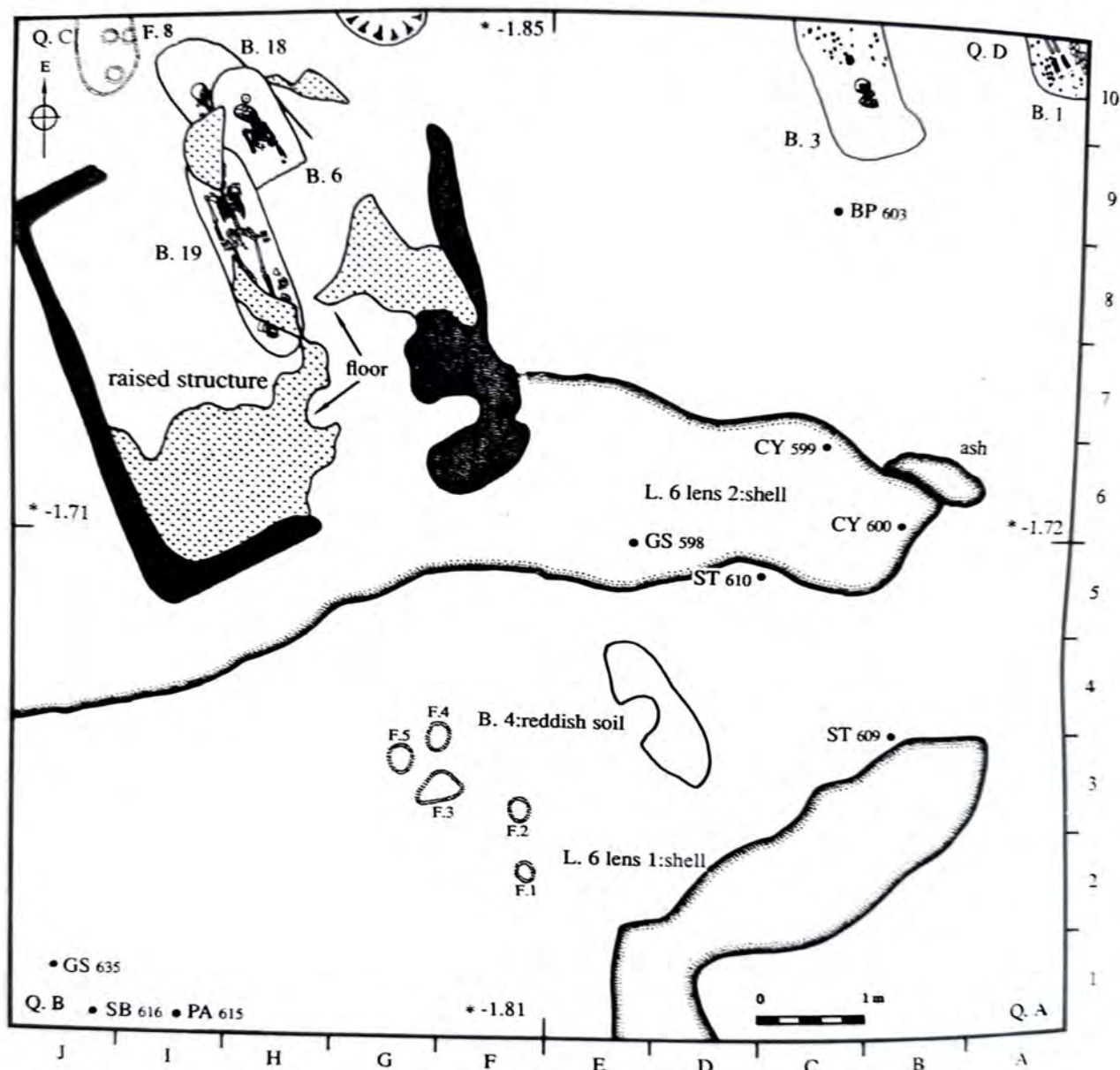


FIG. 73. The distribution of the features identified in layer 6:1. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, PA: adze head, GS: grinding stones, ST: stone disc/bangle, CY: clay cylinder, BP: bone point, SB: shell disc/bangle. The number after each artefact is its catalogue reference

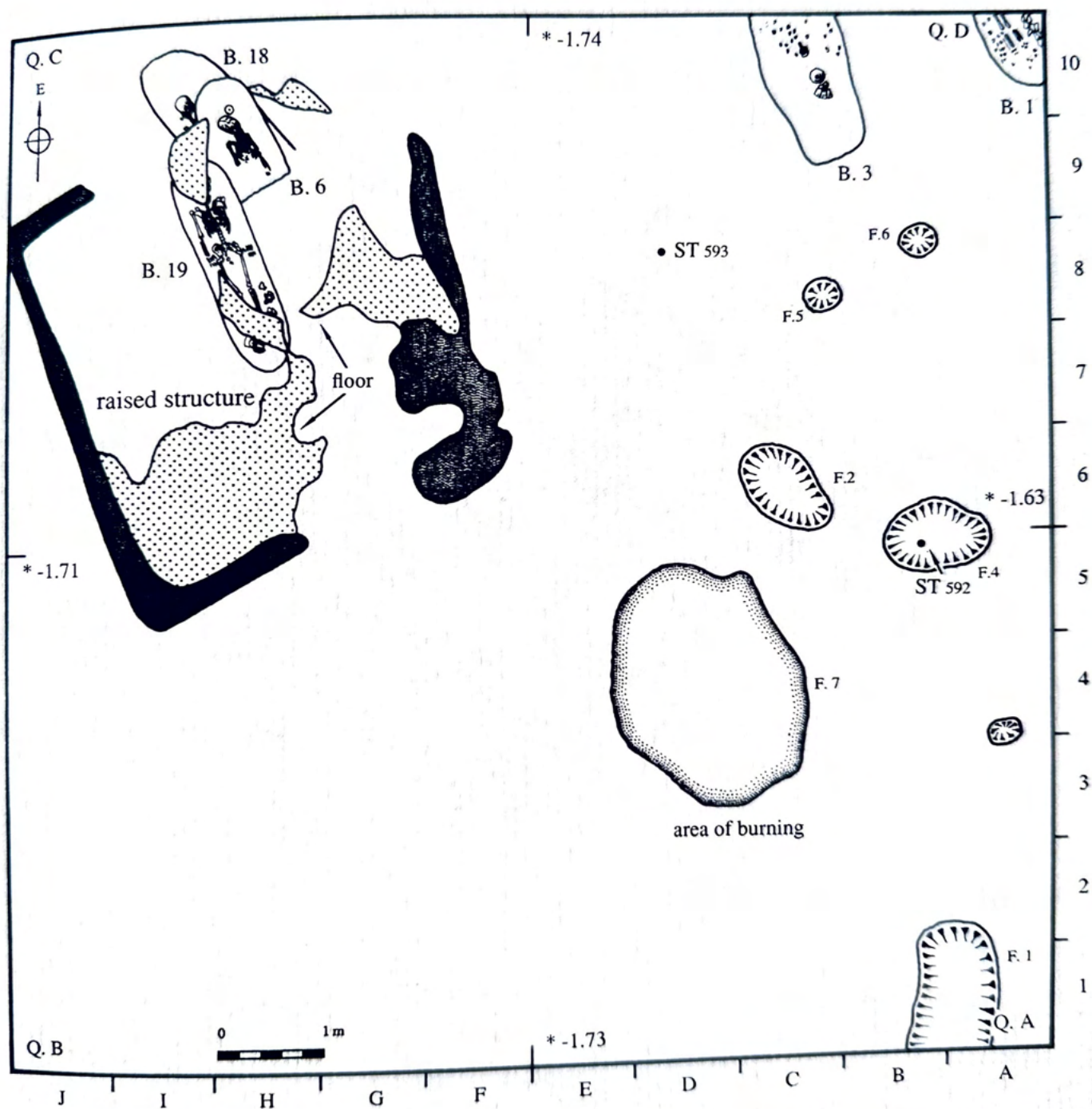


FIG. 74. The distribution of the features identified in layer 5:5. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, ST: stone disc/bangle. The number after each artefact is its catalogue reference

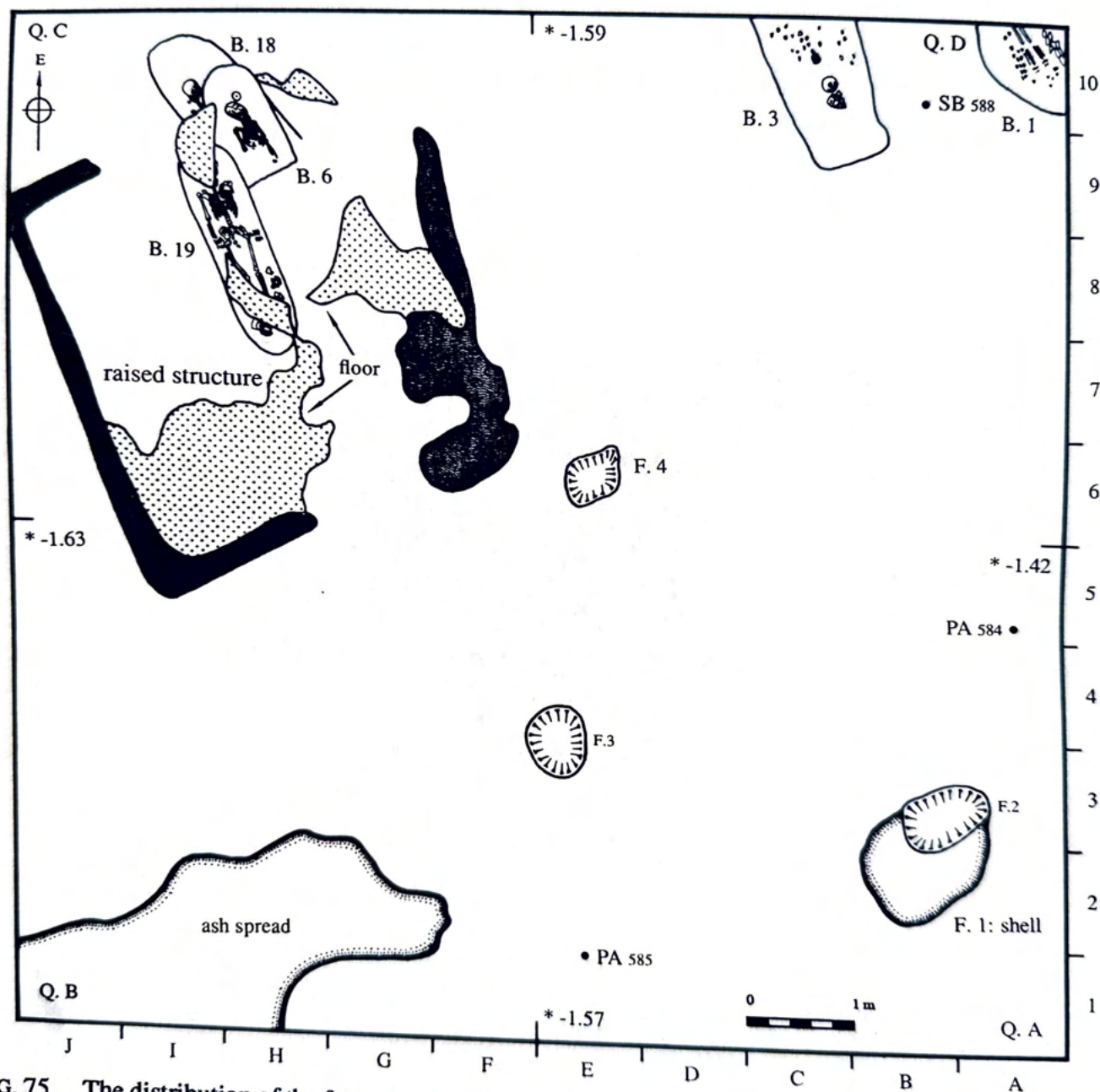
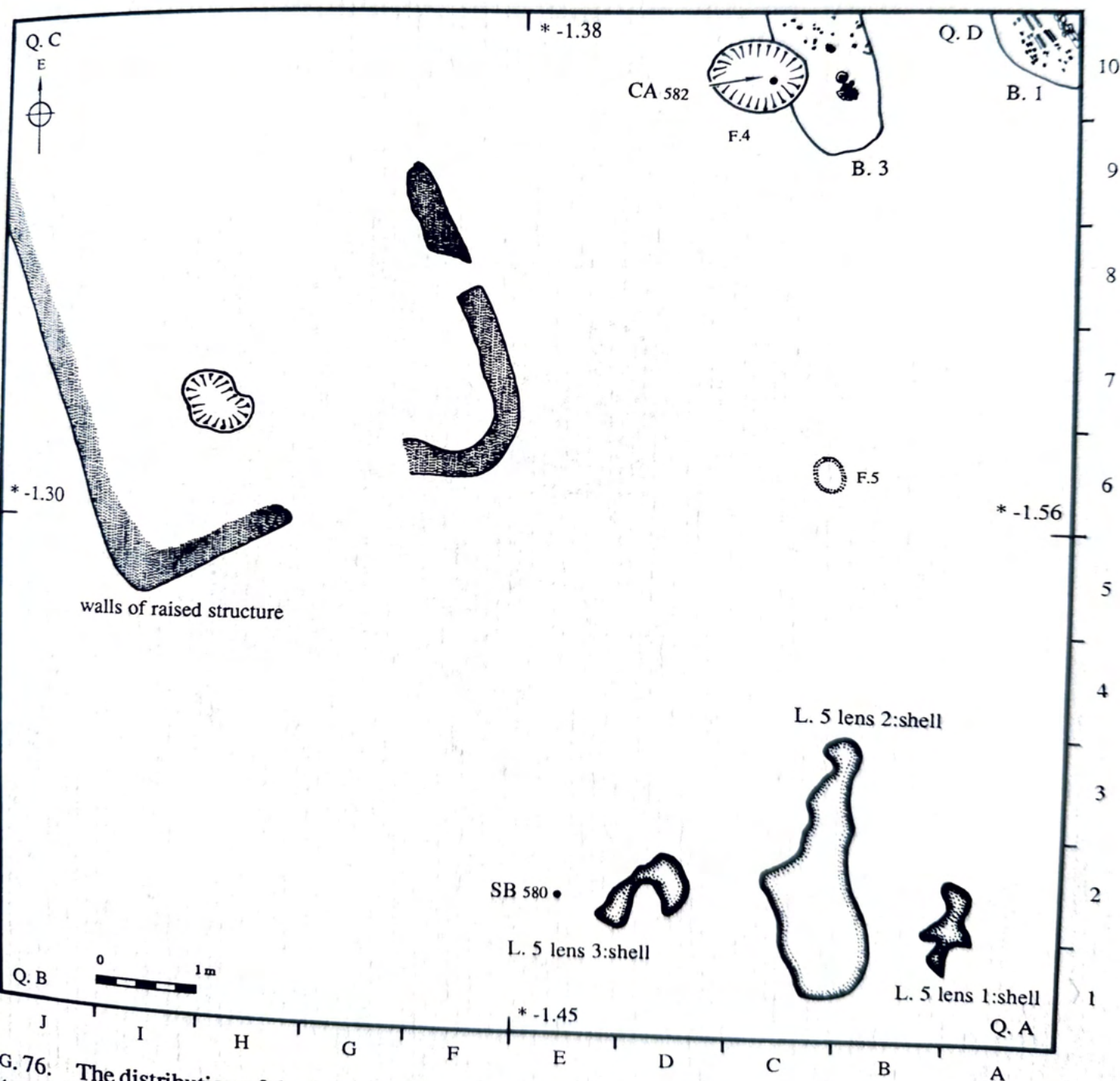


FIG. 75. The distribution of the features identified in layer 5:4. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, B: burial, PA: adze head, SB: shell disc/bangle. The number after each artefact is its catalogue reference



G. 76. The distribution of the features identified in layer 5:3. Abbreviations: *: depth at this point below datum, Q: quadrant, F: feature, L: layer, B: burial, CA: charcoal, SB: shell, L: lens, S: shell, A: artefact.

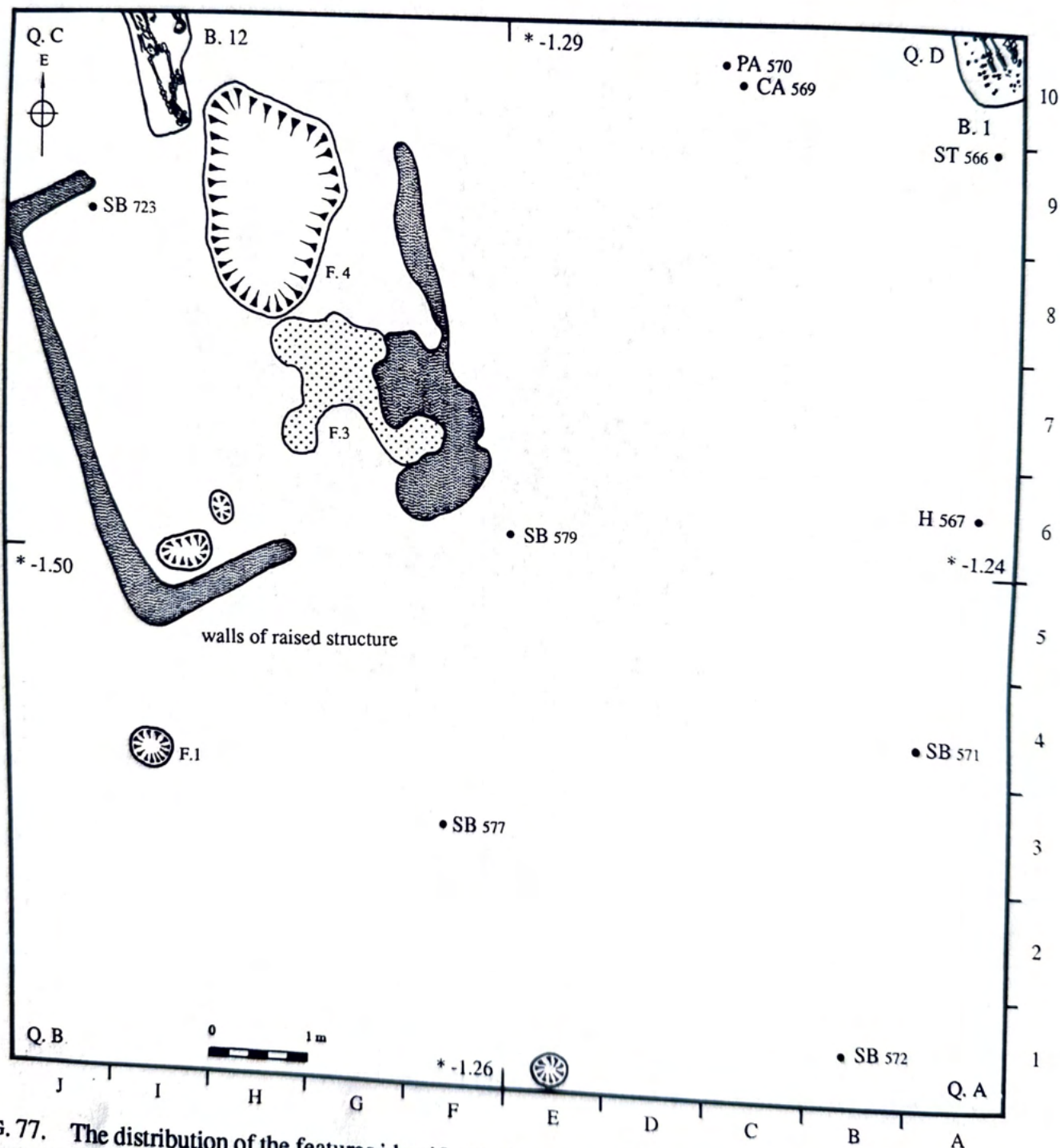
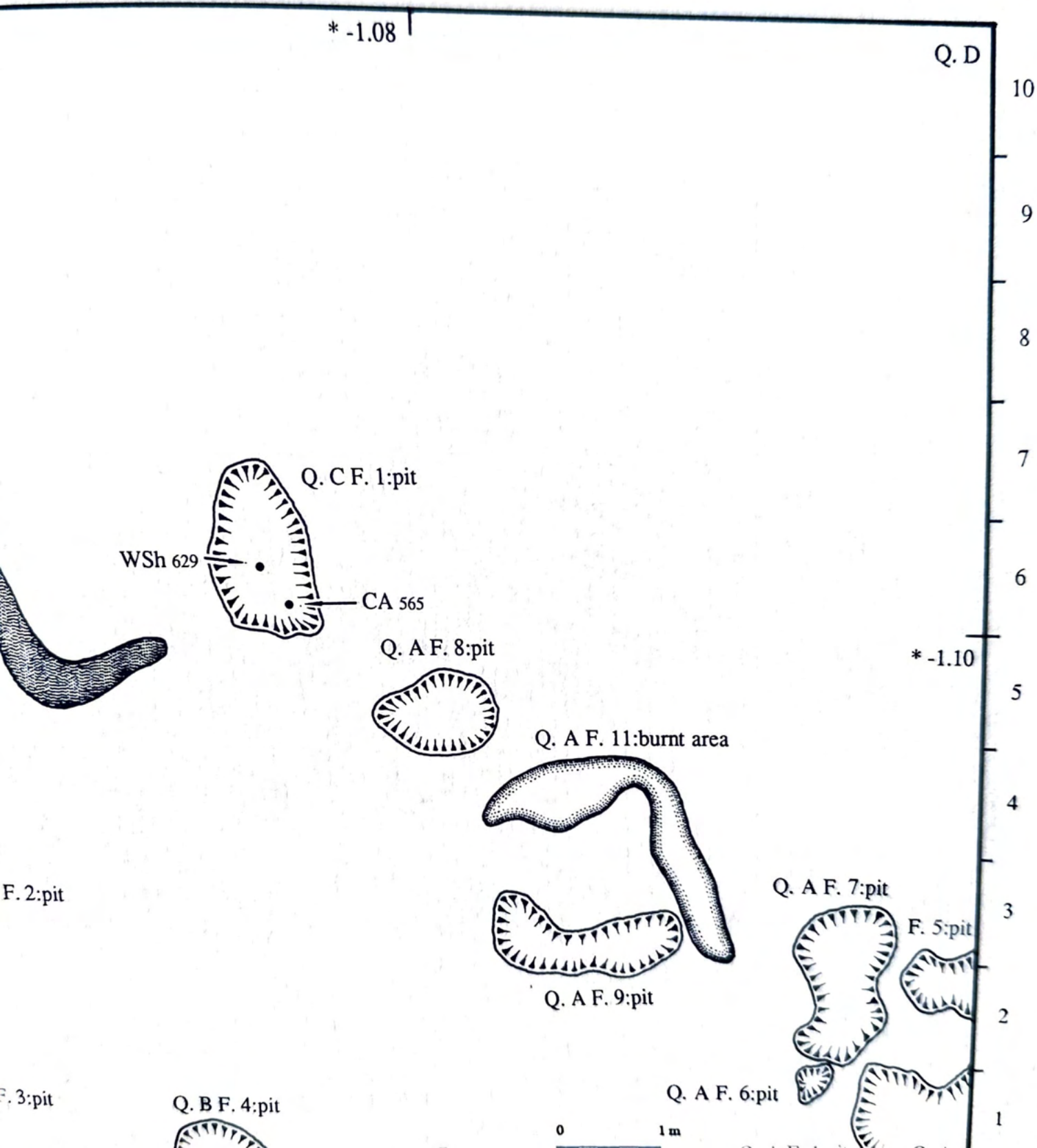


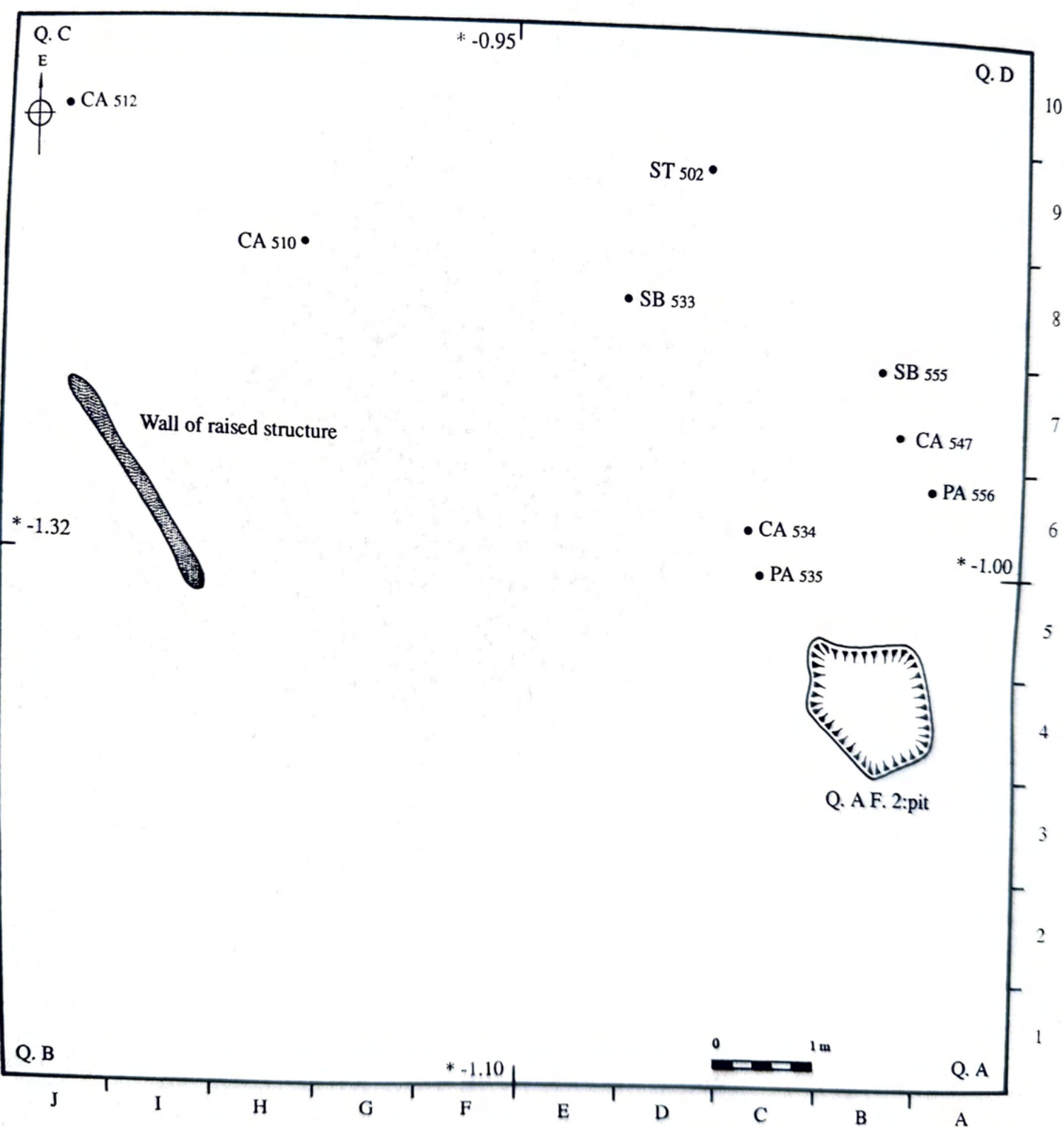
FIG. 77. The distribution of the features identified in layer 5:2. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, B: burial, PA: adze head, H: hoe, SB: shell disc/bangle, CA: clay anvil, ST: stone disc/bangle. The number after each artefact is its catalogue reference

CULTURAL ASPECTS OF THE SEQUENCE

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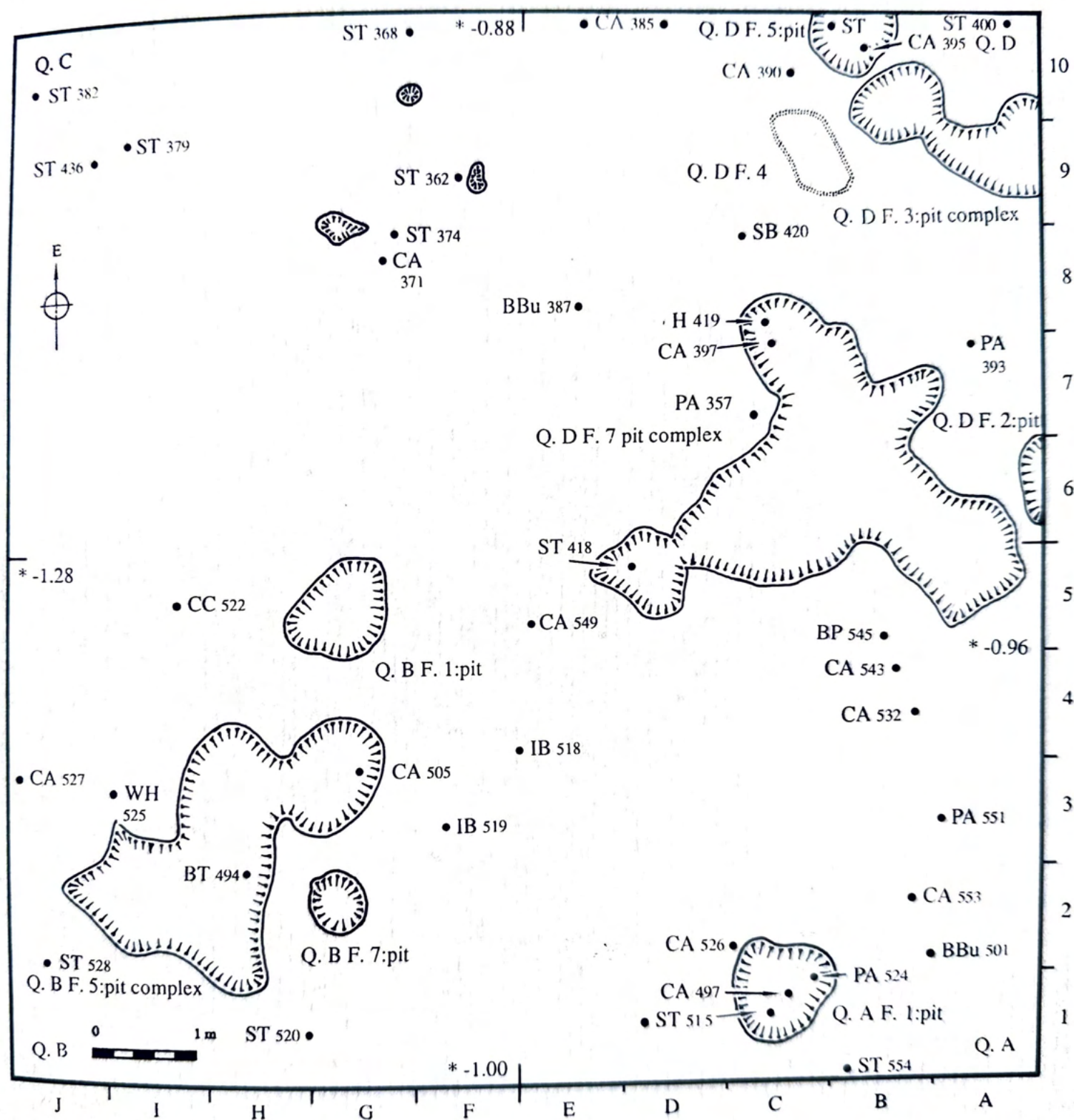
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79. The distribution of the features identified in layer 4:3. *Abbreviations:* *: depth at this point below datum, Q: quadrant, F: feature, PA: adze head, CA: clay anvil, SB: shell disc/bangle, ST: stone disc/bangle. The number after each artefact is its catalogue reference

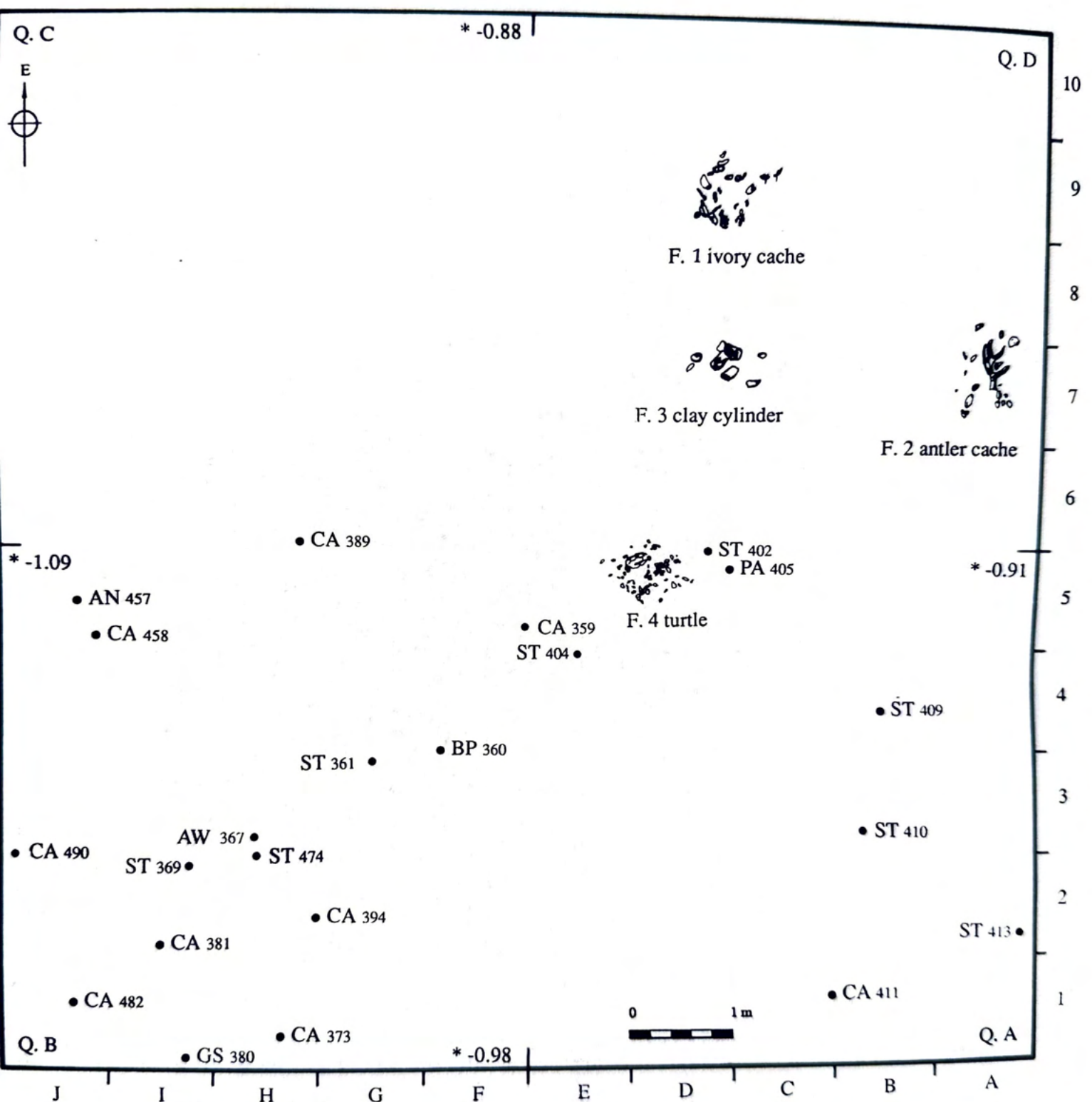
CULTURAL ASPECTS OF THE SEQUENCE

11

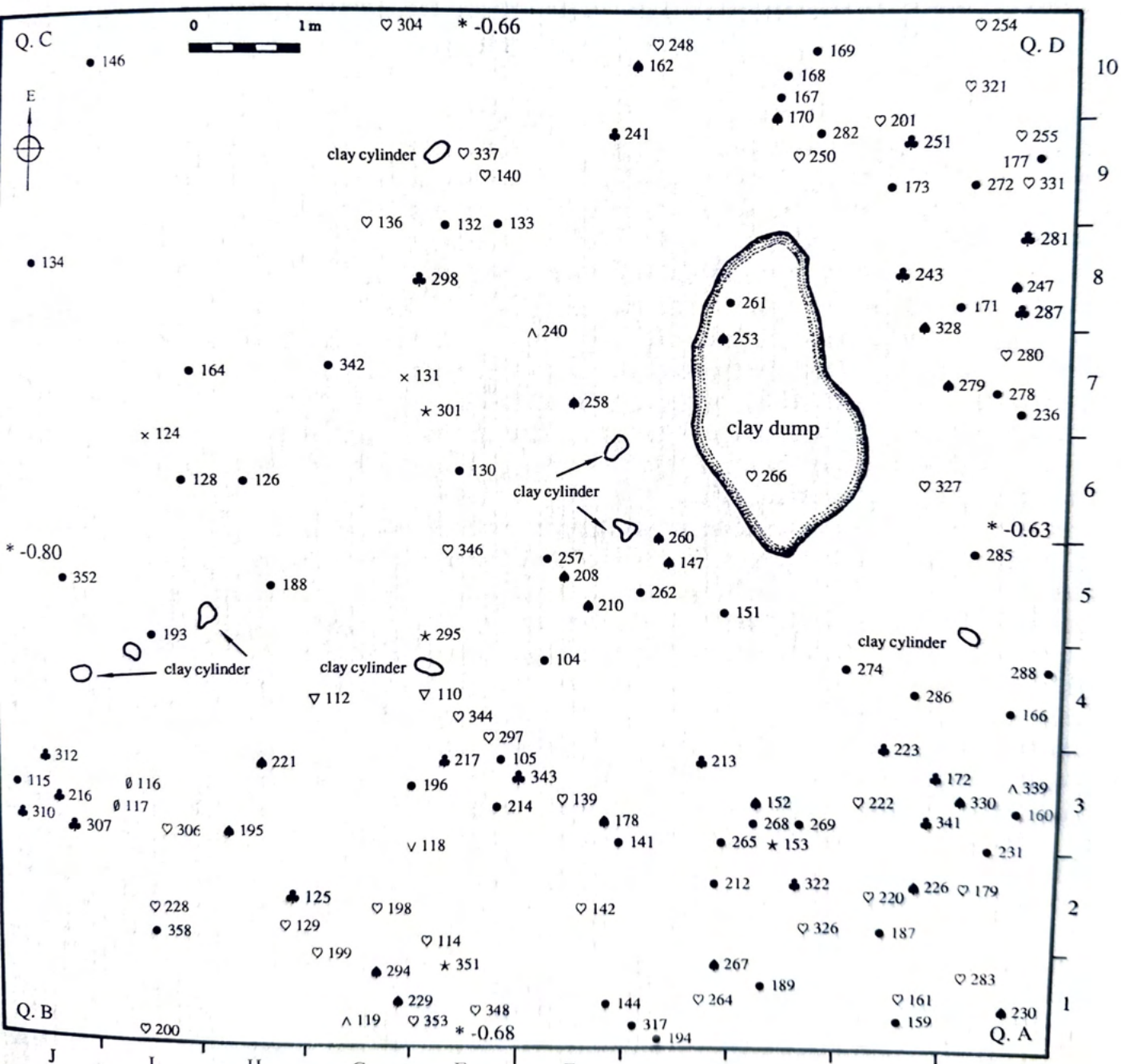


80. The distribution of the features identified in layer 4:1. Abbreviations: Q: quadrant, F: feature depth at this point below datum, PA: adze head, BO: bone disc/bangle, IB: ivory disc/bangle, CC: clay center, H: hoe, BP: bone point, BT: bone tool, BBu: bone burnisher, CA: clay anvil, SB: shell disc/bangle, stone disc/bangle, WH: whetstone. The number after each artefact is its catalogue reference

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1. The distribution of the features identified in lower layer 3 and on the surface of layer 4.
 Abbreviations: Q: quadrant, F: feature, *: depth at this point below datum, CA: clay anvil, BP: bone point, ST: stone disc/bangle, PA: adze head, AN: worked antler, AW: bone awl, ST: stone disc/bangle



THE BIOLOGICAL REMAINS FROM PITS, POSTHOLES, BURIAL FILL, LENSES AND AREAS OF DISTURBANCE

Numerous instances of prehistoric activity were identified during the excavations. These include the digging of graves, postholes and pits, the creation of hearths, ash spreads and deposition of middens in which the remains of foodstuffs predominated. In many cases, it was not possible to be sure whether a feature represents a posthole truncated in prehistory by subsequent activity or simply a disturbed area. In other cases, postholes were clearly recognized by their straight sides, depth and, in a few instances, the survival of the wooden posts.

Table 12 sets out the biological material identified in these features. The following abbreviations have been employed: F. is a delimited context usually interpreted as a pit, posthole or delimited area of disturbance. B is a burial, RS refers to a feature associated with the raised mortuary structure which covered MP6 burials and L is a lens. The table sets these out in chronological order, and each feature is identifiable in the successive plans set out above. Features set aside in the table by the symbol • are, in most cases, circular pits located near burials. It is felt that these might reflect instances of mortuary ritual.

To reduce the table to manageable proportions, and because the final volume in this report will include detailed analyses of the fish, bird micro- and larger mammalian fauna, the fish, turtle and crab species have been grouped and are represented on the basis of the number of bones or other remains ascribed to each. Turtle and crab remains are from species adapted to mudflats and mangal. The fish come from marine, estuarine and freshwater species. The majority of the shellfish are adapted to mangal or mangal fringe habitats (*Polymesoda erosa*, *Cassidula aurisfelis*, *Ellobium aurisjudae*, *Telescopium telescopium* and *Cerithidea obtusa*). *Asaphis* sp. lives in muddy substrate below low tide level and *Donacilla* sp. likewise prefers beaches below the level of low tide. *Anadara* sp., *Marcia hiantina* and *Meretrix lusoria* prefer intertidal conditions with a low gradient, while *Natica tigrina* and *Thais lacera* are found on mudflats. *Nerita articulata* is an intertidal species in mangal, and *Pseudodon inoscularis* is a freshwater bivalve often found in rivers, streams and ponds. *Placuna placenta* is usually found in mudflats associated with mangal. Of the birds, *Grus antigone*, the Sarus crane, feeds in swamps and marshes. The rhinoceros occupies rainforest, while the banded palm civet, *Paradoxurus hermaphroditus*, macaque (*Macaca*) and the langur *Presbytis* sp. are arboreal. *Aonyx cinerea*, the otter, feeds in rivers, estuaries and along the sea shore. The slow loris (*Nycticebus coucang*) is essentially arboreal.

The general conclusions to be drawn from these data are that, during the mortuary phases at the site, there is enduring evidence for an environment which gave access to mangal, estuarine and freshwater conditions. With the end of the mortuary phase, the coastal resources ceased to be locally available. It is noticeable that pits, often circular in plan, were excavated close to burials; when there was a hiatus in mortuary activity, the pits too became rare or ceased. These pits contained a high frequency of shellfish. Given the high frequencies of shellfish and other food remains in the many middens found in these layers, it is argued that such pits might have been dug as part of the grave ritual and food remains placed in them. Alternatively, they may have been filled with food in honour of dead ancestors. It is also stressed that, in cases where the grave fill remained intact, it contained food remains. This is particularly evident in the case of B15, where over 3,000 valves of *Anadara* were encountered as well as a wide range of other biological material. None of this material was encountered as a concentration of food residue near the corpse, but was scattered

through the grave fill. It is, of course, possible that these remains were present fortuitously, as, for example, when a grave cut severed an earlier midden and shellfish or bones were backfilled into the grave after interment. On the other hand, graves usually present a complementary distribution with middens, and the incorporation of the food remains could equally manifest graveside feasting and inclusion of sustenance for the dead within the grave fill. The more detailed consideration of these data is reserved for a later part of this excavation report.[†]

[†]In the following tables, it will be found that the numbers of individual *Anadara* valves are half that mentioned in the sections above. The number of actual valves has been divided by two in order to equate the number of individual bivalves with the number of gastropods.

TABLE 12: The distribution of fish, bird, mammalian, turtle and shellfish remains in the lenses, pits, postholes, burial fill and areas of disturbance

Layer Context	11:2 F1	11:1: L31	10:25 L29	10:25 F1	10:24 L28	10:24 F6	10:24 F5	10:24 F4	10:24 F3	10:23 B152	10:23 L26	10:22 L 27	10:22 F22	10:22 H17
Turtle	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Fish	-	-	-	4	-	2	2	2	-	-	-	-	-	-
<i>Anadara</i> sp.	-	1279	260	12	4357	-	-	-	42	-	5837	262	-	-
<i>P. inoscularis</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	4	100	-	2	-	-	-	2	-	16	2	-	-
<i>Bassina parva</i>	-	-	2	-	-	-	-	-	-	-	-	2	-	-
<i>Marcia hiantina</i>	-	-	-	-	-	-	-	-	-	-	-	2	-	-
<i>Meretrix lusoria</i>	-	13	2315	-	2	-	-	-	7	-	1	-	-	-
<i>Pelecypoda trigona</i>	-	-	2	-	-	-	-	-	66	-	8	22	-	-
<i>Nerita articulata</i>	6	13	40	2	4	-	-	-	-	-	3	-	-	-
<i>Cerithidea obtusa</i>	-	6	1	-	-	-	-	-	-	1	4	9	9	6
<i>Cerithidea cingulata</i>	-	-	-	-	-	-	-	-	-	-	31	-	-	-
<i>T. telescopium</i>	-	2	36	-	-	-	-	-	-	-	1	-	-	-
<i>Natica tigrina</i>	-	11	37	1	-	-	-	-	-	-	2	1	-	-
<i>Cymia lacera</i>	-	-	-	-	2	-	-	-	1	-	3	-	-	-
<i>Cassidula aurisfelis</i>	-	-	6	-	-	-	-	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	33	-	2	1	-	-	-	-	-	17	-	-	-

Layer Context	10:22 F6	10:22 F3	10:22 F1	10:21 B150	10:21 L23	10:21 L25	10:21 F5	10:21 F3	10:21 F1	10:20 L24	10:20 F16	10:20 F13	10:20 F7	10:19 F7
Fish	-	12	-	5	-	1	4	3	2	-	-	18	27	7
Crab	-	-	4	1	-	1	-	4	1	-	3	-	11	1
Reptile	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Phalacrocorax carbo</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	8	-	30	-	3830	190	-	8	2	318	5	5	-	17
Arcid	-	-	-	-	34	5	30	142	2	3	-	-	-	-
<i>Polymesoda erosa</i>	3	-	3	1	12	-	-	1	-	-	-	-	-	2
<i>Marcia hiantina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	-	-	28	-	-	3	1	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	8	2	318	5	5	-	17
<i>T. telescopium</i>	-	-	-	-	1	-	-	1	-	-	-	-	-	-
<i>Nerita articulata</i>	-	-	-	-	4	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-

: ceremonial burial pit, F: feature, B: burial, L: lens, RS: raised structure, H: hearth, Q: quadrant,

: *Telescopium*, P.: *Pseudodon*

Layer Context	10:19 F3	10:19 F2	10:18 F7	10:18 F4	10:18 F3	10:17 L15	10:17 L14	10:17 F7	10:17 F6	10:17 F5	10:17 F4	10:17 F3	10:17 F2	10:16 B145
Fish	1	-	3	6	-	-	-	2	3	1	2	1	1	4
Crab	1	-	1	1	-	-	-	2	1	-	-	-	-	3
<i>Grus antigone</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	-	-	-	49	-	30558	1377	2	3	-	1	4	3	-
Arcid	-	-	-	-	-	2	-	-	-	-	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	46	-	-	1	-	-	-	-	-
<i>Marcia hiantina</i>	-	-	-	-	-	16	-	-	-	-	-	-	-	-
<i>Dosinia trailli</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	-	6	-	176	-	3	-	-	1	-	-	1
<i>Paphia undulata</i>	-	-	-	-	-	51	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	-	-	-	-	10	-	-	-	-	-	-	-	-
<i>Nerita articulata</i>	-	-	-	-	-	5	-	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	5	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	1	-	-	-	-	60	-	-	-	-	-	-	-	-
<i>Cymia lacera</i>	-	-	-	-	-	5	-	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-

Layer Context	10:16 F18	10:16 F15	10:16 B100	10:16 F9	10:16 F8	10:16 F7	10:16 B140	10:15 B131	10:15 B129	10:15 B128	10:15 B110	10:15 B107	10:15 F24	10:15 F23
Fish	1	3	77	1	3	1	3	49	3	5	-	39	-	-
Shark	-	-	1	-	-	-	-	-	-	-	-	1	-	-
Fish otolith	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Crab	-	-	60	-	-	-	-	18	3	5	-	17	3	9
<i>Rattus</i> sp.	-	-	1	-	-	-	-	1	-	3	-	5	-	9
<i>Anadara</i> sp.	1	18	255	1	2	1	125	-	-	-	-	-	2	1796
<i>Placuna placenta</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Asaphis</i> sp.	-	-	2	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	2	1	1	-	-	-	1	-
<i>Marcia hiantina</i>	1	-	-	-	-	-	3	4	1	-	-	3	-	1
<i>Meretrix lusoria</i>	2	-	27	-	1	-	9	9	15	3	-	11	3	5
<i>Cerithidea obtusa</i>	-	-	1	-	-	-	-	1	-	-	3	3	-	2
<i>Cerithidea cingulata</i>	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>T. telescopium</i>	-	-	-	-	-	-	-	1	-	-	1	-	-	1
<i>Nerita articulata</i>	-	2	1	-	-	-	-	1	-	-	1	-	-	-
<i>Natica tigrina</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	7
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	7
<i>Anadara septicostata</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Ellobium aurisjudae</i>	-	-	2	-	-	-	-	2	-	-	-	-	-	2

Layer Context	10:14 F4	10:14 F3	10:14 F2•	10:13 B118	10:13 F31•	10:13 F30•	10:13 F29	10:13 F28	10:13 F22	10:13 F20	10:13 F19	10:13 F18	10:13 F15	10:13 F13•
Fish	4	10	36	1	-	2	-	-	-	8	3	4	17	10
Crab	2	-	22	1	-	1	-	-	-	-	2	1	5	1
<i>Rattus</i> sp.	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	26	52	-	1	65	265	20	5	-	5	20	2	1	270
<i>Placuna placenta</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	6	4	-	4	-	-	-	2	2	1	-	6
<i>Marcia hiantina</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Paphia undulata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cymia lacera</i>	-	-	1	-	-	-	1	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	-	-	-	-	-	-	1	1	-	-	-	-	-

Layer Context	10:13 B113	10:13 B112	10:13 F10	10:13 F7	10:13 F6	10:12 B115	10:12 F21•	10:12 B87	10:12 B109	10:12 F19	10:12 F18	10:12 F17	10:12 F16	10:12 F14
Turtle	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Fish	13	78	-	2	3	5	10	87	61	-	-	1	-	-
Fish otolith	-	3	-	-	-	-	-	1	1	-	-	-	-	-
Crab	3	16	1	-	1	-	3	-	32	44	-	-	-	-
<i>Rattus</i> sp.	1	9	-	-	-	-	-	3	7	-	-	-	-	-
Unidentified bird	-	-	-	-	-	-	-	-	2	-	-	-	-	-
<i>Anadara</i> sp.	119	136	-	1	1	12	2190	124	412	-	-	5	4	23
Arcid	-	-	-	-	-	2	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	1	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	1	-	1	-	-	-	-	-	-	-
<i>Acrosterigma flavum</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	21	23	-	-	2	7	10	45	51	-	-	-	-	-
<i>Marcia hiantina</i>	-	-	-	-	-	-	1	3	1	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	2	1	1	-	-	2	-	-
<i>T. telescopium</i>	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Crepidula</i>	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Natica tigrina</i>	-	3	3	-	-	-	2	2	3	3	1	-	1	1
<i>Cymia lacera</i>	-	-	-	-	-	-	-	-	3	1	1	-	-	-
<i>Ellobium aurisjudae</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-

Layer Context	10:12 F13	10:12 F12•	10:12 F11•	10:12 F10•	10:12 F9•	10:12 F8	10:12 F6	10:12 F5•	10:12 F4	10:12 F3	10:12 F2	10:12 F1•	10:12 B133	10:11 B105
Fish	-	3	44	6	6	-	-	-	10	1	-	8	10	14
Crab	1	-	5	1	2	-	-	-	-	2	-	1	-	2
Reptile	-	-	1	-	-	-	-	-	-	-	-	1	-	-
<i>Anadara</i> sp.	12	83	30	12	315	-	2	1426	7	62	76	184	-	13

EXCAVATION OF KHOK PHANOM DI

Layer (cont.) Context (cont.)	10:12 F13	10:12 F12•	10:12 F11•	10:12 F10•	10:12 F9•	10:12 F8	10:12 F6	10:12 F5•	10:12 F4	10:12 F3	10:12 F2	10:12 F1•	10:12 B133	10:11 B105
<i>Dosinia trailli</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Meretrix lusoria</i>	-	2	3	2	5	3	3	6	1	-	3	4	-	-
<i>Cerithidea obtusa</i>	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	1	1	-	-	-	-	1	-	1	-	-	-	-
<i>Marcia hiantina</i>	-	-	-	1	-	-	-	-	1	-	-	-	-	-
<i>Polymesoda erosa</i>	-	2	-	-	2	-	-	-	-	2	-	1	-	-
<i>Cypraea erronea</i>	-	-	-	-	-	-	-	-	-	2	-	-	-	-
<i>Cypraea helvola</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Cypraea miliaris</i>	-	-	-	-	-	-	-	-	-	-	-	-	3	-
<i>Cymia lacera</i>	-	-	-	-	2	-	-	-	-	-	-	-	2	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pulmonates</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Layer Context	10:11 B97	10:11 F25	10:11 F23	10:11 F22•	10:11 F21	10:11 F20	10:11 F18•	10:11 B105	10:11 F16•	10:11 B102	10:11 F13•	10:11 B101	10:11 F10	10:11 F9
Fish	5	7	-	31	4	8	-	42	-	65	24	54	2	-
Crab	-	8	-	5	-	-	-	5	-	32	6	6	-	-
<i>Rattus</i> sp.	3	-	-	-	-	-	-	-	-	3	-	-	-	-
<i>Sus scrofa</i>	-	-	-	3	-	-	-	-	-	1	-	-	-	-
<i>Anadara</i> sp.	-	-	21	3769	6	4	3	2084	-	383	180	7	9	-
<i>P. inoscularis</i>	-	-	-	-	1	-	-	-	-	1	1	-	-	-
<i>Asaphis violascens</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	1	2	3	-	-	17	-	1	-	-	-	-
<i>Marcia hiantina</i>	-	-	-	1	-	-	-	-	-	35	7	1	-	2
<i>T. telescopium</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	-	4	-	-	-	-	-	-	1	-	-	-
<i>Cymia lacera</i>	-	-	-	1	-	-	3	-	-	-	1	1	-	-
<i>Nassarius liviscens</i>	-	-	-	1	-	-	-	-	-	-	1	-	-	-
<i>Pelecypora trigona</i>	-	-	-	1	-	-	-	-	1	-	-	-	-	-
<i>Nassarius foveolatus</i>	-	-	-	6	-	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-

Layer Context	10:11 B99	10:11 B98	10:11 F3•	10:11 F2	10:11 B96	10:11 B94	10:11 F1	10:11 B123	10:10 F29	10:10 F28•	10:10 F27•	10:10 F26	10:10 F25•	10:10 F23•
Fish	18	3	-	48	18	8	-	6	2	9	20	21	64	9
Shark	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Crab	2	1	-	30	5	9	-	4	-	-	-	5	6	1
<i>Rattus</i> sp.	-	-	-	-	-	-	-	1	-	-	-	-	1	-
<i>Anadara</i> sp.	5	-	-	496	660	2318	-	-	5	183	640	30	133	16

Layer (cont.) Context (cont.)	10:11 B99	10:11 B98	10:11 F3•	10:11 F2	10:11 B96	10:11 B94	10:11 F1	10:11 B123	10:10 F29	10:10 F28•	10:10 F27•	10:10 F26	10:10 F25•	10:10 F23•
<i>Isognomon</i> sp.	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Asaphis</i> sp.	-	1	-	-	-	-	-	-	-	-	-	-	1	-
<i>Meretrix lusoria</i>	3	-	-	15	6	24	-	3	-	7	20	3	50	-
<i>Nerita articulata</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	2
<i>Marcia hiantina</i>	-	-	-	1	-	4	1	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Terebralia palustris</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>T. telescopium</i>	3	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Natica tigrina</i>	-	-	1	1	-	4	1	-	-	-	2	-	-	-
<i>Conus</i> sp.	-	-	-	-	-	1	-	-	-	-	-	-	-	-

Layer Context	10:10 F22	10:10 F21	10:10 F20	10:10 F19	10:10 B91	10:10 F10	10:10 F8	10:10 F7•	10:10 B88	10:10 F4	10:10 F1	10:10 B103	10:9 F32•	10:9 F31
Fish	4	-	-	8	42	-	-	4	22	6	14	1	32	-
Crab	-	-	-	-	6	-	-	-	6	-	1	-	5	-
<i>Rattus</i> sp.	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Anadara</i> sp.	2	-	-	1	11	-	49	1081	4	-	12	13	385	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>T. telescopium</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	1	1	-	-	4	-	-	-	-	-	5	1	-	-
<i>Donacilla</i> sp.	-	-	-	-	-	-	-	1	-	-	-	-	-	1
<i>Natica tigrina</i>	-	-	-	1	-	1	-	-	-	-	-	-	1	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Cymia lacera</i>	-	-	-	-	-	-	-	1	-	-	-	1	-	-
<i>Nassarius liviscens</i>	-	-	3	-	-	-	-	-	-	-	-	1	-	-
<i>Conus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	2	-	-	-	-	-	-	-	-	-	-	-	-

Layer Context	10:9 F30	10:9 F28	10:9 F27	10:9 F26•	10:9 F25•	10:9 F24	10:9 F23	10:9 F21	10:9 F19	10:9 F15	10:9 F14	10:9 F11	10:9 F9	10:9 B93
Fish	2	2	4	46	1	120	1	-	2	-	-	8	4	34
Crab	-	-	3	10	1	27	1	-	1	-	-	5	1	7
<i>Anadara</i> sp.	1	3	2287	18	445	10	8	-	8	-	-	6	80	26
<i>P. inoscularis</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Asaphis violascens</i>	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	1	-	-	-	-	-	-	-	-	-	1	8
<i>Meretrix lusoria</i>	-	1	1	6	3	1	2	2	1	1	-	-	-	-
<i>Strombus canarium</i>	-	-	-	1	-	-	-	-	-	-	-	-	1	-
<i>Natica tigrina</i>	-	-	1	1	-	1	-	1	-	1	-	-	-	-
<i>Nassarius liviscens</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-

EXCAVATION OF KHOK PHANOM DI

Layer Context	10:8 F43●	10:8 F38	10:8 B92	10:8 B90	10:8 F30	10:8 F29	10:8 F25	10:8 F23	10:8 F18	10:8 F17	10:8 F16	10:8 F15●	10:8 F14	10:8 F12
Fish	-	-	3	31	74	-	3	2	-	-	-	-	-	17
Shark	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crab	-	3	11	37	-	1	1	1	-	-	-	-	-	1
<i>Rattus</i> sp.	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	102	5	126	95	-	1	2	3	62	116	-	3	8	-
<i>Polymesoda erosa</i>	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	2	4	110	-	-	1	1	-	4	1	3	1	1
<i>T. telescopium</i>	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	1	-	-	1	-	-	-	-	-	-	-	-	1

Layer Context	10:8 F6	10:8 F5	10:8 F2	10:7 F1	10:7 F31	10:7 F29●	10:7 F26	10:7 F25	10:7 F19	10:7 F18	10:7 F17	10:7 F16●	10:7 F8	10:7 F7
Fish	-	-	1	1	-	485	-	4	-	-	-	12	5	2
Shark	-	-	-	-	-	3	-	-	-	-	-	-	-	-
Crab	-	-	1	1	-	44	-	2	-	-	-	6	-	-
<i>Anadara</i> sp.	-	20	2	27	7	707	-	2	25	5	18	1412	3	12
<i>Placuna placenta</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Asaphis violascens</i>	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	1	-	-	3	-	-	-	-	-
<i>Filopaludina sumatrensis</i>	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<i>Meretrix lusoria</i>	1	1	1	-	2	100	1	1	8	2	2	1	5	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Strombus luhuanus</i>	-	-	-	-	-	2	-	-	-	-	-	-	1	-
<i>Natica tigrina</i>	-	-	-	-	-	5	-	-	-	-	-	-	-	-
<i>Nassarius liviscens</i>	-	-	-	-	-	1	-	-	-	-	-	1	-	1

Layer Context	10:7 B74	10:7 B72	10:7 F6	10:7 F4	10:7 F3	10:6 F1	10:6 B83	10:6 F46	10:6 F45	10:6 F44	10:6 F42	10:6 F38	10:6 F35	10:6 F33
Fish	12	64	-	-	-	-	1	-	2	-	1	3	-	-
Shark	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Fish otolith	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Crab	7	20	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rattus</i> sp.	-	4	-	-	-	-	1	1	-	1	-	-	-	-
<i>Anadara</i> sp.	18	47	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tellinides opalina</i>	-	-	-	1	-	3	7	1	2	2	5	3	-	-

Layer (cont.) Context (cont.)	10:7 B74	10:7 B72	10:7 F6	10:7 F4	10:7 F3	10:6 F1	10:6 B83	10:6 F46	10:6 F45	10:6 F44	10:6 F42	10:6 F38	10:6 F35	10:6 F33
<i>P. inoscularis</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Asaphis violascens</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>Polymesoda erosa</i>	-	1	-	1	-	-	1	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	11	21	1	2	-	3	25	2	1	-	-	4	-	-
<i>Cerithidea obtusa</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>T. telescopium</i>	1	2	-	-	-	-	-	-	-	-	-	-	1	-
<i>Natica tigrina</i>	1	1	-	1	3	-	-	-	-	-	-	-	1	-

Layer Context	10:6 B67	10:6 FB64	10:6 F25	10:6 F22	10:6 F21	10:6 F11	10:6 F6	10:6 F5●	10:6 F4	10:5 F57	10:5 F49	10:5 F44●	10:5 F42	10:5 F36
Fish	7	17	-	-	-	3	-	-	1	8	-	5	-	-
Crab	3	1	1	-	-	1	-	-	-	-	1	-	1	1
<i>Rattus</i> sp.	4	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	46	168	-	-	-	280	4	350	54	1	355	12	3	-
<i>Donacilla nitida</i>	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Asaphis violascens</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	20	22	-	2	1	-	-	-	4	1	7	8	-	5
<i>Cerithidea cingulata</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Cypraea miliaris</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	-	-	-	-	-	-	-	-	1	9	-	5

Layer Context	10:5 F27	10:5 F26	10:5 F18	10:5 F16	10:5 F14	10:5 F13	10:5 F9	10:5 F6	10:5 F5	10:5 F1	10:4 L7	10:4 B79	10:4 F35	10:4 F30
Fish	-	-	-	-	11	-	-	12	9	-	4	22	-	1
Crab	-	-	-	-	1	-	-	2	-	-	3	5	-	-
<i>Marcia hiantina</i>	-	-	-	-	-	-	-	-	-	-	-	2	-	-
<i>Anadara</i> sp.	13	27	3	-	3	2	-	121	40	-	1732	3430	-	-
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	2	-	-	-	-	-
<i>Asaphis violascens</i>	-	-	-	-	-	-	-	-	-	-	11	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	-	4	3	-	-
<i>Meretrix lusoria</i>	1	9	9	-	-	4	1	3	-	-	101	241	-	-
<i>Nerita articulata</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>T. telescopium</i>	-	-	-	-	-	-	-	-	-	-	1	1	-	-
<i>Natica tigrina</i>	-	-	-	1	-	-	-	-	1	1	-	5	5	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	-

Layer Context	10:4 F28	10:4 F27	10:4 F25	10:4 F22	10:4 F21	10:4 F19	10:4 F18●	10:4 B60	10:4 F15	10:4 F14	10:4 F12	10:4 FB57	10:4 F1	10:3 L2
Turtle	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Fish	-	-	4	15	-	1	36	32	-	-	-	23	-	465

1

Layer (cont.)	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3	10:3
Context (cont)	B58	B56	F38	F36	F35	F33	F31	F25	F17	F16	F14	F8	F2	L1
<i>Natica tigrina</i>	1	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Cassidula aurisfelis</i>	2	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>Nassarius liviscens</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	1	-	-	-	-	-	1	-	-	-	-	-	-

Layer	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2	10:2
Context	B77	B64	F56	F52	F51	F35	F33	F25	F24	F23	F16	F15	F9	F6
Fish	27	-	-	4	-	5	-	2	-	2	-	3	-	-
Crab	10	-	-	1	-	-	-	-	1	-	-	1	-	-
<i>Presbytis</i> sp./ <i>Macaca</i> sp.	2	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	26	-	4	1	4	3	3	-	-	6	-	36	51	24
<i>P. inoscularis</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	1	-	-	2	-	3	1	-	-	-	15	8	2
<i>Cerithidea obtusa</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	-	-	-	-	1	-	-	-	1	-	-	-

Layer	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1	9:7
Context	B52	F41	F38	F37	F35	F34	F31	F30	F20	F12	F10	F2	F1	F39
Fish	-	5	1	-	1	1	-	1	-	-	-	-	22	10
Crab	1	-	3	-	-	3	-	-	-	-	-	-	-	2
<i>Rattus</i> sp.	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Cervid	-	3	-	-	-	-	-	-	1	1	-	12	-	-
<i>Sus scrofa</i>	-	-	-	-	-	-	-	1	-	-	1	-	-	-
<i>Anadara</i> sp.	-	17	4	-	10	3	-	3	-	-	17	-	35	10
<i>Polymesoda erosa</i>	-	1	-	-	-	-	-	-	-	-	-	1	1	-
<i>Acrosterigma flavum</i>	-	-	-	-	-	-	-	-	-	-	-	-	10	-
<i>Meretrix lusoria</i>	-	2	1	-	3	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	-	-	-	-	-	2	-	1	-	-	-	-	-
<i>Natica tigrina</i>	-	1	1	1	-	-	-	1	-	-	-	-	-	-

[illegible]

EXCAVATION OF KHOK PHANOM DI

Layer Context	9:6 F31	9:6 F22	9:6 F21	9:6 F20	9:6 F11	9:6 F9	9:6 L9	9:6 F7	9:6 F6	9:5 F2	9:5 F55•	9:5 F54•	9:5 F53	9:5 F47
Turtle	-	-	1	1	-	-	2	-	-	-	-	-	-	-
Fish	-	1	1	1	-	-	89	-	-	-	-	-	-	2
Shark	-	-	-	-	-	-	7	-	-	-	-	-	-	-
Crab	-	30	-	-	-	-	17	1	-	-	-	-	-	1
<i>Anadara</i> sp.	-	5	-	-	7	21	40261	21	20	4	170	7	2	5
<i>Donacilla nitida</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	-	6	36	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	1	-	-	2	3	-	2	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	-	-	2	5	197	-	-	9	-	-	-	-
<i>Littoraria melanostoma</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Isognomon</i> sp.	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<i>Nerita articulata</i>	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<i>T. telescopium</i>	2	-	-	-	-	-	50	-	-	-	1	-	-	1
<i>Natica tigrina</i>	-	-	-	-	-	1	39	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	2	-	-	-	-	-	-	-
<i>Ellobium aurisjudae</i>	-	-	-	-	-	-	7	-	-	-	-	-	-	-

Layer Context	9:5 F46	9:5 F36	9:5 F33	9:5 F31•	9:5 F27	9:5 F25•	9:5 F21	9:5 F20	9:5 F18	9:5 F9	9:5 F8	9:5 F6	9:5 F4	9:5 F2
Turtle	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Fish	2	5	-	12	2	-	-	-	-	-	-	2	-	-
Crab	-	-	-	8	-	1	-	-	-	-	-	-	-	-
<i>Presbytis</i> sp./ <i>Macaca</i> sp.	-	-	-	2	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	7	4	-	17	8	9	7	18	18	10	1443	2	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	1	3	-	1	-
<i>Nerita articulata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	2
<i>T. telescopium</i>	-	-	-	-	-	1	1	1	-	2	3	-	-	-
<i>Natica tigrina</i>	-	-	2	-	-	-	-	-	-	-	-	-	-	-

Layer Context	9:5 F1	9:4 F46	9:4 F40	9:4 F39	9:4 F37	9:4 F32	9:4 F31	9:4 F29	9:4 F28	9:4 F22	9:4 F20	9:4 F12	9:4 F9	9:4 F7
Turtle	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Fish	2	-	-	-	1	4	-	-	-	398	2	1	44	-
Fish otolith	-	-	-	-	-	-	-	-	-	4	-	-	-	1
Crab	1	-	-	-	1	-	-	2	-	30	6	-	2	-
<i>Anadara</i> sp.	8	12	4	-	2	10	-	6	2	1010	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	3	-	-	-	-
<i>Meretrix lusoria</i>	-	2	-	9	1	5	3	-	1	-	-	-	-	-
<i>T. telescopium</i>	-	-	-	-	-	2	1	-	-	-	-	-	-	-

EXCAVATION OF KHOK PHANOM DI

Layer Context	8:7 L12	8:7 L11	8:7 L10	8:7 L9	8:7 F5	8:7 F4	8:7 F2	8:7 F1	8:6 F71	8:6 F59	8:6 F56	8:6 F54	8:6 F53	8:6 F44
Fish	593	-	13	56	1	6	2	-	-	-	-	-	-	-
Fish otolith	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Crab	33	-	-	7	2	7	2	-	-	-	-	-	-	-
<i>Rattus</i> sp.	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	37041	3	-	136	-	1	-	10	-	6	5	2	8	3
<i>Polymesoda erosa</i>	2	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Nerita articulata</i>	2	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Filopaludina sumatrensis</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	321	2	-	1	-	2	-	-	1	12	2	-	1	-
<i>Cerithidea obtusa</i>	2	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	23	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	20	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	6	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cymia lacera</i>	2	-	-	-	-	-	-	-	-	-	-	-	3	-
<i>Ellobium aurisjudae</i>	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Layer Context	8:6 F28	8:6 F26	8:6 F19	8:6 F8	8:6 F7	8:6 F6	8:6 F2	8:6 F1	8:5 F56	8:5 F50	8:5 F44	8:5 F42	8:5 F41	8:5 F34
Fish	-	2	1	2	1	-	-	-	4	1	1	2	2	-
Crab	-	2	-	-	2	-	-	-	4	1	1	2	2	-
<i>Anadara</i> sp.	9	-	2	24	-	25	-	7	6	-	5	-	8	3
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	1	-	-	-	-	-	377	-	-	-	2	-	-	1
<i>T. telescopium</i>	-	-	-	-	-	1	-	1	-	-	-	-	-	-

Layer Context	8:5 B34	8:5 B31	8:5 B30	8:5 F29	8:5 F24	8:5 F23	8:5 F19	8:5 F18	8:5 F14	8:5 L8	8:5 L7	8:5 F6	8:5 F3	8:5 F1
Fish	5	28	34	-	-	-	1	-	-	309	27	-	-	-
Fish otolith	-	1	-	-	-	-	-	-	-	7	-	-	-	-
Crab	1	10	6	-	-	2	-	-	-	13	5	-	1	-
<i>Anadara</i> sp.	7	13	2	-	3	4	2	2	3	569	1714	2	2	-
<i>Placuna placenta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Filopaludina sumatrensis</i>	-	-	-	2	-	1	-	-	-	1	3	-	-	1
<i>Meretrix lusoria</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Nerita articulata</i>	1	5	-	2	2	1	-	-	1	-	-	-	-	6
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	2	-	18	19	-	-	-
<i>T. telescopium</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Natica tigrina</i>	-	1	-	-	-	-	-	-	-	31	5	-	2	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	-	-	7	1	-	-	-
	-	-	-	-	-	-	1	-	-	2	-	-	-	-

8:4 F39	8:4 F38	8:4 B28	8:4 F19	8:4 F17	8:4 F16	8:4 F14	8:4 F9	8:4 F7	8:4 F3	8:4 F2	8:4 F1	8:3 B47	8:3 F38
-	-	17	8	-	-	-	1	120	-	-	6	4	-
-	-	-	-	-	-	-	-	3	-	-	-	-	-
-	-	7	-	1	1	-	3	21	-	-	-	23	-
-	-	-	-	-	-	-	-	-	-	-	-	1	-
-	1	1	-	-	-	-	-	-	-	-	-	-	-
-	3	-	5	2	2	-	10	-	-	-	1714	57	2
-	-	1	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	1	-	-	56	4	-
-	-	-	-	-	-	-	-	1	-	-	-	-	-
-	-	-	-	-	-	1	-	-	-	-	-	4	-
1	-	-	-	-	-	-	-	1	2	1	-	-	-

8:3 F34	8:3 B29	8:3 F28	8:3 F27	8:3 F26	8:3 F24	8:3 F23	8:3 F22	8:3 F21	8:3 F20	8:3 F19	8:3 F17	8:3 F7	8:3 F6
6	2	-	-	-	-	-	1	-	-	-	-	1	1
-	-	-	-	-	-	-	1	-	-	-	-	-	-
26	4	-	-	-	-	-	2	-	-	-	-	-	1
-	-	-	1	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-	2	-	-
16	1	5	1	13	-	5	-	5	-	-	-	4	212
-	-	-	-	-	-	-	-	-	-	-	2	-	-
-	-	-	-	-	-	-	-	-	-	1	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	-	-	4	-	-	1	-	-	1	-	1
-	-	-	-	-	1	-	-	-	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	2

8:3 F28	8:3 F27	8:3 F26	8:3 F24	8:3 F23	8:3 F22	8:3 F21	8:3 F20	8:3 F19	8:3 F17	8:3 F7	8:3 F6	8:3 F5	8:3 L4
-	-	-	-	-	1	-	-	-	-	1	1	-	-
-	-	-	-	-	1	-	-	-	-	-	-	-	-
-	-	-	-	-	2	-	-	-	-	-	1	-	-
-	1	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	1	-	-	-	2	-	-	-	-
5	1	13	-	5	-	5	-	-	-	4	212	201	468
-	-	-	-	-	-	-	-	-	-	2	-	-	-
-	-	-	-	-	-	-	-	1	-	-	-	-	9
-	-	-	-	-	-	-	-	-	-	-	4	2	4
-	-	-	4	-	-	1	-	-	1	-	1	15	30
-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	6

[illegible]

Layer Context	7:7 F28	7:7 F7	7:6 F39	7:6 F38	7:6 B36	7:6 F35	7:6 F34	7:6 F31	7:6 F27	7:6 F24	7:6 B22	7:6 B21	7:6 B20	7:6 F19
Turtle	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Fish	-	194	-	-	21	1	2	-	-	1	12	6	23	-
Crab	-	17	-	-	2	-	-	-	-	-	-	4	14	7
<i>Rattus</i> sp.	-	-	-	-	1	-	-	-	-	-	-	2	-	-
<i>Presbytis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Anadara</i> sp.	-	4	-	272	-	6	-	172	-	-	39	6	53	-
<i>Polymesoda erosa</i>	-	1	-	-	4	-	-	1	-	-	-	-	6	-
<i>Meretrix lusoria</i>	-	1	-	-	4	-	-	1	-	-	3	-	6	-
<i>Cerithidea obtusa</i>	-	-	-	1	9	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	1	-	-	4	-	-	-	-	5	-	-	-	-	-

Layer Context	7:6 F18	7:6 F16	7:6 F14	7:6 F13	7:6 F12	7:6 F10	7:6 F9	7:6 F8	7:6 F6	7:6 F5	7:6 F4	7:6 F3	7:5 F39	7:5 B35
Fish	2	4	1	1	225	1	1	2	1	-	1	2	-	45
Fish otolith	-	-	-	3	-	-	-	-	-	-	-	-	-	-
Crab	-	1	-	9	-	-	-	-	-	-	-	-	-	15
<i>Anadara</i> sp.	4	4775	3	1	-	-	-	4	2	1	2	1	-	139
<i>Scelidionarca</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	1
<i>Meretrix lusoria</i>	-	4	-	-	-	-	-	-	-	1	-	-	-	1
<i>Cerithidea obtusa</i>	-	2	-	-	-	-	-	-	-	-	-	-	-	1
<i>Terebralia palustris</i>	-	2	-	1	-	-	-	-	-	-	-	-	-	1
<i>Natica tigrina</i>	-	-	-	-	-	-	-	-	-	-	-	-	2	-

Layer Context	7:5 F35	7:5 F31	7:5 F30	7:5 F27	7:5 F26	7:5 F24	7:5 F23	7:5 F21	7:5 F18	7:5 F17	7:5 F16	7:5 F14	7:5 F13	7:5 F11
Fish	-	1	1	7	4	6	-	4	1	1	-	1	6	-
Crab	-	-	-	3	-	-	-	1	1	2	1	-	1	1
<i>Rattus</i> sp.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Cervid	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	13	-	1	4	2	2	-	1	2	1	1	2	2	-
<i>Scelidionarca</i> sp.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>P. inoscularis</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-

Layer Context	7:5 F9	7:5 F8	7:5 F5●	7:5 F3	7:5 F2	7:5 F1	7:4 F29	7:4 F23	7:4 F22	7:4 F21	7:4 B17	7:4 F17	7:4 F16	7:4 F14
Fish	1	-	1	1	-	-	1	-	1	2	4	2	4	-
Crab	-	-	-	-	3	1	1	1	1	-	3	4	2	3
<i>Phalacrocorax carbo</i>	-	-	-	-	-	-	-	-	-	-	1	-	-	-

[illegible]

[illegible]

EXCAVATION OF KHOK PHANOM DI

Layer (cont.)	6:8	6:8	6:8	6:8	6:7	6:7	6:7	6:7	6:7	6:7	6:7	6:7	6:7	6:7
Context (cont.)	F7	F5	F3	F2	F28	F27	F26	F24	F20	F19	F18	F17	B14	F13
<i>Rattus</i> sp.	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Sus scrofa</i>	-	-	-	-	-	-	-	-	-	5	-	-	-	-
<i>Anadara</i> sp.	-	-	19	1	20	-	9	9	4	-	-	3	35	-
<i>Placuna placenta</i>	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Donacilla nitida</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	-	-	-	3	-	1	-	-	-	-
<i>Meretrix lusoria</i>	-	-	-	-	-	-	-	2	-	18	-	-	-	-
<i>Nerita articulata</i>	-	-	-	-	-	-	-	-	2	5	-	-	2	-
<i>Cerithidea cingulata</i>	-	-	-	-	-	-	-	4	-	-	-	-	-	-
<i>T. telescopium</i>	1	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Natica tigrina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	-	-	14	-	-	-	-
<i>Cymia lacera</i>	-	-	-	-	-	-	-	2	-	1	-	-	-	-
										1				

Layer	6:7	6:7	6:7	6:7	6:7	6:7	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6
Context	F11	B11	F10	F7	F6	F1	F39	F38	F37	F34	F32	F30	F29	F28
Fish	3	8	15	35	-	1	1	3	3	-	1	2	1	-
Crab	1	-	-	3	-	-	3	-	-	-	-	-	-	-
Cervid	-	-	-	2	-	-	-	-	-	-	-	-	-	1
<i>Sus scrofa</i>	-	-	1	1	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	6	-	102	23	3	-	-	-	-	-	-	-	-	-
<i>Donacilla nitida</i>	-	-	1	-	-	-	-	-	-	1	-	-	-	-
<i>Polymesoda erosa</i>	1	1	4	3	-	-	-	-	-	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	1	-	-	-	-	-	1	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	2	-	-	-	1	110	-	-	-	-	-	1
<i>T. telescopium</i>	-	-	2	1	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	5	-	1	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	1	-	-	-	-	-	-	-	-	-	-

Layer	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6	6:6
Context	F25	F24	F23	F21	F20	F19	F18	F17	F16	F10	F8	F7	F5	F1
Fish	2	3	-	3	2	-	1	1	2	-	1	1	3	-
Crab	-	2	-	2	-	-	4	1	-	1	-	1	-	-
<i>Anadara</i> sp.	18	6	-	13	11	-	4	-	10	4	4	4	4	-
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	1	-	-	-	-	-	-	-	-	1	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	1	19	-	-	1	-	-	-	-	-	-	-	-
									1					1

Layer Context	6:5 F45	6:5 F42	6:5 F41	6:5 F34	6:5 F31	6:5 F30	6:5 F30 ^{RS}	6:5 F28	6:5 F27	6:5 F26	6:5 F25	6:5 F23	6:5 F22	6:5 F19
Fish	-	-	-	9	66	1	62	2	1	1	22	1	2	13
Crab	-	-	-	-	8	-	8	-	-	-	-	-	1	-
<i>Rattus</i> sp.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	5	-	-	5	-	3	-	3	1	2	-	4	-	10
<i>Donacilla nitida</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	1	-	1	-	-	-	-	-	1	1
<i>Nerita articulata</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Cerithidea obtusa</i>	-	1	1	-	-	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	1	1	-	-	-	-	-	-	-	-	-	-	-

Layer Context	6:5 F14	6:5 F13	6:5 B13	6:5 F11	6:5 F10 ^{2B}	6:5 F10 ^{2C}	6:5 F9	6:5 L6	6:5 L5	6:5 F4	6:5 F70	6:4 F69	6:4 F68	6:4 F67
Fish	1	-	53	3	2	36	26	3	26	32	-	1	1	1
Crab	-	-	17	-	-	-	2	1	10	2	2	-	-	-
<i>Rattus</i> sp.	-	-	3	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	5	5	212	6	-	-	4	1042	207	6	17	-	12	57
<i>Donacilla nitida</i>	-	-	2	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	7	-	-	1	1	-	2	-	-	-	-	-
<i>Meretrix lusoria</i>	-	-	-	-	-	-	-	1	1	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	1	1	-	-	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	1	-	-	1	-	-	-	-	-	-	-	-

Layer Context	6:4 F66	6:4 F64	6:4 F60	6:4 F57	6:4 F54	6:4 F52	6:4 F49	6:4 F48	6:4 F47	6:4 F45	6:4 F42	6:4 F40	6:4 F39	6:4 F37
Turtle	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Fish	1	27	1	2	-	1	4	1	3	2	2	-	4	3
Crab	1	4	-	-	-	1	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	3	3	2	42	2	3	327	2	9	3	-	3	-	39
<i>P. inoscularis</i>	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	2	-	-	-	-	-
<i>T. telescopium</i>	-	-	2	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	-	1	-	1	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	1	1	-	-	-	-	-	-	2	-	-

Layer Context	6:4 F34	6:4 F31	6:4 F30	6:4 F27	6:4 F26	6:4 F25	6:4 F24	6:4 F23	6:4 F21	6:4 F15	6:4 F14	6:4 F14 ^{RS}	6:4 F13	6:4 F11
Fish	1	-	4	4	1	2	-	65	2	-	10	7	69	188

Layer (cont.) Context (cont.)	6:4 F34	6:4 F31	6:4 F30	6:4 F27	6:4 F26	6:4 F25	6:4 F24	6:4 F23	6:4 F21	6:4 F15	6:4 F14	6:4 F14 ^{as}	6:4 F13	6:4 F11
Shark	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Fish otolith	-	-	-	-	-	-	-	-	-	-	-	-	1	2
Crab	-	-	-	1	-	-	-	-	2	1	-	2	1	7
<i>Rattus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	2	-
<i>Anadara</i> sp.	3	5	4	91	15	14	-	2	18	8	310	-	10	309
<i>P. inoscularis</i>	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Polymesoda erosa</i>	-	-	-	-	1	-	-	-	-	-	4	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	4
<i>Natica tigrina</i>	-	-	-	-	-	-	1	-	-	-	-	1	-	10
<i>Cassidula aurisfelis</i>	-	1	-	-	-	-	-	-	1	-	-	-	-	26
<i>Nassarius liviscens</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	4
Layer Context	6:4 F11	6:4 F10	6:4 F9	6:4 F8	6:4 L7	6:4 F7	6:4 F5	6:4 F3	6:4 L3	6:4 F2	6:4 F1	6:3 F94	6:3 F89	6:3 F86
Fish	2	1	1	13	12	9	4	4	-	2	-	1	3	3
Crab	-	-	1	2	3	-	-	-	-	1	-	-	-	2
<i>Rattus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	37	67	29	46	-	-	-	19	-	1	-	-	-	-
<i>P. inoscularis</i>	-	-	-	1	-	-	3	-	-	-	-	5	5	10
<i>Polymesoda erosa</i>	1	-	1	2	2	-	1	-	-	11	-	-	-	1
<i>Cerithidea obtusa</i>	-	-	-	-	1	24	-	-	-	2	-	-	-	-
<i>T. telescopium</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Natica tigrina</i>	-	-	-	2	2	-	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	2	3	-	-	4	2	-	21	-	-
<i>Nassarius liviscens</i>	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Layer Context	6:3 F85	6:3 F84	6:3 F83	6:3 82	6:3 F81	6:3 F80	6:3 F79	6:3 F75	6:3 F73	6:3 F72	6:3 F71	6:3 F70	6:3 F69	6:3 F68
Fish	-	4	1	-	2	-	-	-	2	1	16	1	42	34
Crab	-	1	-	-	-	-	-	-	-	-	-	-	2	1
<i>Sus scrofa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	13	20	4	-	6	-	4	-	13	5	-	13	172	9
<i>Atactodea striata</i>	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Polymesoda erosa</i>	1	-	1	-	-	-	-	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	-	-	-	-	-	2	-	1	-	-	-	-	-
<i>Natica tigrina</i>	1	-	-	1	-	2	-	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	-	-	-	-	-	-	-	1	1	-	1	-	-	1
Layer Context	6:3 F67	6:3 F65	6:3 F62	6:3 F61	6:3 F60	6:3 F59	6:3 F57 ^{2a}	6:3 F57 ^{2b}	6:3 F56	6:3 F52	6:3 F50	6:3 F49	6:3 F46	6:3 F45
Turtle	-	-	-	-	-	-	-	-	-	-	1	-	-	-

Layer (cont.)
Context (cont.)

6:3
F6

Fish
Shark
Crab
Rattus sp.
Sus scrofa
Anadara sp.
Scelidionarca sp.
P. inoscularis
Polymesoda erosa
Meretrix lusoria
Cerithidea obtusa
T. telescopium
Natica tigrina
Cassidula aurisfelis
Cymia lacera

Layer
Context

F

Turtle
Fish
Fish otolith
Crab
Anadara sp.
P. inoscularis
Polymesoda erosa
Nerita violacea
Cerithidea obtusa
T. telescopium
Natica tigrina
Cassidula aurisfelis
Cymia lacera
Macrochlamys

Layer
Context

Fish
Shark
Fish otolith
Crab
Rattus sp.
Sus scrofa
Anadara sp.

Layer (cont.) Context (cont.)	6:3 F67	6:3 F65	6:3 F62	6:3 F61	6:3 F60	6:3 F59	6:3 F570A	6:3 F570B	6:3 F56	6:3 F52	6:3 F50	6:3 F49	6:3 F46	6:3 F45
Fish	24	-	5	1	16	2	5	1	18	55	1	1	1	1
Shark	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Crab	1	-	2	-	4	1	1	2	2	24	1	-	-	-
<i>Rattus</i> sp.	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Sus scrofa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara</i> sp.	-	-	8	3	257	4	10	1	18	1509	18	11	-	5
<i>Scelidionarca</i> sp.	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>P. inoscularis</i>	-	-	-	-	1	-	-	-	-	1	-	-	-	-
<i>Polymesoda erosa</i>	4	-	-	-	2	-	-	-	1	1	-	-	-	-
<i>Meretrix lusoria</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	7	1	-	-	1	-	-	-	-	-	-	-	-	-
<i>T. telescopium</i>	-	-	-	-	1	-	-	-	-	32	-	-	-	-
<i>Natica tigrina</i>	2	2	-	-	2	-	-	-	-	2	-	-	-	-
<i>Cassidula aurisfelis</i>	3	-	-	-	1	-	-	-	-	16	-	-	-	-
<i>Cymia lacera</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-

Layer Context	6:3 F440A	6:3 F440B	6:3 F42	6:3 F39	6:3 F36	6:3 F35	6:3 F33	6:3 F32	6:3 F30	6:3 F25	6:3 F23	6:3 F19	6:3 F17	6:3 F15
Turtle	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Fish	14	26	8	6	1	7	5	1	1	20	7	-	-	-
Fish otolith	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Crab	34	58	8	1	1	-	-	-	2	2	1	-	1	-
<i>Anadara</i> sp.	-	152	-	13	12	-	9	3	-	-	18	-	10	-
<i>P. inoscularis</i>	1	6	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda erosa</i>	1	15	1	-	-	-	-	-	-	2	-	-	-	-
<i>Nerita violacea</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	2	-	-	-	-	2	1	-	-	-	2	2	-	1
<i>T. telescopium</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Natica tigrina</i>	1	-	-	-	-	-	45	-	-	-	-	-	-	-
<i>Cassidula aurisfelis</i>	2	5	-	-	-	1	-	-	1	-	-	-	-	-
<i>Cymia lacera</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Macrochlamys</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-

Layer Context	6:3 F11	6:3 B9	6:3 B8	6:3 F7	6:3 B5	6:3 F4	6:3 B3	6:3 F3	6:3 F2	6:3 F1	6:2 F5	6:2 B4	6:2 F4	6:2 F3
Fish	-	57	27	-	76	63	103	-	11	127	2	1451	2	2
Shark	-	1	-	-	-	-	-	-	-	-	-	1	-	-
Fish otolith	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Crab	-	12	3	4	3	5	6	-	-	2	1	5	-	-
<i>Rattus</i> sp.	1	-	-	-	-	-	1	-	-	-	-	1	-	-
<i>Sus scrofa</i>	-	-	-	-	-	1	-	-	-	-	-	2	-	-
<i>Anadara</i> sp.	-	182	188	17	-	5	76	-	-	52	-	472	-	-

Layer (cont.) Context (cont.)	5:5 F1	5:4 L7	5:4 F3	5:3 F8	5:3 B6	5:3 F4	5:3 L3	5:3 L2	5:3 F1	5:2 F4	5:2 F3	4:5 F5	4:5 F3	4:5 F1
<i>Presbytis</i> sp.	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<i>Anadara</i> sp.	241	3	5	-	234	-	-	689	-	520	38	67	-	14
<i>Polymesoda erosa</i>	2	2	-	-	10	-	-	-	-	19	3	1	-	1
<i>Meretrix lusoria</i>	-	-	-	-	2	-	-	-	-	3	-	-	-	-
<i>Nerita articulata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Cerithidea obtusa</i>	1	1	-	-	3	3	-	1	1	23	34	-	-	-
<i>T. telescopium</i>	-	-	-	-	1	-	-	-	-	2	-	-	-	-
<i>Natica tigrina</i>	2	-	-	3	-	-	-	-	-	9	-	-	-	1
<i>Cassidula aurisfelis</i>	1	2	-	-	5	-	-	-	-	3	-	-	-	1
<i>Cymia lacera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1
<i>Nassarius liviscens</i>	-	-	-	1	-	-	1	-	-	-	-	-	-	-
<i>Macrochlamys</i>	-	-	-	-	1	2	-	-	1	-	3	-	-	3

Layer Context	4:3 F3	4:3 F2	4:1 F7 ^{QD}	4:1 F6	4:1 F5 ^{QB}	4:1 F4	4:1 F2	4:1 F1 ^{QB}	4:1 F1 ^{QA}
Turtle	-	-	-	-	12	-	-	-	15
Frog	-	-	1	-	-	-	-	-	-
Fish	-	-	12	-	119	11	-	-	130
Shark	-	-	-	-	1	-	-	-	-
Fish otolith	-	-	-	-	-	-	-	1	1
Crab	-	-	-	-	3	-	-	-	43
<i>Paradoxurus hermaphroditus</i>	-	-	-	-	2	1	1	-	-
<i>Felis viverrina</i>	-	-	1	-	-	-	-	-	-
<i>Aonyx cinerea</i>	-	1	1	-	-	-	-	-	-
Cervid	-	-	-	-	-	-	-	2	1
<i>Grus antigone</i>	1	-	-	-	-	-	-	-	-
<i>Rattus</i> sp.	-	-	6	-	2	-	-	-	4
<i>Sus scrofa</i>	-	-	1	-	-	-	-	-	1
<i>Presbytis</i> sp.	-	-	-	-	-	-	-	-	1
<i>Anadara</i> sp.	-	77	966	-	753	-	-	-	-
<i>P. inoscularis</i>	-	-	1	-	-	-	-	-	-
<i>Polymesoda erosa</i>	-	5	11	-	5	-	-	1	2
<i>Meretrix lusoria</i>	-	-	1	-	-	-	-	-	-
<i>Cerithidea obtusa</i>	-	1	44	3	35	-	-	-	8
<i>T. telescopium</i>	-	-	1	-	-	-	-	-	1
<i>Natica tigrina</i>	-	-	11	-	-	-	-	-	1
<i>Cassidula aurisfelis</i>	-	-	12	-	10	-	-	-	2
<i>Ellobium aurisjudae</i>	-	-	-	-	-	1	-	1	-
<i>Macrochlamys</i>	7	-	1	-	11	-	-	-	-

III. MORTUARY PHASE 1

By C.F.W. Higham and R. Bannanurag

THE basal layers at Khok Phanom Di comprised a complex and variable series of lenses, some of which reflect human activity and others natural deposition, probably by water. The earliest six burials were found stratified within these lenses. The lowest and earliest of these graves was excavated at a depth of 6.51m below datum, and the latest, 5.88m below datum. The former skeleton was therefore interred after 17cm of cultural material had built up.

The earliest six burials were interred in shallow graves, no grave exceeding 20cm in depth. There is no evidence for a specific burial area, nor for the clustering of graves into a particular grouping. The graves were found within or adjacent to shell middens and ash lenses. With the exception of that of an adult male (B152), no offerings were found. There was a marked preference for orientating the grave so that the head pointed to the east. Already during this early phase one burial, that of an infant, showed the use of red ochre and the wrapping of the body in unwoven *tapa* fabric. This practice continued until the end of the burial sequence.

Note: In the following figures, the inset at top right shows the location of the burial within the excavated area and all dimensions are in metres.

TABLE 13: *The mortuary goods, ages and sexes of burials from mortuary phase 1*

	B153	B154	B151	B152	B150	B147
Age	0 m	25	0 m	37	2.5	19
Sex	-	Female	-	Male	-	Male
Approx. number of children	-	2-3	-	-	-	-
Orientation	122°	90°	84°	90°	43°	90°
Depth of grave cut below datum (m)	6.51	6.45	6.29	6.20	6.03	5.88
Red ochre	-	-	p	-	-	-
<i>Tapa</i> fabric	-	-	p	-	-	-
Disc-shaped shell beads	-	-	-	11	-	-
Funnel-shaped shell beads	-	-	-	1	-	-

Note: p = present, m = months

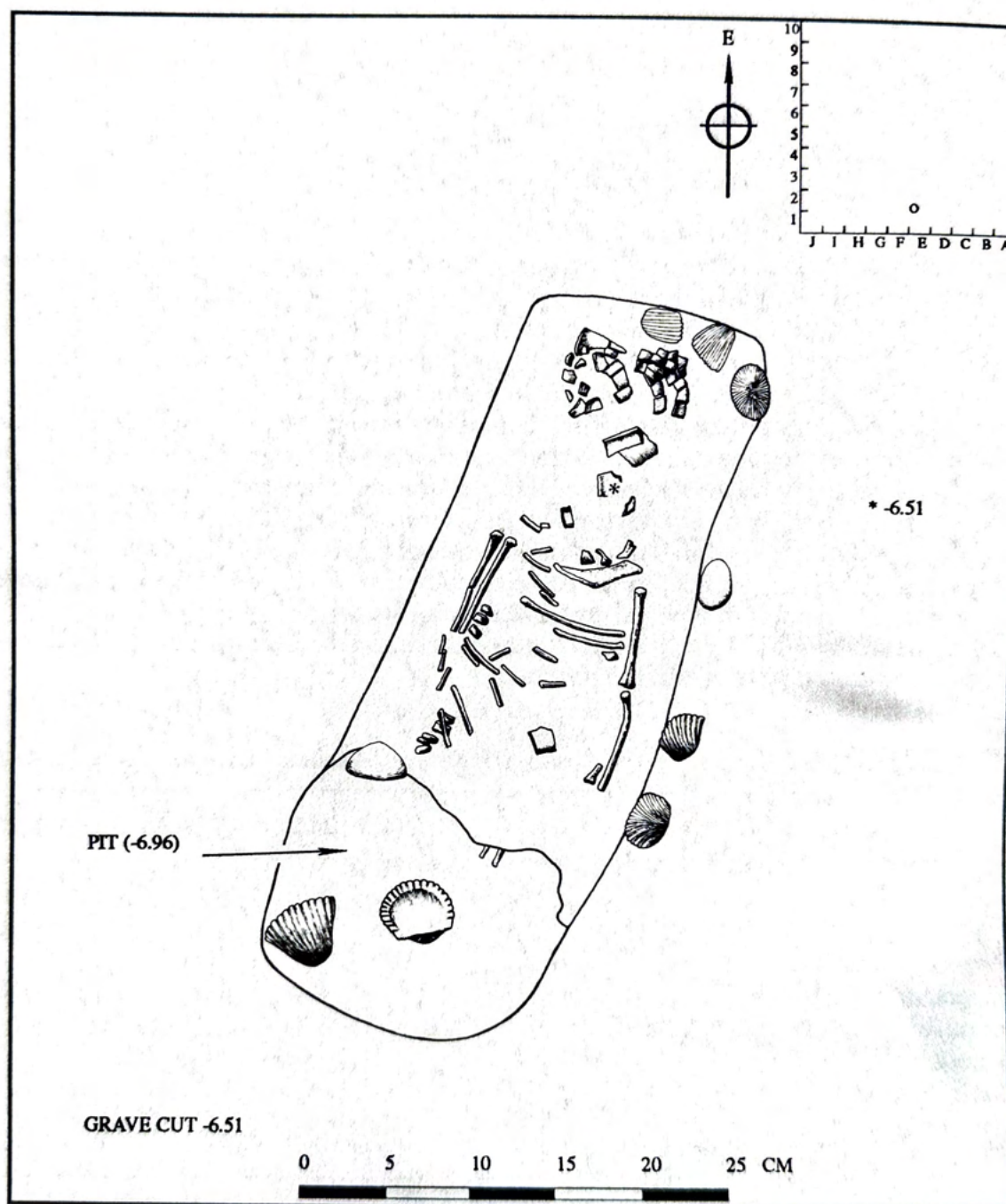


FIG. 83. Burial 153 mortuary phase 1. The remains of a very young infant buried in a shallow grave with the head pointing towards the south-east. The grave was found at the edge of an extensive shell midden (lens 29 within layer 10) and in the vicinity of several ash and charcoal spreads. No grave goods or associated ritual features such as *tapa* bindings or red ochre were found

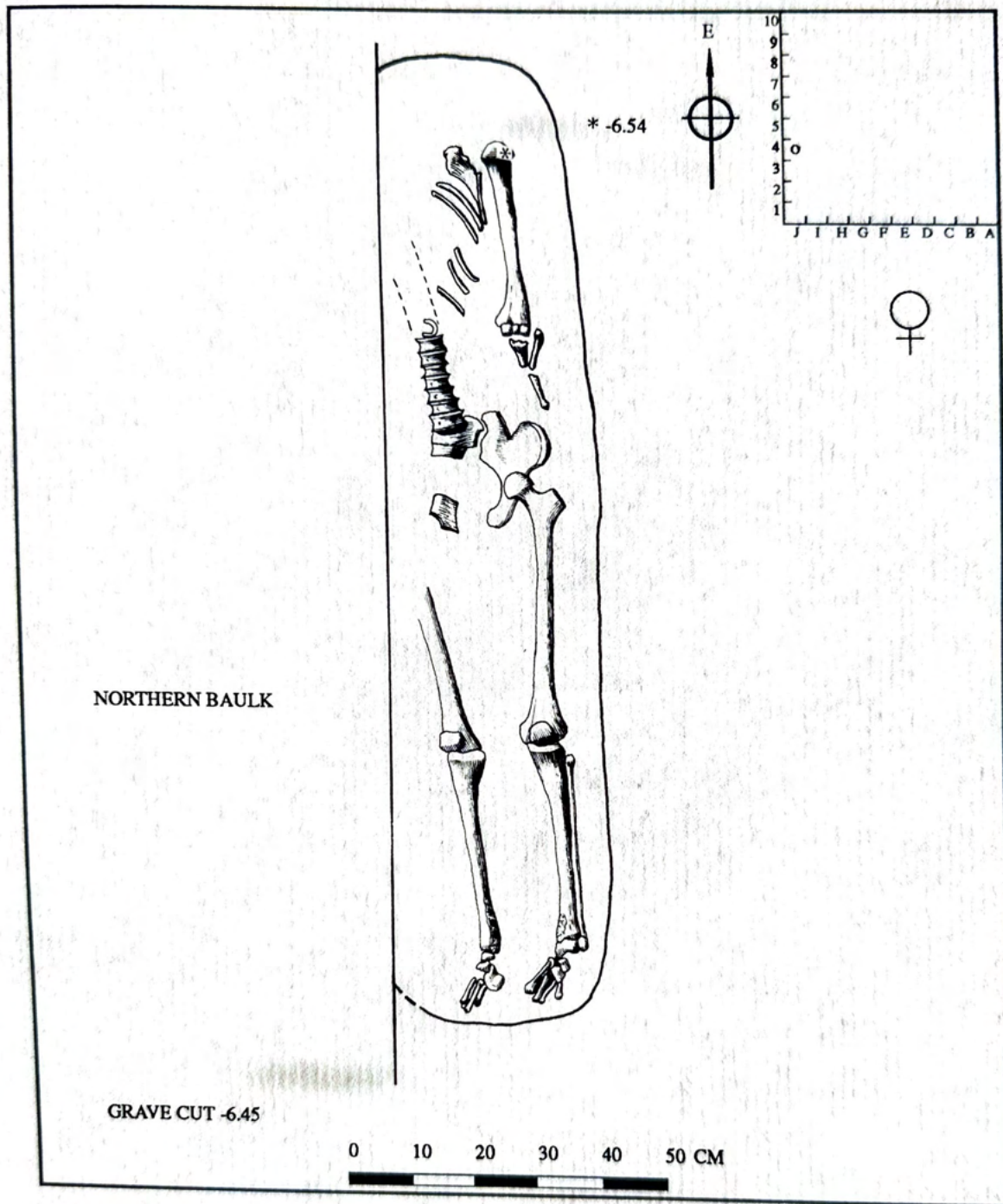


FIG. 84. Burial 154 mortuary phase 1. The presence of extensive spreads of ash and shell middens which sealed or underlay individual graves makes it possible to order these six early burials in chronological order. This grave was encountered at a depth of 6.45m, and was relatively shallow, the base being at 6.58m. As such, the grave was cut from a level which postdates that for B153. It contained the remains of a female aged *c.* 32, laid on the back. No evidence was found for any red ochre, or for any grave goods. The head pointed almost due east

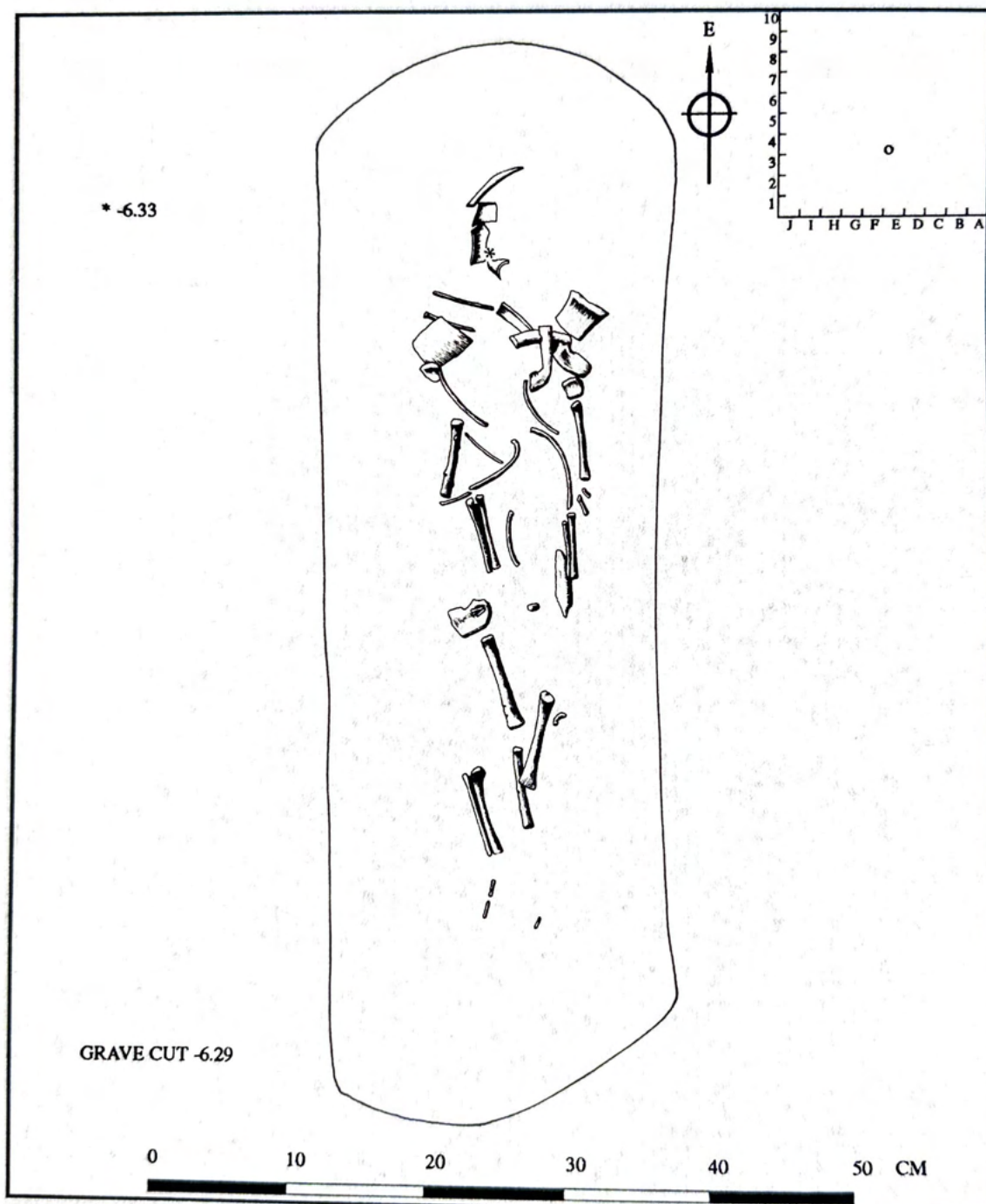


FIG. 85. Burial 151 mortuary phase 1. This grave is cut from a depth of 6.29m into an extensive spread of ash and charcoal (lens 27), which seals the cut for B153. The base of the grave was located at 6.32m. It contained a very young infant, laid out on its back with red ochre below and above the body, which was contained within surviving fragments of unwoven fabric or *tapa*

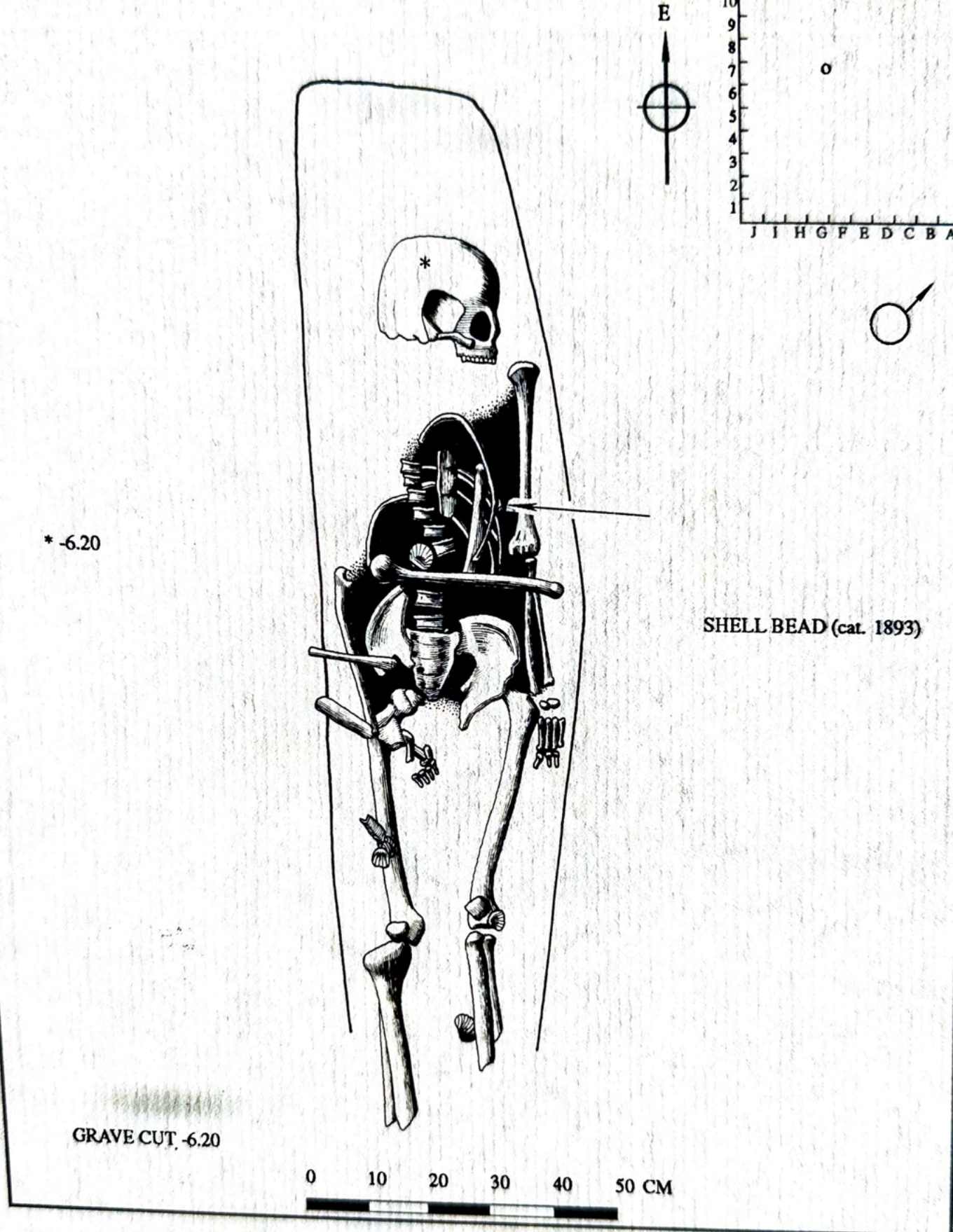
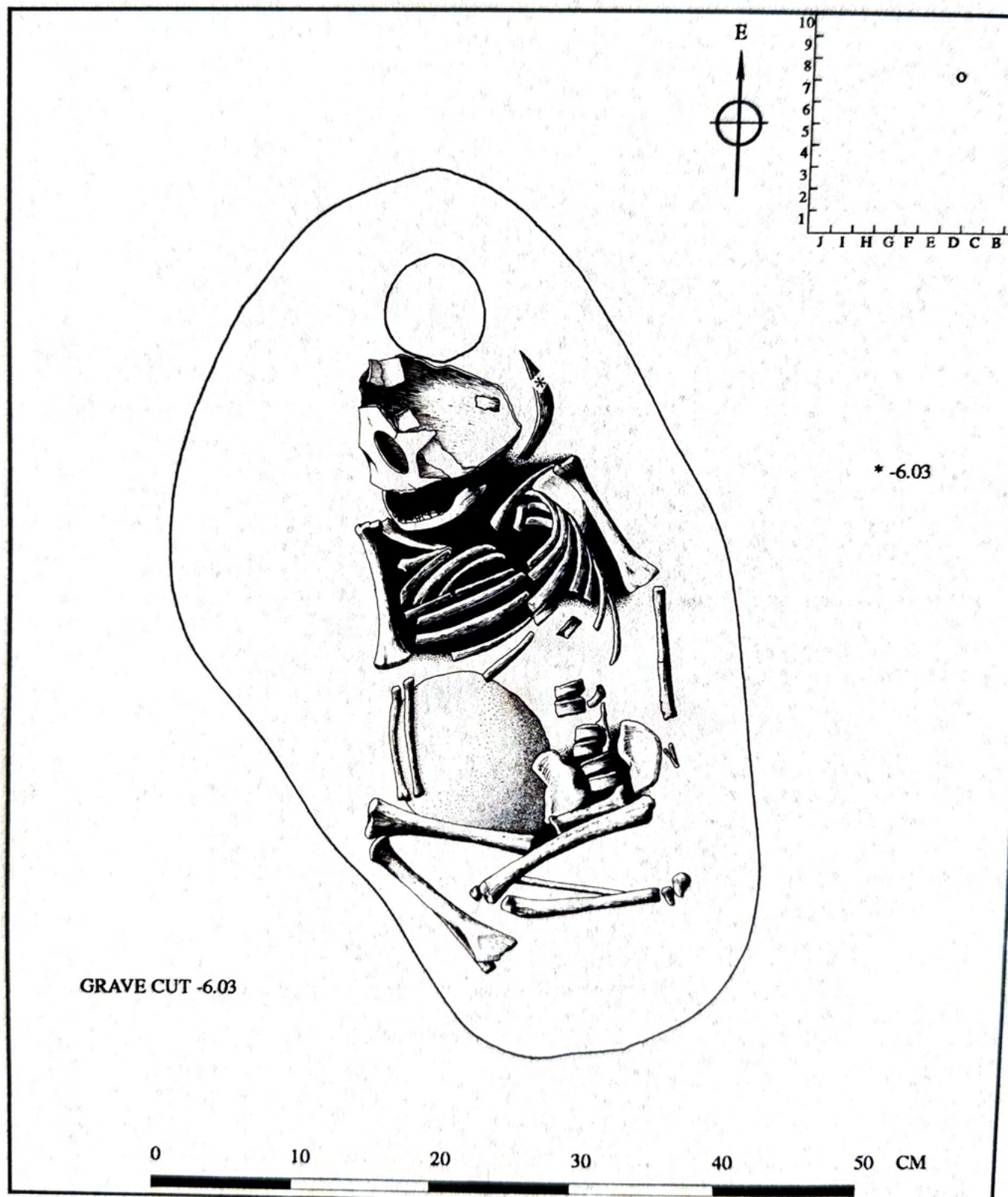
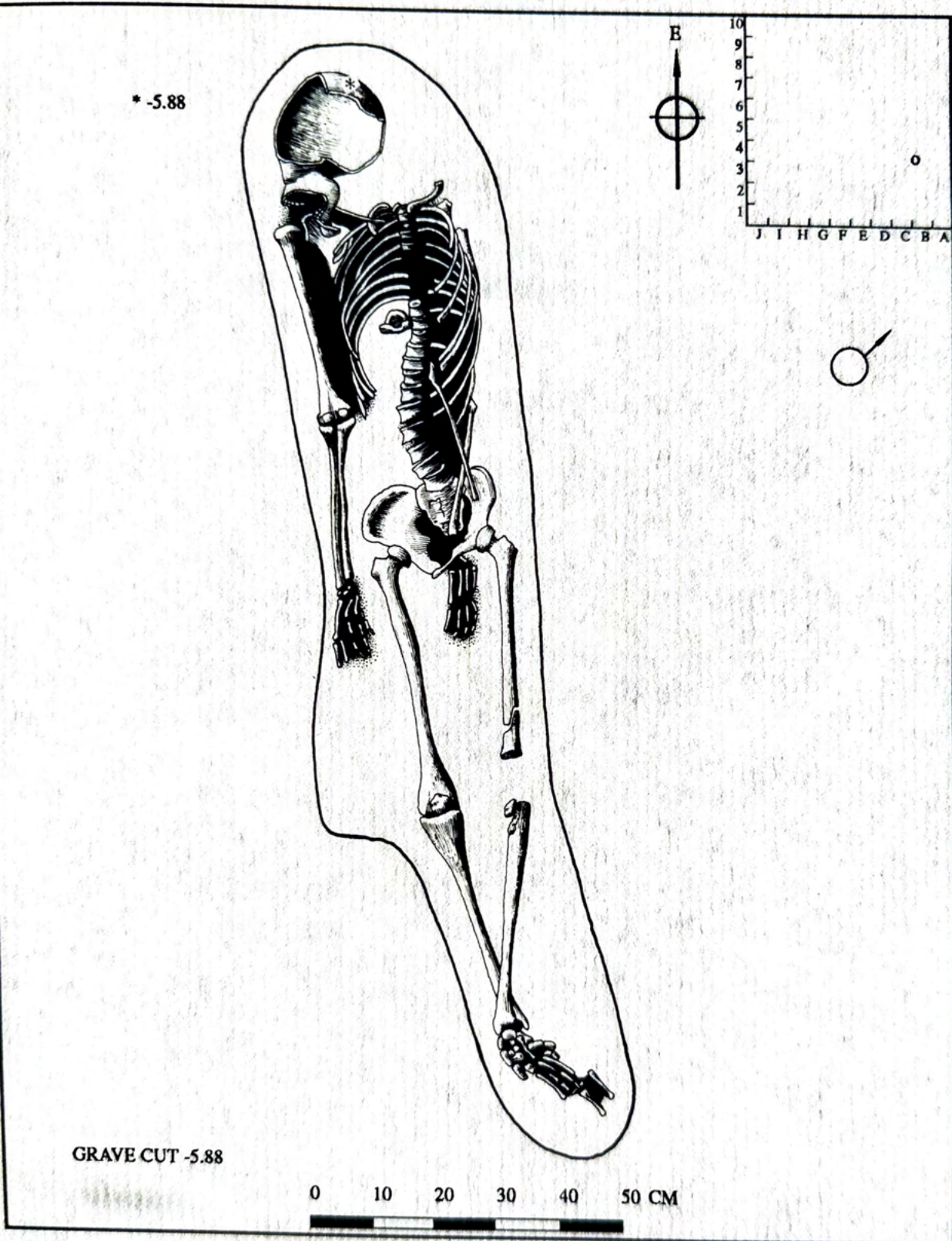


FIG. 86. Burial 152 mortuary phase 1. This burial contains the remains of a male aged c. 37, laid back and slightly disarticulated in antiquity, such that the right humerus is placed over the body, and the ulna and radius are no longer in articulation. It is cut into ash lens 27. The grave edge for this burial is at 6.35m below datum. Because of the deeper grave, this burial is considered later than B151. This is the earliest burial in the site to yield grave goods: one funnel-shaped shell associated with eleven small disc shell beads

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Burial 147 mortuary phase 1. The latest burial of MP1 belonged to an adult male who died when 15 and 19 years old. Although there is no stratigraphical relationship between burials 147 and 150, it is considered likely that B147 is the later one because its grave cut was higher (5.88m). The body lies on its back at 5.98m below datum. It is intact, but no grave goods were found.

IV. BURIAL CLUSTER A

THERE is a stratigraphic break of c. 30cm between the cutting of the last MP1 grave and the earliest in MP2. This hiatus did not involve an abandonment of this part of the site. The intervening lenses comprised numerous ash spreads, hearths, pits, postholes and shell middens. With the MP2 burials we encounter a new aspect to the mortuary ritual, since burials were set out in discrete clusters. These clusters normally included the remains of adults of both sexes, infants and children. Cluster A is divisible into four stages (Fig. 89).

STAGE 1 MORTUARY PHASE 2

The first stage contains seven burials: an adult male, an adult female, a child and four infants (Fig. 90).

TABLE 14: *The mortuary goods, ages and sexes of burials from cluster A stage 1 mortuary phase 2*

	B143	B144	B100	B110	B128	B119	B96
Age	0 m	0 m	32	36	0 m	0 m	4
Sex	-	-	Male	Female	-	-	-
Approx. number of children	-	-	-	2-3	-	-	-
Orientation	82°	82°	25°	80°	80°	230°	-
Depth of grave cut below datum (m)	5.57	5.57	5.55	5.42	5.40	5.37	5.18
Red ochre	p	p	p	p	-	-	p
Tapa fabric	-	p	-	p	-	-	-
Coffin wood	-	-	p	-	-	-	-
Disc-shaped shell beads	50	2	220	-	-	-	-
Funnel-shaped shell beads	2	-	-	-	-	-	-
Pottery vessel	-	-	-	1	-	-	-
Burnishing stones	-	-	-	5	-	-	1

Note: p = present, m = months

EXCAVATION OF KHOK PHANOM DI

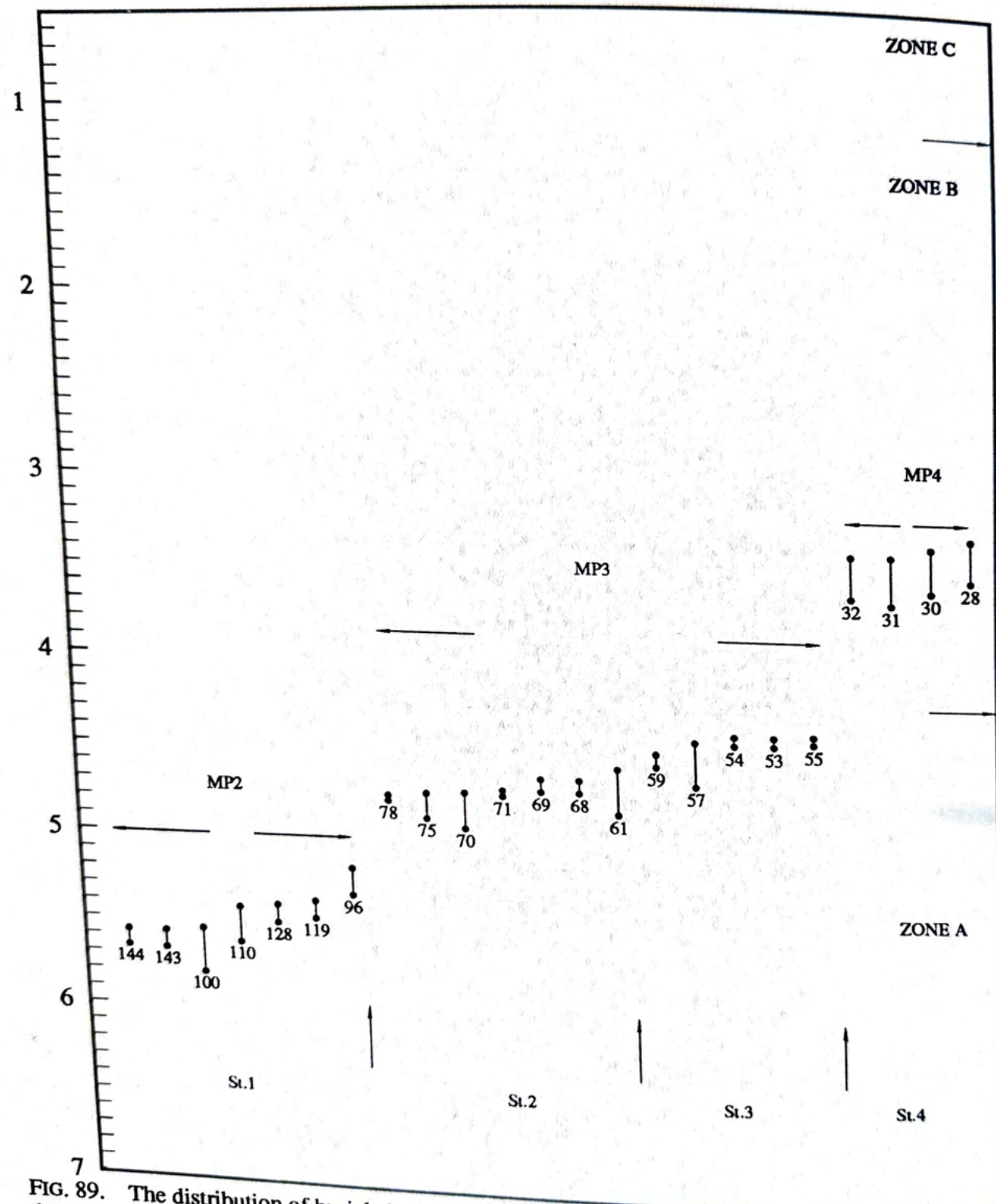


FIG. 89. The distribution of burials belonging to cluster A. The upper mark for each burial represents the depth in metres below datum of the grave cut and the lower, the depth of the human remains. The left-hand scale shows the depth in metres below datum

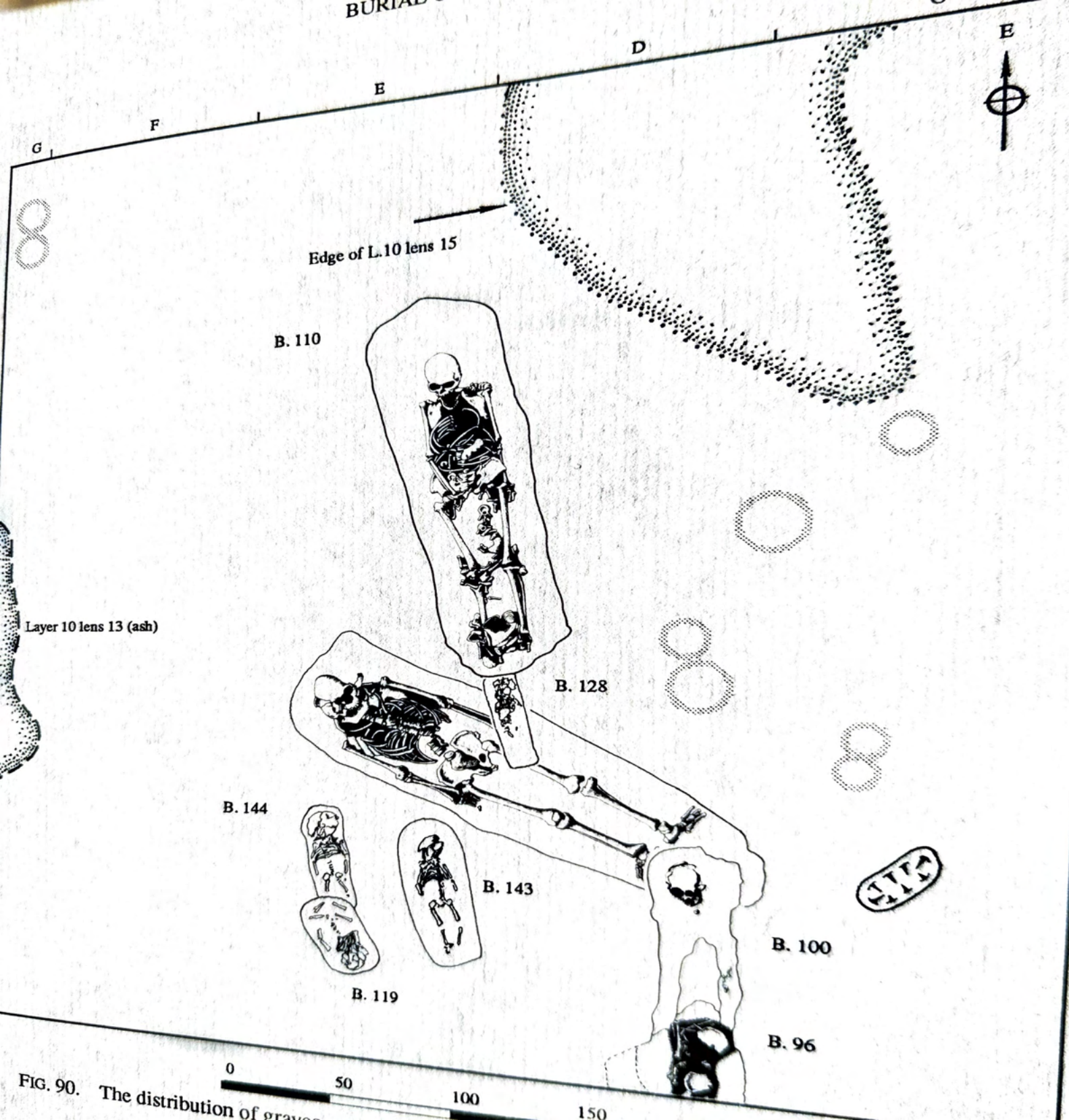


FIG. 90. The distribution of graves

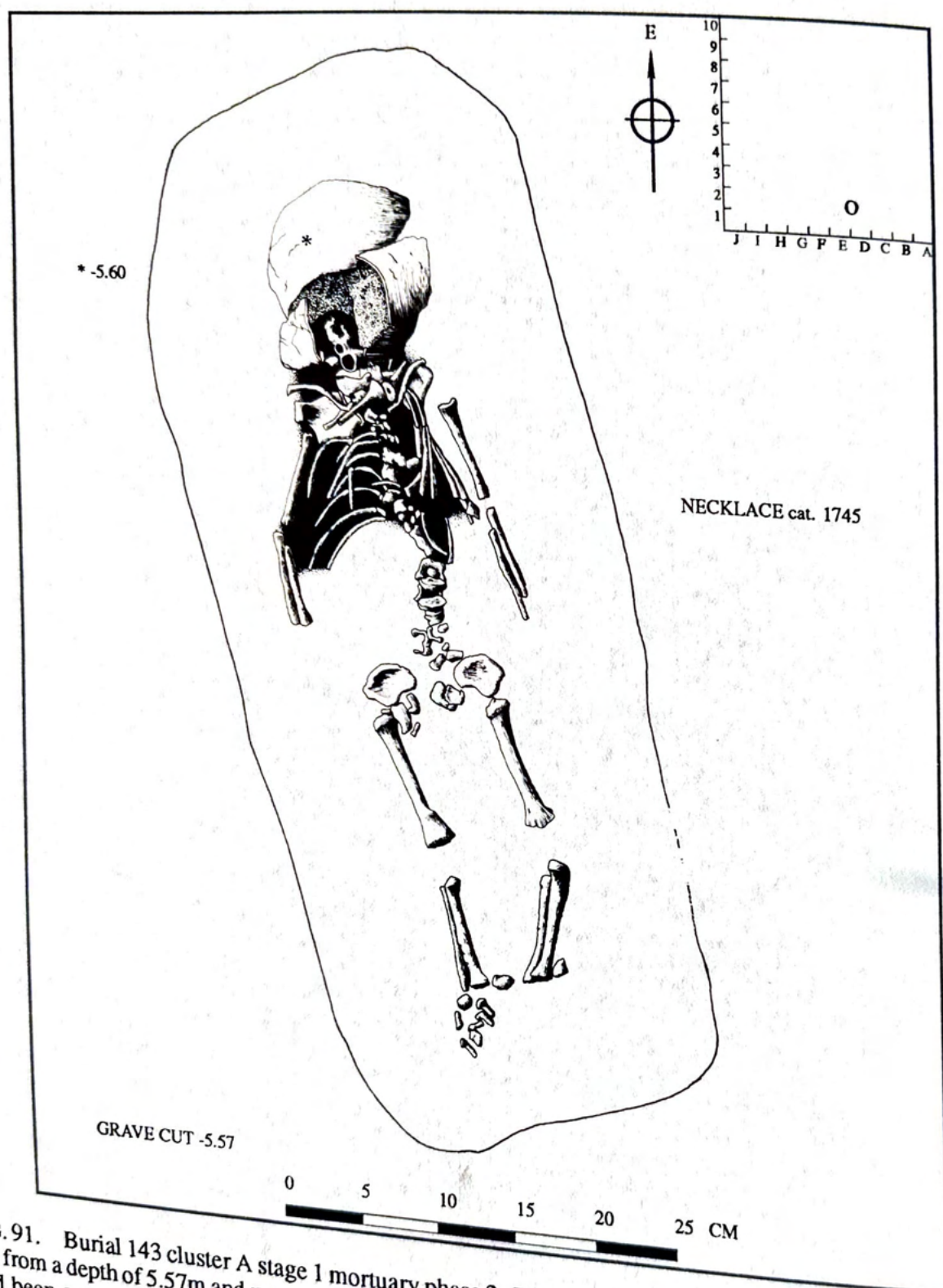


FIG. 91. Burial 143 cluster A stage 1 mortuary phase 2. The remains of a very young infant. The grave was cut from a depth of 5.57m and was very shallow, the base of the grave being encountered at 5.67m. The body had been covered in red ochre. A necklace comprising at least 50 shell disc beads and two funnel-shaped shell beads was found (cat. 1745)

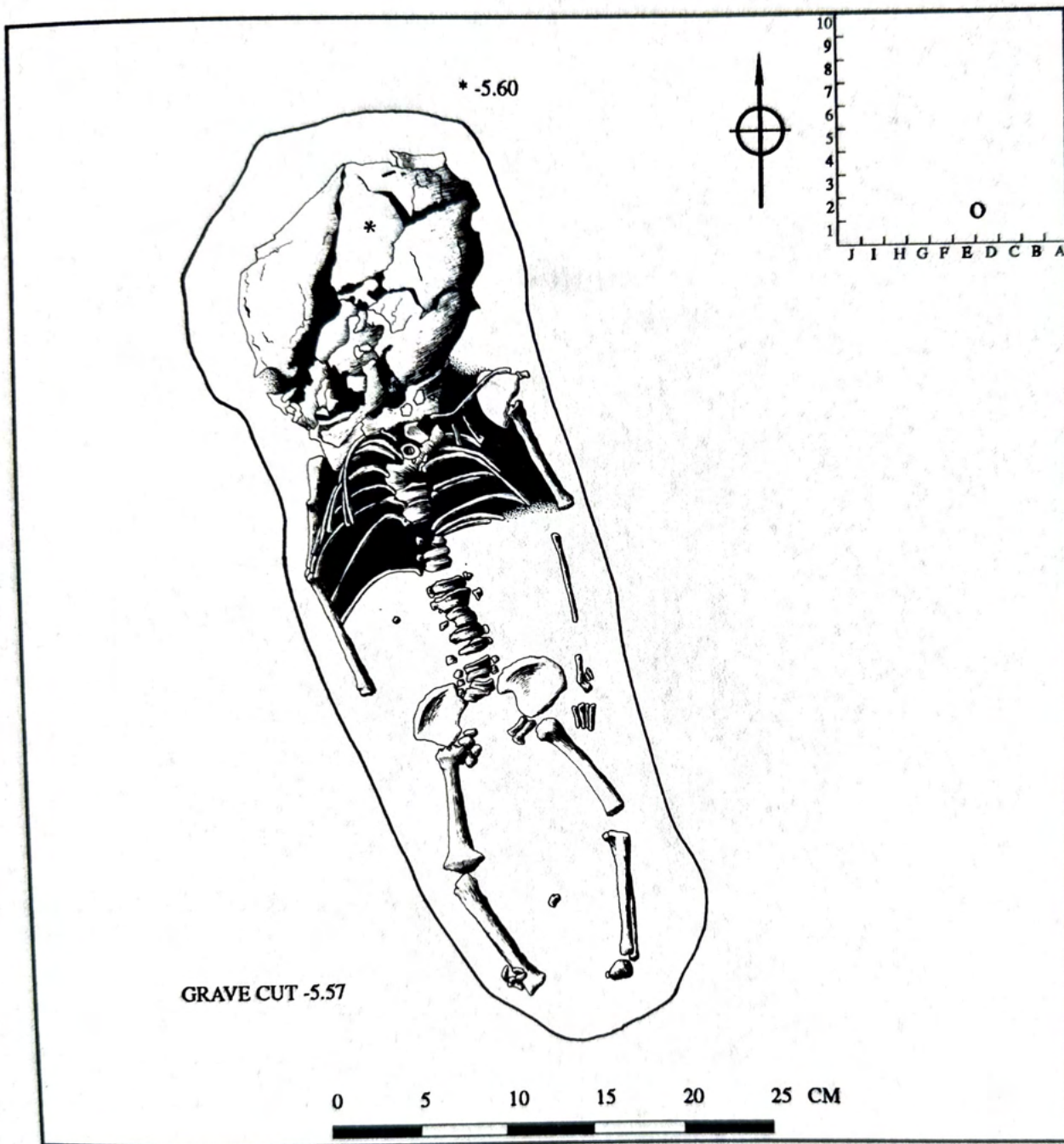


FIG. 92. Burial 144 cluster A stage 1 mortuary phase 2. This second infant burial was stratigraphically contemporaneous with B143. It was about the same age at death. Again, the body was covered in red ochre and laid out on the back. Only two shell disc beads were found in association during the laboratory preparation of the skeleton. There were also traces of the white unwoven fabric, referred to as *tapa*, which had been used to wrap the body prior to interment.

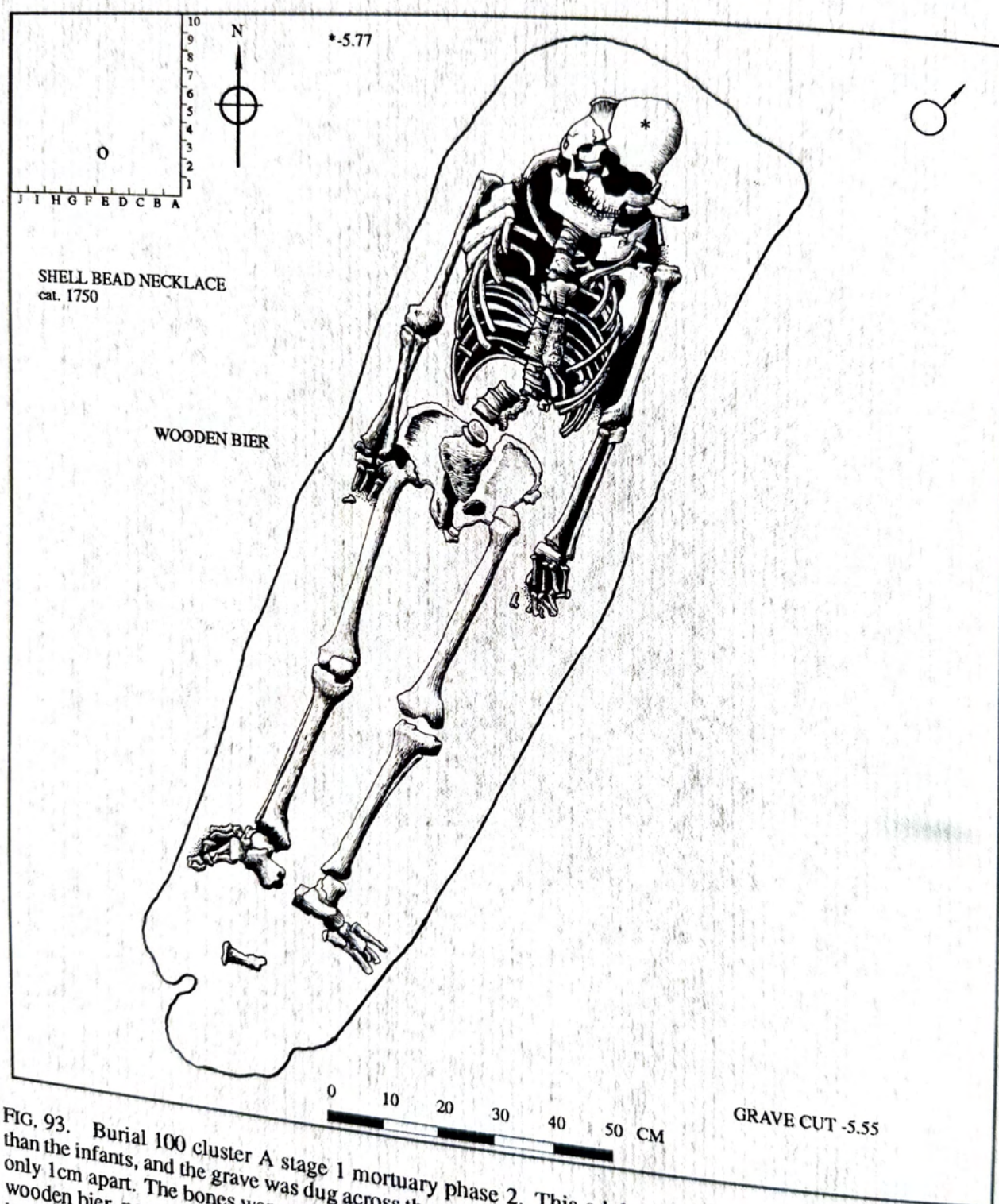


FIG. 93. Burial 100 cluster A stage 1 mortuary phase 2. This adult male had been interred slightly later than the infants, and the grave was dug across the axis of their graves, the edges of graves 100 and 143 being only 1cm apart. The bones were covered in red ochre. The body had been laid out in a supine position on a wooden bier, part of which survived under the hip bones. The grave was 25cm deep. About 220 shell disc beads were found in the form of a necklace (cat. 1750)

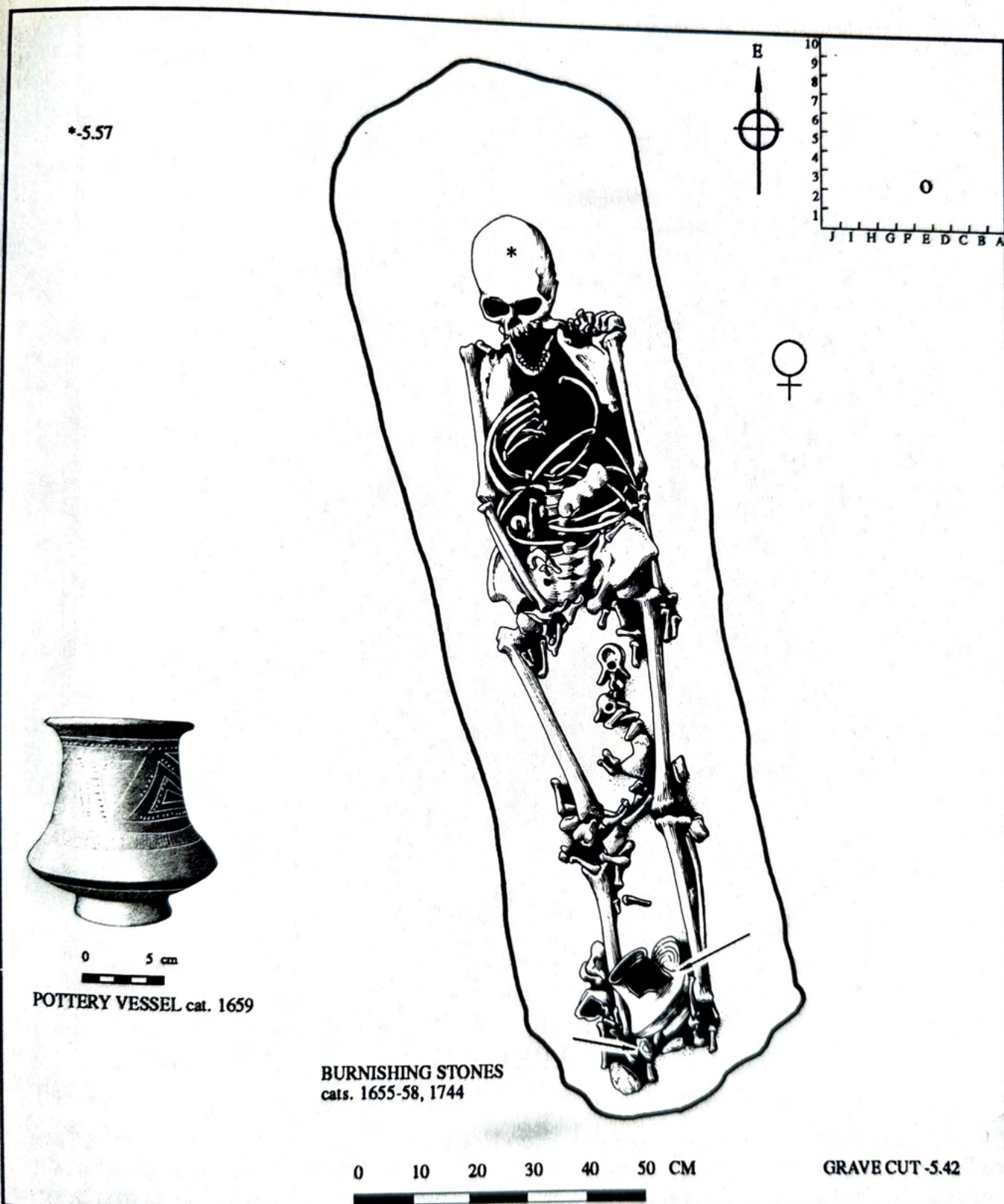


FIG. 94. Burial 110 cluster A stage 1 mortuary phase 2. Interred rather later than B100, the adult female had been buried supine at a depth of 5.62m. The body had been covered in red ochre and wrapped in *tapa*. Some vertebrae from another individual and some bones of the foot were found placed between the thighs. A complete pottery vessel (cat. 1659) and five burnishing pebbles (cats. 1655-8 and 1744) had been placed between the ankles

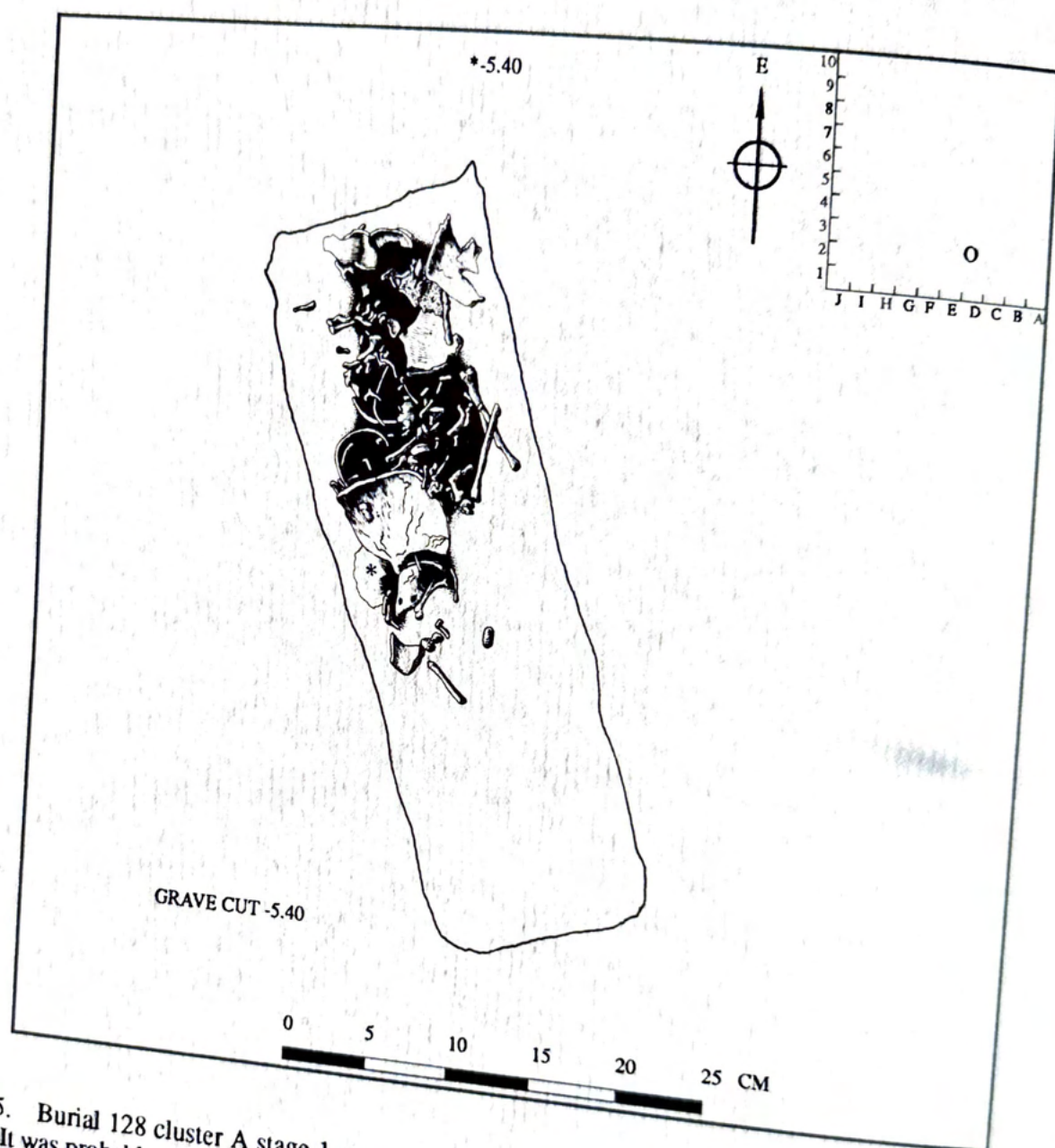


FIG. 95. Burial 128 cluster A stage 1 mortuary phase 2. This infant burial was found beyond the feet of B110. It was probably associated with the adult female in B110, the grave cut being found just 2cm higher. Most unusually, the head pointed in the opposite direction to most burials at the site. The bones, however, were found in some disarray as if they had been disturbed and replaced during the prehistoric period. No grave goods were found

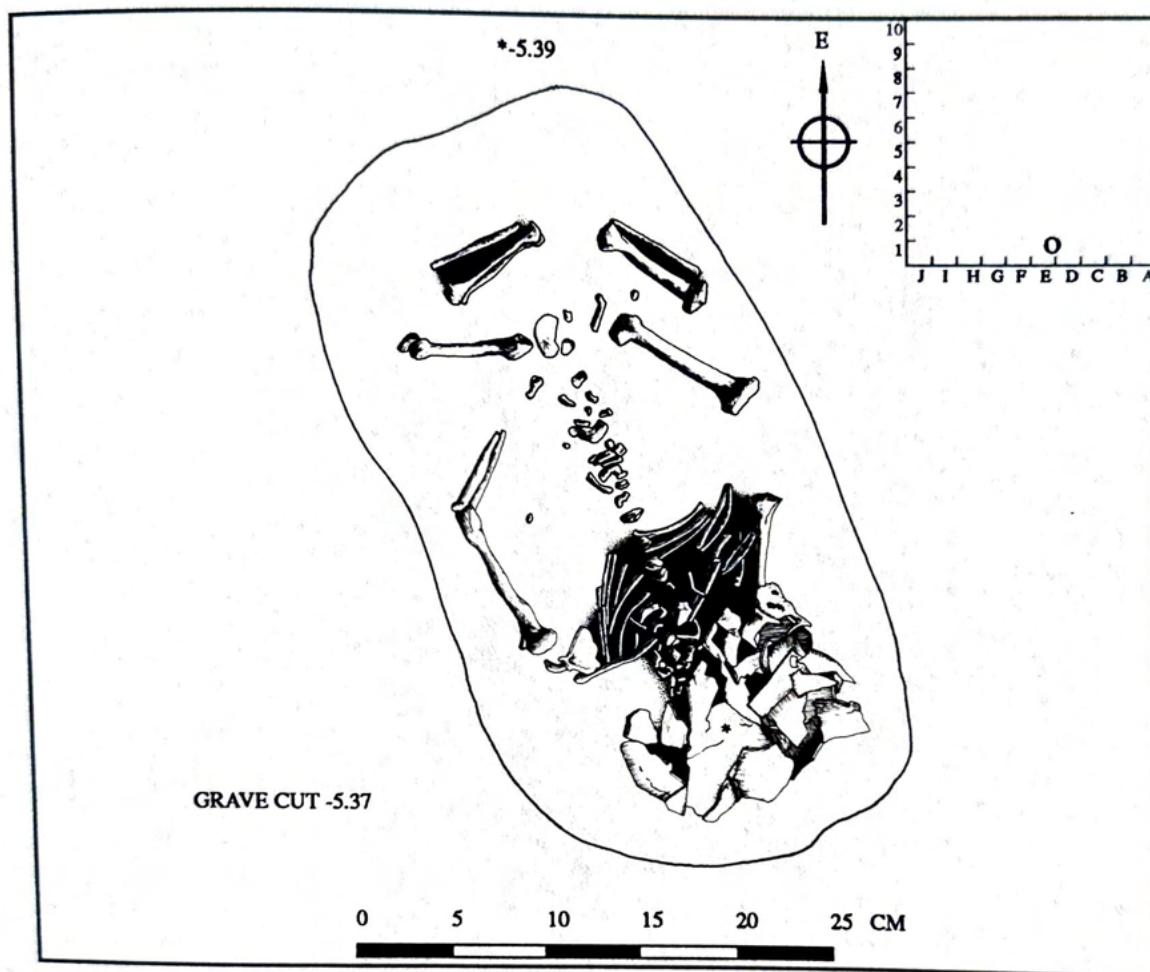


FIG. 96. Burial 119 cluster A stage 1 mortuary phase 2. This infant burial was found to be directly over B144, but the grave cut was found 20cm higher. The scoop containing this burial was 10cm deep. The legs were in a flexed position. No traces of grave goods, *tapa* or ochre were found

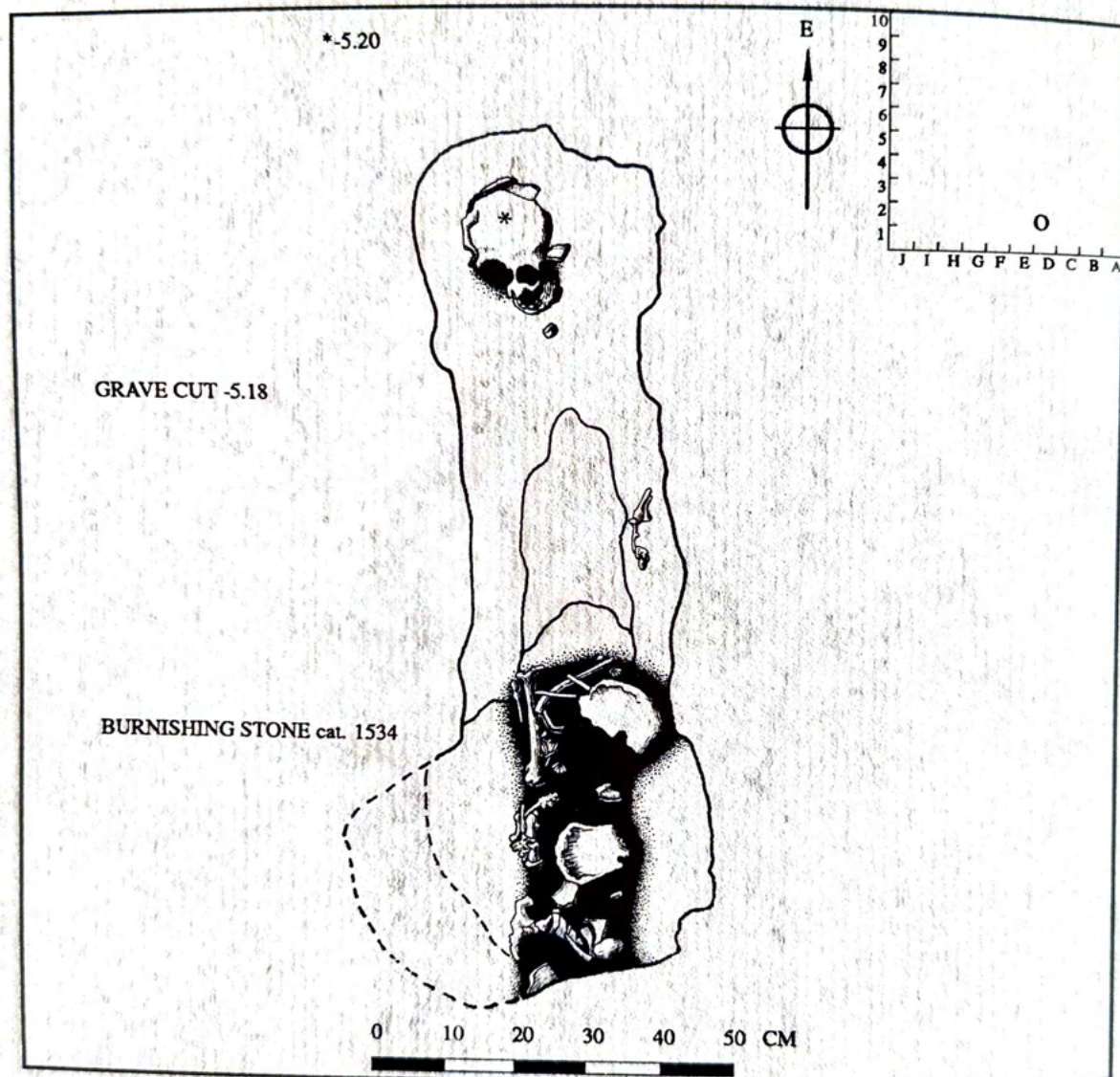


FIG. 97. Burial 96 cluster A, probably stage 1 mortuary phase 2. It is possible that this burial was an isolated one and does not belong to this stage of cluster A. It had been disturbed in antiquity and overlies B143 although the grave cut is 39cm higher. The bones of a child showed traces of red ochre but no *tapa*. Only the skull, femur, finger bones and some ribs were found, and one burnishing stone was present (cat. 1534)

STAGE 2 MORTUARY PHASE 3

There was gap of 42cm between the last burial in stage 1 and the first in stage 2. During that period, and indeed during the interment of the burials which comprise stage 2, a shell midden (layer 10 lens 2) accumulated in the vicinity of the graves. Its distribution is most intriguing since, throughout its build-up, the edge of the midden skirted not only the cluster A burials, but also other contemporary clusters across the excavated area. This is significant, because the deep midden could hardly have accumulated to such a depth in this manner unless there was some wall or barrier to confine it. The existence of such a barrier is supported by an inspection of the site sections, which disclose the midden abutting postholes (Fig. 99).

There is very little evidence of construction activity in the vicinity of cluster A between stages 2 and 3, but, with the onset of stage 3, three or four pits were excavated and these ring the stage 3 graves. Their use is unclear, since there are no singular finds in them. One contained seventeen shellfish, but the number is no greater than would be expected in the layers in the vicinity of the pit. Several postholes were dug in the general vicinity of the stage 2 burials, but no obvious pattern which might represent a structure is evident from visual inspection. Five postholes, however, are found along the edge of the thick shell midden referred to as layer 10 lens 2. Six infant burials were interred during what was, to judge from grave depths, a short timespan, followed by the burial of a woman in B61.

TABLE 15: *The mortuary goods, ages and sexes of burials from cluster A stage 2 mortuary phase 3*

	B78	B75	B70	B71	B69	B68	B61
Age	0 m	0 m	0 m	0 m	0 m	0 m	48
Sex	-	-	-	-	-	-	Female
Approx. number of children	-	-	-	-	-	-	2-3
Depth of grave cut below datum (m)	4.76	4.74	4.73	4.71	4.68	4.64	4.57
Red ochre	-	p	p	p	p	p	p
Disc-shaped shell beads	-	189	-	-	-	-	-
Fish vertebra disc/bangle	-	-	1	-	-	-	-
Pottery vessel	-	1	-	-	-	-	-

Note: p = present, m = months

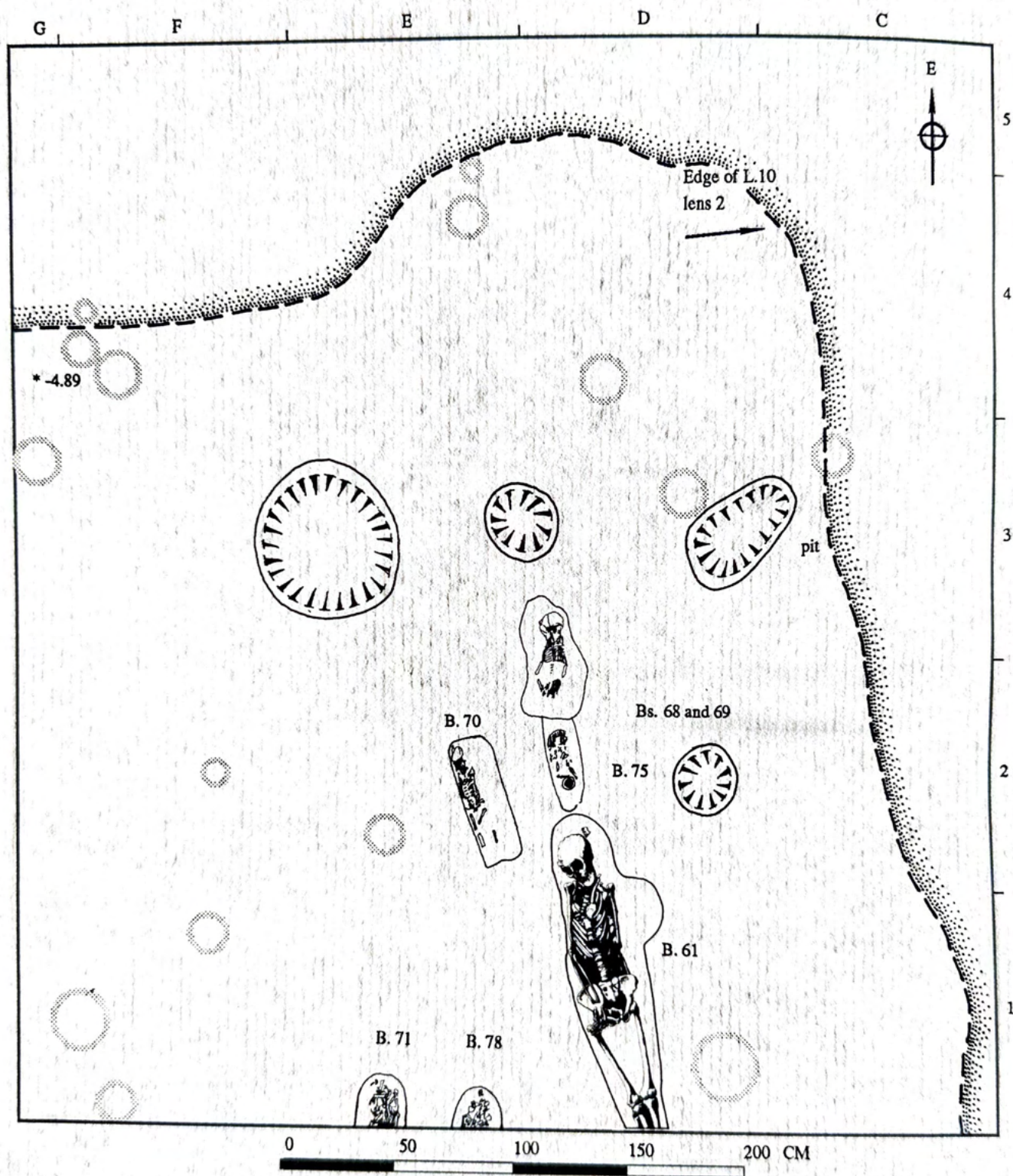


FIG. 98. The distribution of graves and associated features of cluster A stage 2 mortuary phase 3

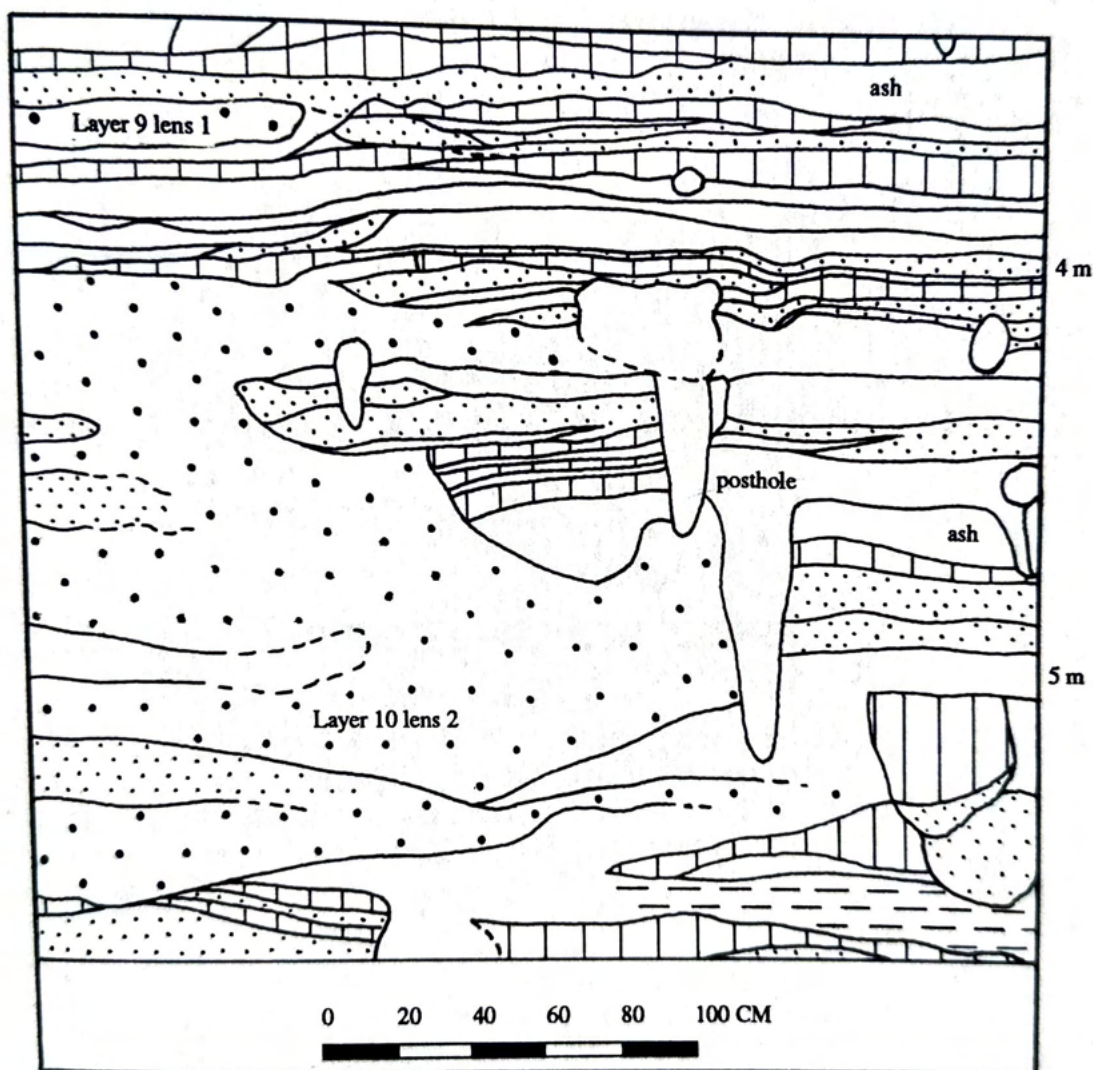
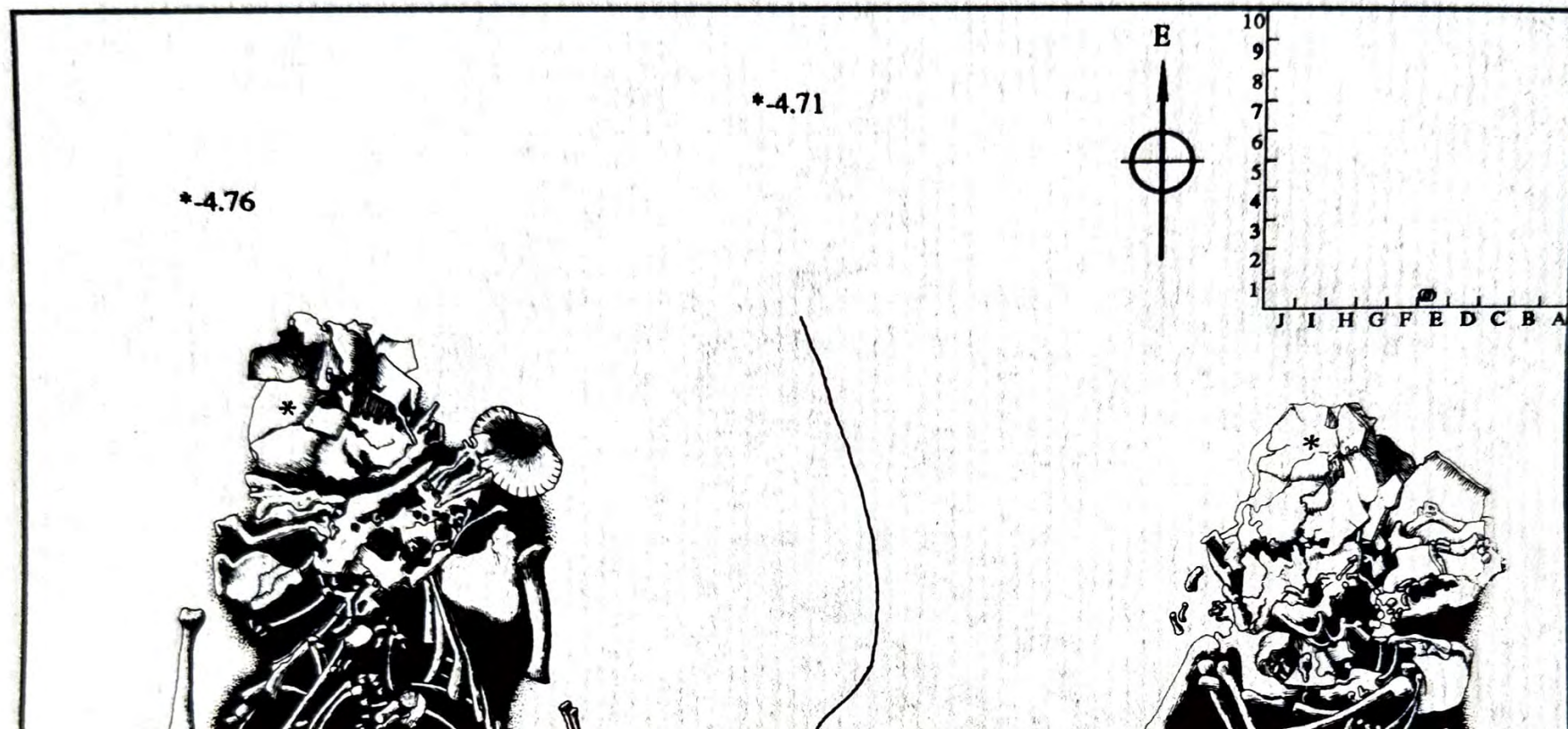


FIG. 99. Part of the section of the western wall of the excavation square, showing shell midden layer 10 lens 2 abutting the edge of a posthole

EXCAVATION OF KHOK PHANOM DI



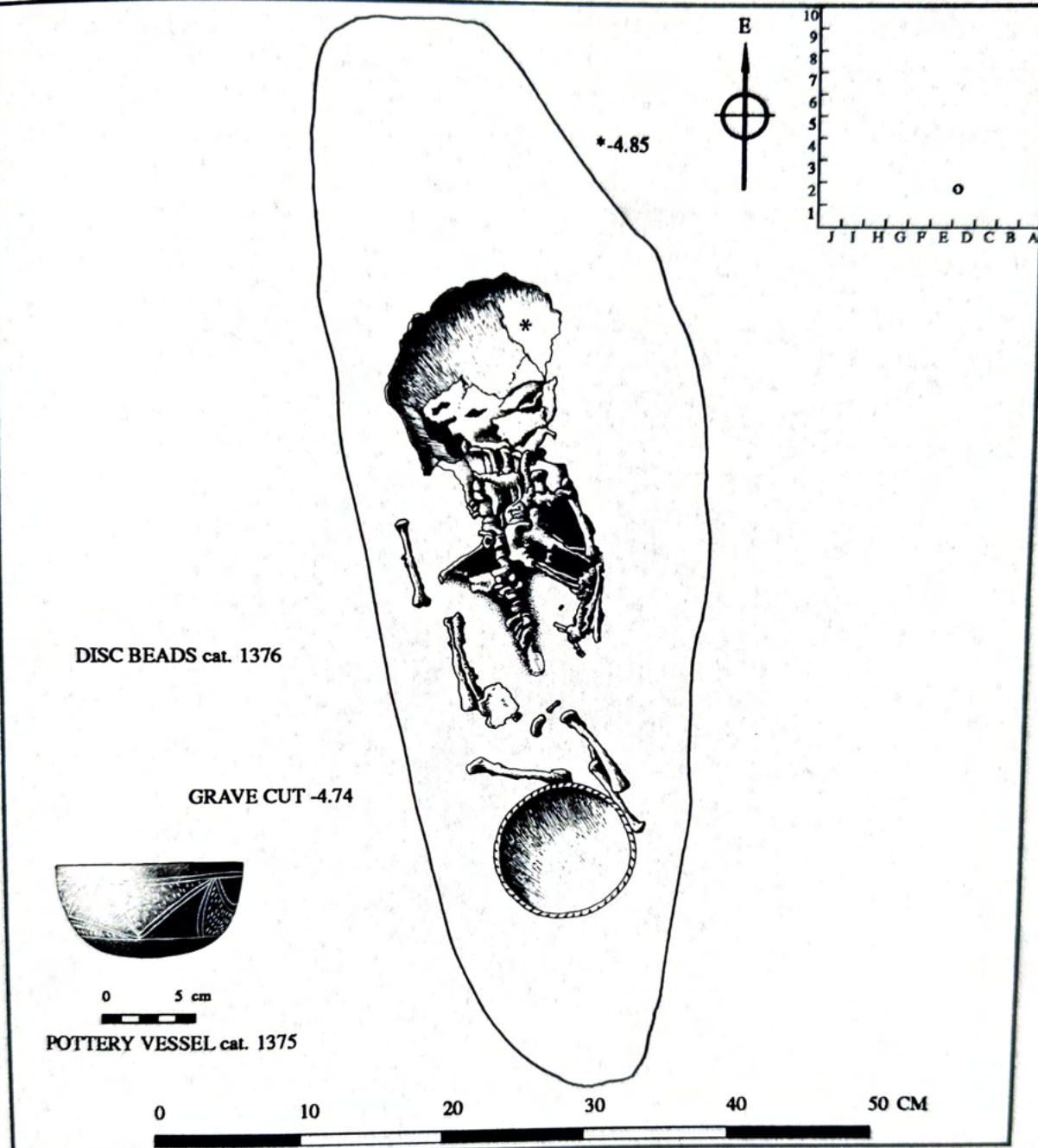


FIG. 101. Burial 75 cluster A stage 2 mortuary phase 3. This third infant burial was interred at about the same time as B78. A lens of charcoal and ash (layer 10 lens 6) was found in the vicinity of this cluster, and it partially overlaps the grave. The body had been covered in red ochre and laid on its back. A tiny pottery vessel (cat. 1375) was found over the infant's legs. There are about 189 disc-shaped shell beads (cat. 1376) in the area of the waist

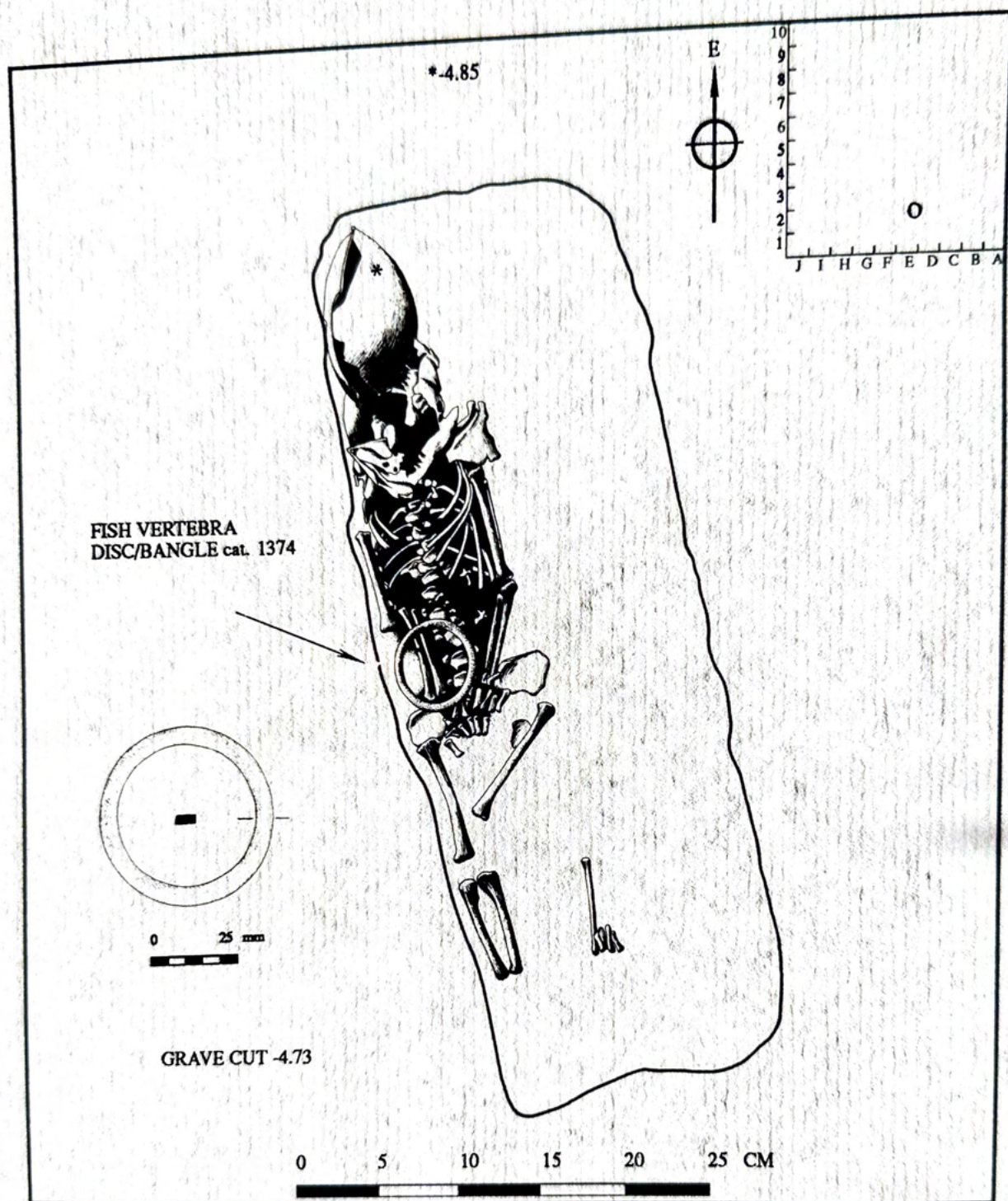
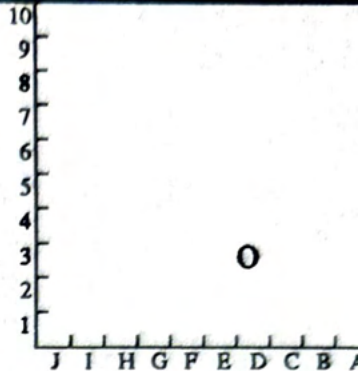
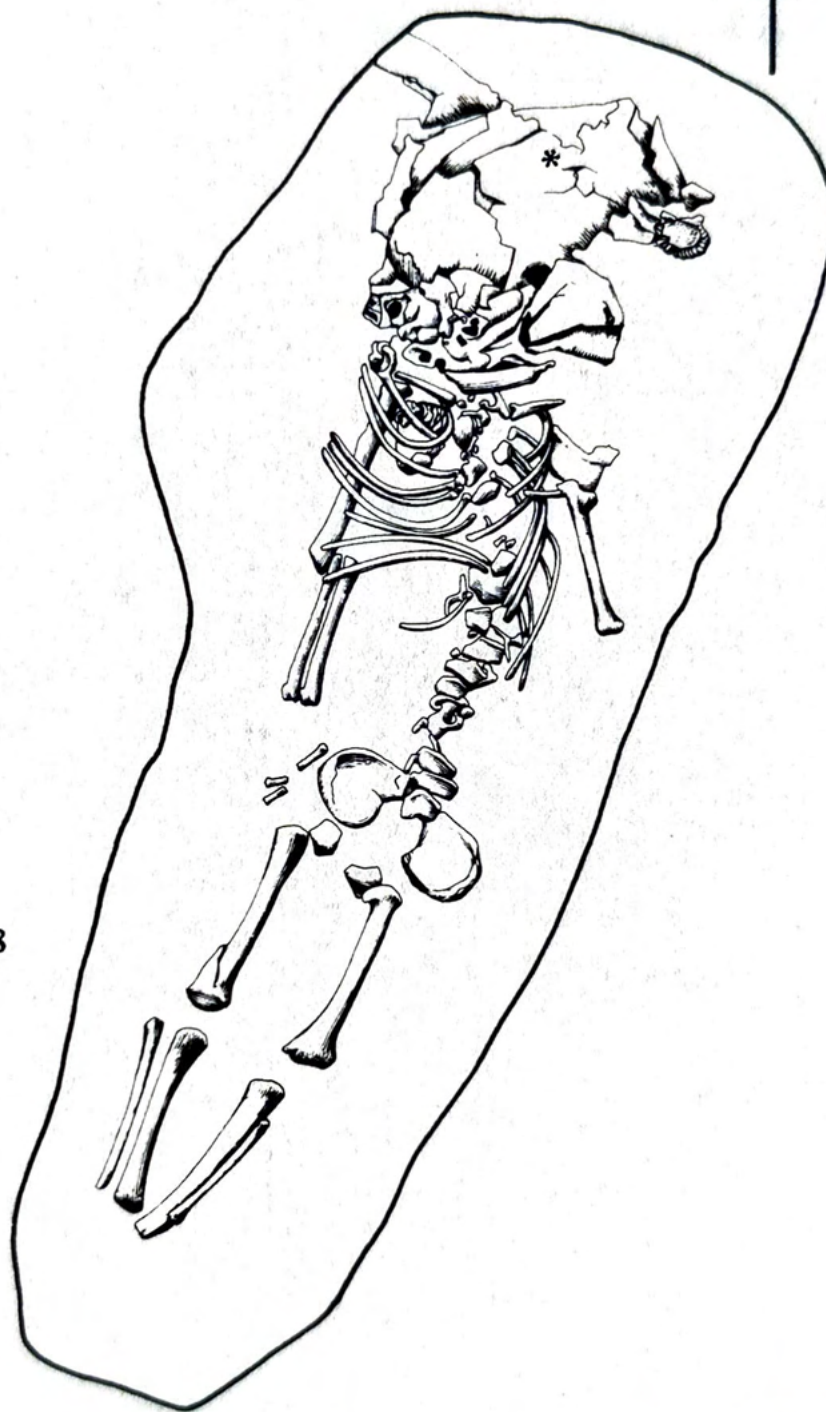


FIG. 102. Burial 70 cluster A stage 2 mortuary phase 3. This infant's grave lies adjacent to B75. It was cut from 4.73 down to 4.93m. A disc/bangle fashioned from a fish vertebra (cat. 1374) was found over the right hand. The body was laid out with the head pointing to the north-east, and it was stained with red ochre

*-4.67



GRAVE CUT -4.68



5 10 15 20 25 CM

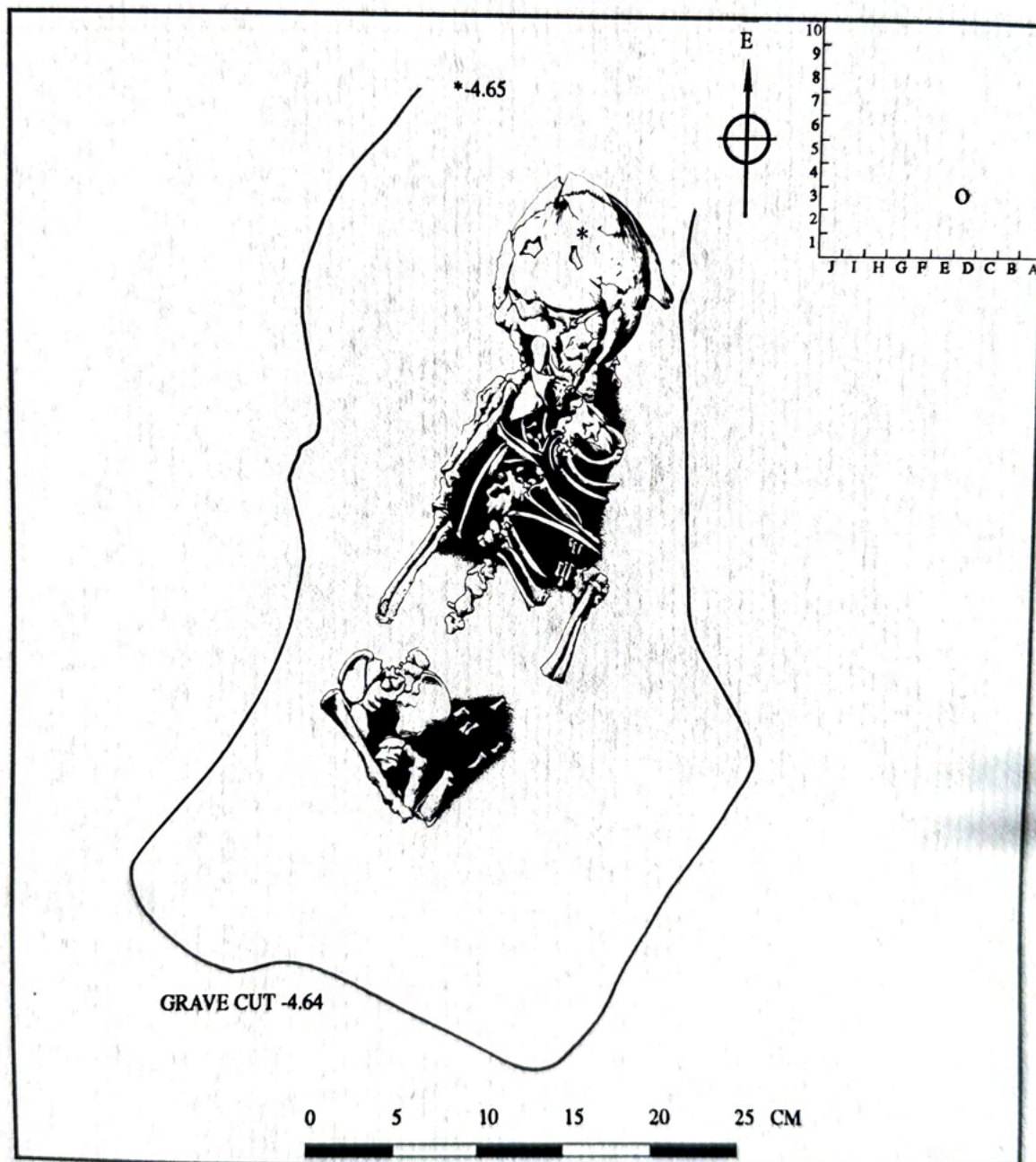


FIG. 104. Burial 68 cluster A stage 2 mortuary phase 3. Burials 68 and 69 were buried in the same grave, with B69 lying directly on top of B68. The grave was cut from 4.64m down to 4.71m. Both were covered in red ochre

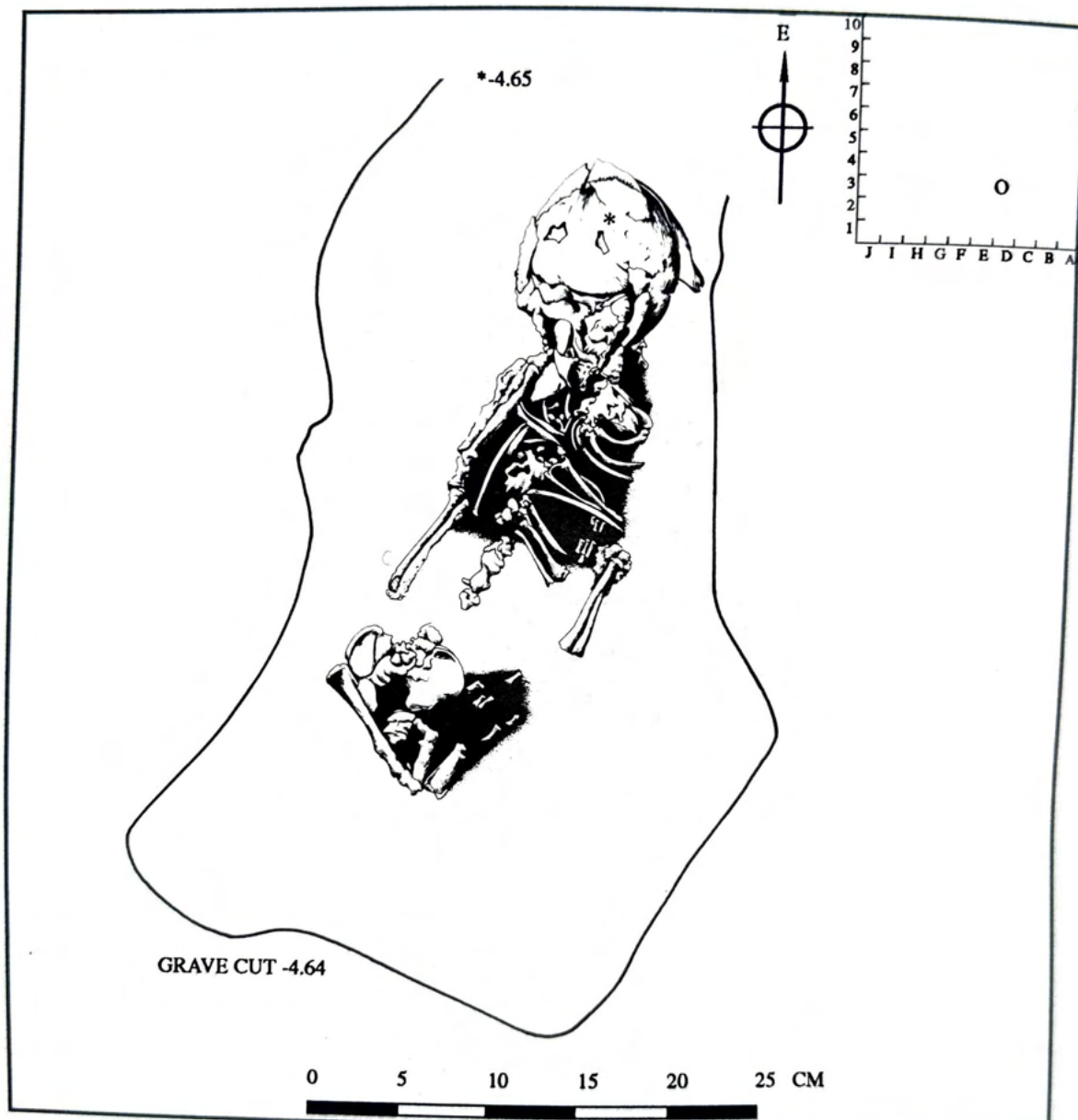
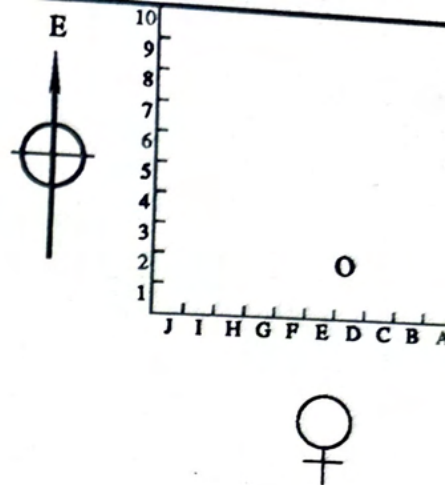


FIG. 104. Burial 68 cluster A stage 2 mortuary phase 3. Burials 68 and 69 were buried in the same grave, with B69 lying directly on top of B68. The grave was cut from 4.64m down to 4.71m. Both were covered in red ochre

*-4.67



GRAVE CUT -4.57

0 10 20 30 40 50 CM

FIG. 105. Burial 61 cluster A stage 2 mortuary phase 3. An adult female was found in this very grave, which was cut from 4.57m. It seems likely that the body was bound, for the left hand lay the body and the right had been placed over the stomach. No grave goods were found, but the body was partially covered in red ochre.

STAGE 3 MORTUARY PHASE 3

During what must have been a brief interlude between stages 2 and 3, eleven further postholes were dug round the burial area, six of which ran along the new margin of layer 10 lens 2. Two of the eleven were dug into graves of phase 3. Just before the funeral of B57, the second in this stage, an ash spread accumulated, only to be cut with the interment of this burial. As will be seen, such small ash spreads prior to interments are not unusual. This particular example is layer 10 lens 3.

With the interment of burials 57 and 59, a pit was opened 1cm from the northern edge of B59 and four more postholes were dug. Examination of the postholes in figure 106 indicates the possibility of an oval structure round the burials. The graves in this group comprise an adult male and four infants disposed in a straight line to the north of the adult. After the burials were in place, a further pit was sunk, about 10cm north of burials 53-4 and four more postholes were dug.

TABLE 16: *The mortuary goods, ages and sexes of burials from cluster A stage 3 mortuary phase 3*

	B59	B57	B53	B54	B55
Age	0 m	26	0 m	0 m	0 m
Sex	-	Male	-	-	-
Orientation	68°	85°	50°	-	85°
Depth of grave cut below datum (m)	4.48	4.41	4.37	4.37	4.36
Red ochre	-	p	-	p	-
Tapa fabric	-	p	-	-	-
Disc-shaped shell beads	-	23	-	-	-
Turtle bone ornament	-	1	-	-	-
Pottery vessel	-	2	-	-	-

Note: p = present, m = months

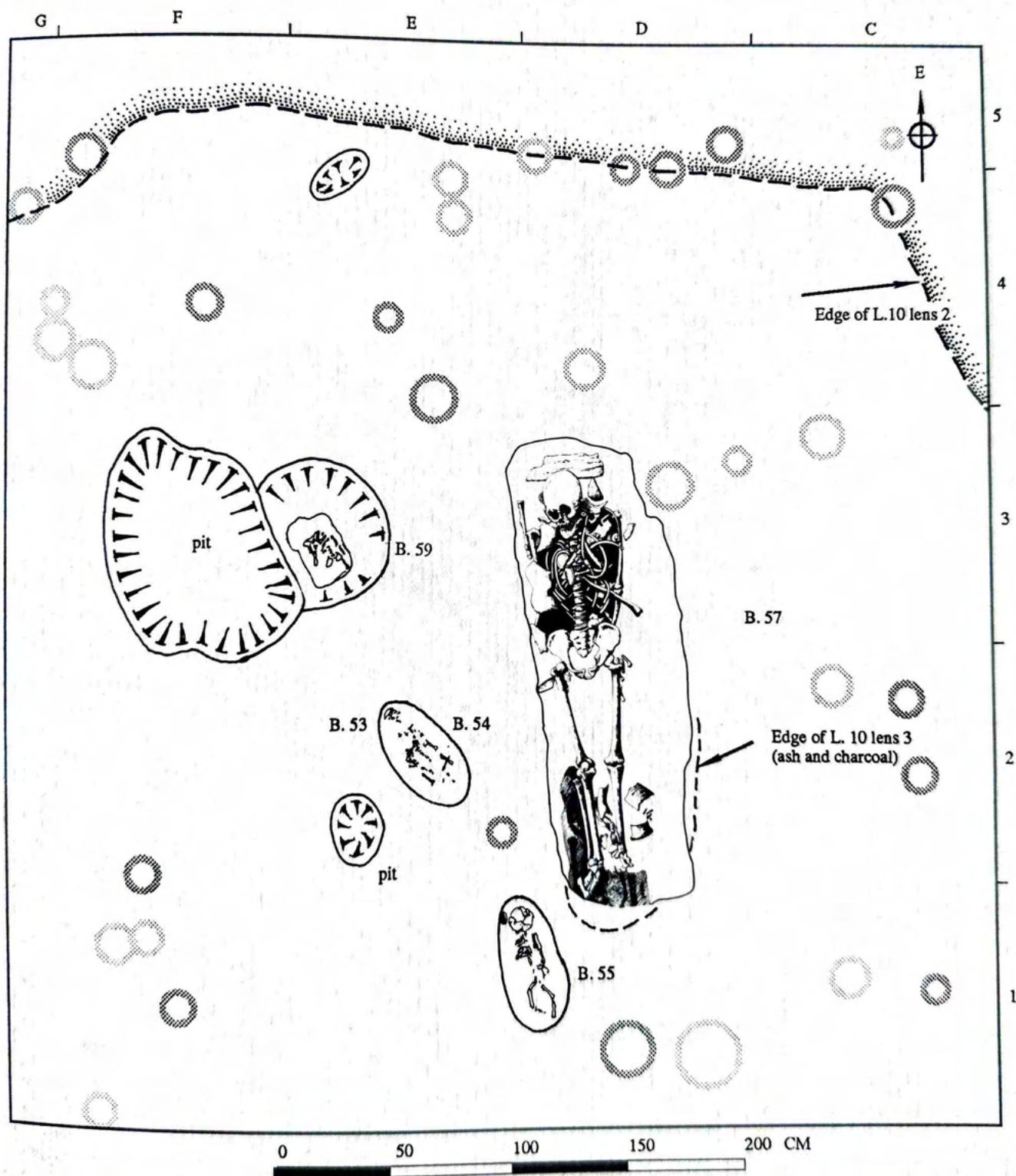


FIG. 106. The distribution of graves and associated features of cluster A stage 3 mortuary phase 3. The darker postholes were added between stages 3 and 4

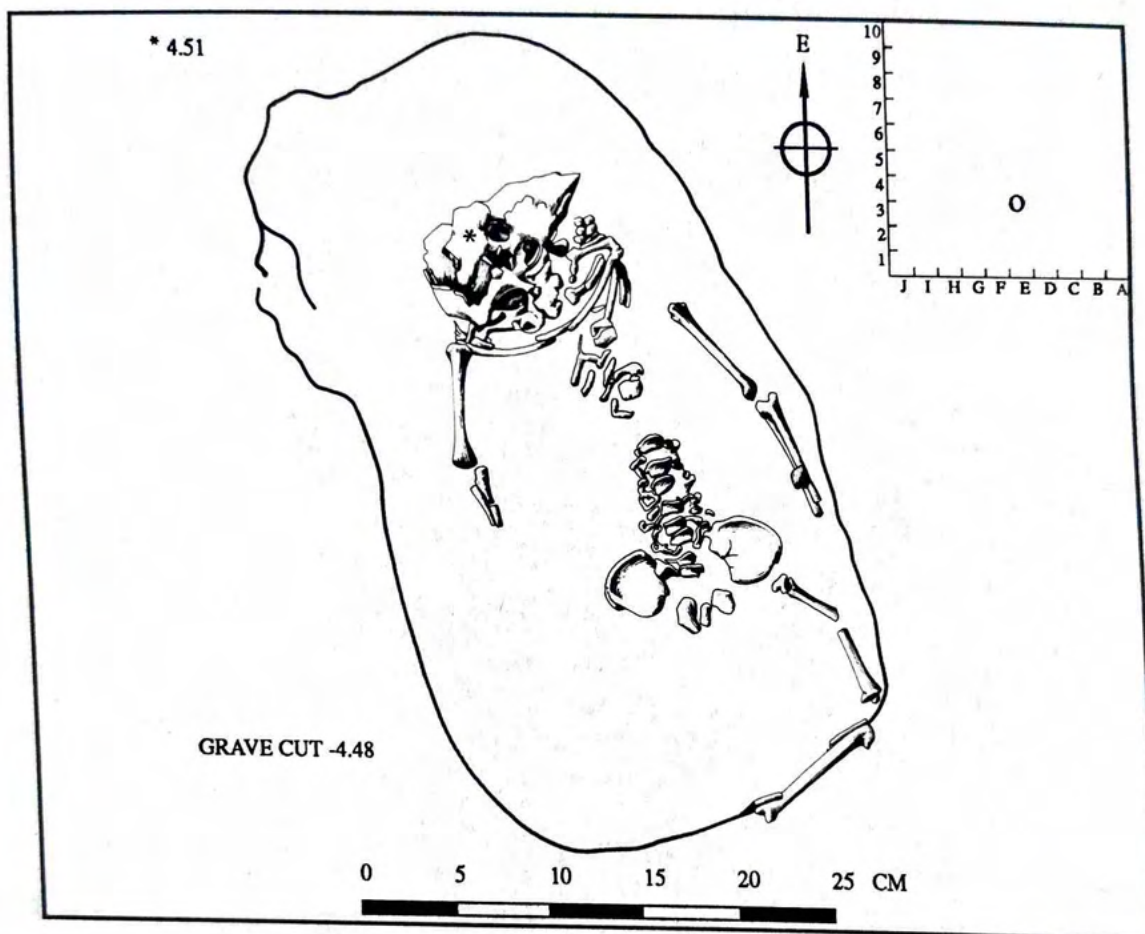


FIG. 107. Burial 59 cluster A stage 3 mortuary phase 3. This grave contained the remains of a new-born infant. It had been buried in a scoop cut from 4.48 to 4.56m below datum. No grave goods were found, nor any sign of ochre

Burial 57 (page 173). The grave of an adult male overlay burials 68 and 69 and partially overlapped B61. The grave cut was 24cm deep. Two broken pottery vessels were found, one at the left shoulder and the other in the region of the ankles (cats. 1288-9). A particularly notable part of the grave furniture was an ornament fashioned from a large turtle carapace. It had been broken in antiquity and the three sections were disposed down the right side of the body from the elbow to the hip. This is the only appearance of such an artefact in a MP3 context. When reconstructed, the broken pieces reveal a patterned shape incorporating a hole in the centre. Disc-shaped shell beads, which were relatively rare in MP3 graves, were present with B57, a few being found adhering to the largest piece of turtle carapace (cat. 2770). Red ochre covers all the bones and a particularly large concentration of *tapa* was found under the skull

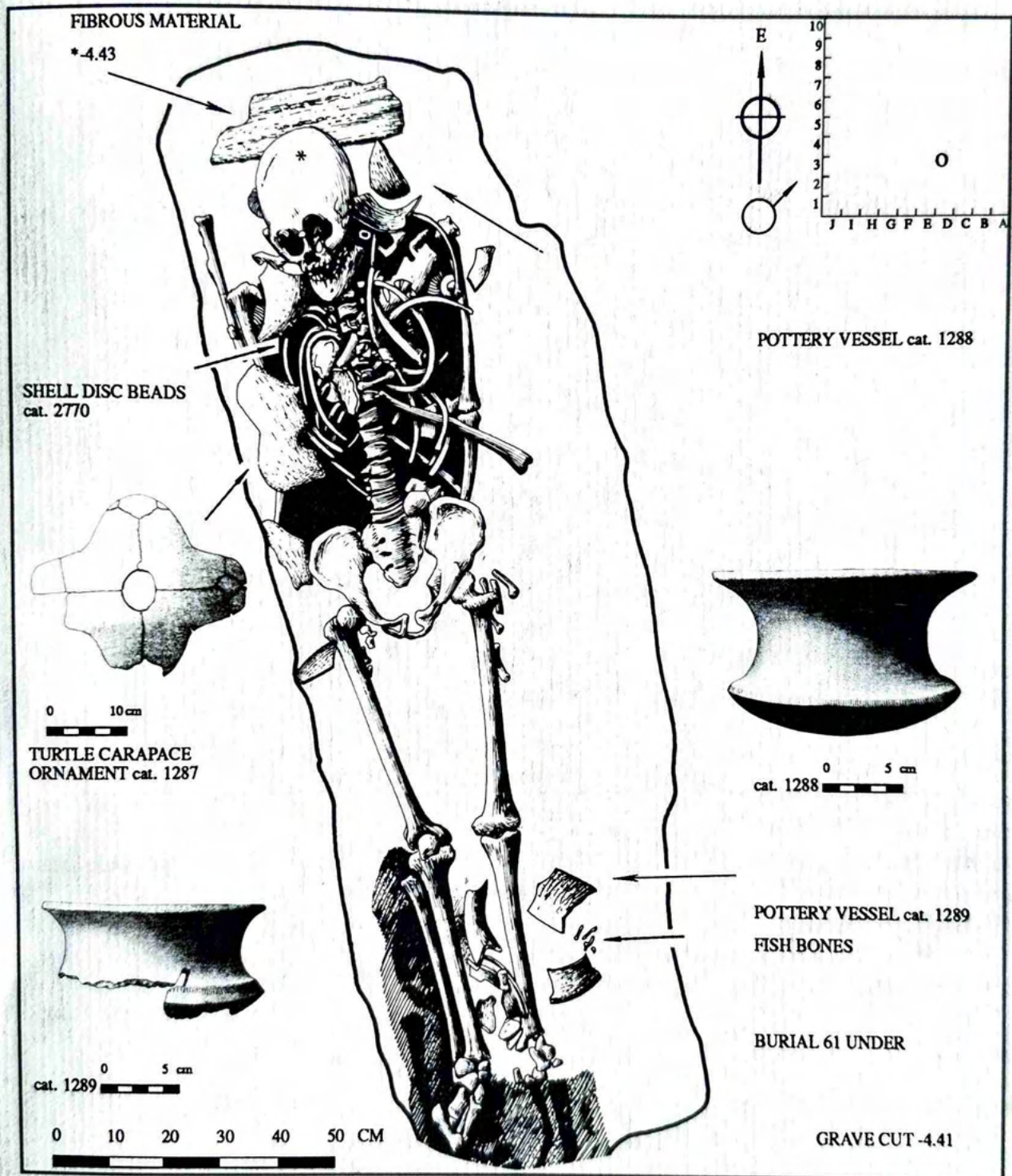


FIG. 108. Burial 57 cluster A stage 3 mortuary phase 3. For description, see opposite page

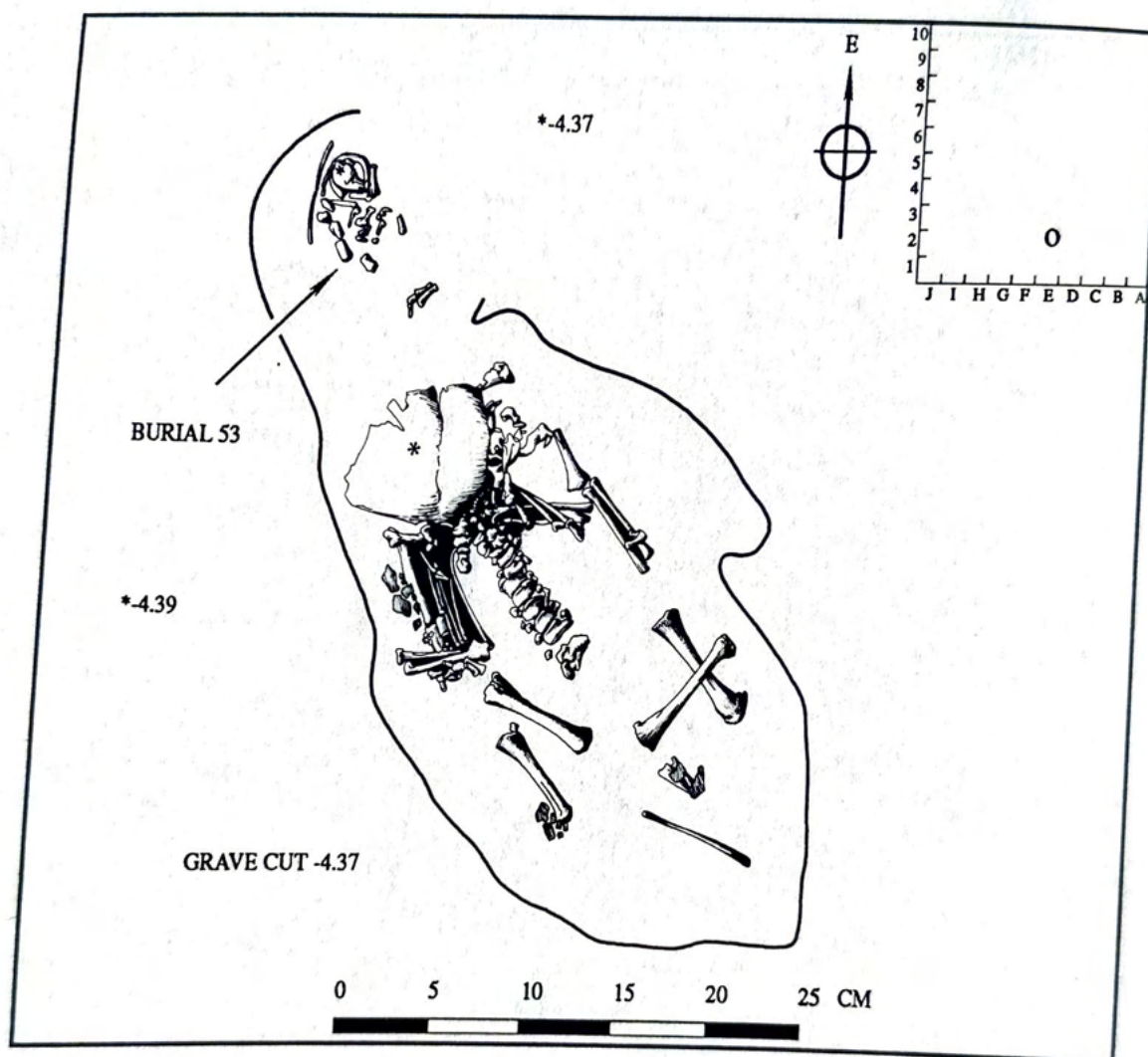


FIG. 109. Burials 53 and 54 cluster A stage 3 mortuary phase 3. These remains of two infants were located in a grave to the north of B57 and were found about 20cm apart from each other. Burial 53 had clearly been disturbed in antiquity. Red ochre was found only over B54

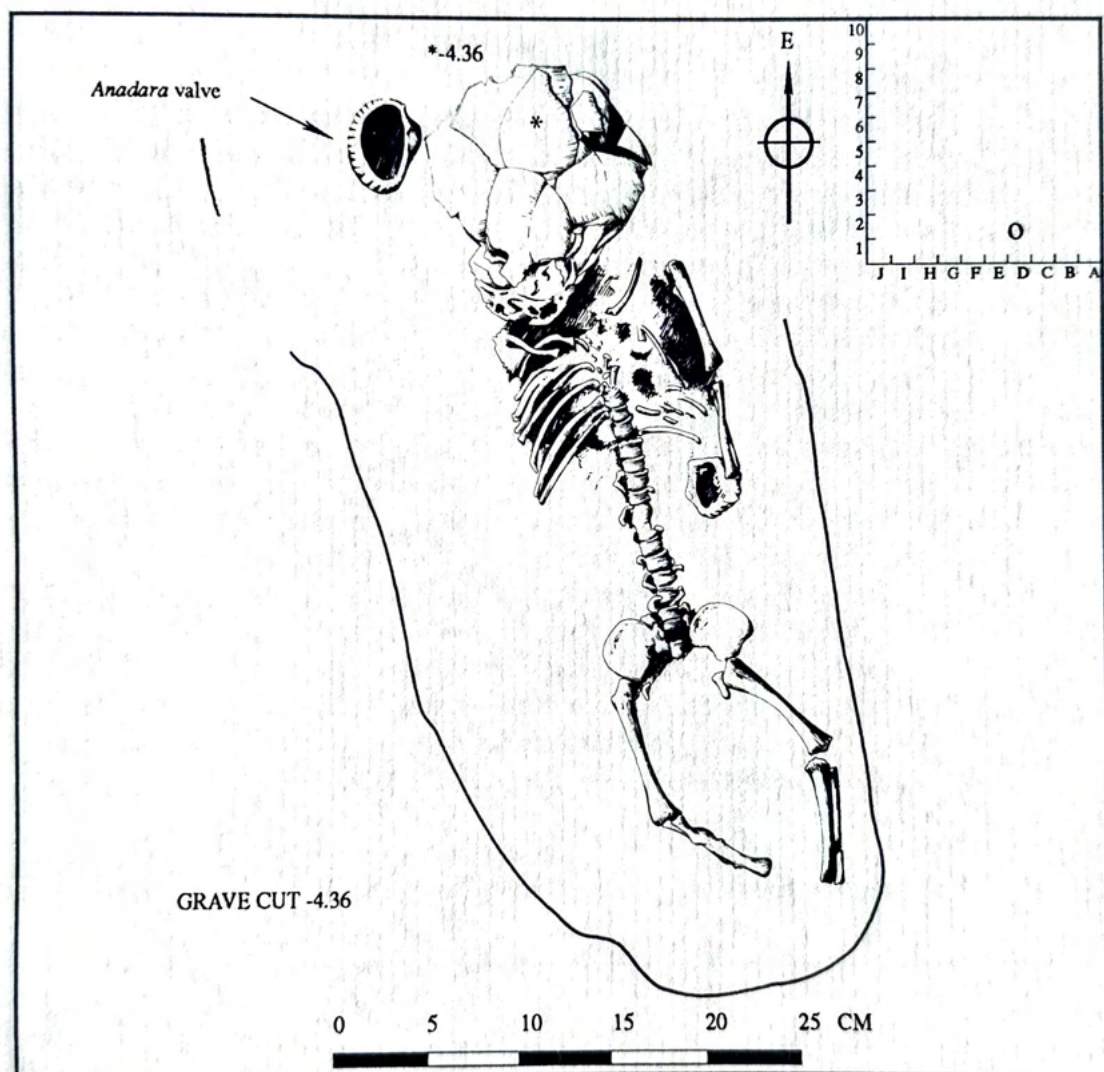


FIG. 110. Burial 55 cluster A stage 3 mortuary phase 3. This last burial in cluster A during the third mortuary phase contains the remains of a very young infant which was buried at the same time as burials 53 and 54 at a depth of 4.36 to 4.40m. There is no evidence for any associated artefacts nor for the use of red ochre in the mortuary ritual

STAGE 4 MORTUARY PHASE 4

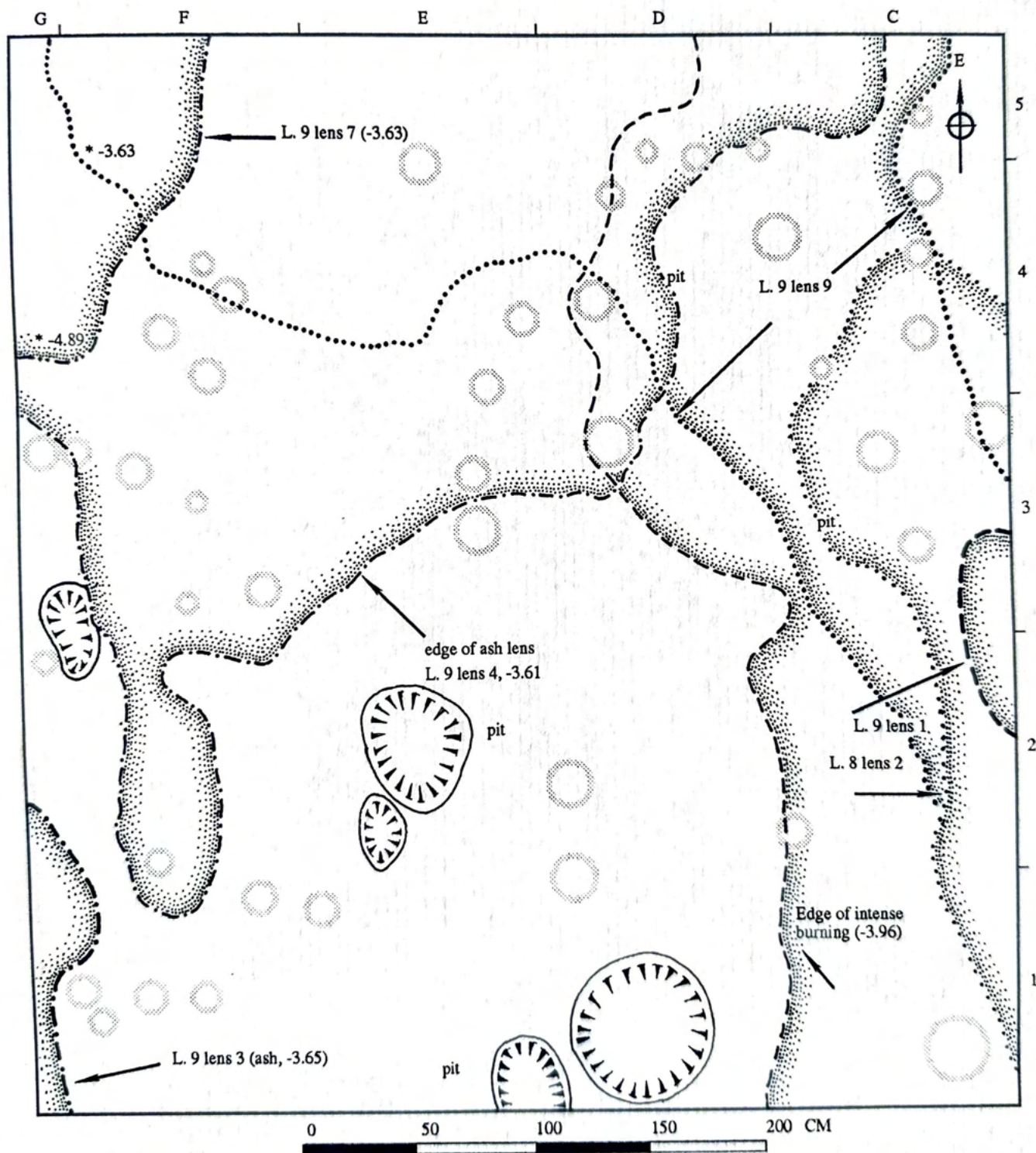
There was a hiatus, measured in depth of deposit, of 99cm between the interment of the last burial in stage 3 (4.36m) and the first in stage 4 (3.37m). During this interval, it is notable that no postholes were dug into the stage 3 burials between the depths of 4.36 and 3.96m. At 4.10m below datum, lens 9 of layer 9 runs parallel and about 40cm to the south of B57. This relationship between the burial area and deposition of middens or ash spreads was also noted at 3.96m below datum, when a large area subjected to burning also ran parallel with and just lapped over the top of B57. At the same depth, an almost perfectly circular pit was dug down to 4.12m at the feet of B57. At a depth of 3.63m, a further ash lens, layer 9 lens 7, skirts the north-east corner of the burial area and, 2cm higher, lens 2 in layer 9 runs round the mortuary area but never transgress it. At 3.65m layer 9 lens 3 and, 4cm higher, layer 9 lens 1 are located respectively north and south of the graves. There is, then, a consistent separation between the burials and deposition of midden residue and burning activity even over periods when no interments were being made (Fig. 111).

Before burials began again in the cluster A area, we find that a thin ash spread lay under burials 31-2, while layer 8 lenses 8 and 12, both being rich in shellfish, once again follow the margins of the area reserved for burials. Lens 8 is virtually contemporary with the burials themselves. A series of postholes was also dug just prior to the interments and it is possible that some indicate a mortuary structure in that they clearly run round the four burials. After the last interment, layer 8 lens 2 was deposited, and it is important to note that its edge is parallel with the grave for burials 31-2 (Fig. 112).

TABLE 17: *The mortuary goods, ages and sexes of burials from cluster A stage 4 mortuary phase 4*

	B31	B32	B30	B28
Age	25	11	34	21
Sex	Female	?Female	Male	Male
Approx. number of children	3+	-	-	-
Orientation	80°	82°	83°	87°
Depth of grave cut below datum (m)	3.37	3.37	3.32	3.27
Red ochre	p	p	p	p
Turtle bone object	-	1	1	-
Pottery vessel	1	1	1	1
Fishhook	-	-	1	-
Turtle bone pendant	-	1	-	-
Clay counter	p	-	-	-
Worked <i>Polinices tumidus</i>	-	-	-	1

Note: p = present, m = months



EXCAVATION OF KHOK PHANOM DI

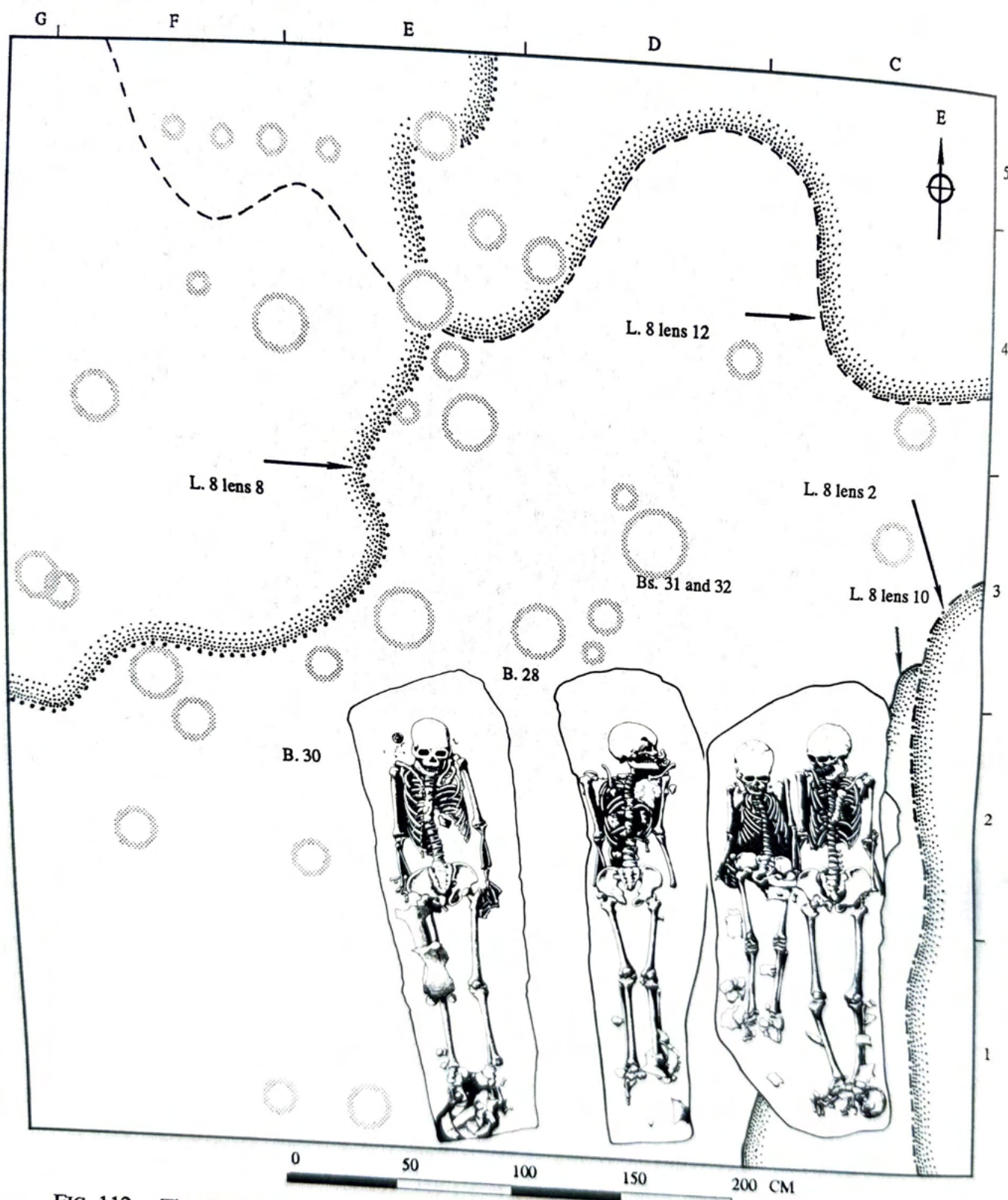


FIG. 112. The distribution of graves and associated features of cluster A stage 4 mortuary phase 4

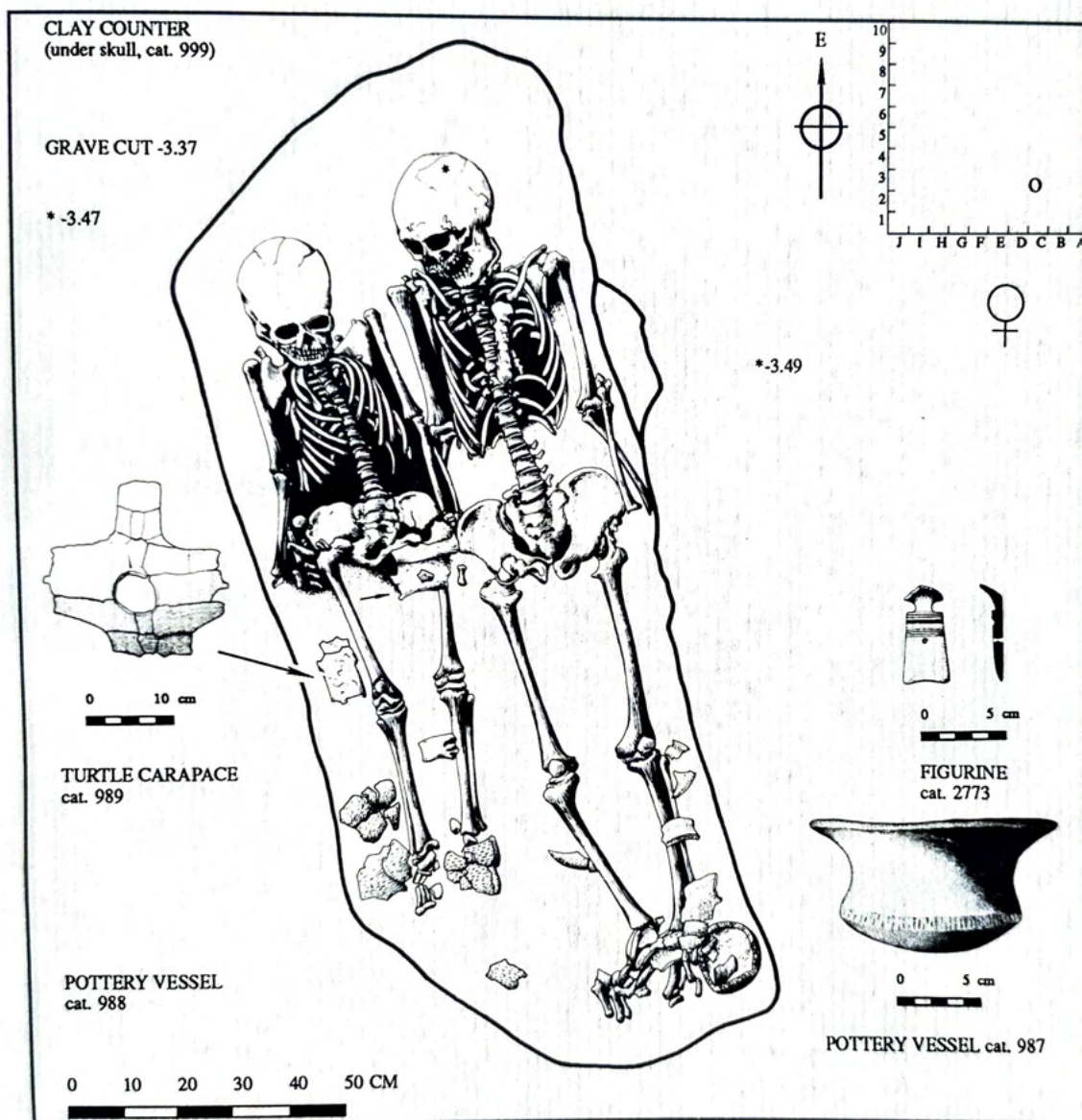


FIG. 113. Burials 32 (left) and 31 cluster A stage 4 mortuary phase 4. An adult female aged about 25–9 years (B31) and a child, whose left arm rests on the right arm of the woman. Red ochre appeared on the skull only. Burial 31 was accompanied by a broken pot (cat. 987) over the ankles and a cord-marked potsherd cut into a circular form under the skull (cat. 999). Burial 32 also had a broken pottery vessel placed over the ankles (cat. 988). Broken sections of carved turtle carapace ornament were found in two areas: over the upper left thigh and near the right knee. A unique bone object was found with B32 in the vicinity of the turtle bone object (cat. 2773). Standing 5.6cm high, it has what may be a highly stylized human form with a flared head, neck and shoulders. There is a hole in the middle and a number of horizontally engraved lines are located between the shoulder area and this bored hole. The reverse side is plain and smooth

EXCAVATION OF KHOK PHANOM DI

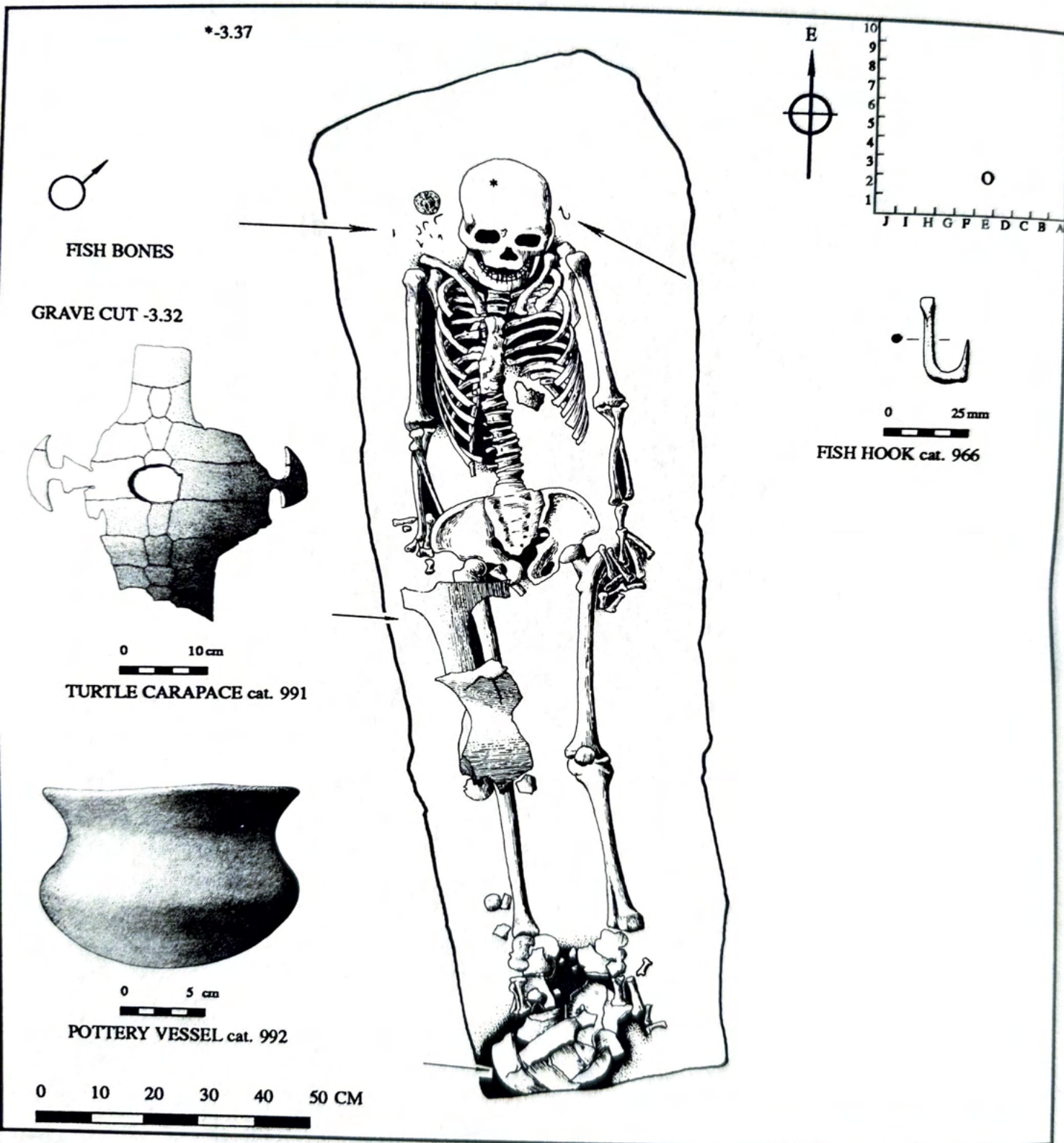


FIG. 114. Burial 30 cluster A stage 4 mortuary phase 4. The remains of an adult male were located 80cm to the north of the double burial just described. Three types of grave offering were found: a broken pottery vessel over the feet (cat. 992), a turtle carapace ornament, smashed, and placed over the right thigh; and a small fish hook cut from a pig's tusk beyond the right shoulder (cat. 966)

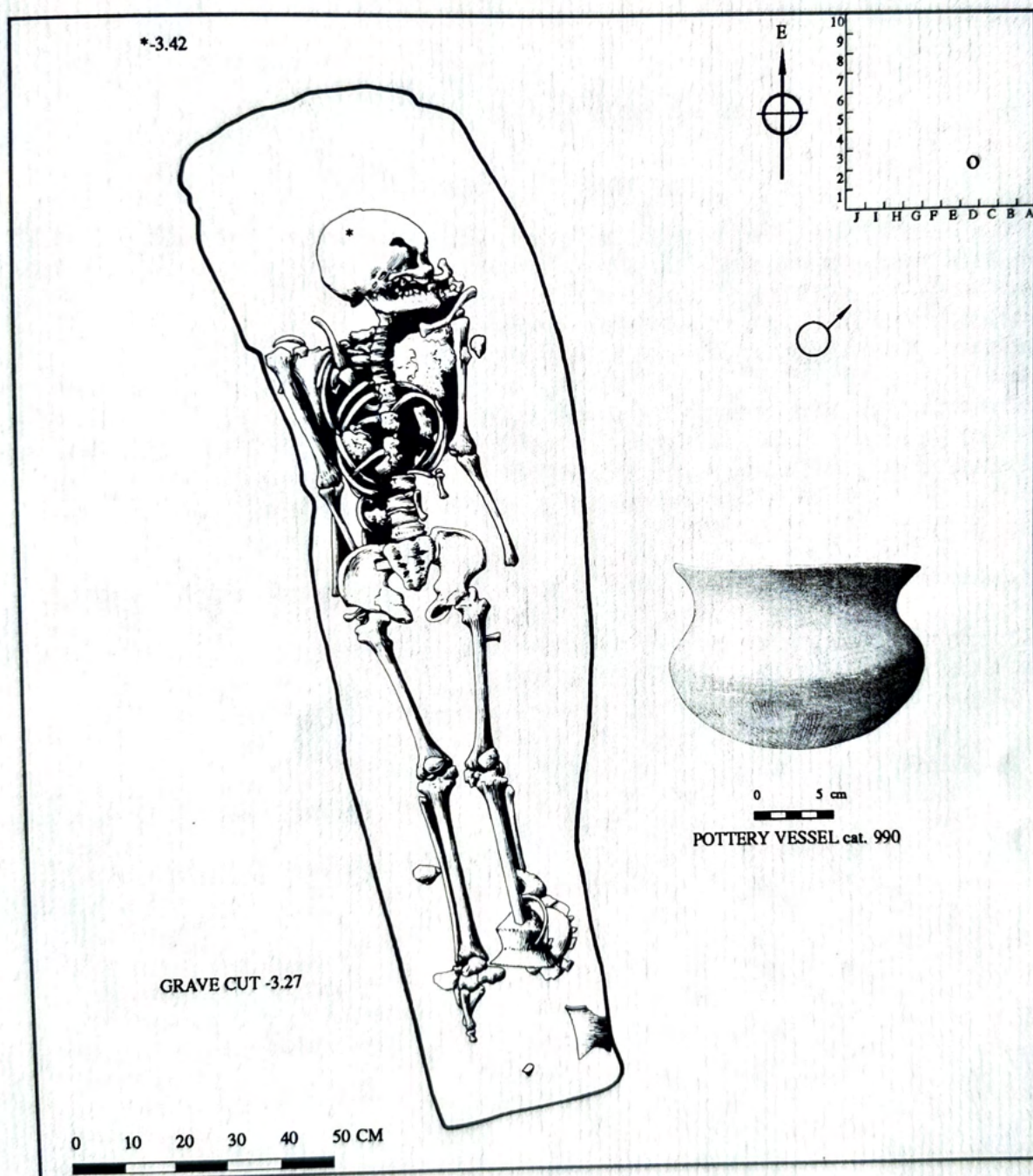


FIG. 115. Burial 28 cluster A stage 4 mortuary phase 4. Located between burials 30 and 31-2, this grave contains the remains of an adult male laid out on the back, with the head facing to the left. The only offering was a broken pottery vessel placed over the left ankle. A perforated specimen of *Polinices tumidus* was found in the grave fill

V. BURIAL CLUSTER B

STAGE 1 MORTUARY PHASE 2

BURIALS belonging to stage 1 in this cluster were interred at approximately the same time as those in cluster A stage 1, and were separated by a horizontal distance of about 2m. There are two adult males, an adult female and the remains of three infants, the grave cuts varying between 5.13 and 5.56m. Burial 141 is earlier than the others and burials 129 and 130 are the first definite cluster B burials. An adult male was buried with an infant placed on the right shoulder. An adult male was then buried over B129, followed by the burial of an infant, B121, and an adult female (B94). The disposition of postholes round the cluster suggests a wooden mortuary structure, a possibility supported by the layout of layer 10 lens 2, a thick shell midden which runs parallel with B94, turns at right-angles and then runs along the feet area of all the burials. This layout is consistent with shellfish and other residue building up against a wall (Fig. 117).

TABLE 18: *The mortuary goods, ages and sexes of burials from cluster B stage 1 mortuary phase 2*

	B141	B129	B130	B120	B121	B94
Age	0 m	27	6 m	21	15 m	31
Sex	-	Male	-	Male	-	Female
Approx. number of children	-	-	-	-	-	2-3
Orientation	55°	90°	85°	85°	-	90°
Depth of grave cut below datum (m)	5.56	5.48	5.48	5.36	5.31	5.13
Red Ochre	-	p	p	p	p	p
Tapa fabric	-	-	p	-	-	-
Disc-shaped shell beads	-	-	-	327	-	-
Barrel-shaped shell beads	-	353	17	13	7	-
Short barrel-shaped shell beads	-	-	-	-	-	55
Fish vertebra disc/bangle	-	-	1	-	-	-
Perforated shell disc	-	-	-	-	-	1
Rhinoceros tooth	-	-	-	1	-	-
Pottery vessel	-	-	1	2	-	-
Burnishing stone	-	-	-	-	-	1

Note: p = present, m = months

EXCAVATION OF KHOK PHANOM DI

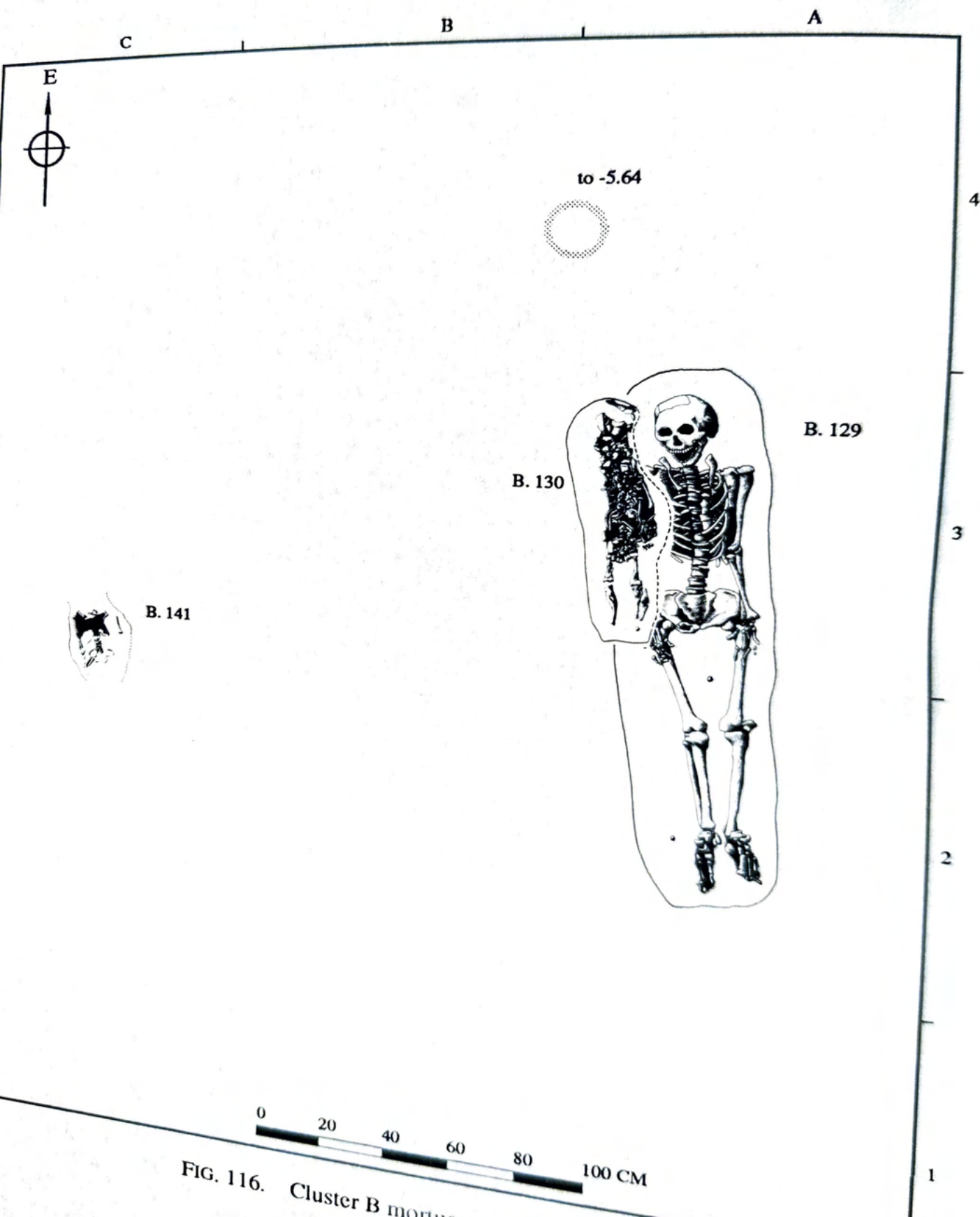


FIG. 116. Cluster B mortuary structures.

BURIAL CLUSTER B

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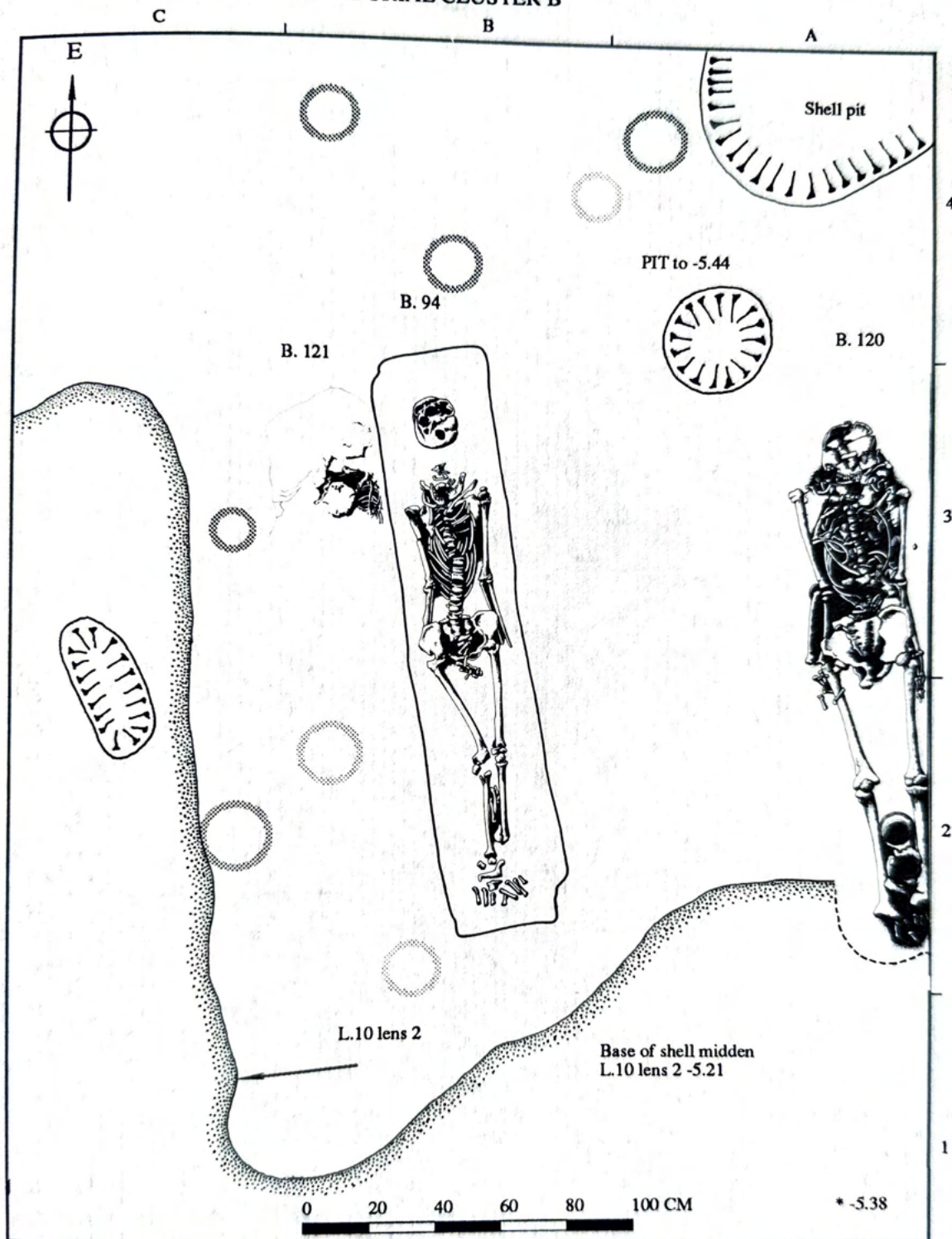


FIG. 117. Cluster B mortuary phase 2, later stage 1. * = spot point for depth below datum. Shaded postholes were dug during or just before this stage, the darker postholes postdate the burials of this stage

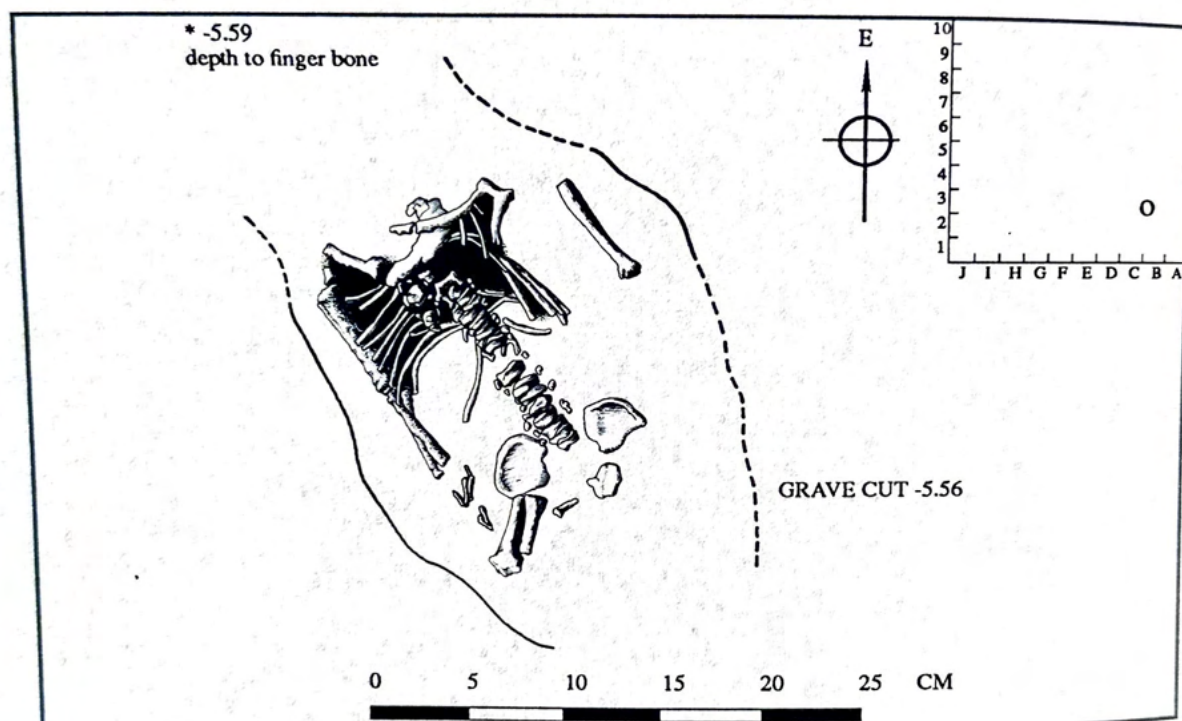


FIG. 118. Burial 141 cluster B stage 1 mortuary phase 2. It is questionable whether this burial belongs to cluster A or B, because it lies equidistant between them and is contemporary with burials 143, 144 and 100 of cluster A. If mortuary treatment is used as a guide, it is more likely to belong to cluster B because, unlike the infants in cluster A, the body was not covered in red ochre. It was buried in a very shallow scooped grave only 4cm deep without any grave goods

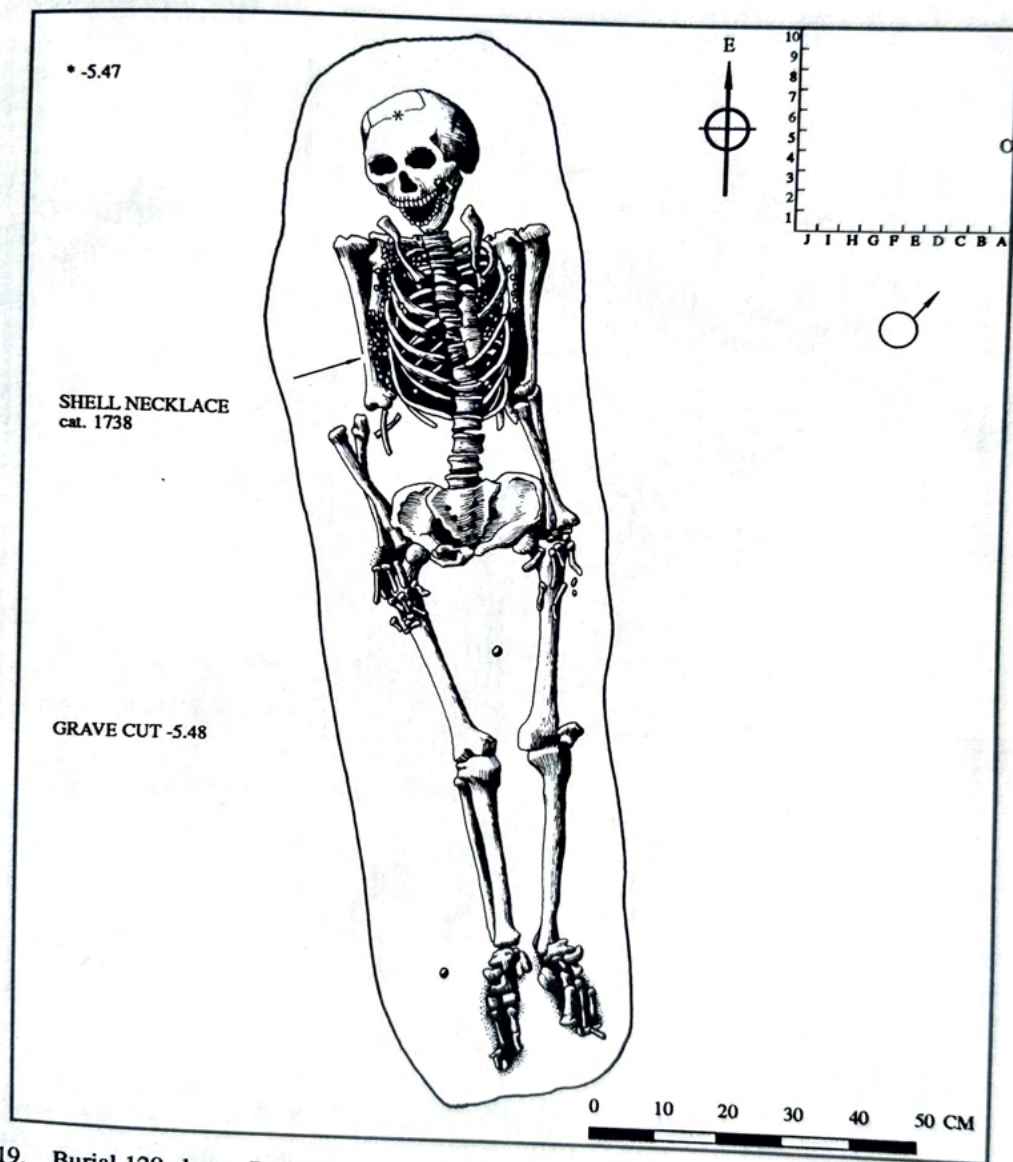


FIG. 119. Burial 129 cluster B stage 1 mortuary phase 2. The grave of this adult male was found 1.50m to the left of B.141 and it was cut 8cm higher at 5.48m. The grave was 20cm deep. The body was placed in a supine position with the head pointing almost due east. It was covered in red ochre. 353 barrel-shaped shell beads were found, disposed in a two-stringed necklace (cat. 1738). No evidence for *tapa* cloth has been found, but the body was almost certainly wrapped in a perishable material because the bones of the arm were found close to the upper torso and the foot bones were placed forward in a manner suggesting binding of some sort.

EXCAVATION OF KHOK PHANOM DI

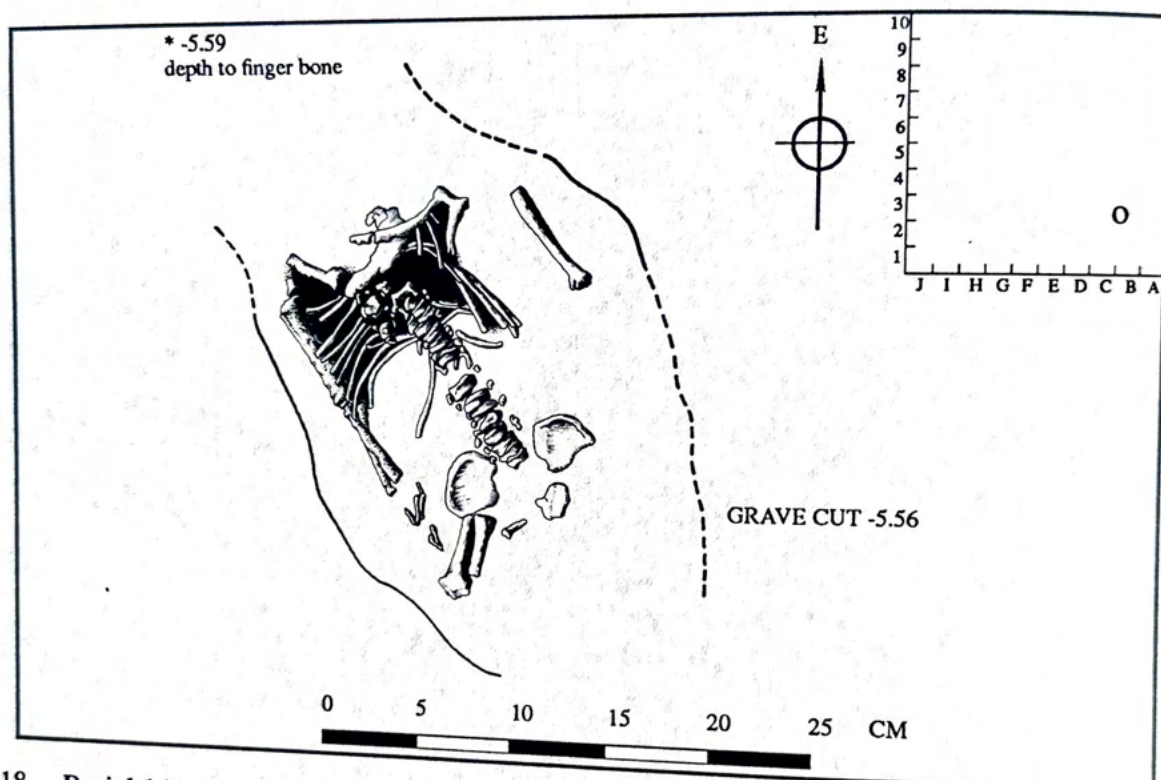


FIG. 118. Burial 141 cluster B stage 1 mortuary phase 2. It is questionable whether this burial belongs to cluster A or B, because it lies equidistant between them and is contemporary with burials 143, 144 and 100 of cluster A. If mortuary treatment is used as a guide, it is more likely to belong to cluster B because, unlike the infants in cluster A, the body was not covered in red ochre. It was buried in a very shallow scooped grave only 4cm deep without any grave goods

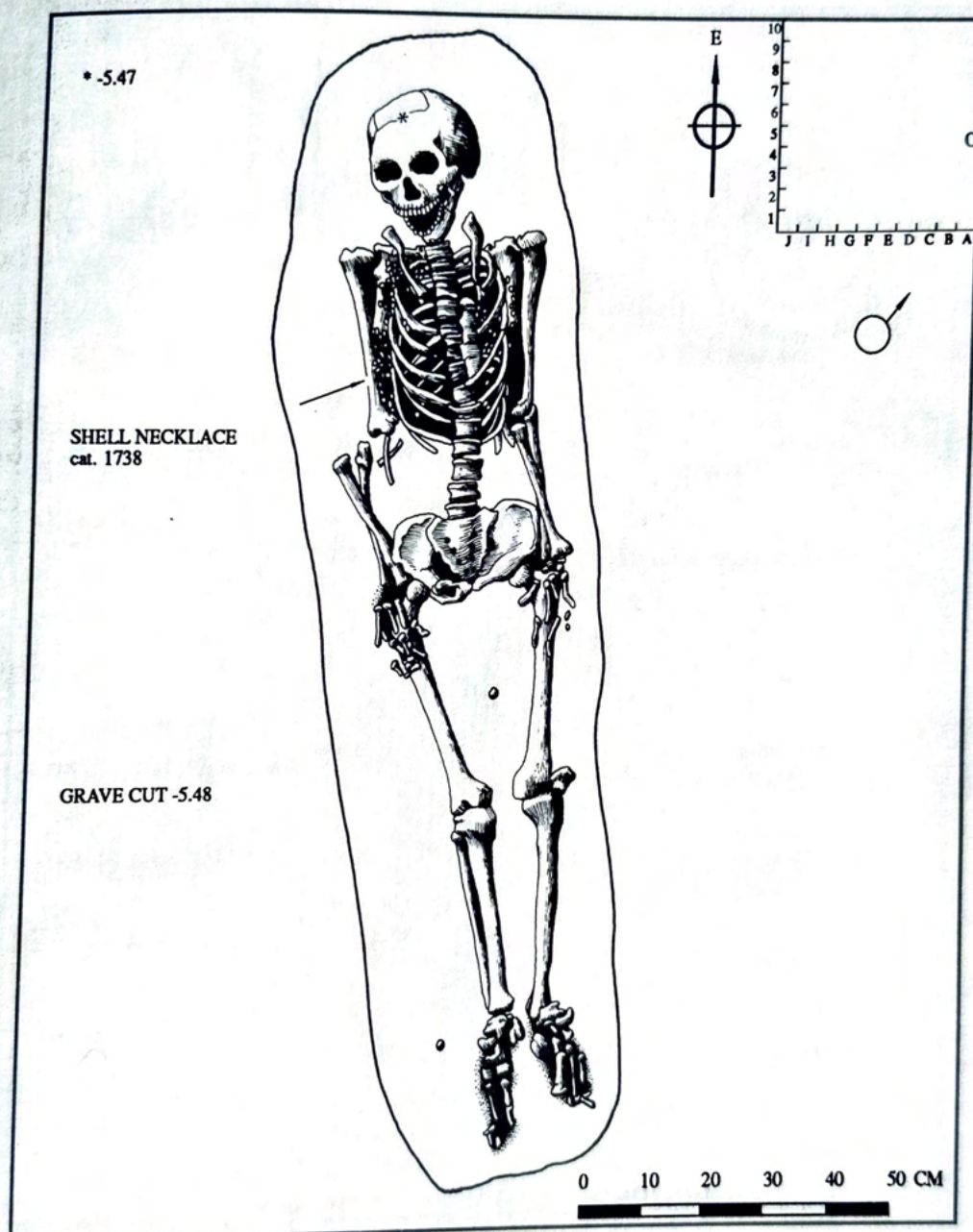


FIG. 119. Burial 129 cluster B stage 1 mortuary phase 2. The grave of this adult male was found 1.50m to the left of B.141 and it was cut 8cm higher at 5.48m. The grave was 20cm deep. The body was placed in a supine position with the head pointing almost due east. It was covered in red ochre. 353 barrel-shaped shell beads were found, disposed in a two-stringed necklace (cat. 1738). No evidence for *tapa* cloth has been found, but the body was almost certainly wrapped in a perishable material because the bones of the arm were found close to the upper torso and the foot bones were placed forward in a manner suggesting binding of some sort

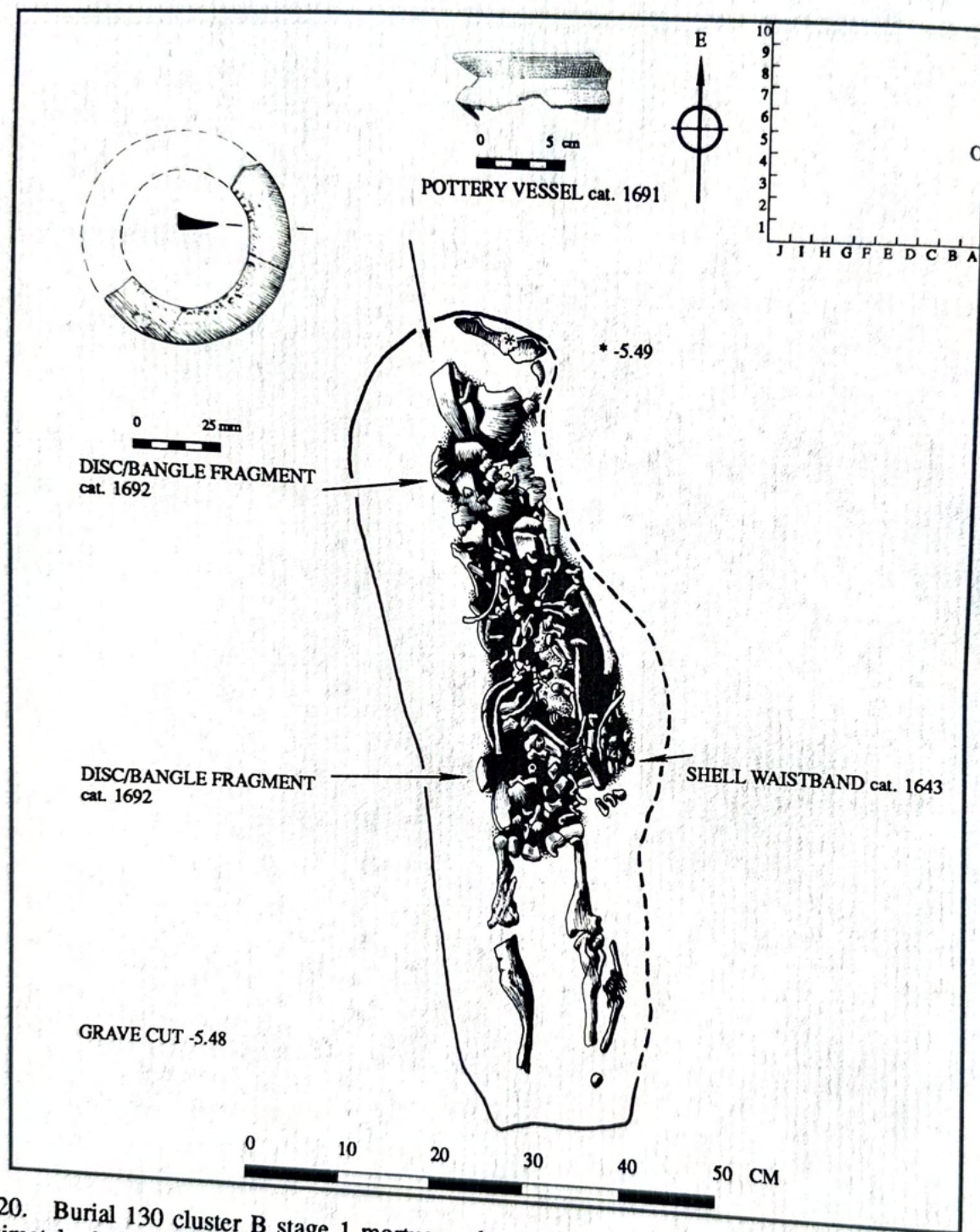


FIG. 120. Burial 130 cluster B stage 1 mortuary phase 2. The remains of this infant were interred at approximately the same time as the remains in B129, and they lie adjacent to each other, with the infant at the adult male's right shoulder. Red ochre covered the whole body, underlying fragments of *tapa* cloth. The fabric ran longitudinally up the body and over the pot which lay beyond the head, confirming that both the body and associated grave goods were packaged in fabric before interment. A pottery vessel lay beyond the head (cat. 1691) and a belt of barrel-shaped shell beads was found round the waist (cat. 1643). Two fragments of a disc/bangle made from a large fish vertebra were found, one near the head and the other near the right wrist (cat. 1692).

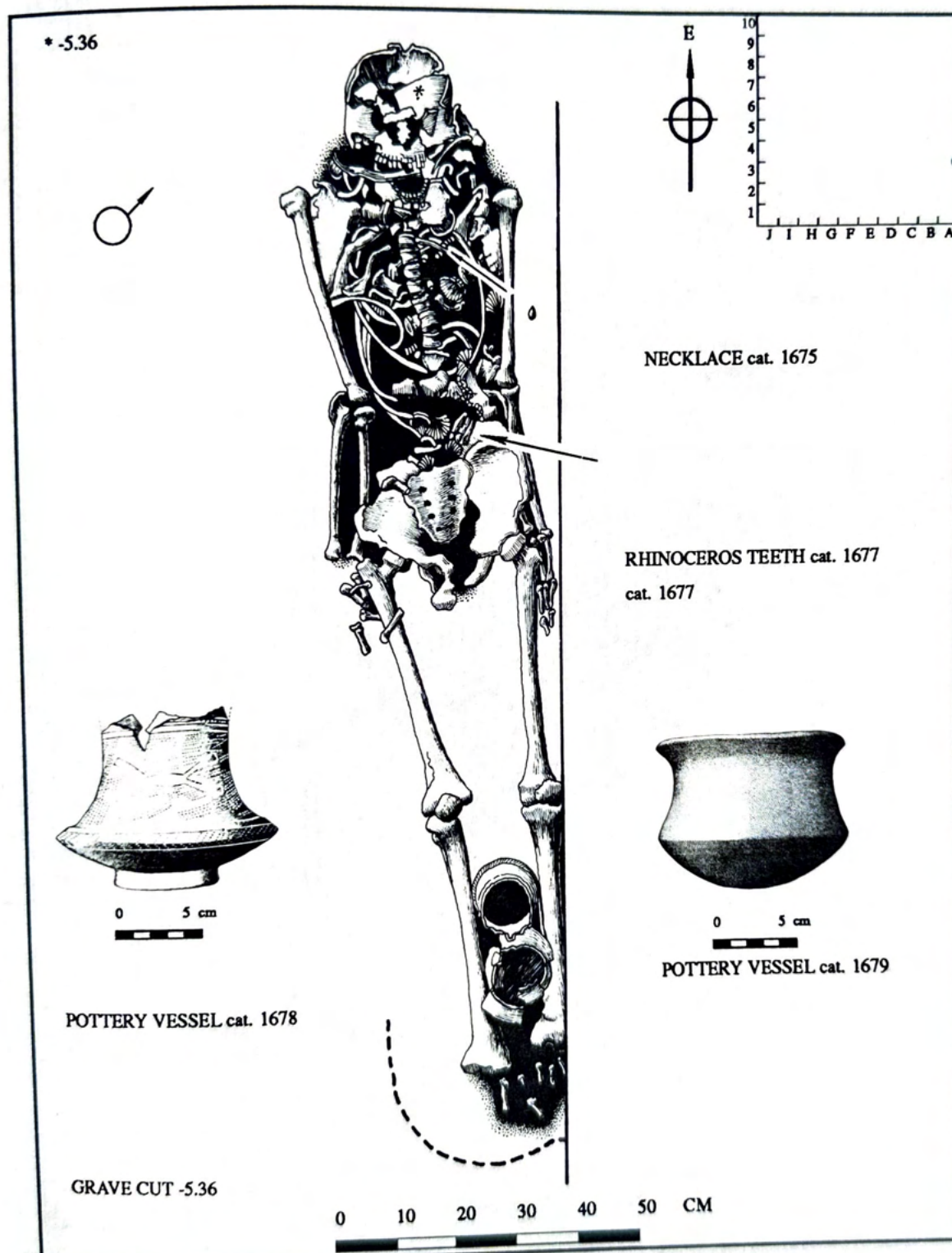


FIG. 121. Burial 120 cluster B stage 1 mortuary phase 2. This burial was found lying immediately alongside and just overlapping B129, but it was slightly later, the grave being 12cm higher. The body was covered in red ochre. Two whole pots (cats. 1678-9) were found between the calves, while a rhinoceros tooth was found over the abdomen (cat. 1677). A shell necklace made of barrel-shaped and small disc beads was found (cat. 1675). One pot contained some beads and *Anadara* shellfish

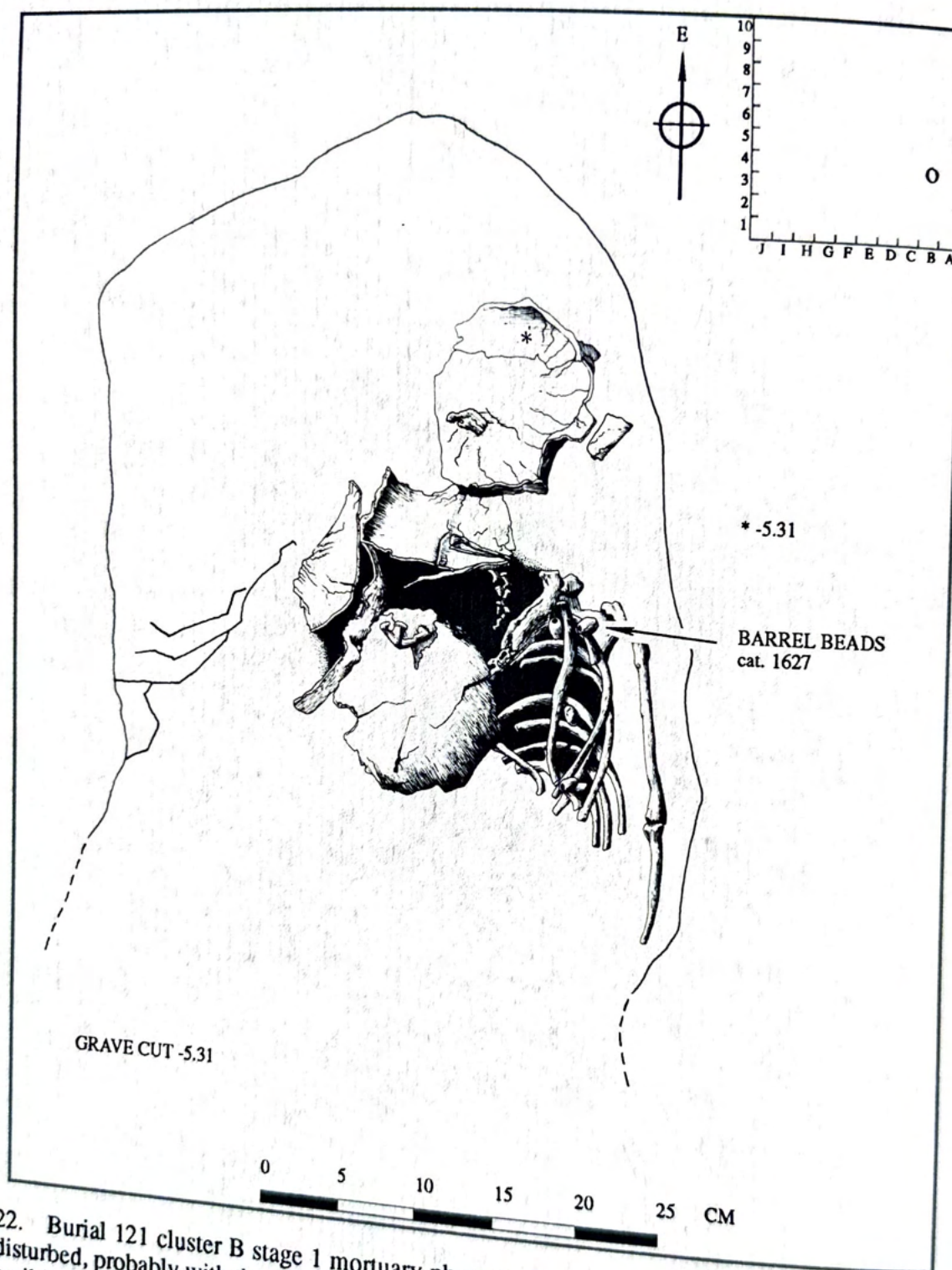


FIG. 122. Burial 121 cluster B stage 1 mortuary phase 2. The bones of this infant burial had been very badly disturbed, probably with the digging of a pit into the grave from a depth of 5.19 down to 5.55m. It is also possible that the grave for B94, which lies adjacent, resulted in further disturbance. The body lies at a depth of 5.47m, the grave cut being encountered at 5.31m. The body had been covered in red ochre, and seven barrel-shaped shell beads were found over the rib bones (cat. 1627)

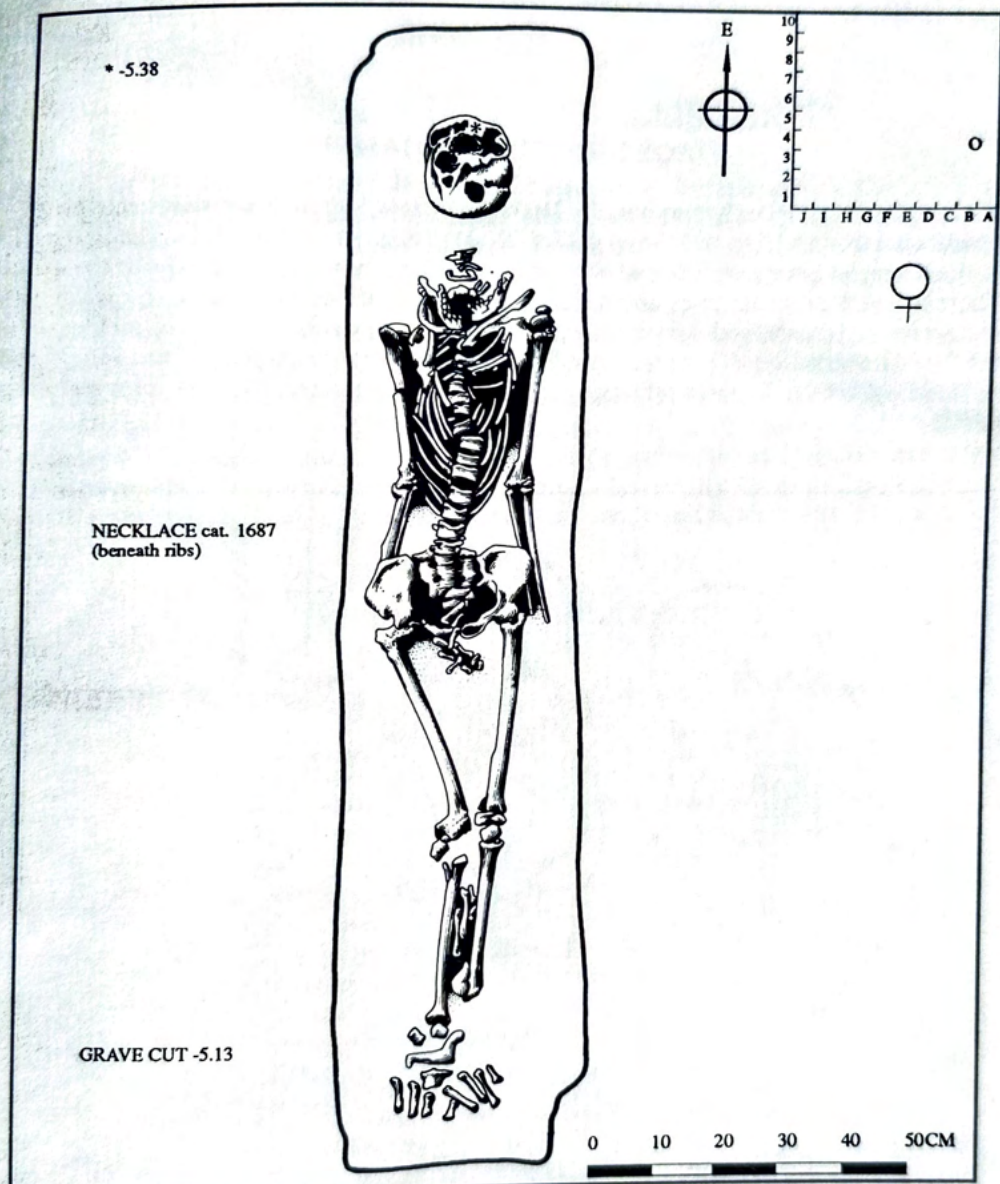


FIG. 123. Burial 94 cluster B stage 1 mortuary phase 2. The body of an adult female was found covered in red ochre and laid on the back with an orientation due east. Apart from the skull, which had fallen back from the vertebrae, the skeleton was in articulation. The disposition of the bones of the forearms and legs suggested a form of binding. Grave goods include a shell necklace made of about 55 short barrel-shaped beads (cat. 1687), a perforated shell disc beneath the ribs (cat. 1688) and a fragment of burnishing stone (cat. 2297).

STAGE 2 MORTUARY PHASE 3

This stage is represented by only two burials. Both are infants buried at the same time in separate, shallow graves cut from 4.14 m (B51) and 4.17m (B52) respectively (Fig. 124). The heads pointed to the north. No grave goods were found with them, nor was there any evidence for the use of red ochre. There is a vertical distance of about 1m between the last interment of cluster B during MP2 and these two infant burials, and during the intervening period a substantial shell midden accumulated over the MP2 structure. There may not be any cultural link between the two infants and the previous burials of cluster B, since infants were from time to time buried away from main clusters during MP2.

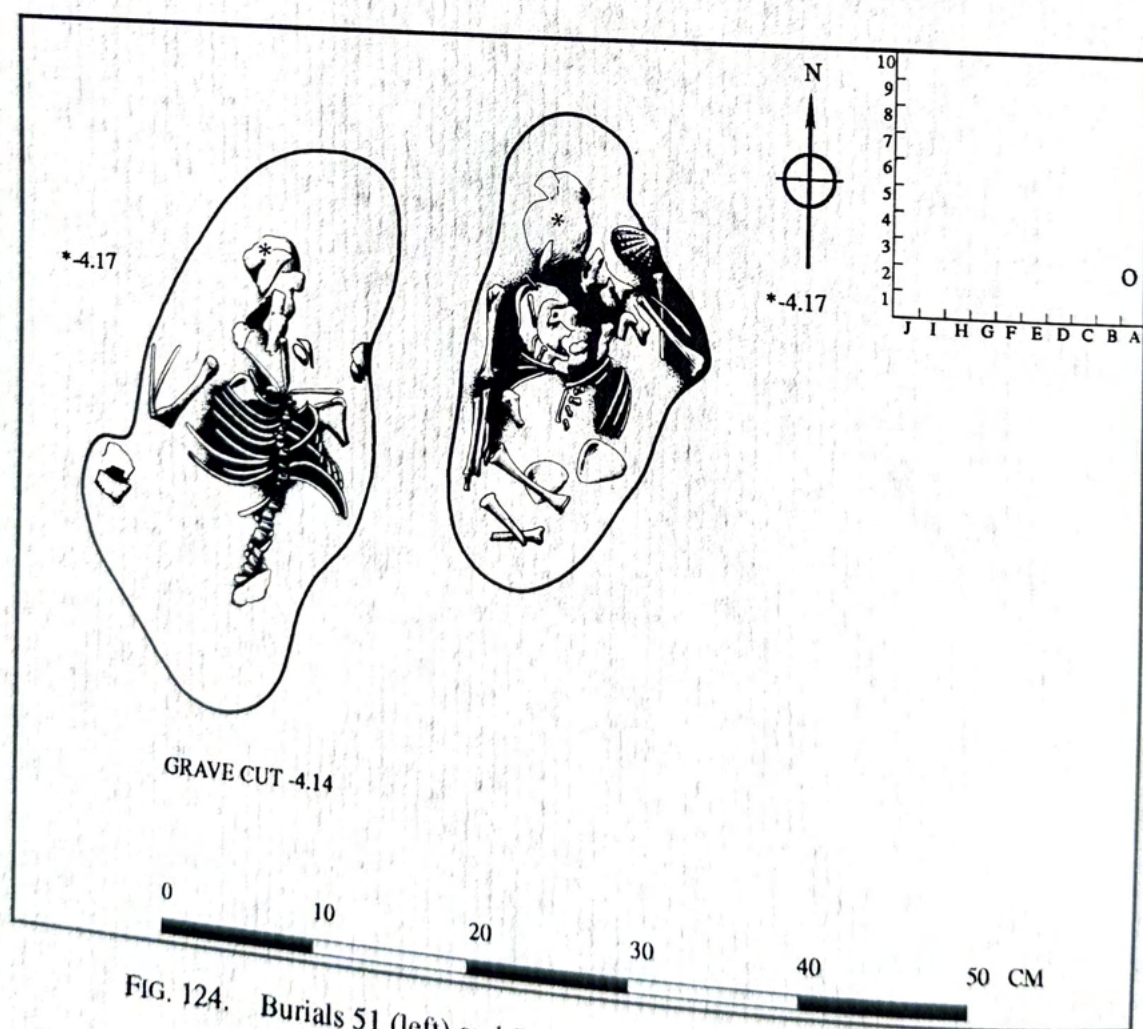


FIG. 124. Burials 51 (left) and 52, cluster B stage 2 mortuary phase 3

VI. BURIAL CLUSTER C

BURIAL cluster C provides the longest sequence of burials ascribed to any cluster at Khok Phanom Di. The earliest was interred at a depth of 5.54m below datum, and the latest at a depth of 1.30m (Fig. 126). This series also reveals virtually uninterrupted mortuary activity, and close inspection of the interments and associated material culture discloses changes in the ritual associated with death.

During MP2, the remains of eleven individuals were recovered, the grave cuts ranging over a vertical distance of 45 to 50cm. The earliest was cut from a depth of 5.54m and the latest from 4.90m. Detailed consideration of the sequence reveals three stages in the accumulation of graves in this cluster. The first (Fig. 125) included the graves of a child and a young adult female (burials 145 and 140), interred at about the same time beside each other and on the same alignment. Both graves were cut into an earlier shell midden. Only two postholes were dug in the vicinity of the burials at the time of burial, but a circular hearth was found at the same level and 30cm north of B145.

STAGE 1 MORTUARY PHASE 2

TABLE 19: *The mortuary goods, ages and sexes of burials from cluster C stage 1 mortuary phase 2*

	B140	B145
Age	17	8
Sex	Female	-
Approx. number of children	1-2	-
Orientation	75°	75°
Depth of grave cut below datum (m)	5.54	5.53
Red ochre	p	p
Tapa fabric	p	-
Disc-shaped shell beads	610	-
Polished stone adze	1	-
Worked shell	1	-

Note: p = present

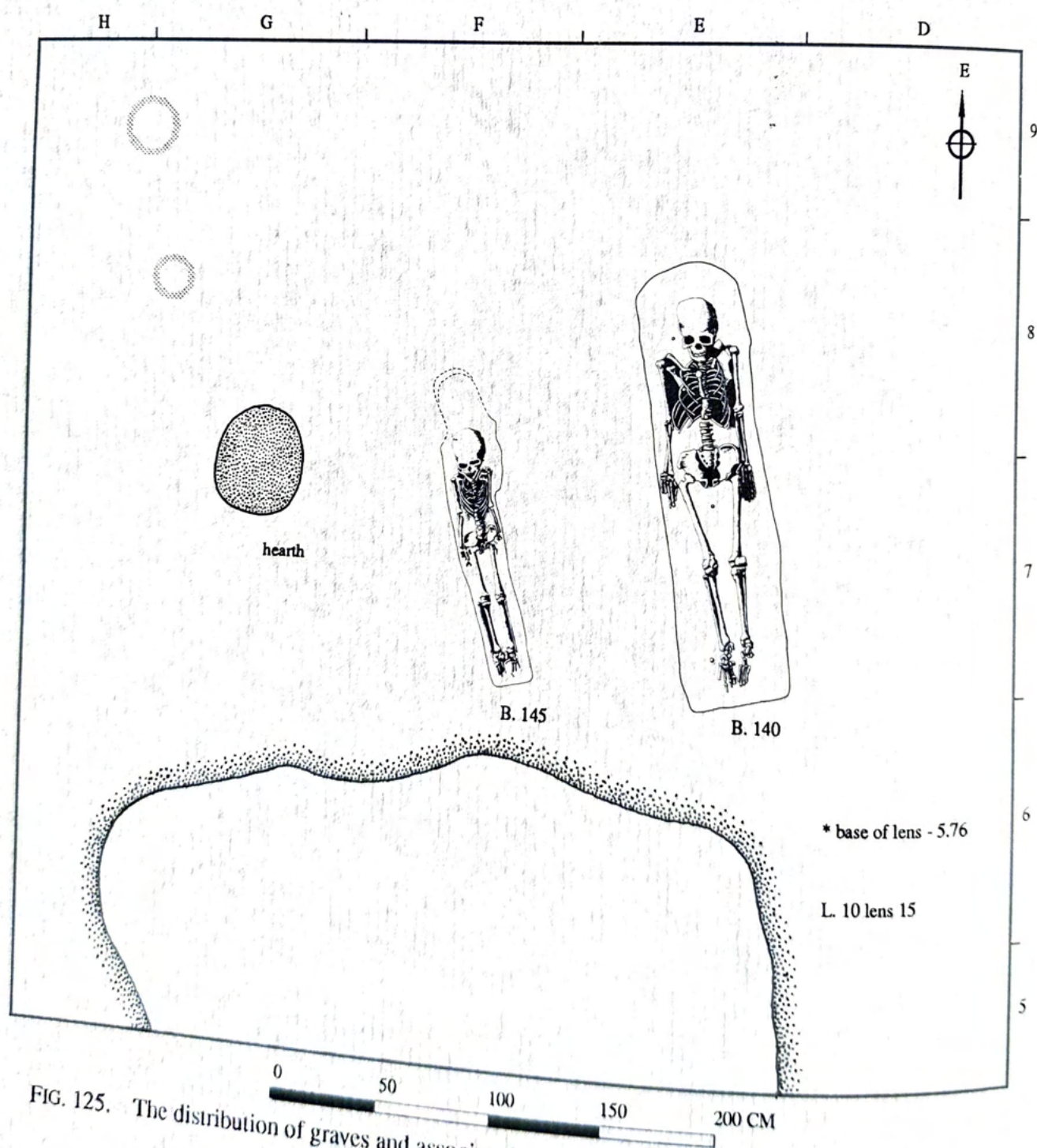


FIG. 125. The distribution of graves and associated features of cluster C stage 1 mortuary phase 2

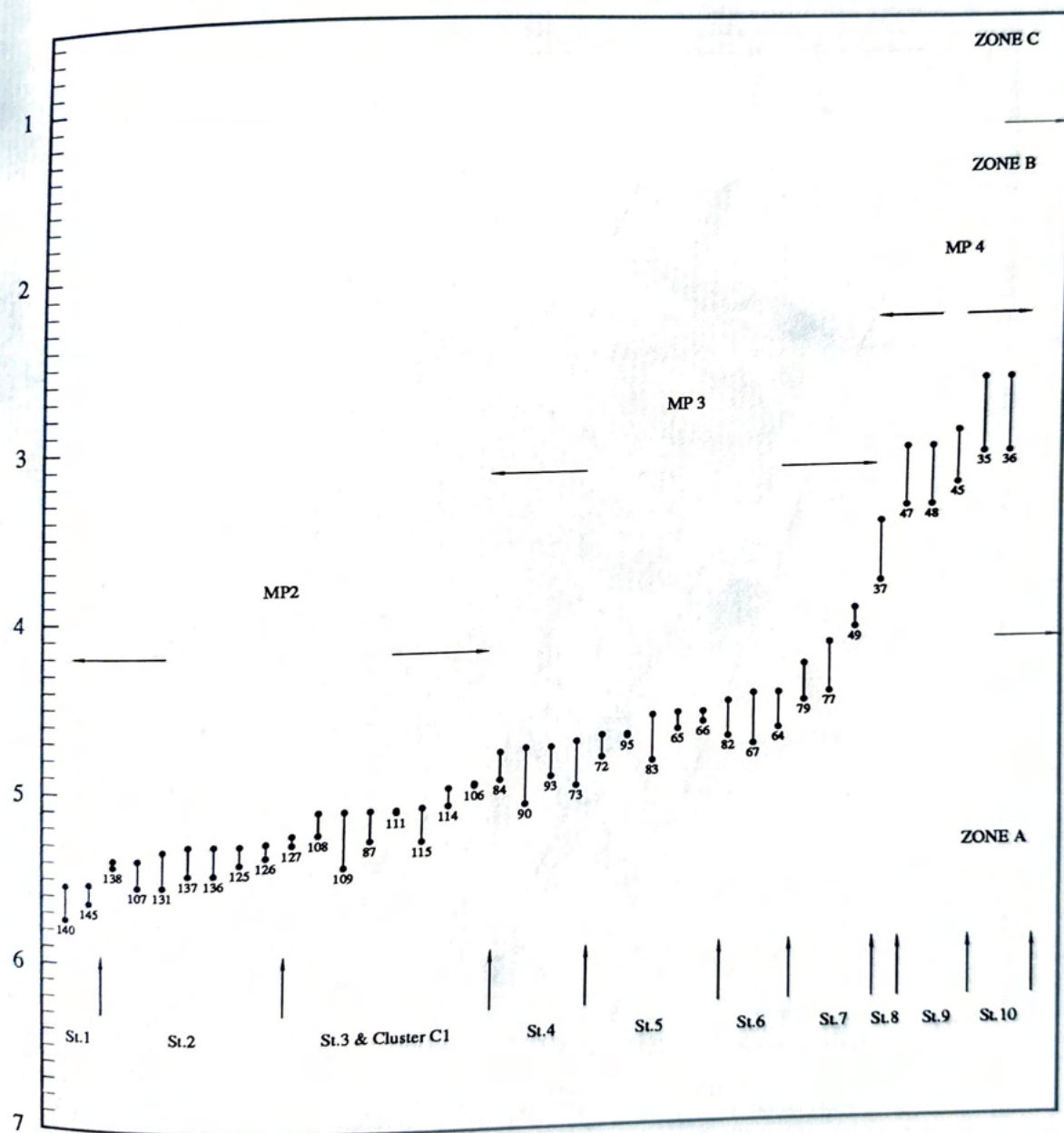


FIG. 126. The distribution of burials belonging to cluster C. The upper mark for each burial represents the depth in m below datum of the grave cut and the lower, the depth of the human remains. The left-hand scale shows the depth in metres below datum

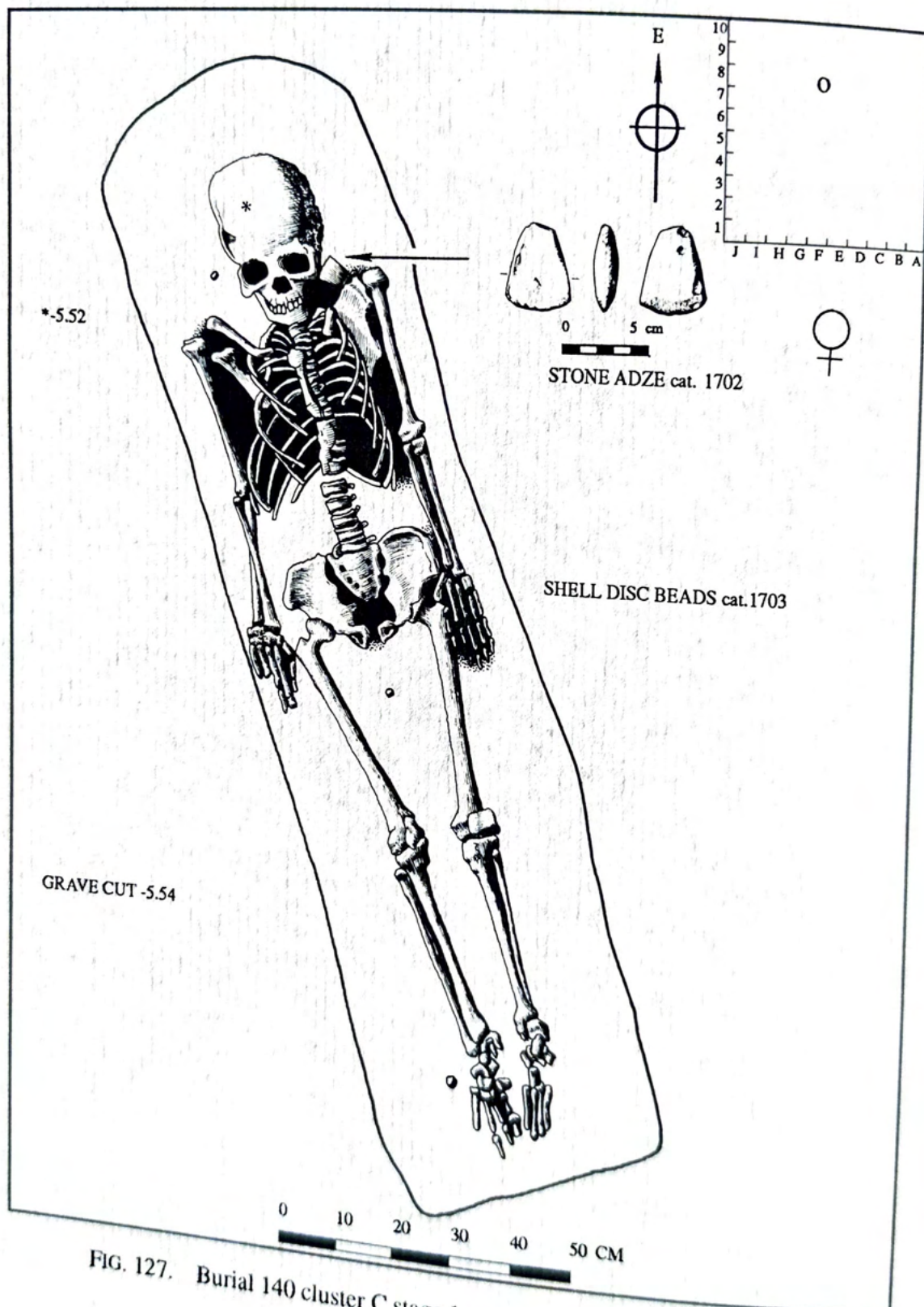


FIG. 127. Burial 140 cluster C stage 1 mortuary phase 2. (See Fig. 128)

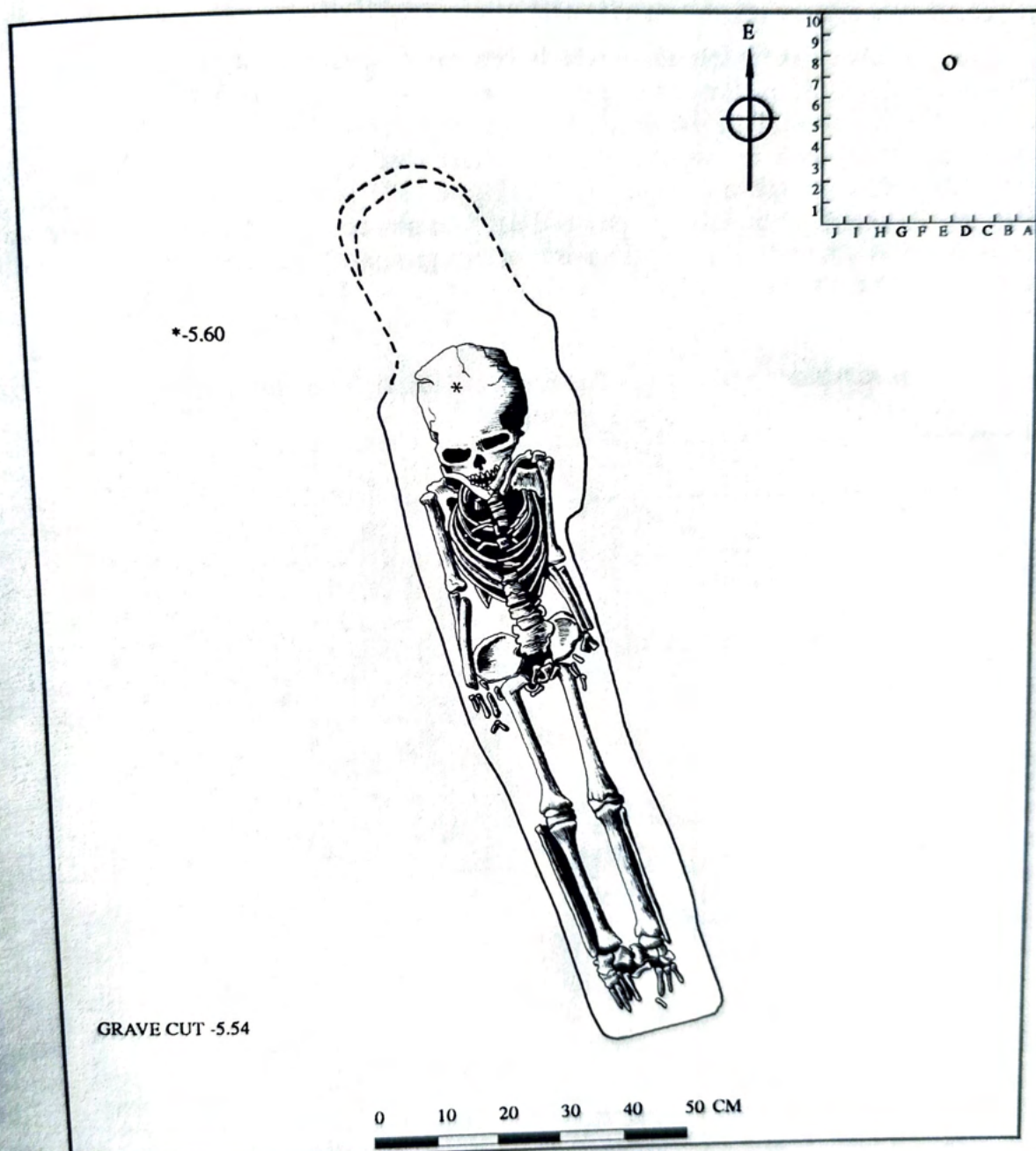


FIG. 128. Burial 145 cluster C stage 1 mortuary phase 2. These intact burials, B140 a young female and B145 a child, were laid out supine with the hands beside the body. The bones were covered in red ochre. Burial 140 was associated with a polished stone adze (cat. 1702) at the left shoulder, a shell disc bead necklace (cat. 1703), and a shell cutting implement (cat. 1753), found during the cleaning of the skeleton. The child was not associated with grave goods

STAGE 2 MORTUARY PHASE 2

The second stage involved six burials, all of which were interred at about the same time, there being a vertical distance of only 9cm between all the grave cuts involved. There is an adult male (B131), with the unusual orientation with the head to the north. Burial 107 contained an adult female and the other four interments are all of children. In one case, a child and an infant were buried simultaneously in the same grave (burials 136-7). Burials 125 and 126 also involved infants. At the same time as this series of burials was proceeding, four pits containing shellfish were excavated in a group between 20cm and 130cm to the north of this group of five interments. Four postholes were also cut at this juncture (Fig. 129).

TABLE 20: *The mortuary goods, ages and sexes of burials from cluster C stage 2 mortuary phase 2*

	B107	B131	B125	B136	B137	B126
Age	40	25	0 m	0 m	5	0 m
Sex	Female	Male	-	-	-	-
Approx. number of children	1-2	-	-	-	-	-
Orientation	75°	0°	80°	80°	80°	85°
Depth of grave cut below datum (m)	5.38	5.33	5.30	5.30	5.30	5.29
Red ochre	p	p	p	p	p	p
Tapa fabric	p	p	p	p	p	p
Wooden bier	p	-	-	-	-	-
Disc shaped shell beads	-	-	2	-	-	3
Pottery vessel	-	-	1	-	-	-
Burnishing stone	1	-	-	-	-	-
Animal bone	p	-	-	-	-	-

Note: p = present, m = months

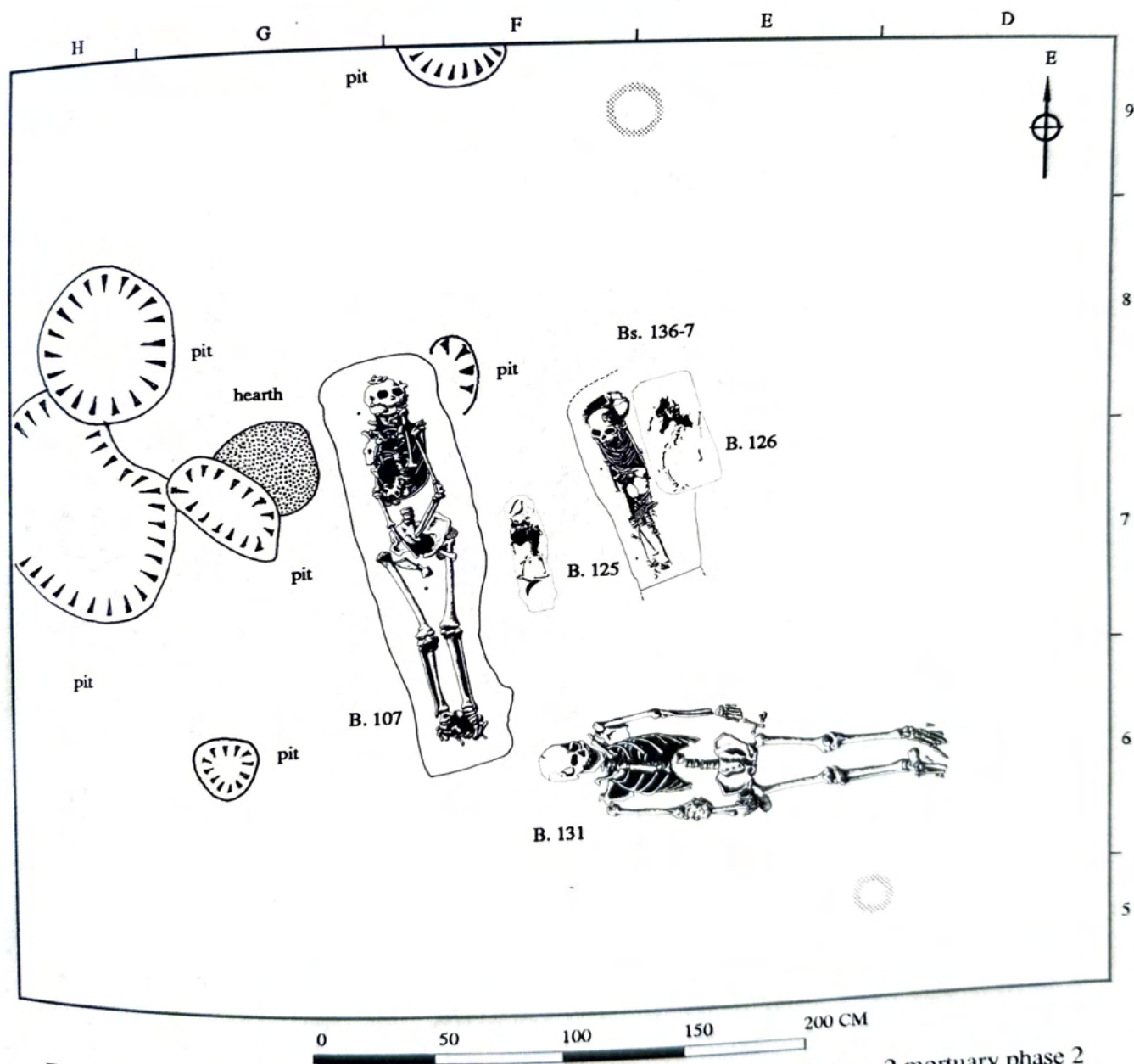


FIG. 129. The distribution of graves and associated features of cluster C stage 2 mortuary phase 2

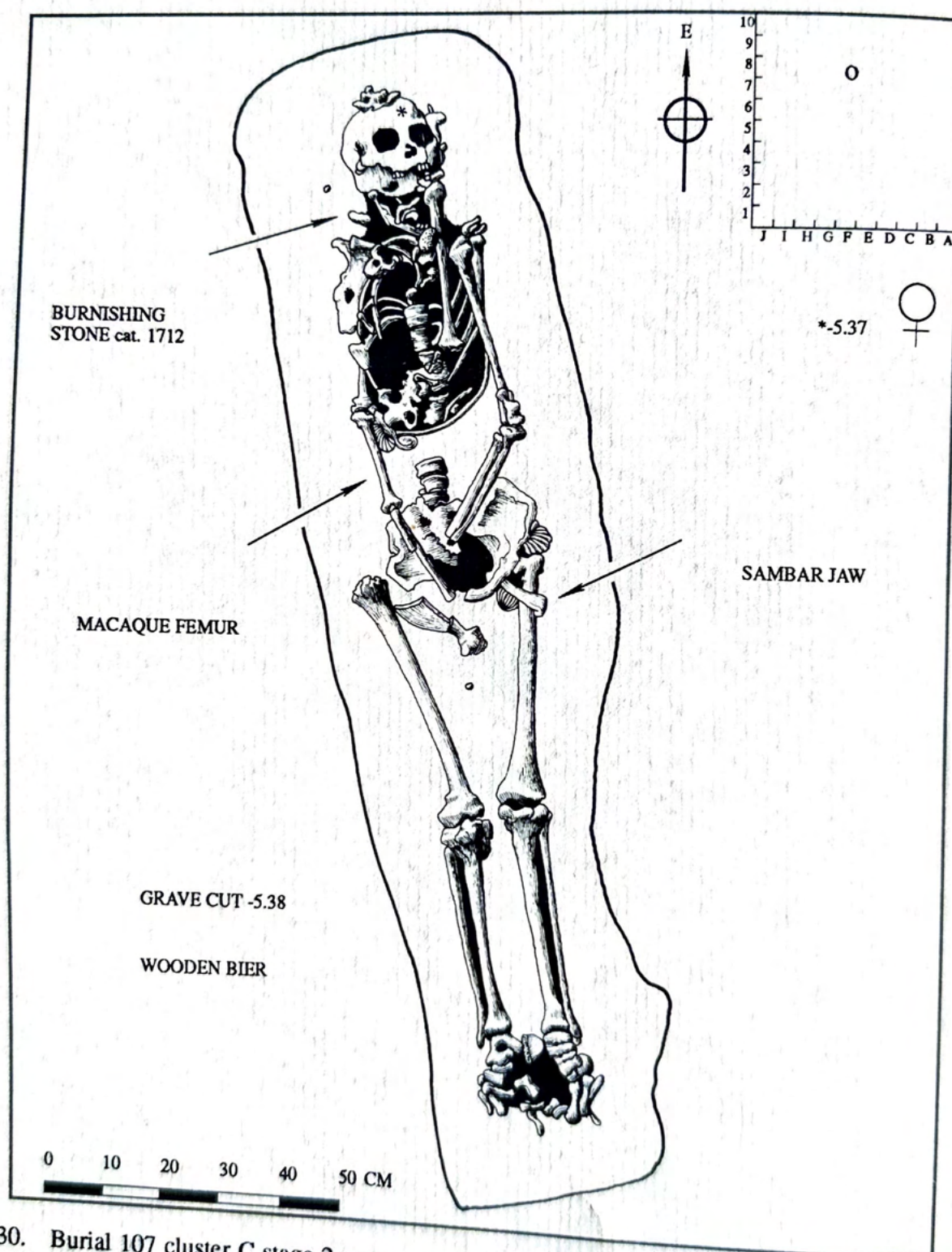


FIG. 130. Burial 107 cluster C stage 2 mortuary phase 2. This adult female had been wrapped in *tapa* cloth and rested on a wooden bier. The remains of wood were found under the whole skeleton. The grain of the wood ran in the same direction as the skeleton. Red ochre covered the skull and parts of the body. A burnishing stone was found to the right of the cranium (cat. 1712). The jaw of a sambar deer (*Cervus unicolor*) was found over the upper left thigh and a macaque (*Macaca* sp.) femur was located over the right forearm

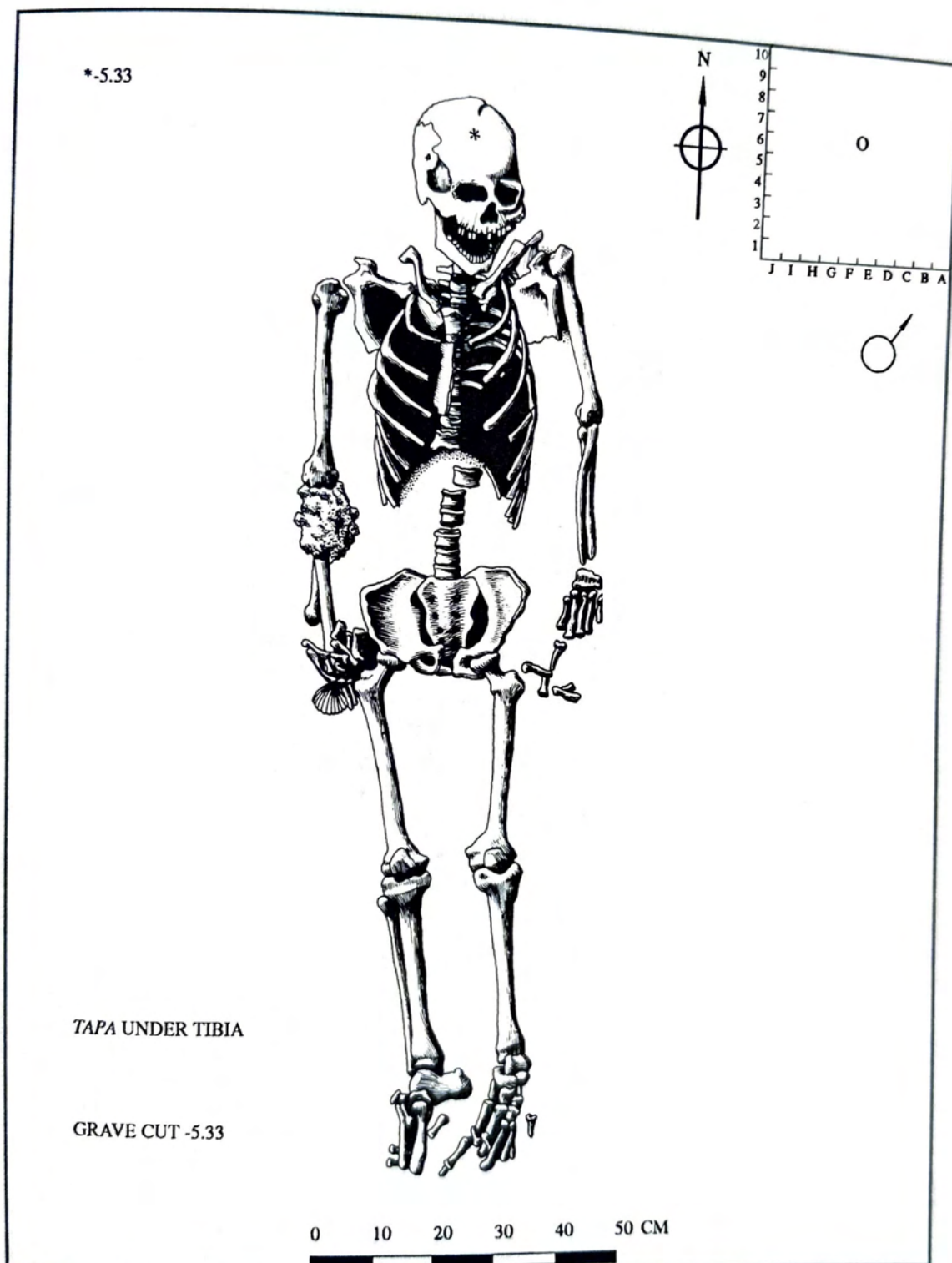


FIG. 131. Burial 131 cluster C stage 2 mortuary phase 2. This adult male burial was unusual in that it was orientated with the head to the north. Apart from the presence of red ochre over the whole corpse and some *tapa*, there are no grave goods. The grave survives to a depth of 21cm

EXCAVATION OF KHOK PHANOM DI

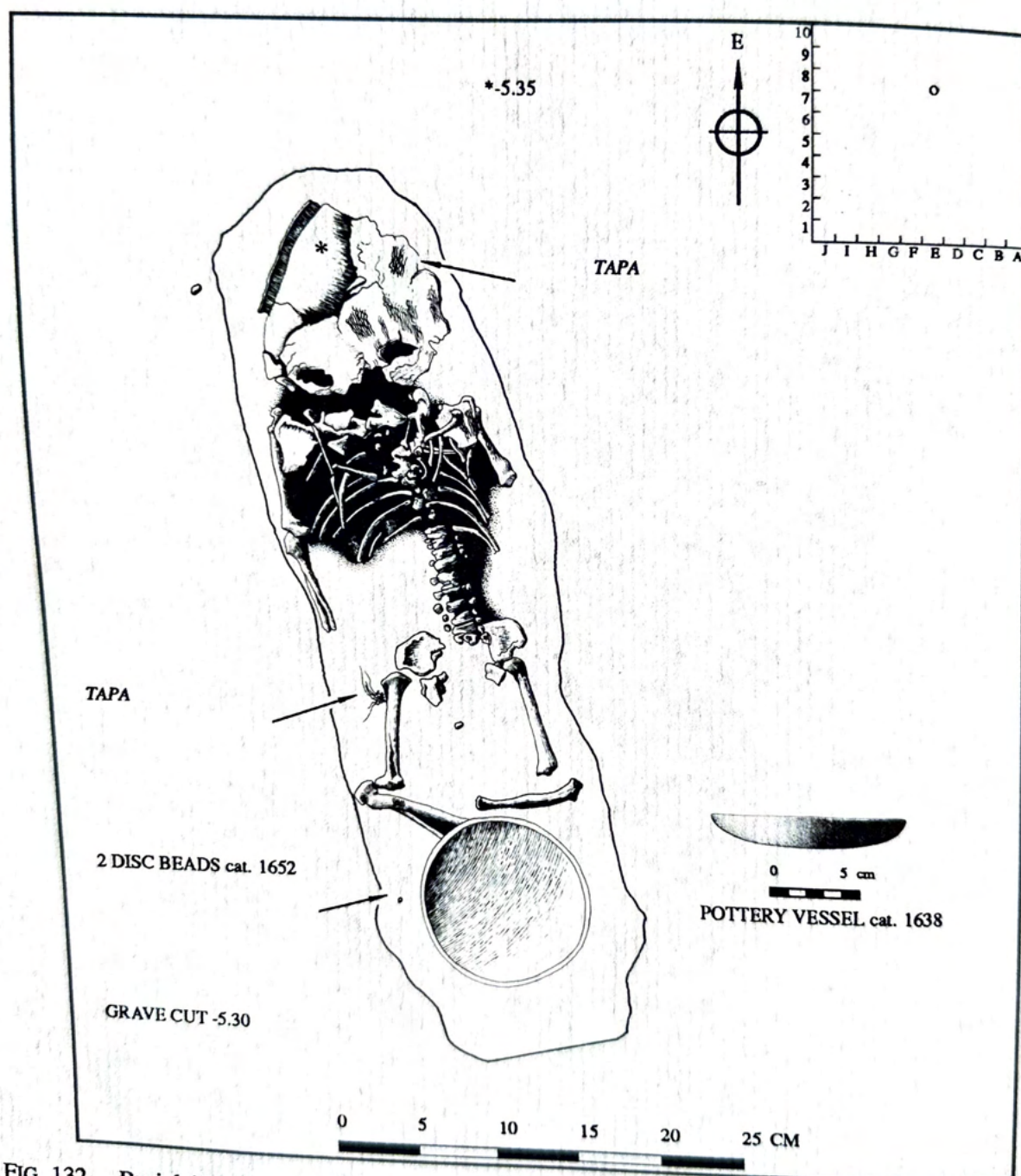


FIG. 132. Burial 125 cluster C stage 2 mortuary phase 2. This infant grave overlies B145 and was found 20cm higher. The infant was interred on its back with an orientation 10° north of east. Of all the burials in this cluster during stages 1-4, this is the only one to contain a pottery vessel (cat. 1638). It had been placed beyond the feet. Two shell-disc beads were also found in the area of the ankle (cat. 1652). The body was covered in red ochre and *tapa* was then wrapped round both the corpse and the pottery vessel. It was buried at the same time as burials 121 and 131

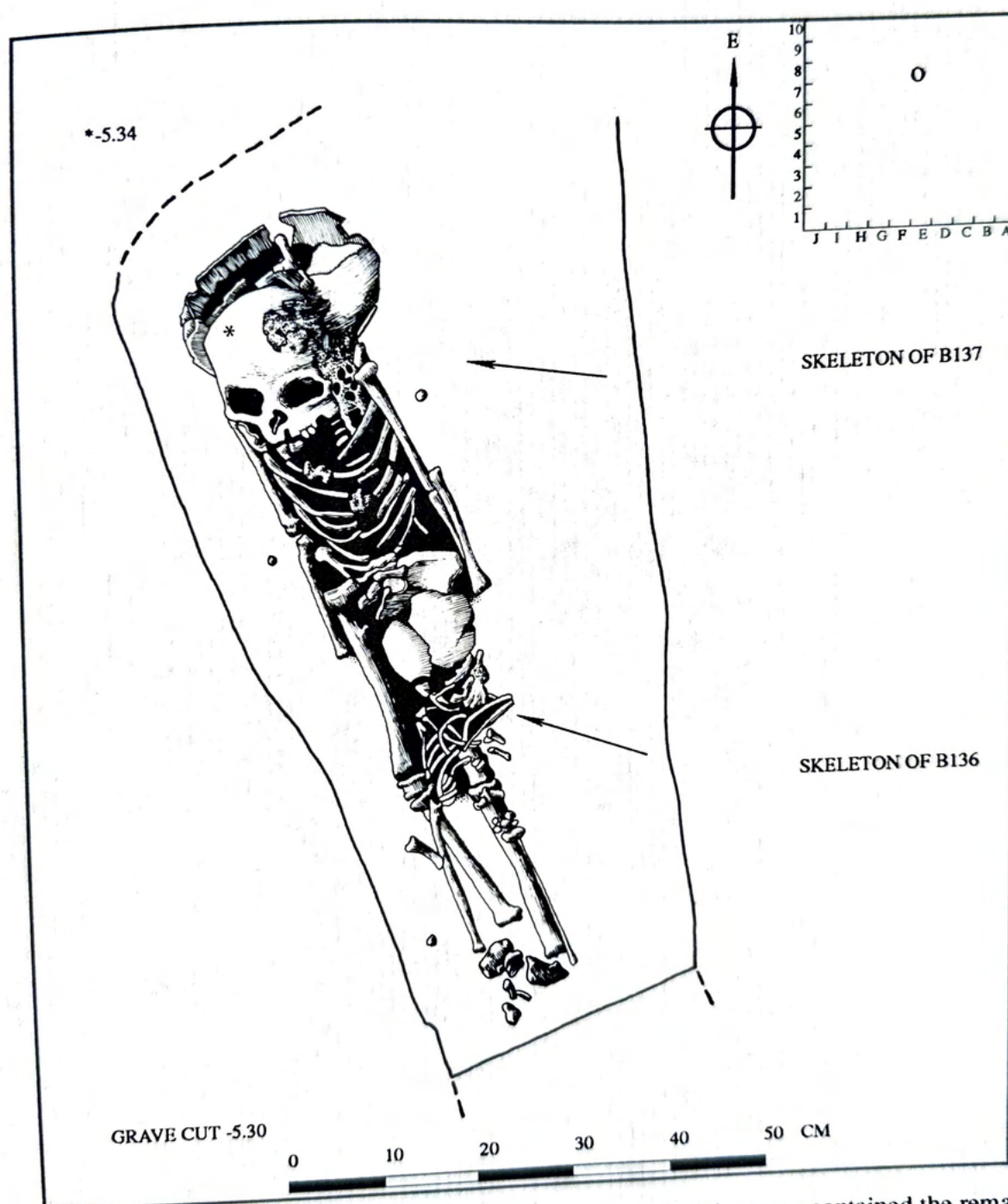


FIG. 133. Burials 136 and 137 cluster C stage 2 mortuary phase 2. The grave contained the remains of a child with an infant over its lower limbs. They had been covered in red ochre and wrapped in *tapa* but there were no other grave goods

EXCAVATION OF KHOK PHANOM DI

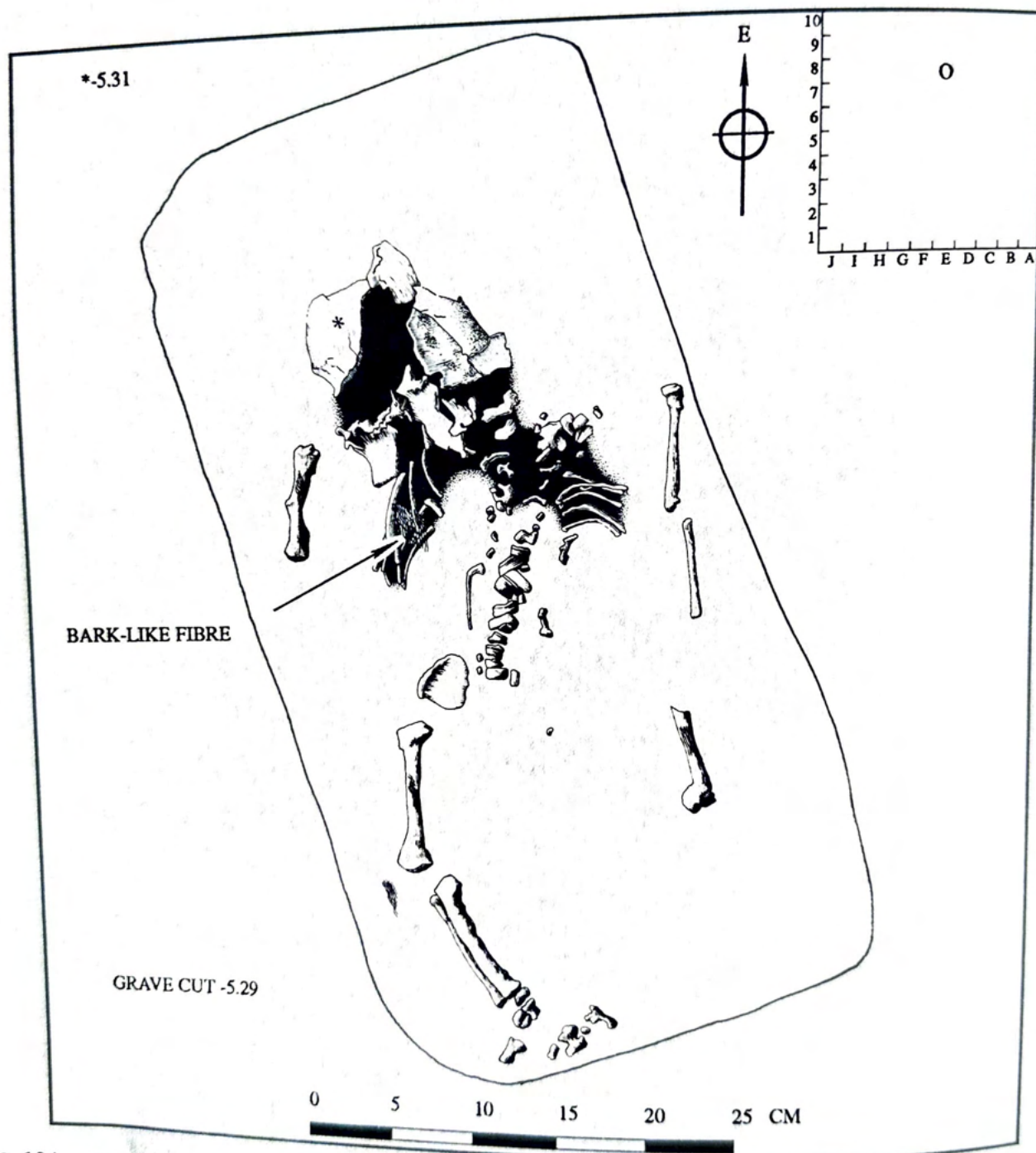


FIG. 134. Burial 126 cluster C stage 2 mortuary phase 2. This infant burial had been disturbed in antiquity, although most of the bones were still present in the grave. It was located next to and cut slightly into burials 136 and 137. The body was covered in red ochre, wrapped in *tapa* and laid on its back. Three shell-disc beads were recovered when lifting the burial, which was interred at about the same time as burials 121, 131, 125, 136 and 137.

STAGE 3 MORTUARY PHASE 2

Stage 3 saw three further burials. The first two were of an infant (B108) and an adult female (B109). Burial 106, another infant, was found directly above the woman's body such as to suggest interment in a scoop excavated into the grave itself. This infant burial had been very badly disturbed in prehistory. There was no sign of a grave cut, but the skull rested on a depth of 4.98m. Only these skull fragments, tibia and hip bones were recovered. No traces of red ochre were noted, nor could the orientation be ascertained. There was also a further episode of pit excavation. Two were dug into those associated with stage 2, and three others were located between 1.1 and 2.3m to the north of the foot of B109. Seven further postholes were dug after the last interment, and when layer 10 lens 2 was building up after this phase of mortuary activity was over, it ran round the burials, overlying only the grave of B131. This singular distribution of the edge of the midden is compatible with the existence of an above-ground structure round the mortuary area (Fig. 135).

TABLE 21: *The mortuary goods, ages and sexes of burials from cluster C stage 3 mortuary phase 2*

	B108	B109	B106
Age	0 m	31	6 m
Sex	-	Female	-
Approx. number of children	-	0	-
Orientation	85°	80°	-
Depth of grave cut below datum (m)	5.12	5.12	4.98
Red ochre	p	p	-
Disc-shaped shell beads	-	1588	-
Burnishing stone	-	2	-
Clay pellet	-	1	-
Clay cylinder	-	1	-
Clay net weight	-	1	-

Note: p = present, m = months

EXCAVATION OF KHOK PHANOM DI

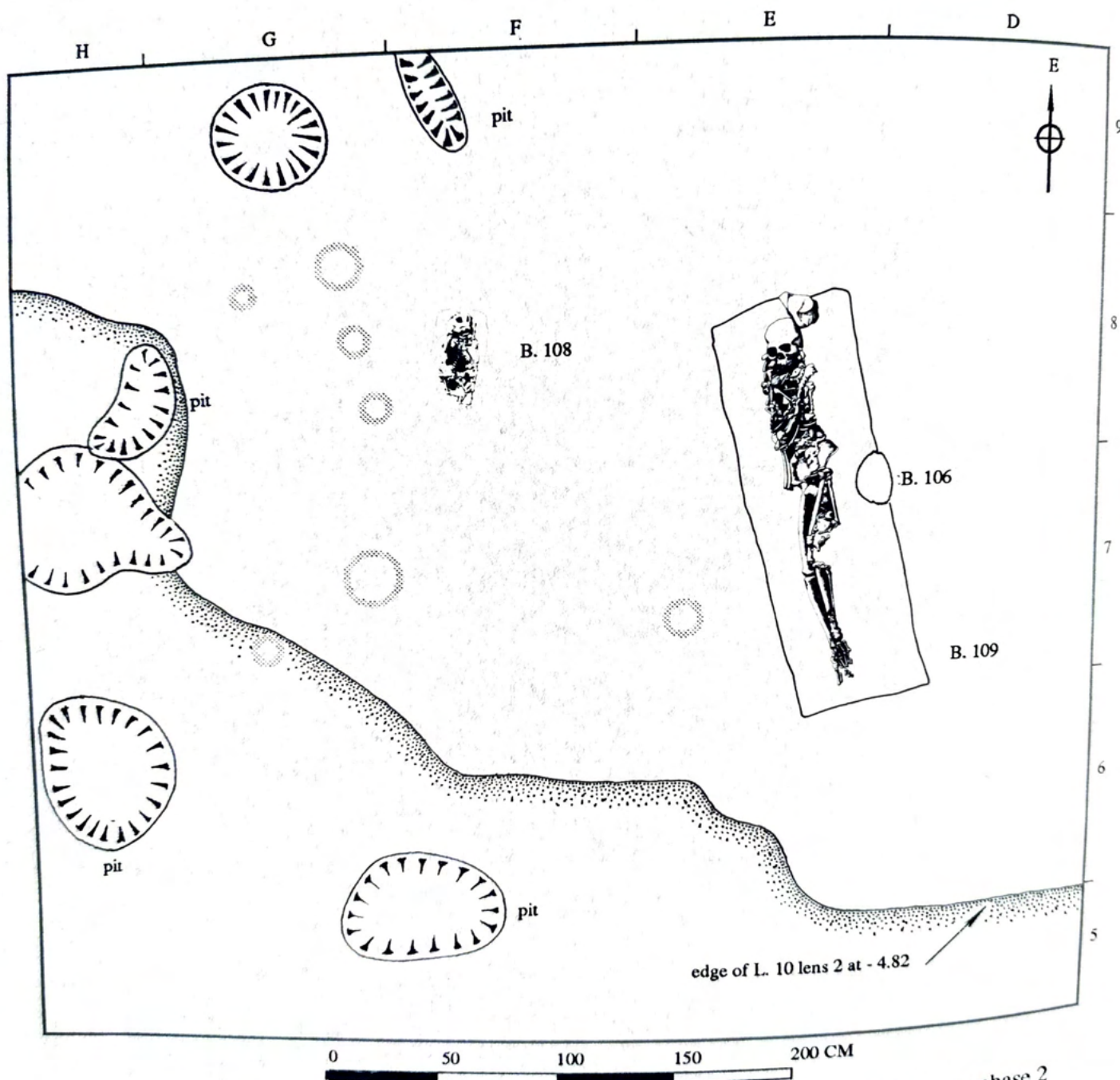


FIG. 135. The distribution of graves and associated features of cluster C stage 3 mortuary phase 2

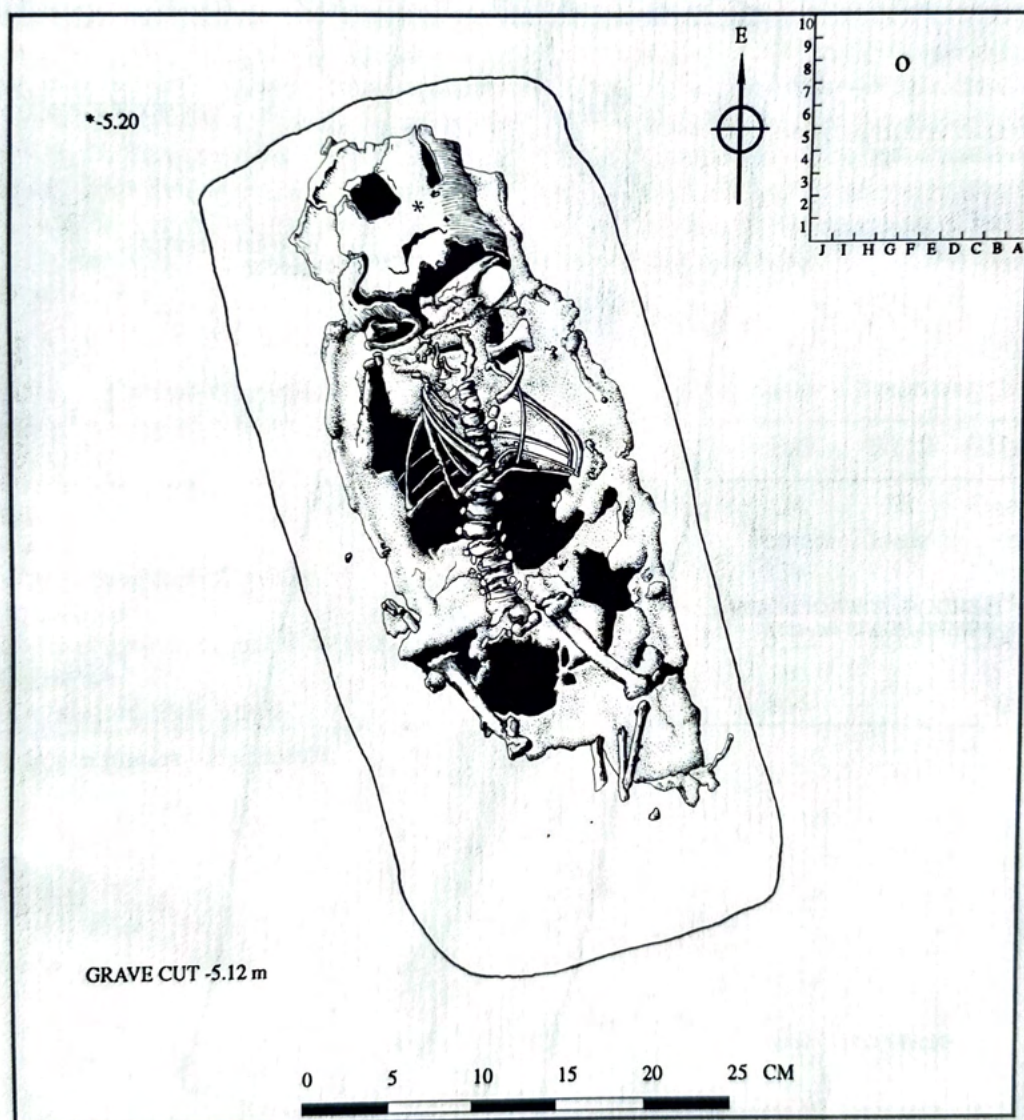


FIG. 136. Burial 108 cluster C stage 3 mortuary phase 2. This infant burial was interred at about the same time as burials 94 and 109. The body was laid out in a supine position with the legs slightly flexed. It was covered in red ochre but, on this occasion, no traces of *tapa* were noted. There were no other grave goods

EXCAVATION OF KHOK PHANOM DI

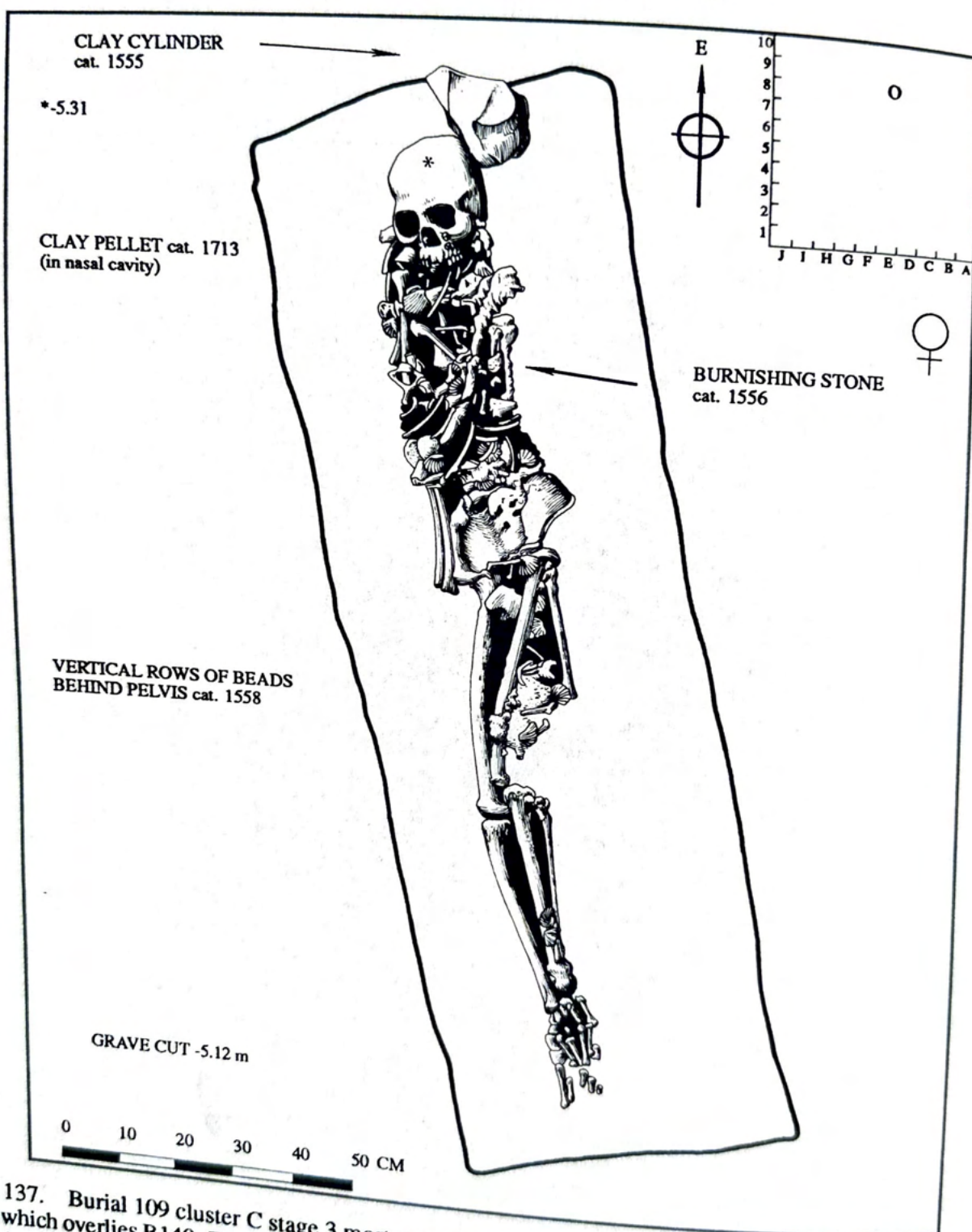


FIG. 137. Burial 109 cluster C stage 3 mortuary phase 2. This adult female burial was cut into a charcoal lens which overlies B140. The body had been covered in red ochre and the limbs may well have been bound and tied prior to interment. Several vertical rows of shell-disc beads behind the pelvis suggest some form of garment round the waist which had been embroidered with shell beads (cat. 1558). There was a clay cylinder, representing stored clay, immediately behind the head (cat. 1555), and a burnishing stone over the left forearm (cat. 1556). A clay pellet was found in the nasal cavity (cat. 1713)

BURIAL CLUSTER C1: MORTUARY PHASE 2

This cluster is closely linked in space and time with cluster C, but as may be seen in Fig. 138, it comprises a distinct, parallel row. Therefore it is given its own identity as cluster C1. There are six burials in this cluster, four infants, an adult male and an adult female. On an east-west axis, cluster C1 aligns with clusters A and C, but on a north-south axis the alignment is with clusters D and E. Burial 138 is the earliest in this cluster and it was interred slightly later than the earliest burials in clusters A to D. The grave was dug at the same time as a circular pit which is located only 8cm to the south. Two further infants were buried before the adult male and female were interred. An ashy lens was laid down, skirting the edge of grave 115, at the time of the interment of burials 115 and 87. The last burial, B114, was buried over the body of the adult male and within the area of the grave fill.

TABLE 22: *The mortuary goods, ages and sexes of burials from cluster C1 mortuary phase 2*

	B138	B127	B111	B87	B115	B114
Age	0 m	0 m	0 m	24	38	0 m
Sex	-	-	-	Female	Male	-
Approx. number of children	-	-	-	3+	-	-
Orientation	235°	75°	-	80°	80°	75°
Depth of grave cut below datum (m)	5.38	5.25	5.12	5.12	5.11	5.00
Red ochre	-	-	-	p	p	p
Disc-shaped shell beads	-	-	-	866	-	16

Note: p = present, m = months

EXCAVATION OF KHOK PHANOM DI

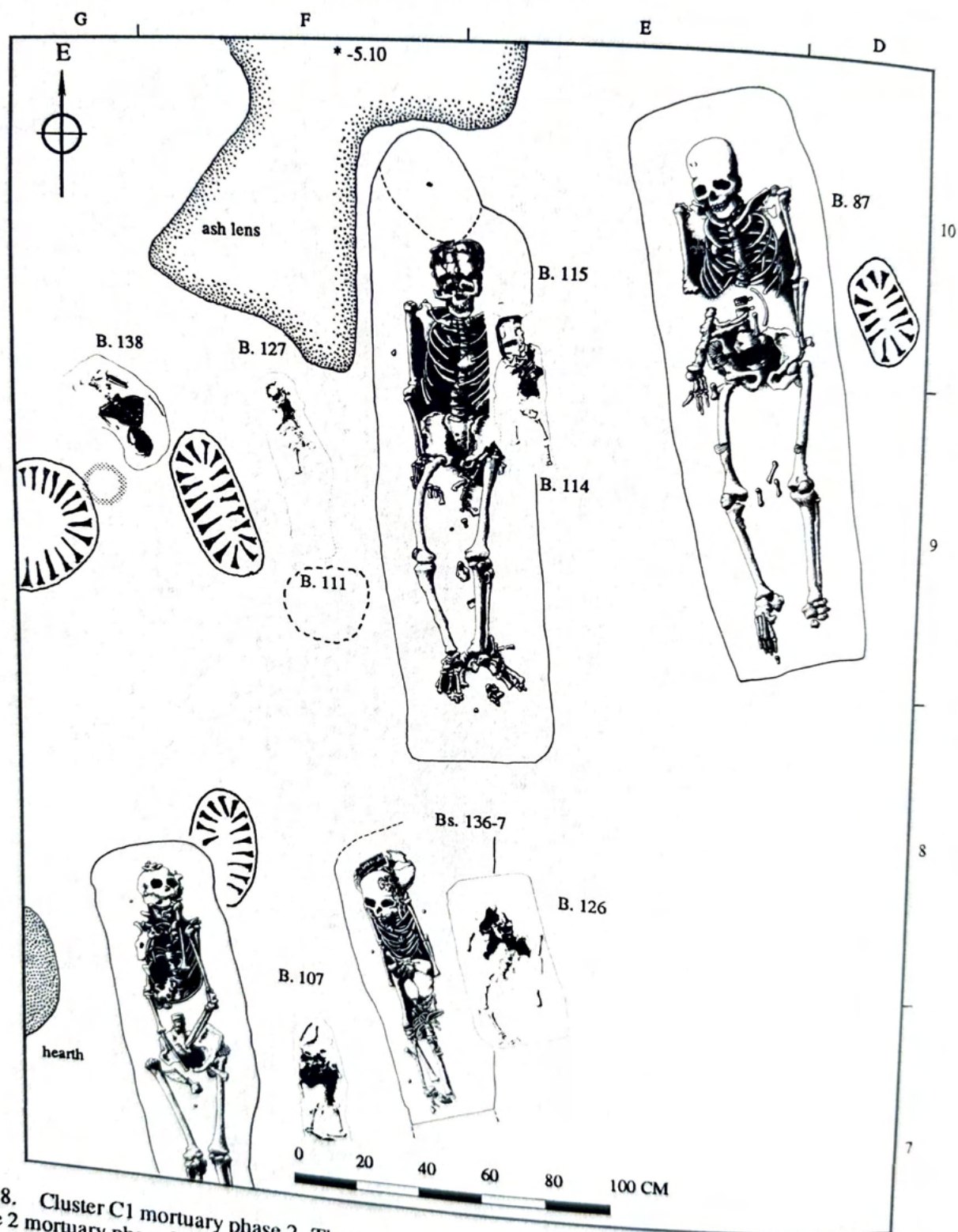


FIG. 138. Cluster C1 mortuary phase 2. The burials in the western part of the illustration belong to cluster C stage 2 mortuary phase 2. *: depth at this point below datum

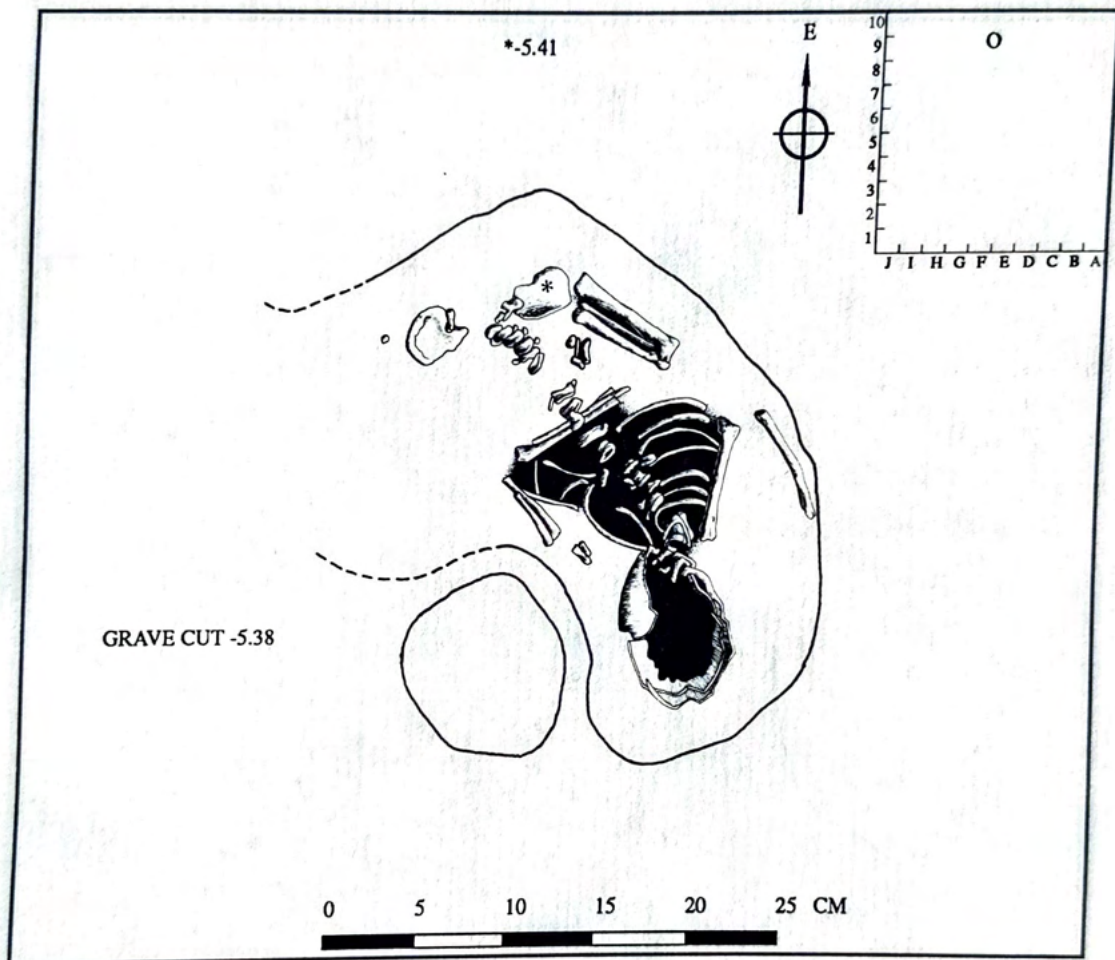


FIG. 139. Burial 138 cluster C1 mortuary phase 2. An infant burial interred at about the same time as burials 107, 125, 126, 131, 136 and 137 of the adjacent cluster C. It is unusual in that it was interred in a flexed position with the head pointing 35° south of west. The grave itself is very shallow, about 4cm deep, and is cut from 5.38m. Usually the interments at this level were found covered with red ochre and wrapped in *tapa* cloth, but this was not the case here

Burial 11 (not illustrated) contained the remains of a third infant. It was found at a depth of 5.12m. During the excavation, the ribs, vertebrae, tibia and fibula were accidentally disturbed during the lifting of B90 because the compacted soil joined the bones together. No evidence for grave goods, *tapa* or red ochre were encountered.

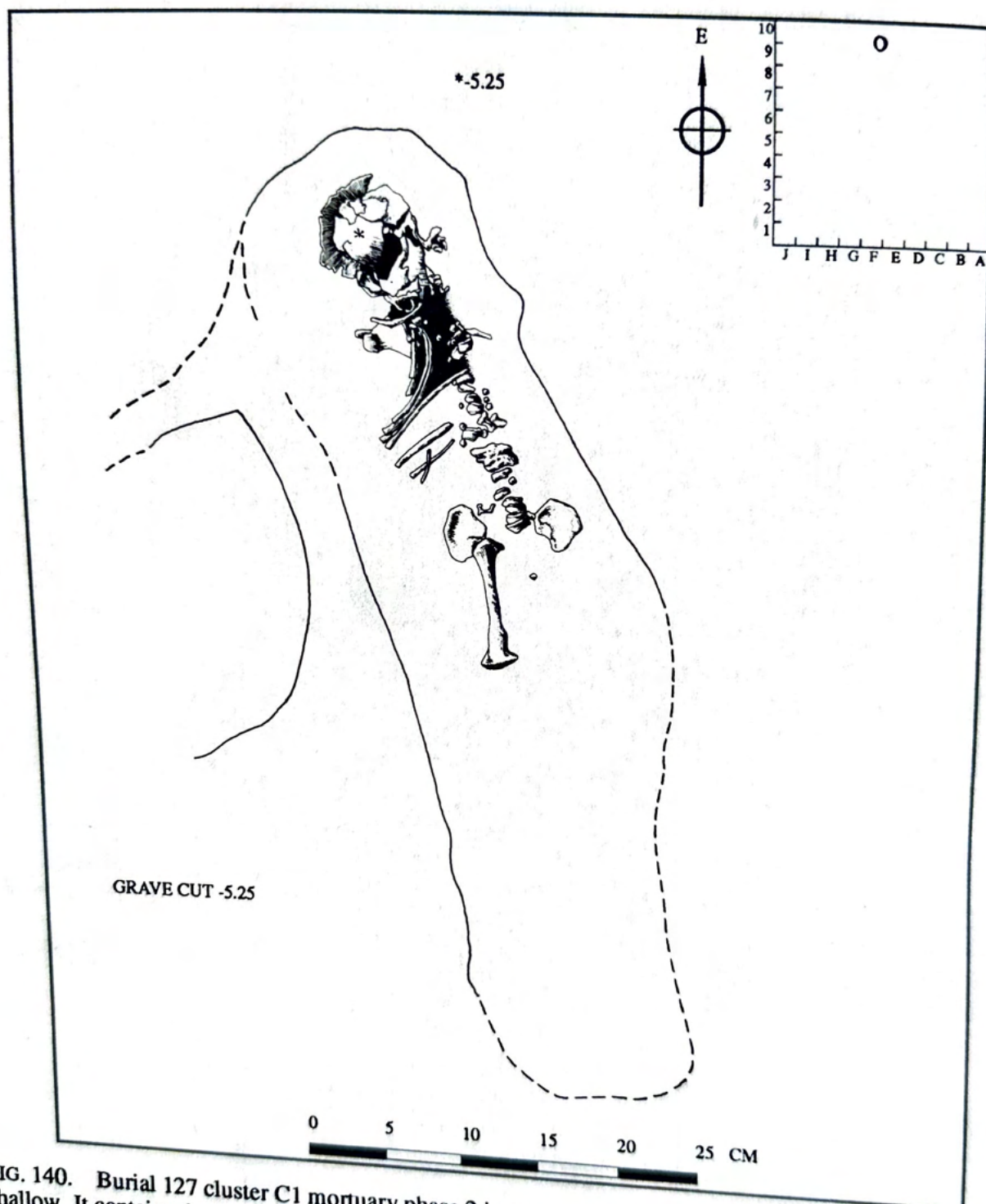


FIG. 140. Burial 127 cluster C1 mortuary phase 2 is encountered at a depth of 5.25m and, again, it is very shallow. It contains the remains of an infant, disturbed in antiquity. Most of the longbones are missing and the ribs are disoriented. No evidence for the use of ochre or *tapa* were found

BURIAL CLUSTER C

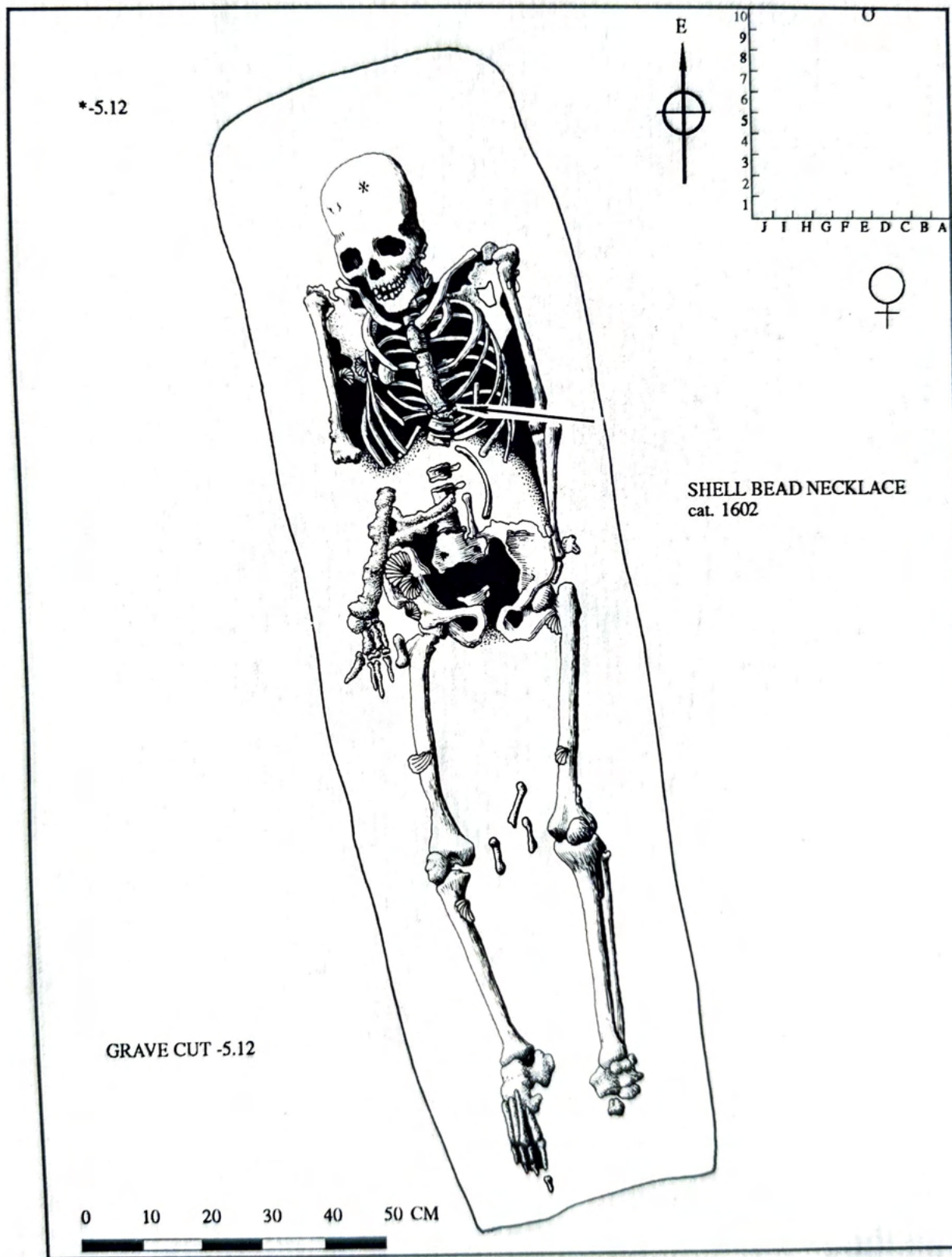


FIG. 141. Burial 87 cluster C1 mortuary phase 2. The remains of an adult female found in this grave associated with a necklace of 866 shell disc beads (cat. 1602). The bones bore traces of red ochre. The orientation was 10° north of east

EXCAVATION OF KHOK PHANOM DI

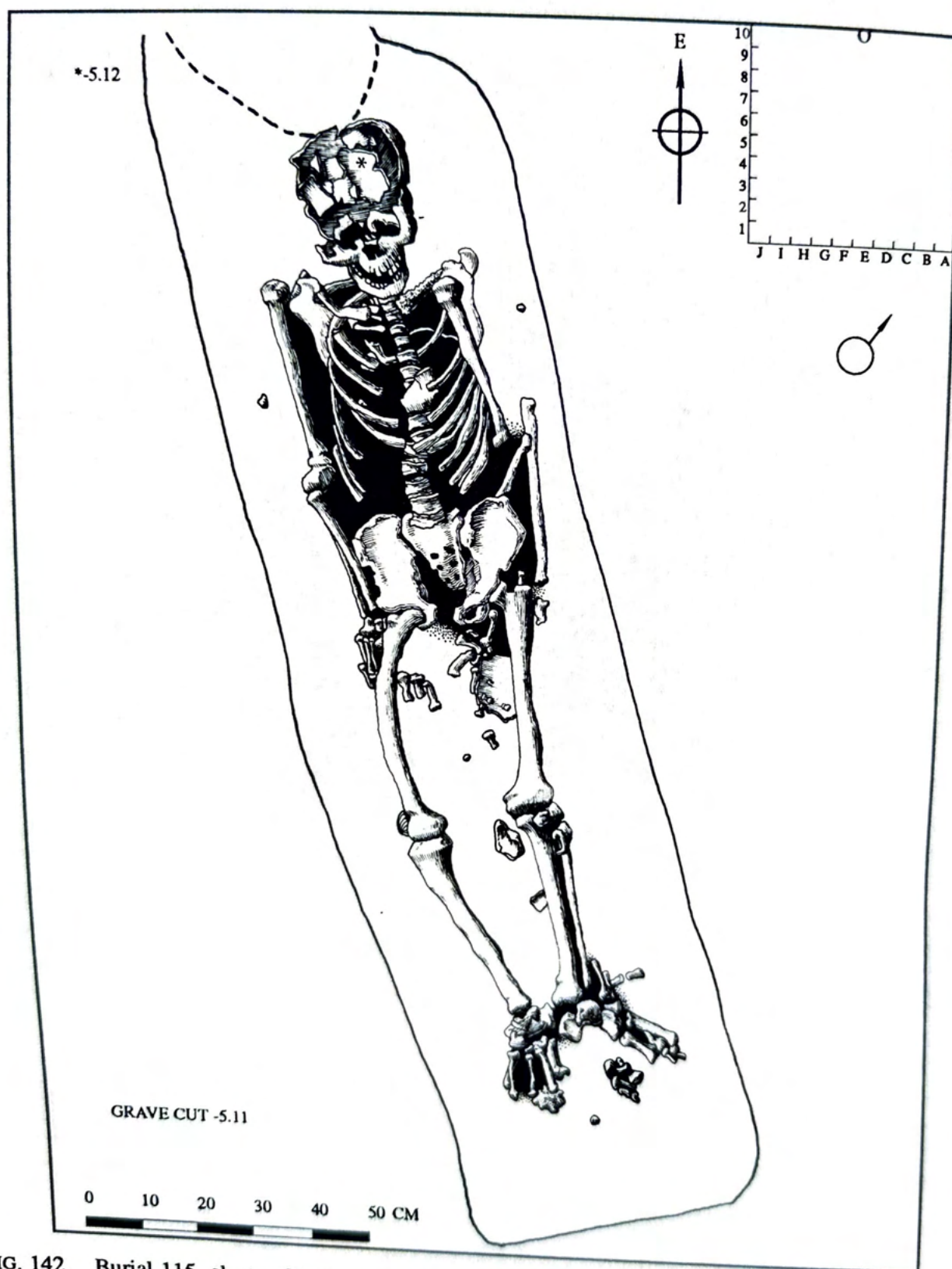


FIG. 142. Burial 115 cluster C1 mortuary phase 2. The remains of this adult male were interred at the same depth and alongside B87. Apart from a covering of red ochre, there were no grave goods

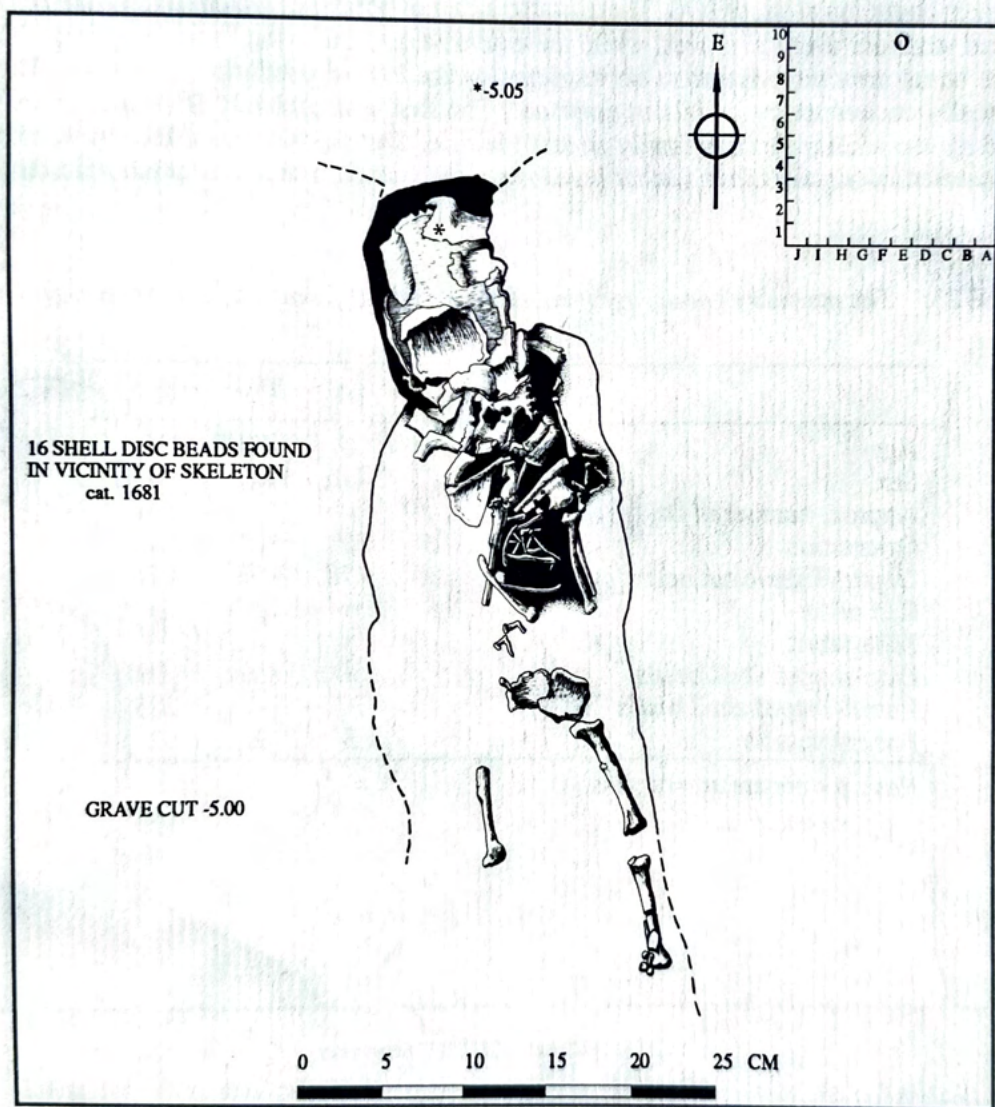


FIG. 143. Burial 114 cluster C1 mortuary phase 2. The last burial in cluster C1 contained a fourth infant skeleton. It was found on top of B115. The body had been laid supine, orientated 15° north of east. Red ochre and *tapa* were found over the bones, and sixteen shell disc beads (cat. 1681) were found in association with the bones

STAGE 4 MORTUARY PHASE 3

Before the first burial of this stage was interred, three pits containing shells were dug in a linear arrangement about 1m north of B90. There is also a ring of postholes which suggest the possibility of a raised structure over the graves, while the extensive and thick shell midden, layer 10 lens 2, skirts the burial area and appears to be restricted by the line of postholes (Fig. 144). There are four virtually contemporary burials in question. The first was probably B84, that of an infant, followed by two adult males and finally an adult female. During this period four more small pits were excavated, along with four further postholes which conform in distribution with the earlier set.

TABLE 23: *The mortuary goods, ages and sexes of burials from cluster C stage 4 mortuary phase 3*

	B84	B90	B93	B73
Age	0 m	27	42	25
Sex	-	Male	Male	Female
Approx. number of children	-	-	-	3-4
Orientation	105°	70°	80°	100°
Depth of grave cut below datum (m)	4.80	4.78	4.78	4.75
Red ochre	p	p	p	p
Tapa fabric	-	p	-	-
Disc-shaped shell beads	-	1500	859	1260
Barrel-shaped shell beads	-	37	-	285
Pottery vessels	-	3	2	2

Note: p = present, m = months

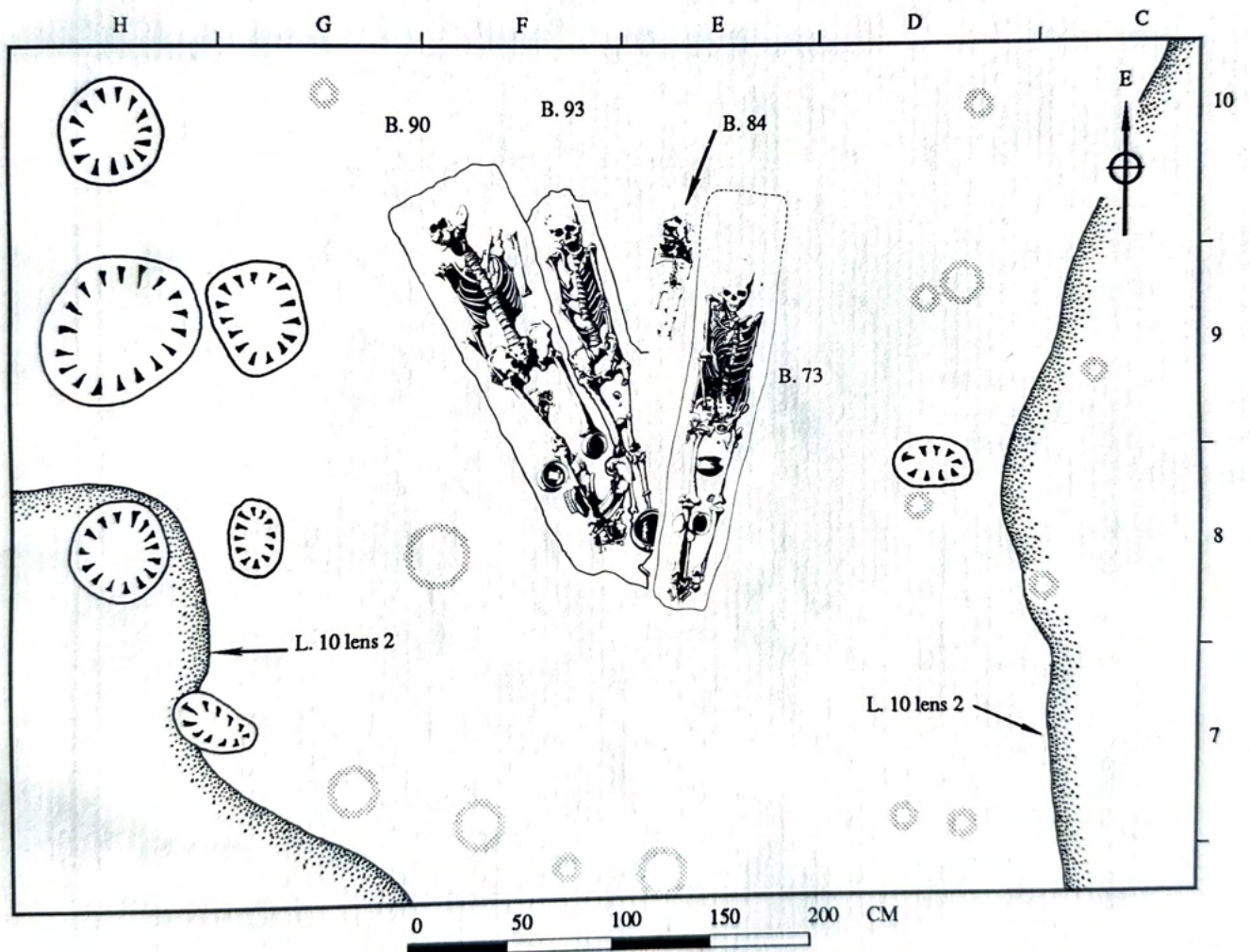


FIG. 144. The distribution of burials belonging to cluster C mortuary phase 3 stage 4

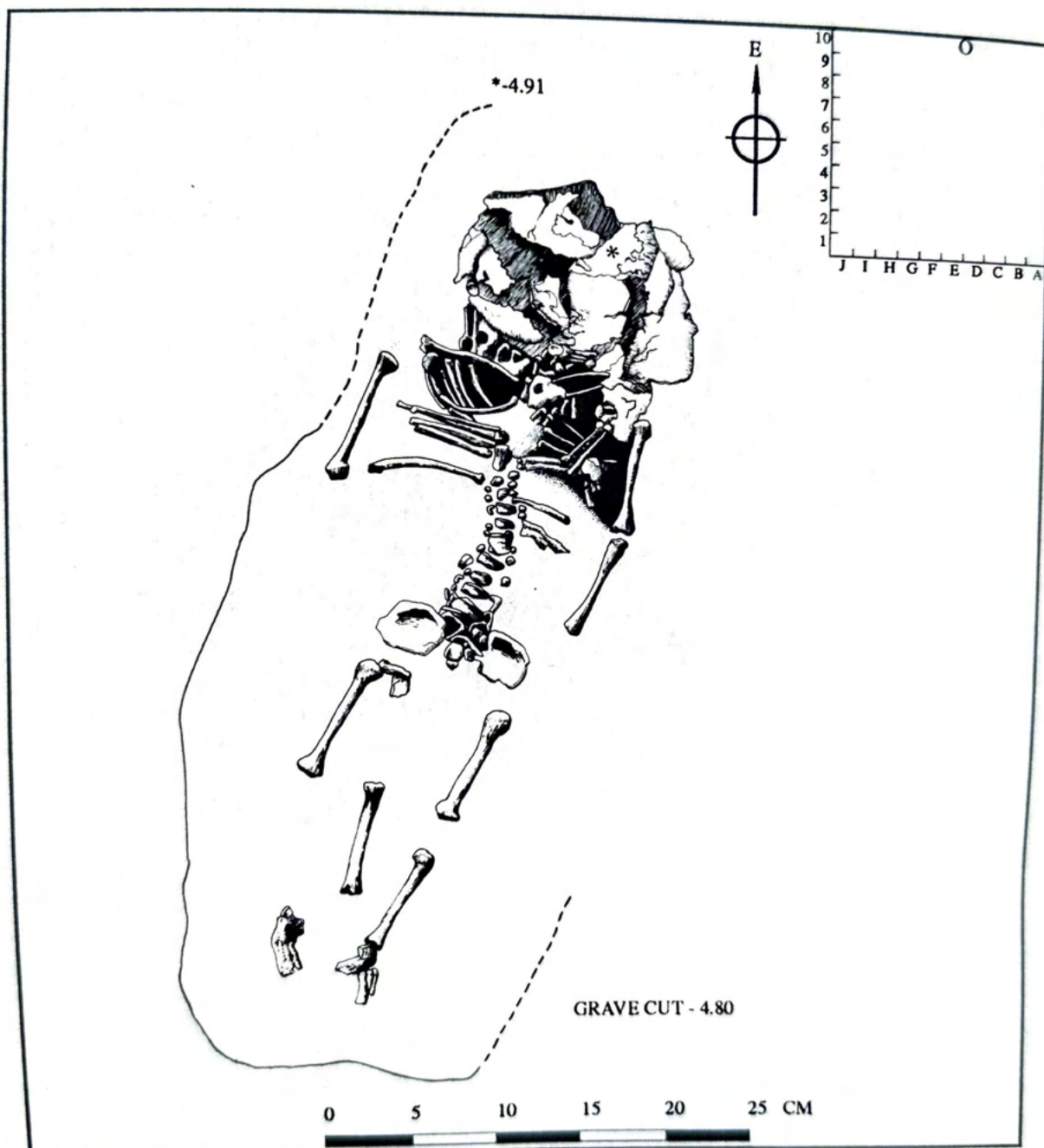


FIG. 145. Burial 84 cluster C stage 4 mortuary phase 3, the earliest grave of cluster C in MP3, contained the remains of an infant laid out in a supine position with the head pointing 15° south of east. The grave itself was cut from 4.8m down to 4.96m. Red ochre covered the whole body, but no other evidence for mortuary ritual was noted

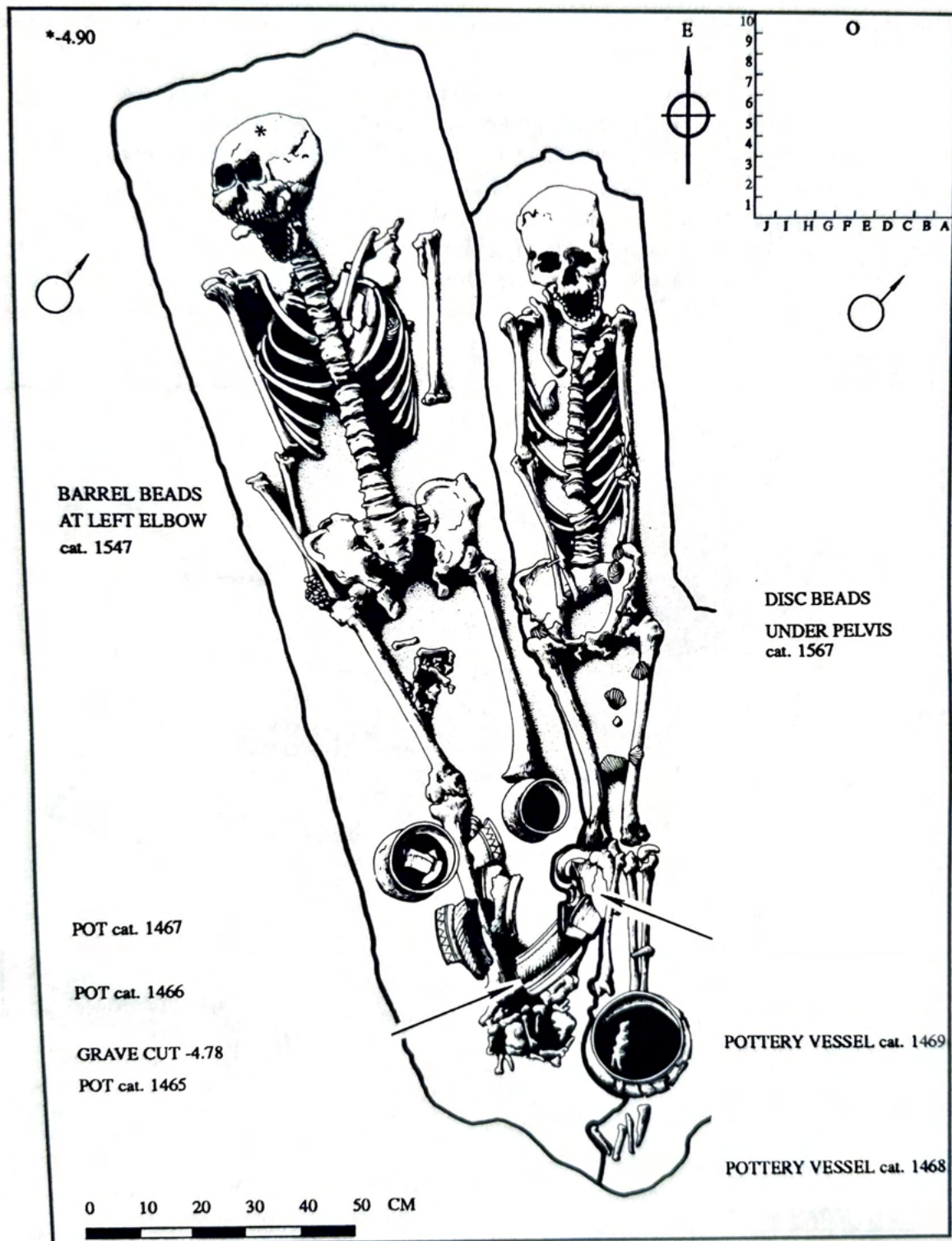


FIG. 146.

Burials 90 (left) and 93 cluster C stage 4 mortuary phase 3. See page 220

B90 (page 219) was cut down from 4.78m to a depth of 5.11m and contained the skeleton of an adult male partially covered in red ochre and wrapped in *tapa*. Thirty-seven barrel-shaped beads were concentrated in the vicinity of the left elbow, and 1,500 shell disc beads were found strung in rows under the pelvis. Two whole pots were found in the area of the right knee (cats. 1466-7) and several pieces belonging to a third vessel (cat. 1465) lay over and under the lower limbs. Burial 93 was cut from about the same depth as that for B90, but was shallower. Only the skull still bore traces of red ochre, but no *tapa* was encountered. One pot was found on top of the feet and a second under the right leg (cats. 1468-9). A total of 859 disc-shaped shell beads were found under the pelvis (cat. 1567).

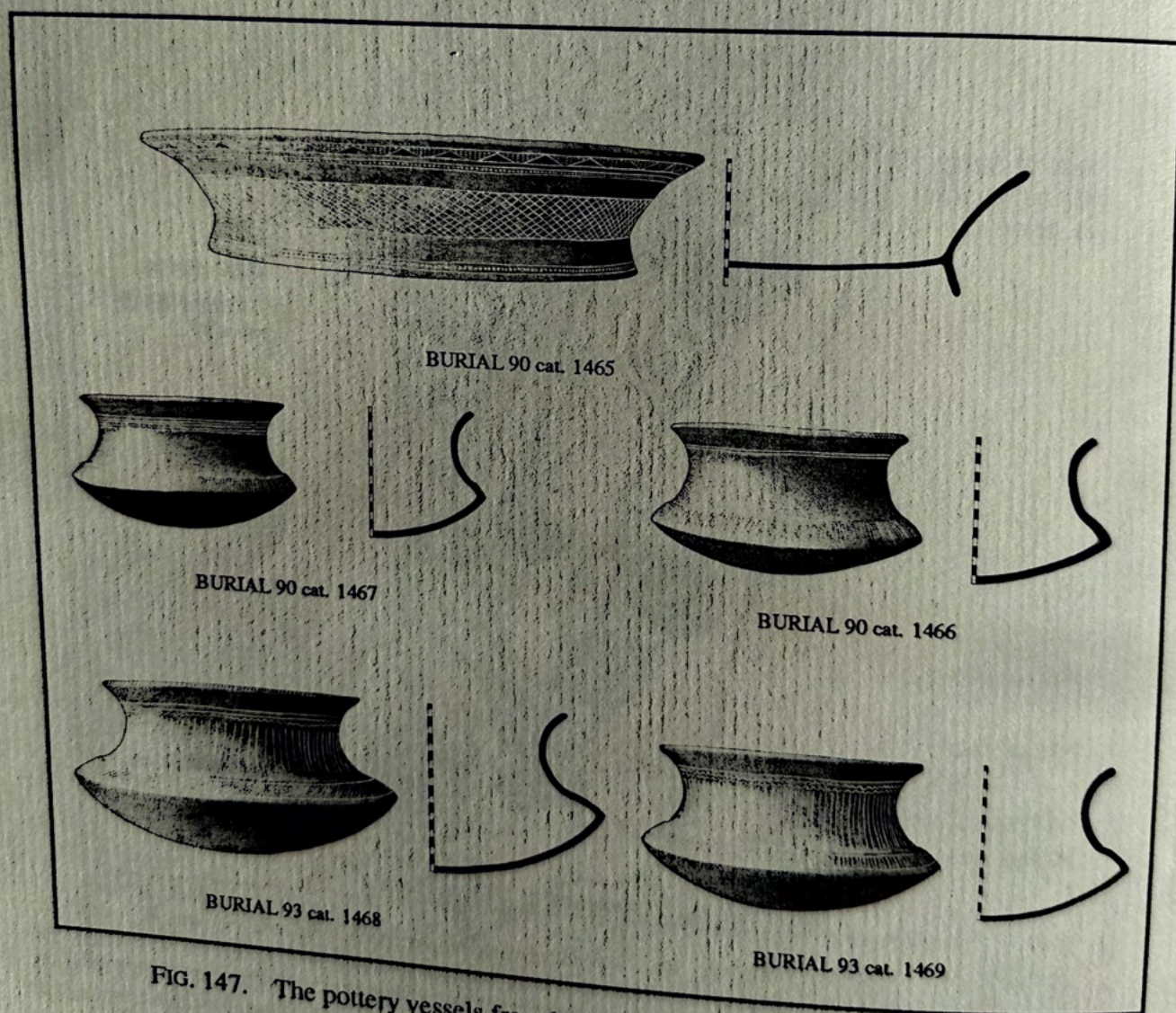


FIG. 147. The pottery vessels from burials 90 and 93. The scales are in 0.5cm

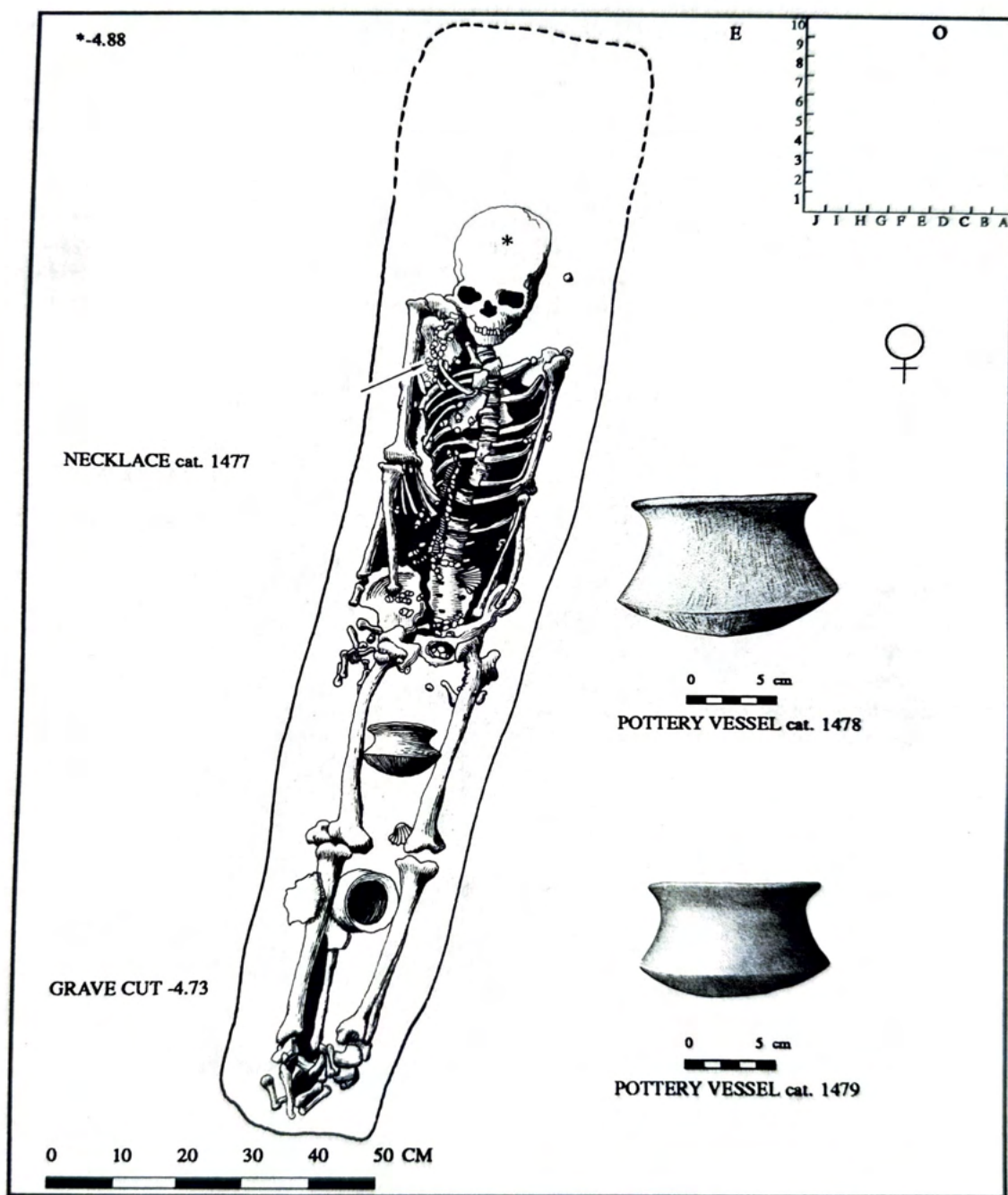


FIG. 148. Burial 73 cluster C stage 4 mortuary phase 3. The grave of a female buried at about the same time as burials 90 and 93. The grave cut into the edge of that for B93. The bones were covered in red ochre, and she wore four strings containing 1,260 disc and 285 barrel-shaped shell beads (cat. 1477). Two whole pots also accompanied the body (cats. 1478-9)

EXCAVATION OF KHOK PHANOM DI

STAGE 5 MORTUARY PHASE 3

The definition of this stage is largely determined by superpositions of burials. Burial 72, for example, partially covers B73 and burials 83 and 95 completely cover B73. Only three features were added at the same time as the interment of the five burials which make up stage 5. A shallow pit was dug in the same general area as earlier ones and two further postholes were dug. The five burials comprise an adult male, an adult female and three infants, two of which, burials 65 and 66, were buried simultaneously (Fig. 149). Burial 95 had been seriously disturbed with the later excavation of a posthole. Both the grave cut and the disarticulated bones of an infant were found at a depth of 4.72m. Apart from the scattered bones, no evidence for mortuary ritual was encountered.

TABLE 24: *The mortuary goods, ages and sexes of burials from cluster C stage 5 mortuary phase 3*

	B72	B95	B83	B65	B66
Age	32	0 m	30	0 m	0 m
Sex	Male	-	Female	-	-
Approx. number of children	-	-	1-2	-	-
Depth of grave cut below datum (m)	4.72	4.72	4.61	4.60	4.60
Orientation	70°	-	85°	95°	90°
Red ochre	p	-	p	p	p
Disc-shaped shell beads	330	-	-	-	-
Large barrel-shaped bead	1	-	-	-	-
Pottery vessel	3	-	-	-	-
Burnishing stones	3	-	-	-	-
<i>Nautilus</i> shell	p	-	2	-	-
Shaped animal tusk	1	-	-	-	-
Fish skeleton	p	-	-	-	-
Shark dorsal spine pendant	1	-	-	-	-
Polished stone chisel	1	-	-	-	-

Note: p = present, m = months

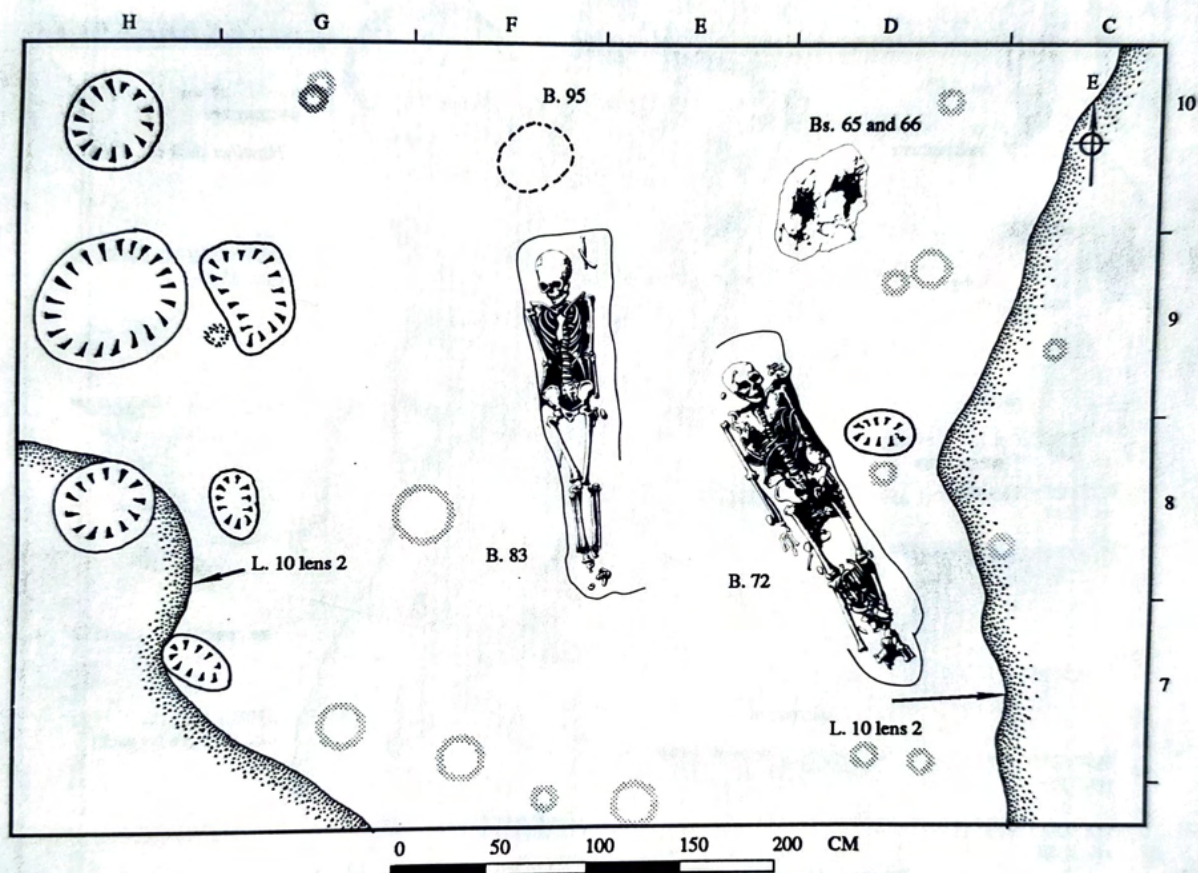


FIG. 149. The burials of cluster C stage 5 mortuary phase 3

EXCAVATION OF KHOK PHANOM DI

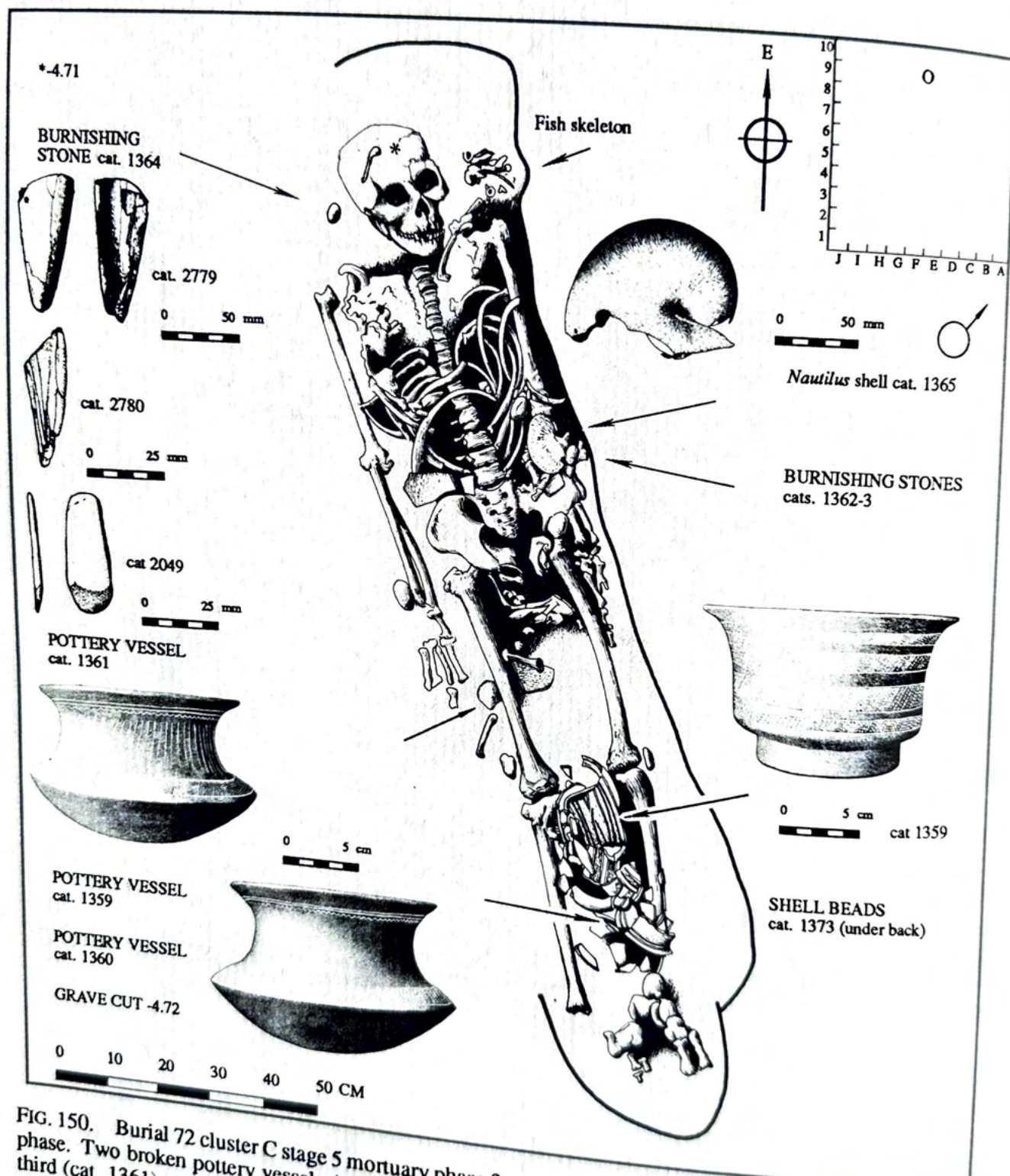


FIG. 150. Burial 72 cluster C stage 5 mortuary phase 3. The richest burial in cluster C during this mortuary phase. Two broken pottery vessels (cats. 1359 and 1360) were found over or between the lower legs. A third (cat. 1361) was found under the pelvis. Over the left hip was a cut and worked specimen of the deep-sea shell species *Nautilus* (cat. 1365). Two burnishing stones were located next to the *Nautilus* shell and another above the right shoulder. Three hundred and thirty shell disc beads and a barrel bead (cat. 1373) were found under the body, which had been covered in red ochre. A pierced dorsal spine of a shark pendant (cat. 2779) was found during the laboratory preparation of the bones. There was also a shaped pig's tusk (cat. 2780) and a small polished stone chisel (cat. 2049).

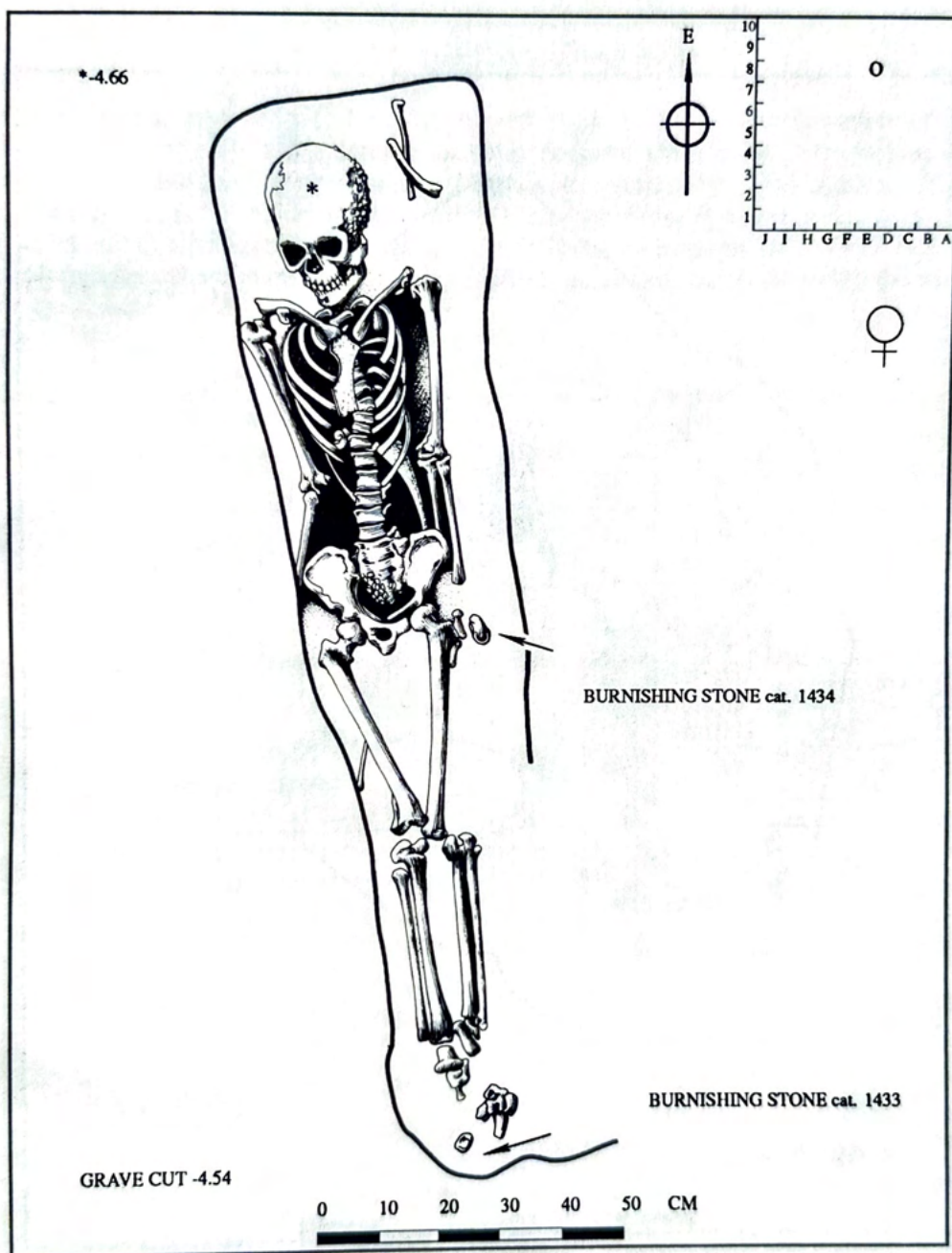


FIG. 151. Burial 83 cluster C stage 5 mortuary phase 3. This grave lies directly over B93, but is 17cm higher. It contains the skeleton of an adult female and was cut from 4.61 down to 4.88m. The bones were covered in red ochre. This is the only adult grave in cluster C during the third mortuary phase which had no pottery vessels as grave goods, but two burnishing stones were found, one near the left hand (cat. 1434) and the other beyond the feet (cat. 1433)

EXCAVATION OF KHOK PHANOM DI

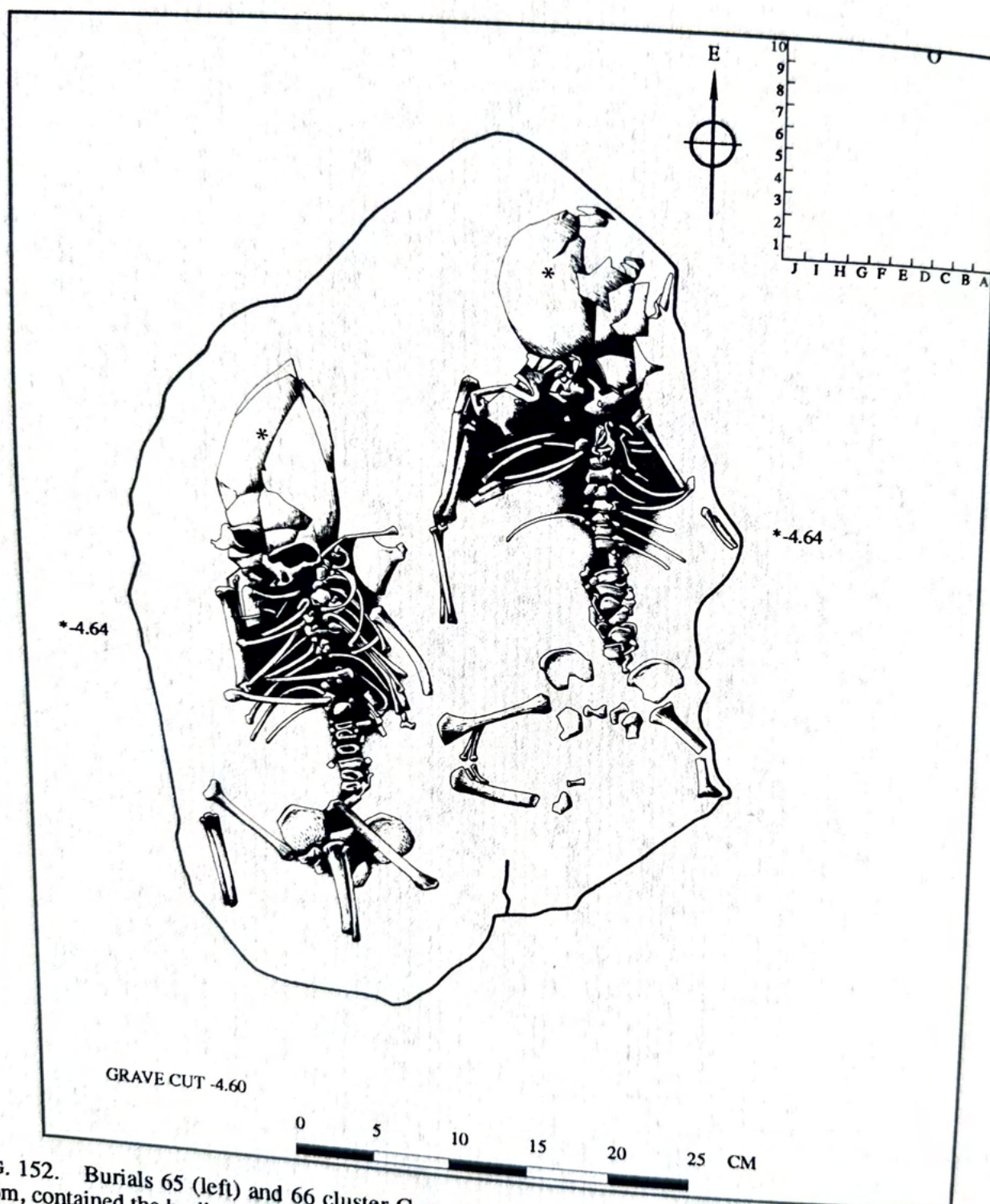


FIG. 152. Burials 65 (left) and 66 cluster C stage 5 mortuary phase 3. This grave, found at a depth of 4.6m, contained the bodies of two new-born infants. Each was covered in red ochre, and the heads pointed to the east

STAGE 6 MORTUARY PHASE 3

Between the last interment of stage 5 and the first of stage 6, a hearth was formed over the ankle area of B83 and a large pit was dug, some 20cm from the feet of B82, one of the three burials which comprises stage 6. Just before the interment of B64, a 5cm-thick ash lens was formed just beyond its feet (layer 10:6 lens 5). A further pit was dug 25cm from B64. Nine postholes were also dug, four of which run in a straight line parallel with B67. There are three graves in this stage, an adult male, adult female and an infant (Fig. 153). The infant was buried first, followed by the adult male and then the female.

TABLE 25: *The mortuary goods, ages and sexes of burials from cluster C stage 6 mortuary phase 3*

	B82	B67	B64
Age	6 m	35	21
Sex	-	Male	Female
Approx. number of children	-	-	3+
Orientation	89°	65°	85°
Depth of grave cut below datum (m)	4.54	4.50	4.50
Red ochre	p	p	p
Tapa fabric	-	-	p
Pottery vessels	-	2	2
Burnishing stone	1*	-	-
Miniature clay anvil	1*	-	-

Note: p = present, * = found in the grave fill and not in certain association with the human interment

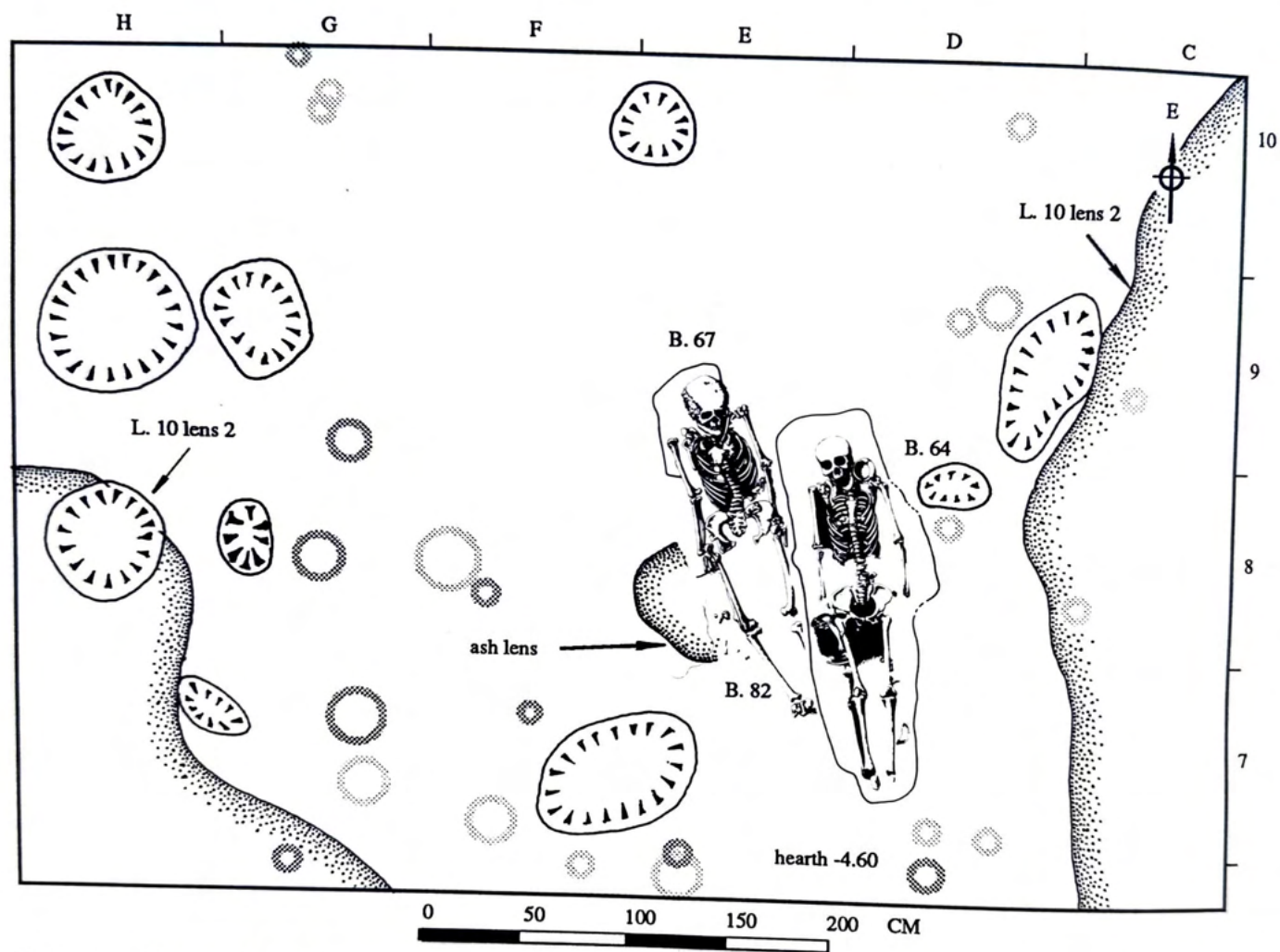
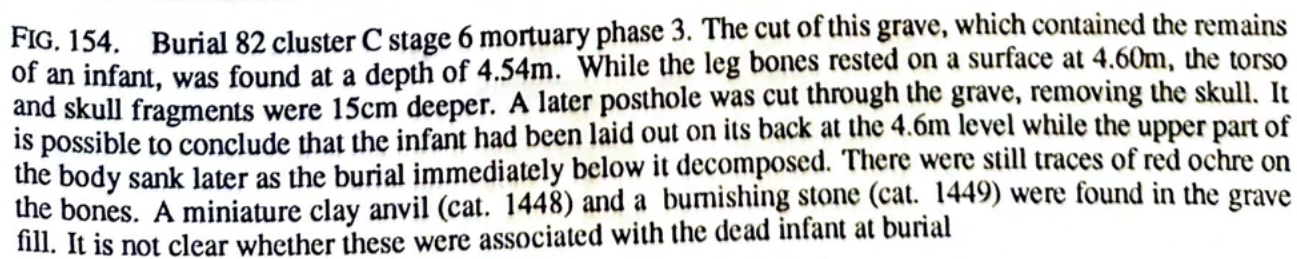


FIG. 153. The burials from cluster C mortuary phase 3 stage 6. The postholes depicted by the lighter stipple date from earlier stages, the darker postholes were dug between stages 5 and 6



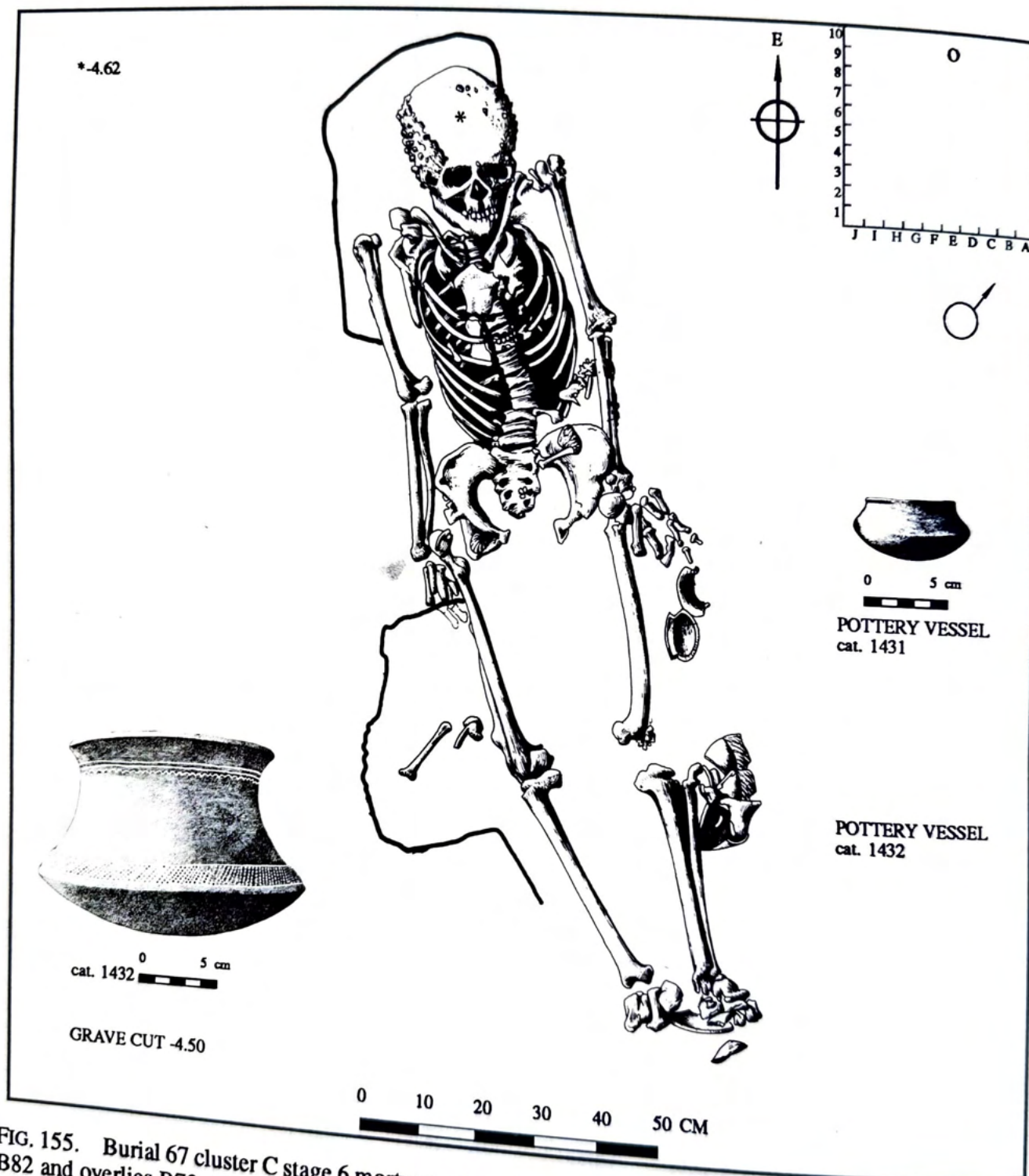


FIG. 155. Burial 67 cluster C stage 6 mortuary phase 3. This burial of an adult male was located alongside B82 and overlies B73. The grave was cut from 4.5m down to 4.8m. There are two broken pottery vessels near the left thigh (cats. 1431 and 1432). Red ochre covered the body

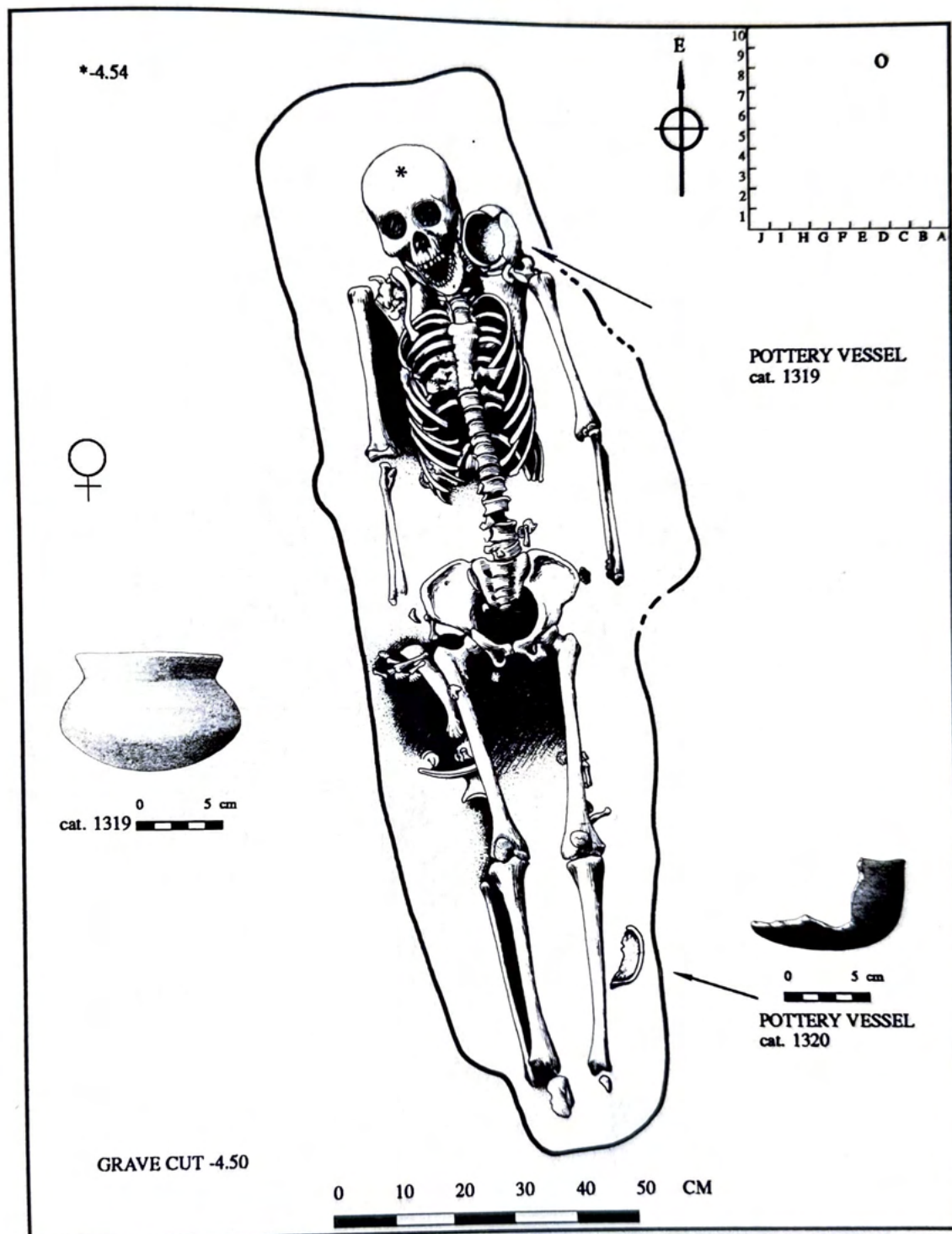


FIG. 156. Burial 64 cluster C stage 6 mortuary phase 3. The woman in this grave died when aged approximately 21 years. Her grave overlies those of burials 67, 72 and 73. The body was laid out supine and pointing 5° north of east. A complete pottery vessel was found at the left shoulder (cat. 1319) and a broken vessel containing the remains of red ochre was situated near the left leg. The remains of *tapa* were relatively abundant, particularly under the pelvis, and the strips ran on the long axis of the body

STAGE 7 MORTUARY PHASE 3

During the brief interval between stages 6 and 7, a further circular pit containing the remains of shellfish was excavated in the area of earlier pits to the north of the graves. Fourteen small postholes were also dug round the burial area. There are two adult female burials in this stage (burials 77 and 79), both being buried on an easterly orientation and parallel with each other. Burial 49, that of an infant, was rather later than burials 77 and 79 and, although it partially overlies B77 (Fig. 157), may not have close affinities with the other two stage 7 interments.

TABLE 26: *The mortuary goods, ages and sexes of burials from cluster C stage 7 mortuary phase 3*

	B79	B77	B49
Age	47	26	0 m
Sex	Female	Female	-
Approx. number of children	3+	3+	-
Orientation	90°	90°	90°
Depth of grave cut below datum (m)	4.33	4.21	4.01
Red ochre	-	p	p
Pottery vessel	1	1	-

Note: p = present

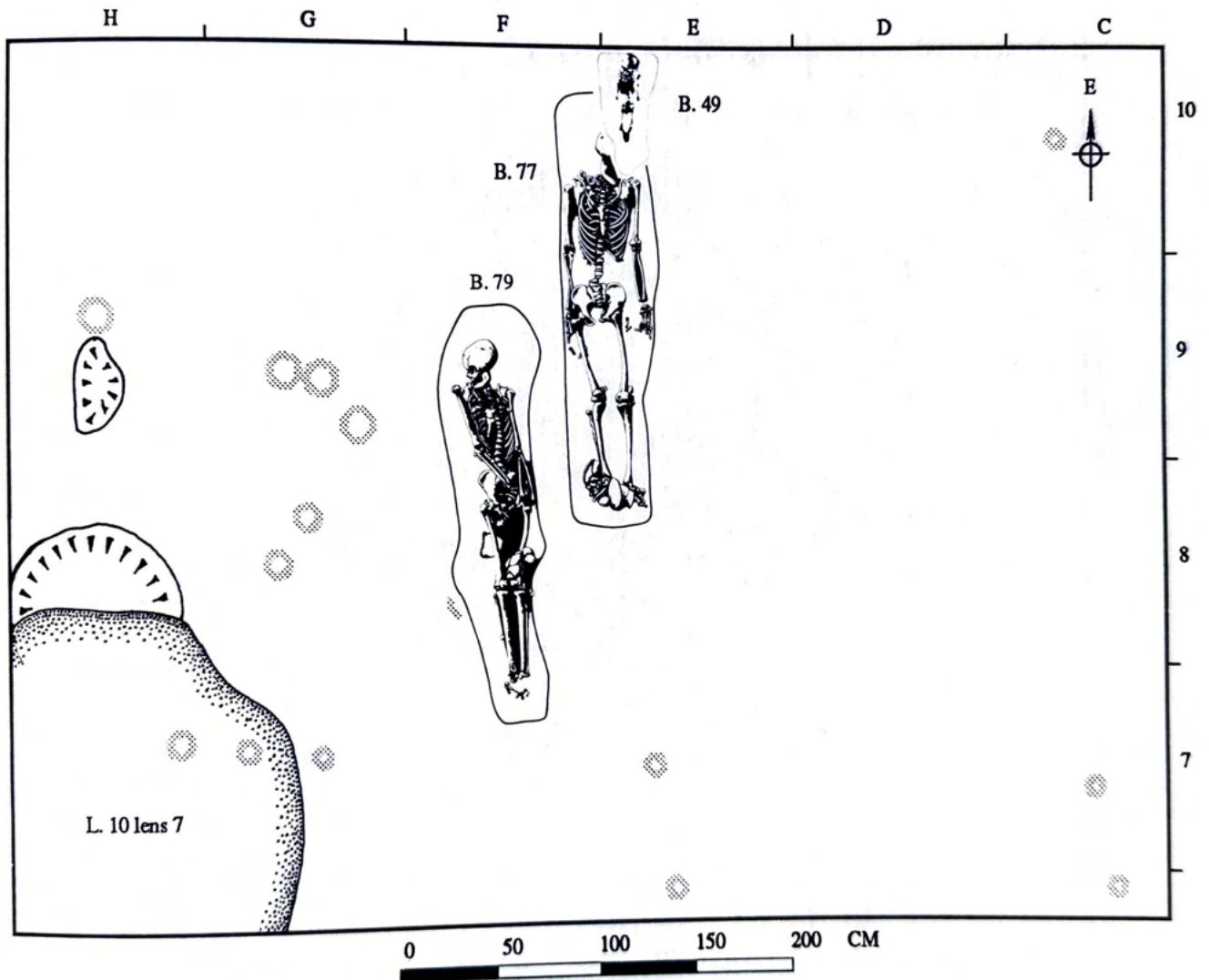


FIG. 157. The burials from cluster C stage 7 mortuary phase 3

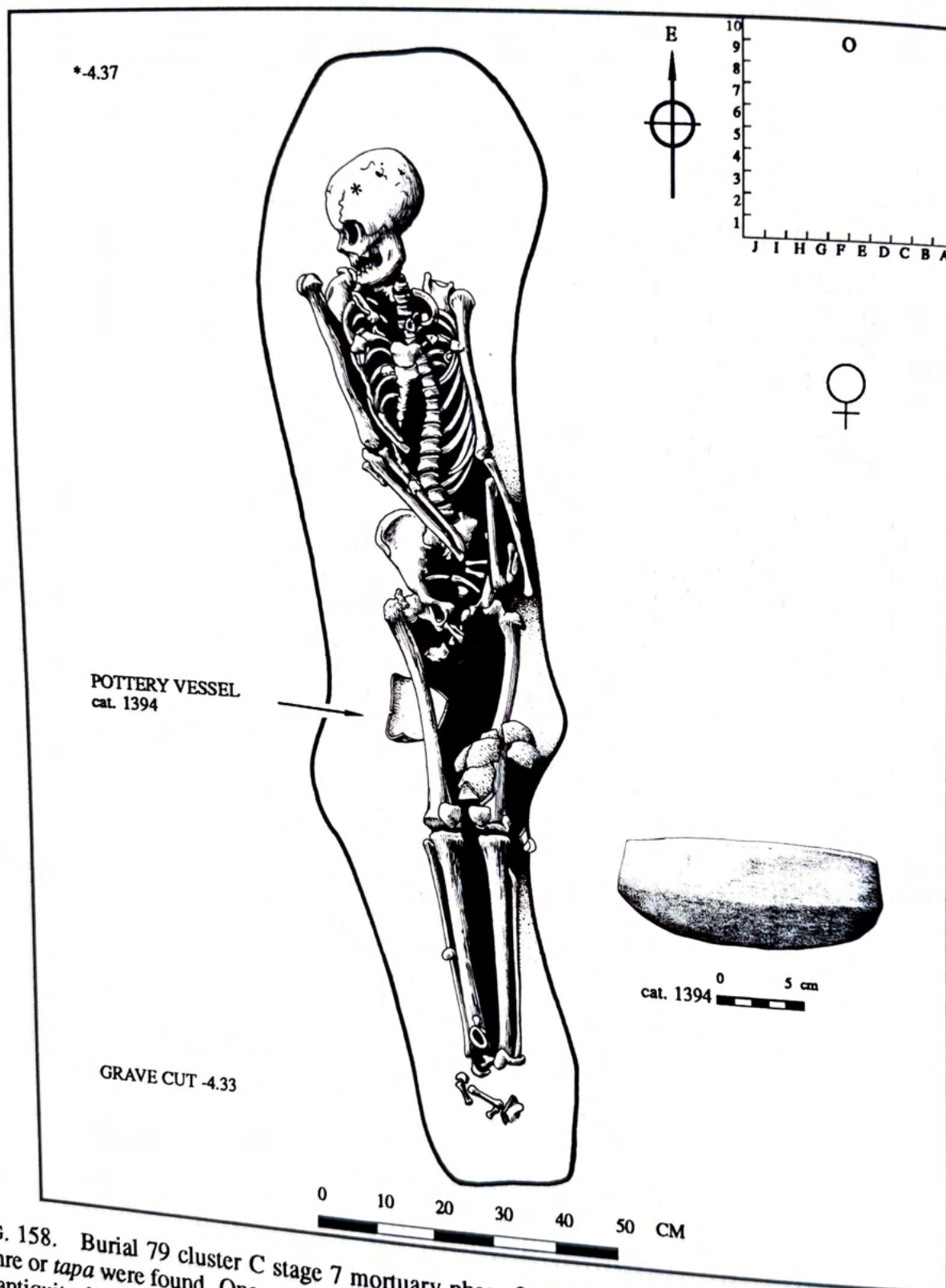


FIG. 158. Burial 79 cluster C stage 7 mortuary phase 3. This grave contained another female. No red ochre or *tapa* were found. One pottery vessel (cat. 1394) was associated with the body. It had been broken in antiquity, half being placed under the right thigh and the other half over the left thigh

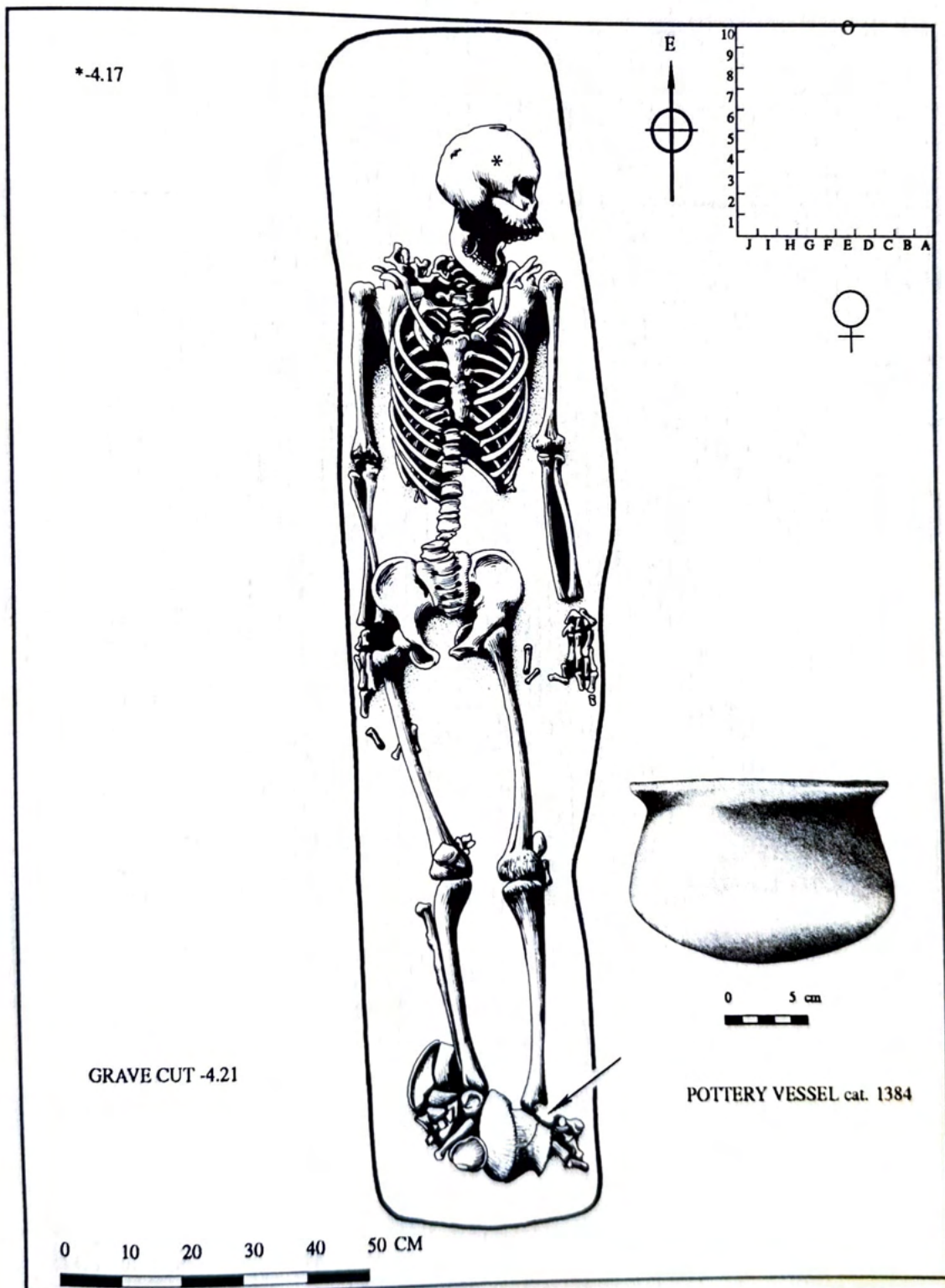


FIG. 159. Burial 77 cluster C stage 7 mortuary phase 3. The last female interment of cluster C during the third mortuary phase. She had been laid out supine, with the head pointing to the east. Broken pieces of a pottery vessel were found over the feet (cat. 1384). No other grave goods were found although the bones bore traces of red ochre

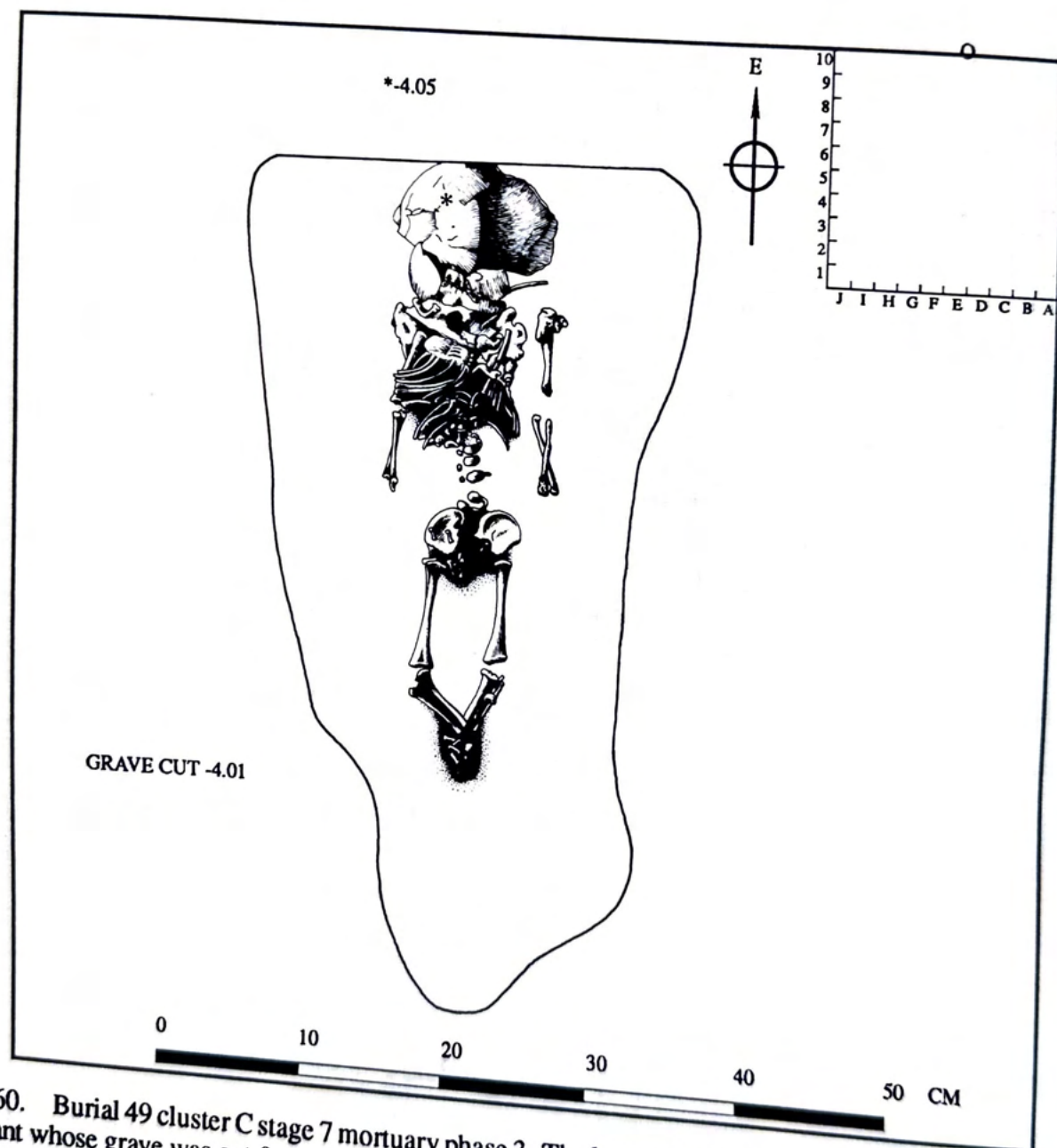


FIG. 160. Burial 49 cluster C stage 7 mortuary phase 3. The last burial in this cluster during MP3 comprises an infant whose grave was cut from 4.01m to 4.12m. It overlies B77. The bones were covered in red ochre, but there were no grave goods. The body lies supine, with the head pointing to the east

STAGE 8 MORTUARY PHASE 4

Burials 77 and 49 were cut from depths of 4.21 and 4.01m respectively. Burial 37 is the only grave ascribed to stage 8, and it was interred from a depth of 3.49m. There was, therefore, a gap of 50cm between the two stages. During this hiatus, a rich shell midden (layer 9 lens 8) was laid down. Its edge corresponds with the margin of the cluster C burial area. A more restricted ash and charcoal

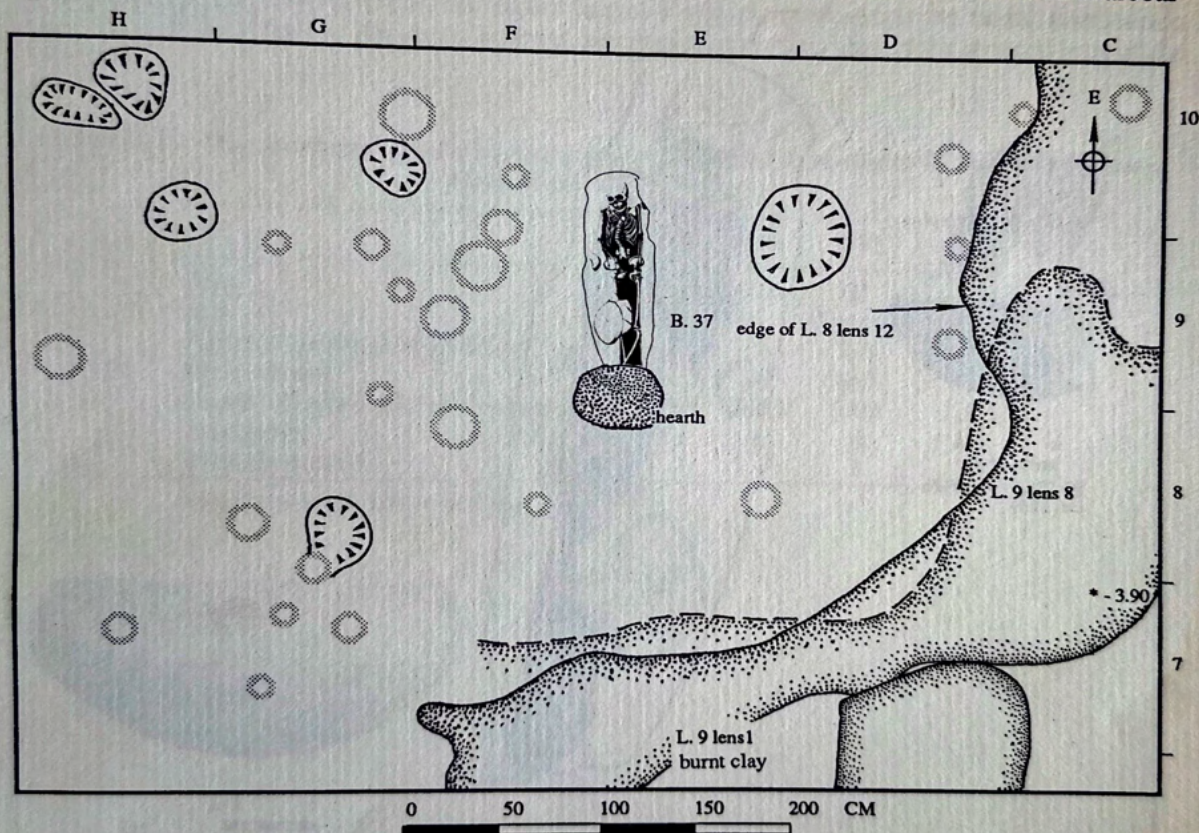


FIG. 161. The distribution of graves and associated features leading up to the interment of burial 37, cluster C stage 8 mortuary phase 4

feature was deposited at a depth of 3.84m to the south-west of the burial area (Fig. 161). Other activities which occurred before the interment of B37 were the digging of six pits, four of which were found in the same area as the earlier concentrations, and twenty-one postholes. A hearth was also formed directly over the foot area of B77 and under the subsequent B37. At a depth of 3.48 to 3.58m, that is, contemporaneously with B37, a further ash and shell lens (layer 8 lens 12) was laid down and this followed very closely the area of layer 9 lens 8.

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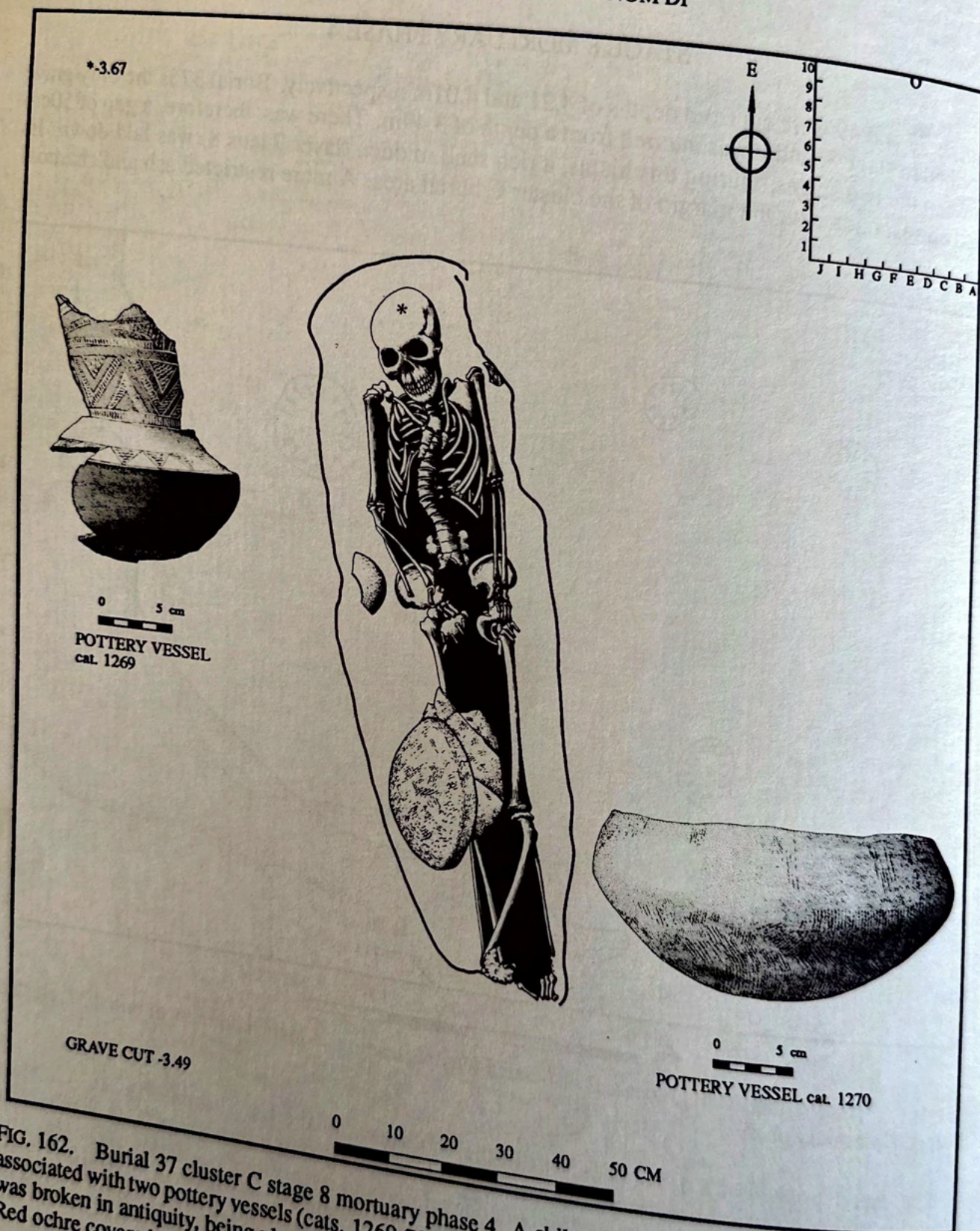


FIG. 162. Burial 37 cluster C stage 8 mortuary phase 4. A child's skeleton directly overlies B77 and was associated with two pottery vessels (cats. 1269-70), one being placed over the right knee and the other, which was broken in antiquity, being placed in part at the right forearm with the remainder over the left shoulder. Red ochre covered the bones and the remains of partially digested food were found in the stomach area

STAGE 9 MORTUARY PHASE 4

There was a gap of 44cm between the grave cut for B37 and those for burials 45, 47 and 48, the three burials which comprise stage 9 of burial cluster C. During this interval, layer 8 lens 4 was laid down at a depth of between 3.07 and 3.15m. This was just prior to the interment of the stage 9 burials. This lens, rich in ash and shellfish remains, has a distribution which covers the area of cluster C burials, in distinction to the earlier lenses which complemented the burial distribution (Fig. 163). After the bodies had been interred, seven postholes were dug in the general area of the graves.

TABLE 27: *The mortuary goods, ages and sexes of burials from cluster C stage 8 mortuary phase 4 (B37) and stage 9*

	B37	B48	B47	B45
Age	9	0 m	22	45
Sex	-	-	Female	Female
Approx. number of children	-	-	2-3	1-2
Orientation	83°	86°	86°	84°
Depth of grave cut below datum (m)	3.49	3.05	3.05	2.96
Red ochre	P	P	P	P
Pottery vessels	2	-	1	1

Note: p = present, m = months

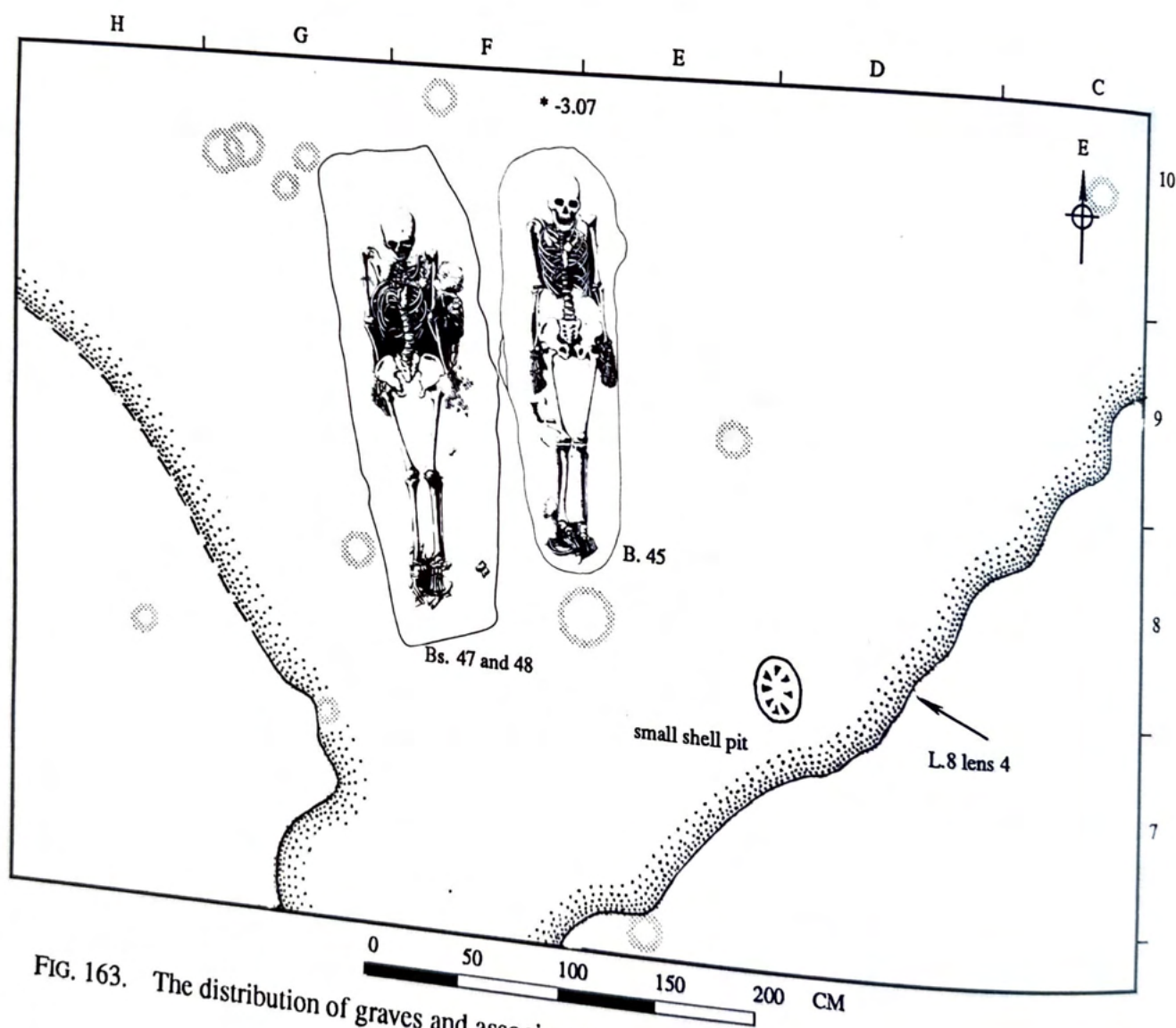


FIG. 163. The distribution of graves and associated features of cluster C stage 9 mortuary phase 4

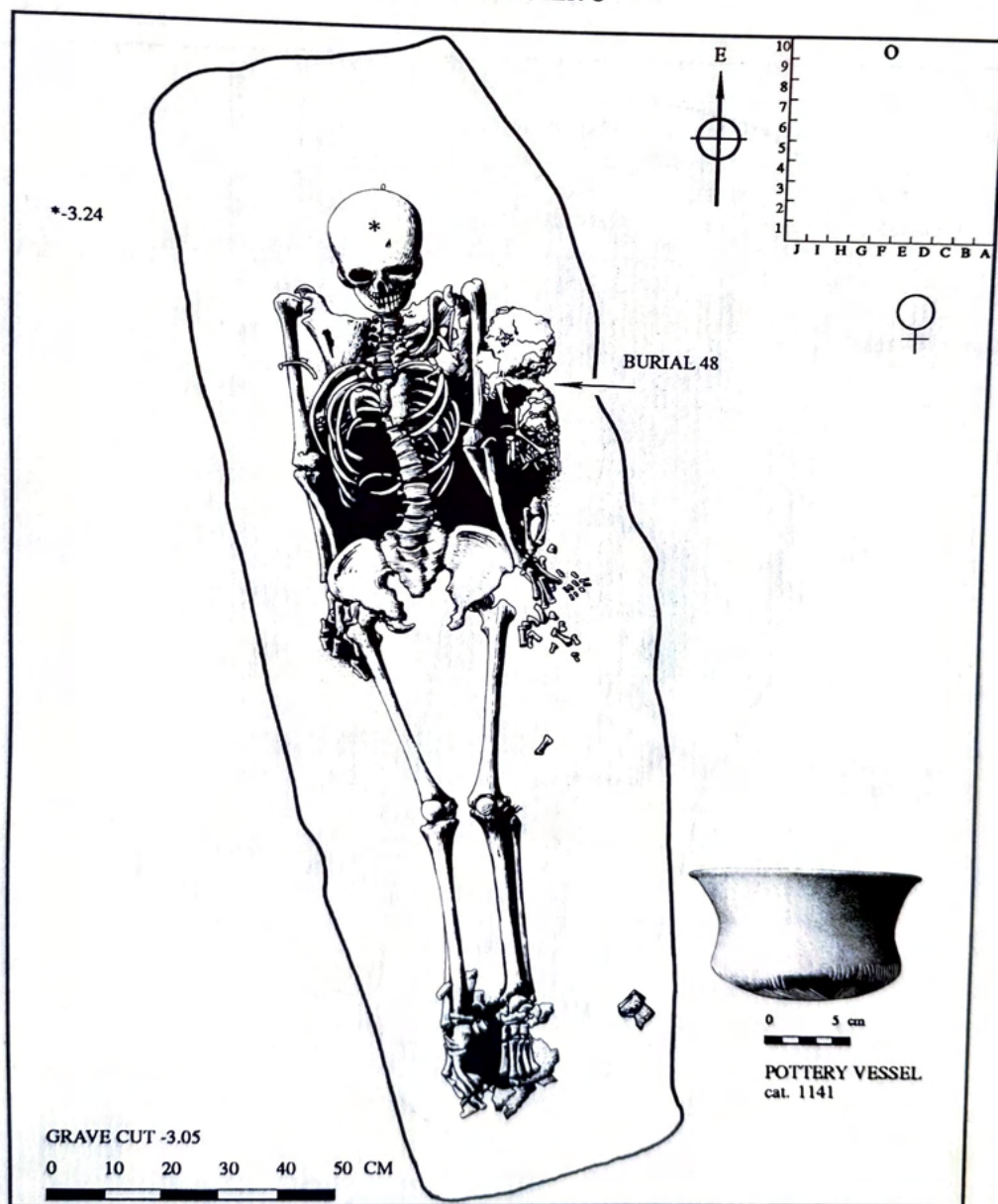


FIG. 164. Burials 47 and 48 cluster C stage 9 mortuary phase 4. Two individuals, a female aged 20–4 years and a new-born infant. The former, B47, is lying on the right-hand side of the grave and her left arm partially overlies the infant's skeleton. They were buried simultaneously. The grave was cut from a depth of 3.05 down to 3.4m. A broken pottery vessel (cat. 1141) was found under the feet of B47 and her skull was covered in red ochre

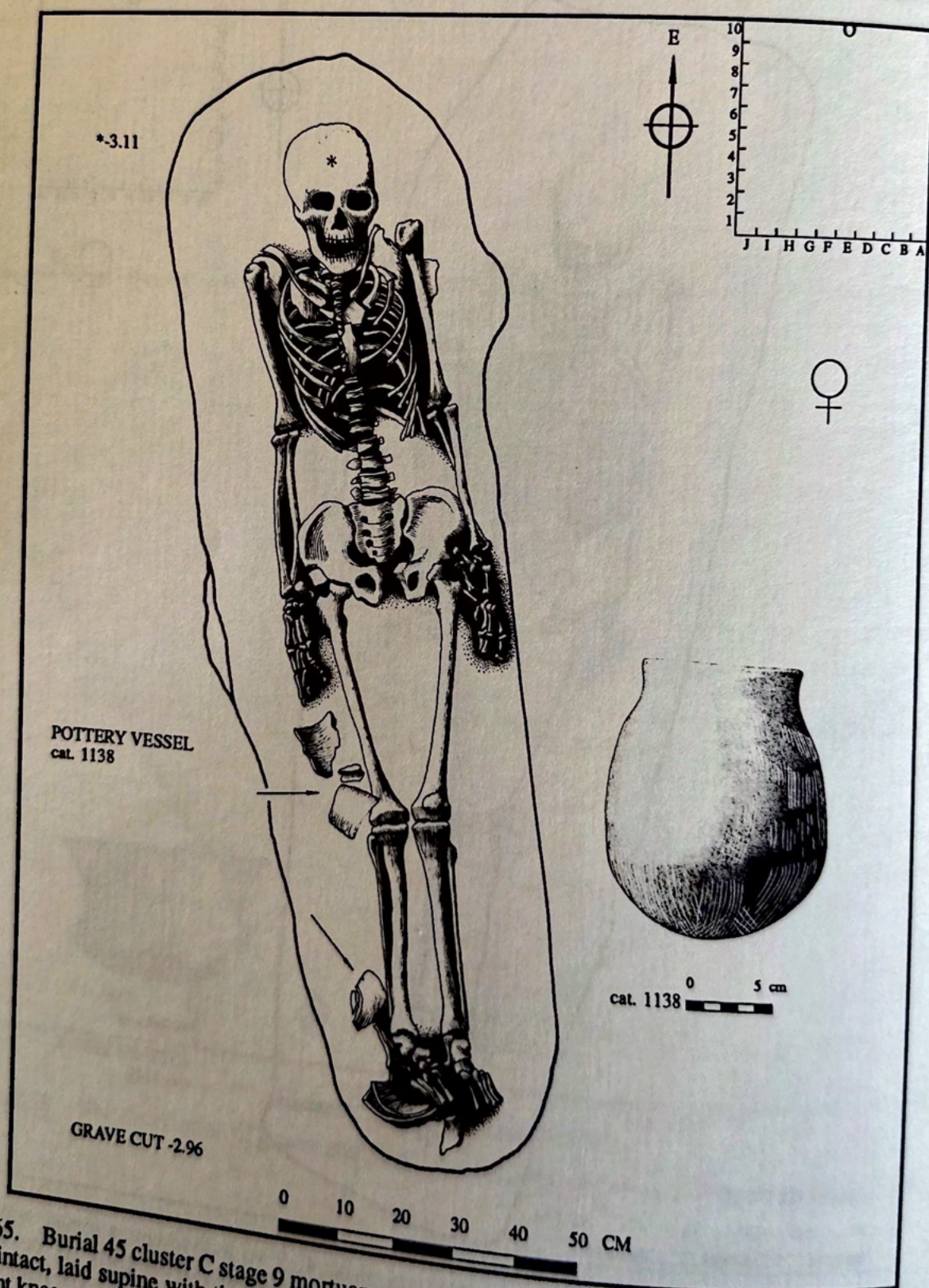


FIG. 165. Burial 45 cluster C stage 9 mortuary phase 4. The remains of an adult female. The skeleton was found intact, laid supine with the hands to the side. Sherds from a broken pottery vessel were found near the right knee and ankle (cat. 1138). There were also faint traces of red ochre on the skull

STAGE 10 MORTUARY PHASE 4

The two stage 10 burials in this cluster were located about 1m to the north of the stage 9 interments, and there was a gap of 30cm between the two stages. During the interval, an almost circular pit was dug into the grave containing burials 47 and 48, and eleven postholes were formed, although no structure outline is evident. The disposition of burials 35 and 36 is unusual, because they are set out in a line rather than side by side (Fig. 166).

TABLE 28: *The mortuary goods, ages and sexes of burials from cluster C stage 10 mortuary phase 4*

	B36	B35
Age	21	21
Sex	Female	Female
Approx. number of children	2-3	1-2
Orientation	72°	73°
Depth of grave cut below datum (m)	2.65	2.65
Red ochre	p	p
Pottery vessels	2	2
Shell disc beads	-	8
Clay anvil	-	1
Burnishing stone	1	3

Note: p = present

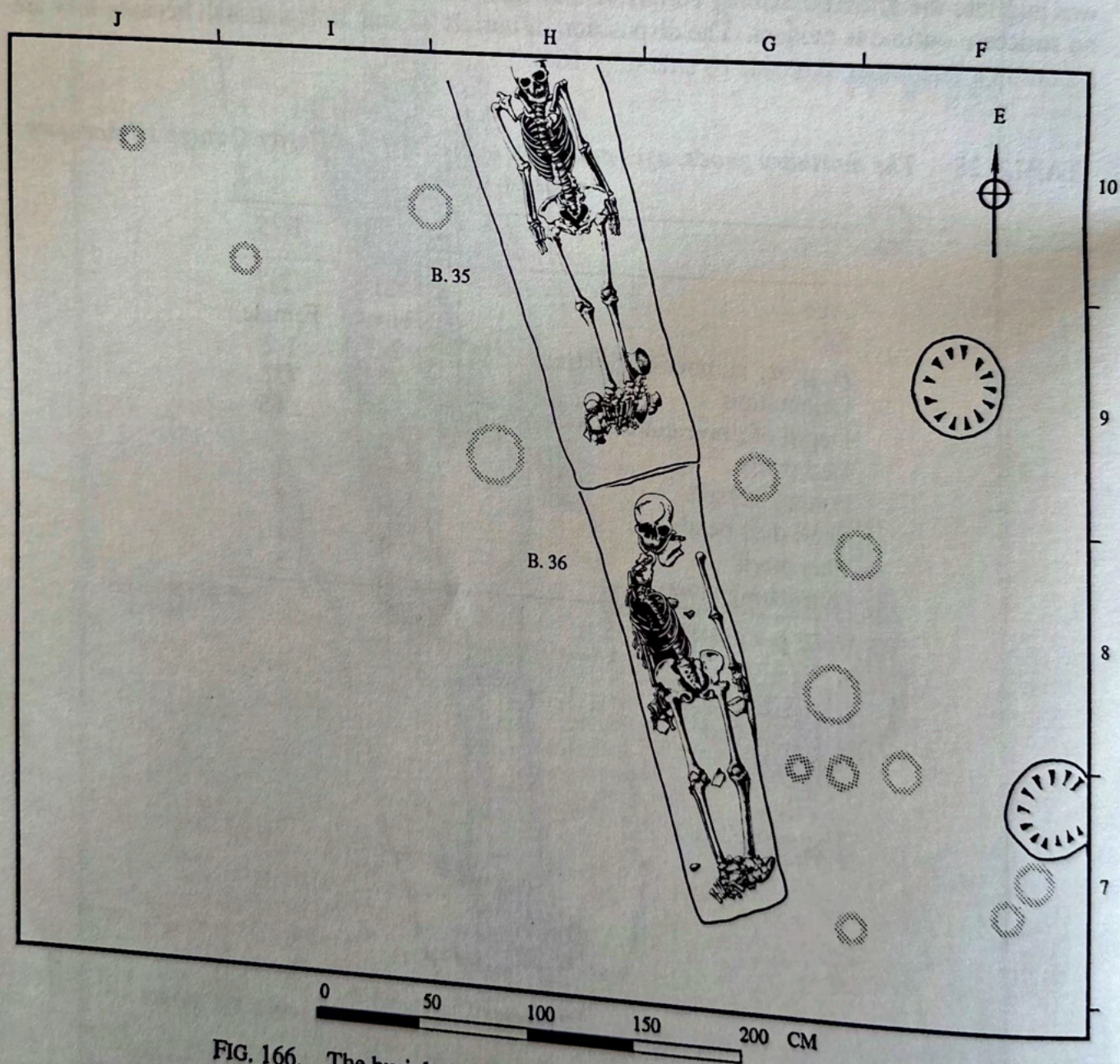


FIG. 166. The burials from cluster C stage 10 mortuary phase 4

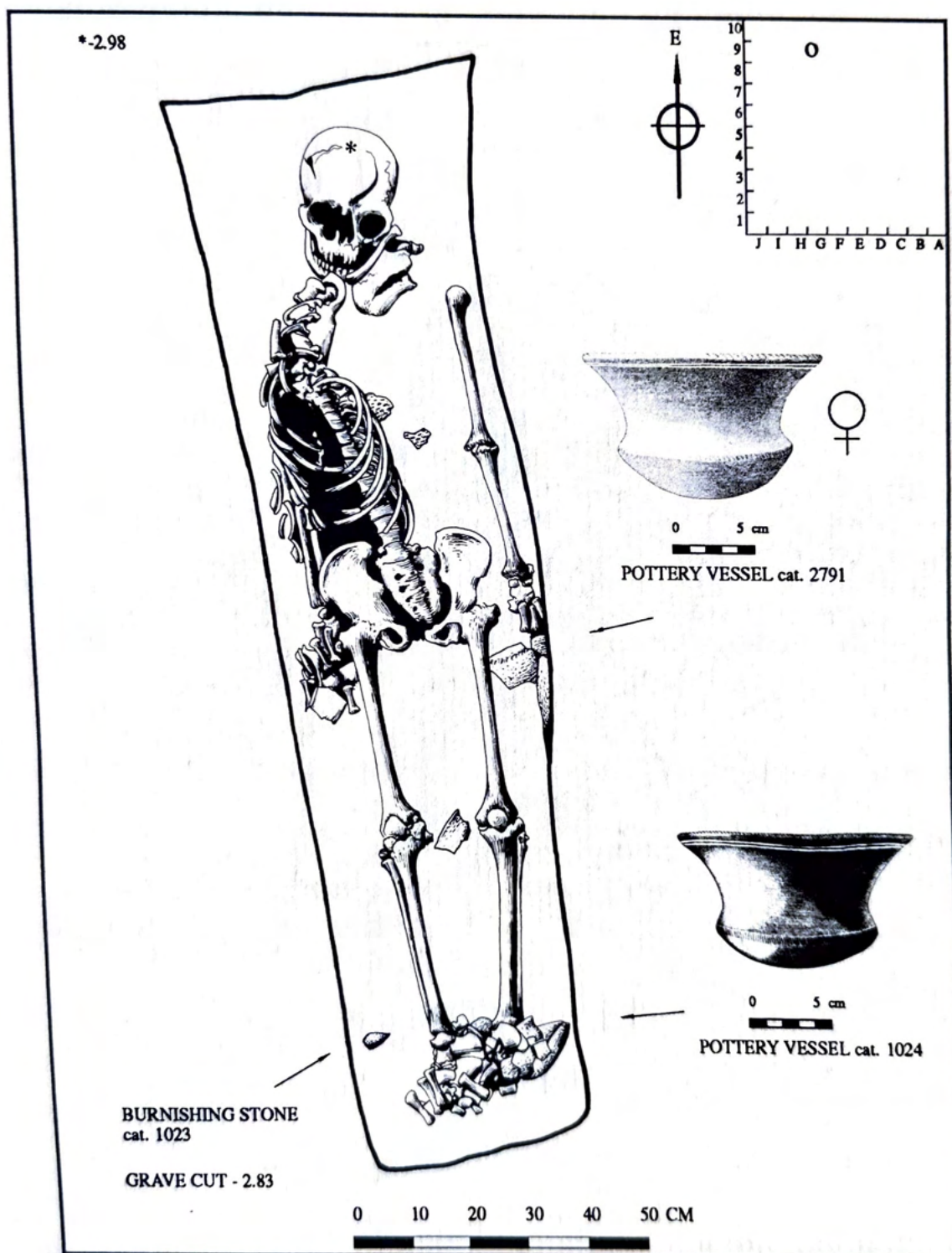


FIG. 167. Burial 36 cluster C stage 10 mortuary phase 4. This adult female was interred in a grave cut from 2.65m. Red ochre was apparent only on the skull. Two pottery vessels accompanied the skeleton (cats. 1024 and 2791). The former was found in pieces scattered between the hands and knees, and the latter was placed over the ankles. A burnishing stone was found beside the right ankle (cat. 1023)

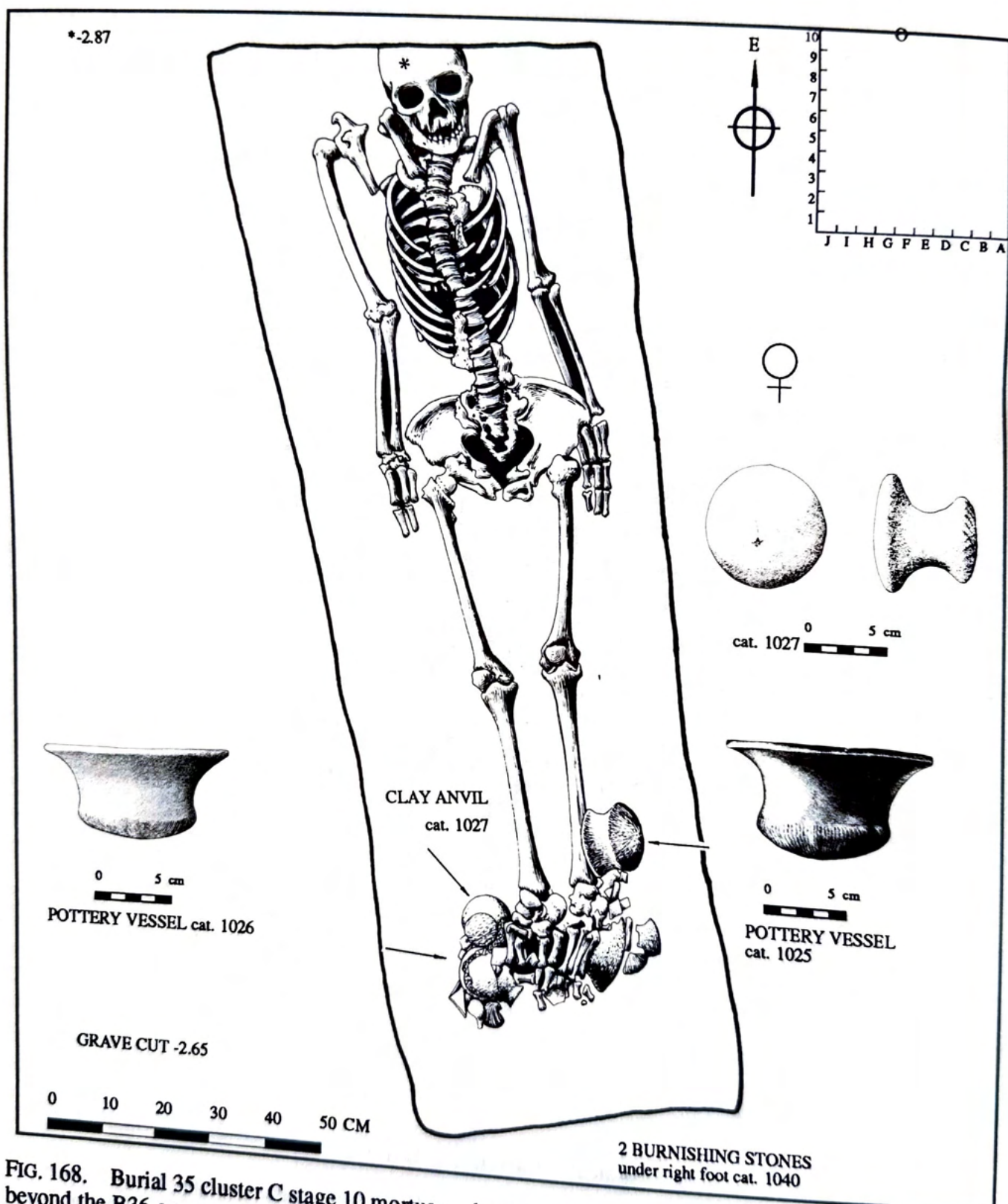


FIG. 168. Burial 35 cluster C stage 10 mortuary phase 4. An adult female interment situated immediately beyond the B36 grave. A broken pottery vessel (cat. 1026) and an anvil had been placed beside the right foot, while two burnishing stones (cat. 1040) were found underneath it. A second pottery vessel was placed upside-down over the left ankle. A third burnishing stone (cat. 2760) and eight small shell disc beads were identified in the laboratory. The bones were covered in red ochre

VII. BURIAL CLUSTER D

THE burials comprising cluster D are located in the extreme north-east corner of the excavated area. This means that only one edge of the cluster is available for consideration and the actual number of burials at each stage is unknown. Nevertheless, there are twelve burials in this cluster from mortuary phases 2, 3 and 4 (Fig. 169).

STAGE 1 MORTUARY PHASE 2

There are three burials in this stage. Prior to the interments, an extensive shell midden was deposited (layer 10 lens 15), and its edges follow the edge of the burial area. A second and much smaller lens (layer 10 lens 16) was deposited as the burial activity proper commenced, and it lies within a few centimetres of the edge of B139. The first burial involved an infant (B146). It was followed by B139, another infant, and an adult female was later buried between the two. B139 lies about a metre to the south of B142 and it is uncertain whether it belongs to cluster D. It was partially covered in red ochre, and there were no grave goods. During the course of this activity, three pits were dug, although the two which lie to the south-west of the burials may well have been associated with cluster C (Fig. 170).

TABLE 29: *The mortuary goods, ages and sexes of burials from cluster D stage 1 mortuary phase 2*

	B146	B139	B142
Age	0 m	0 m	31
Sex	-	-	Female
Approx. number of children	-	-	2-3
Orientation	85°	85°	85°
Depth of grave cut below datum (m)	5.51	5.43	5.30
Red ochre	p	p	p
Tapa	-	p	-

Note: p = present, m = months

EXCAVATION OF KHOK PHANOM DI

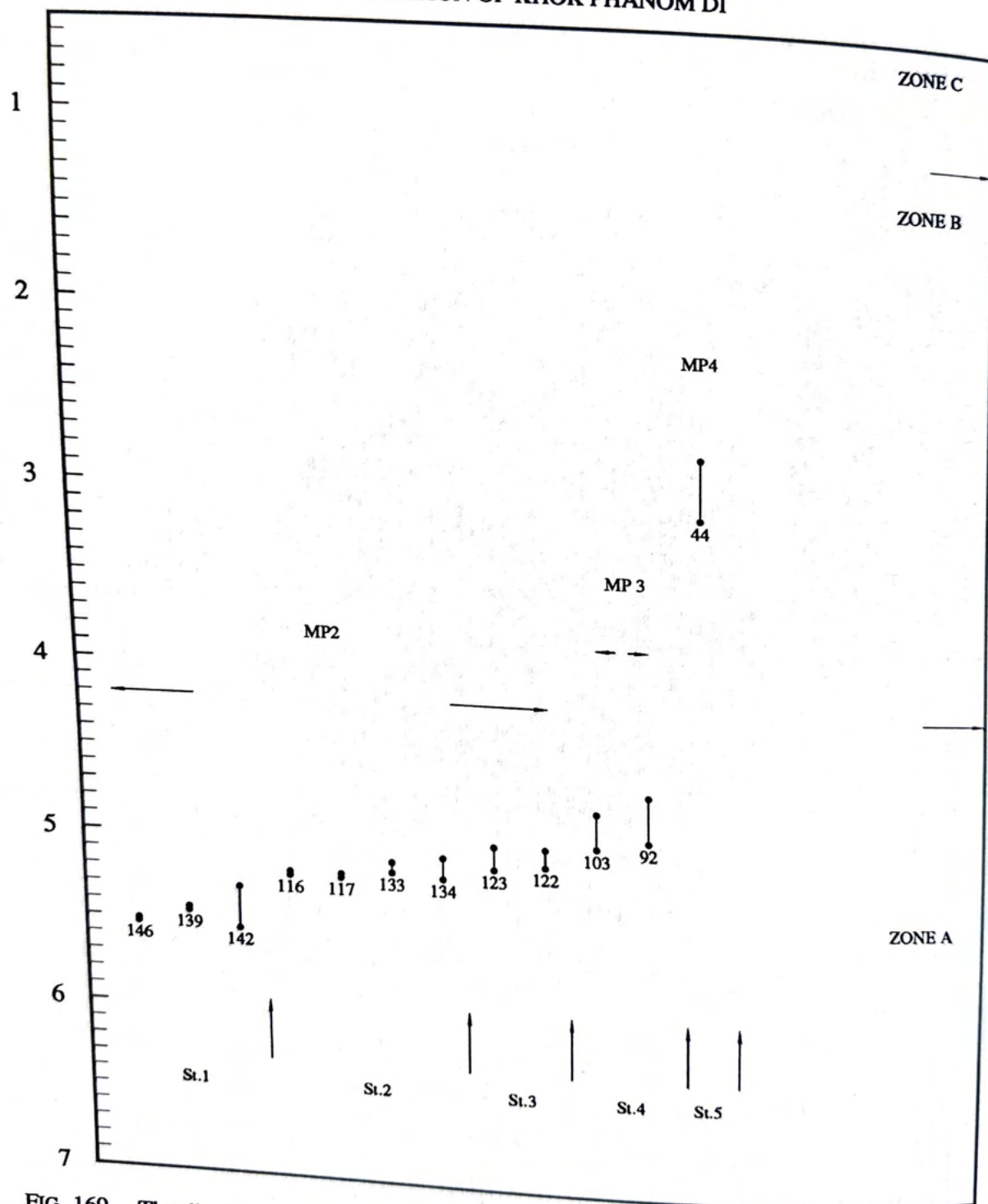


FIG. 169. The distribution of burials belonging to cluster D. The upper mark for each burial represents the depth below datum of the grave cut and the lower, the depth of the human remains. The left-hand scale shows depth below datum in metres

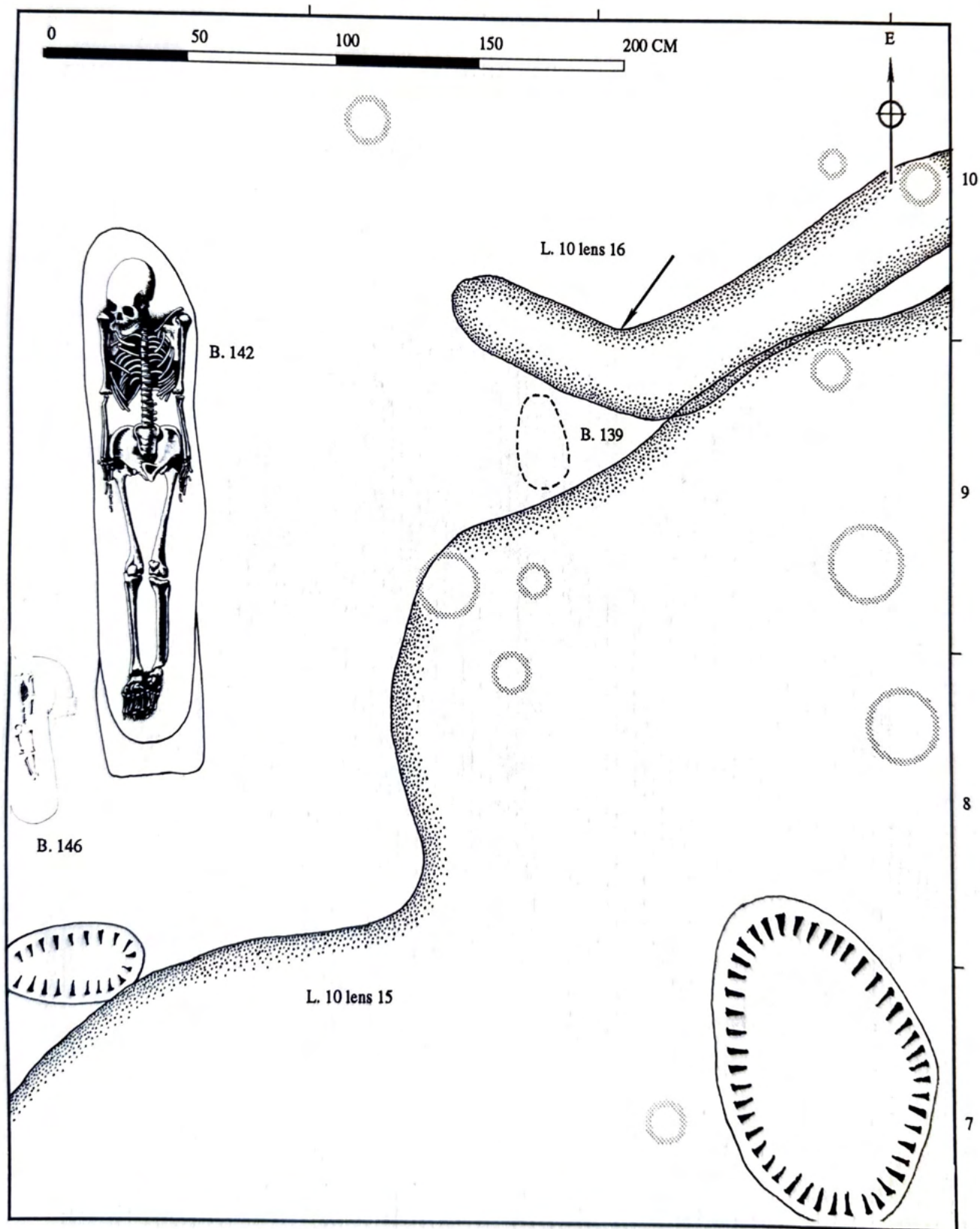


FIG. 170. The distribution of graves and associated features of cluster D stage 1 mortuary phase 2

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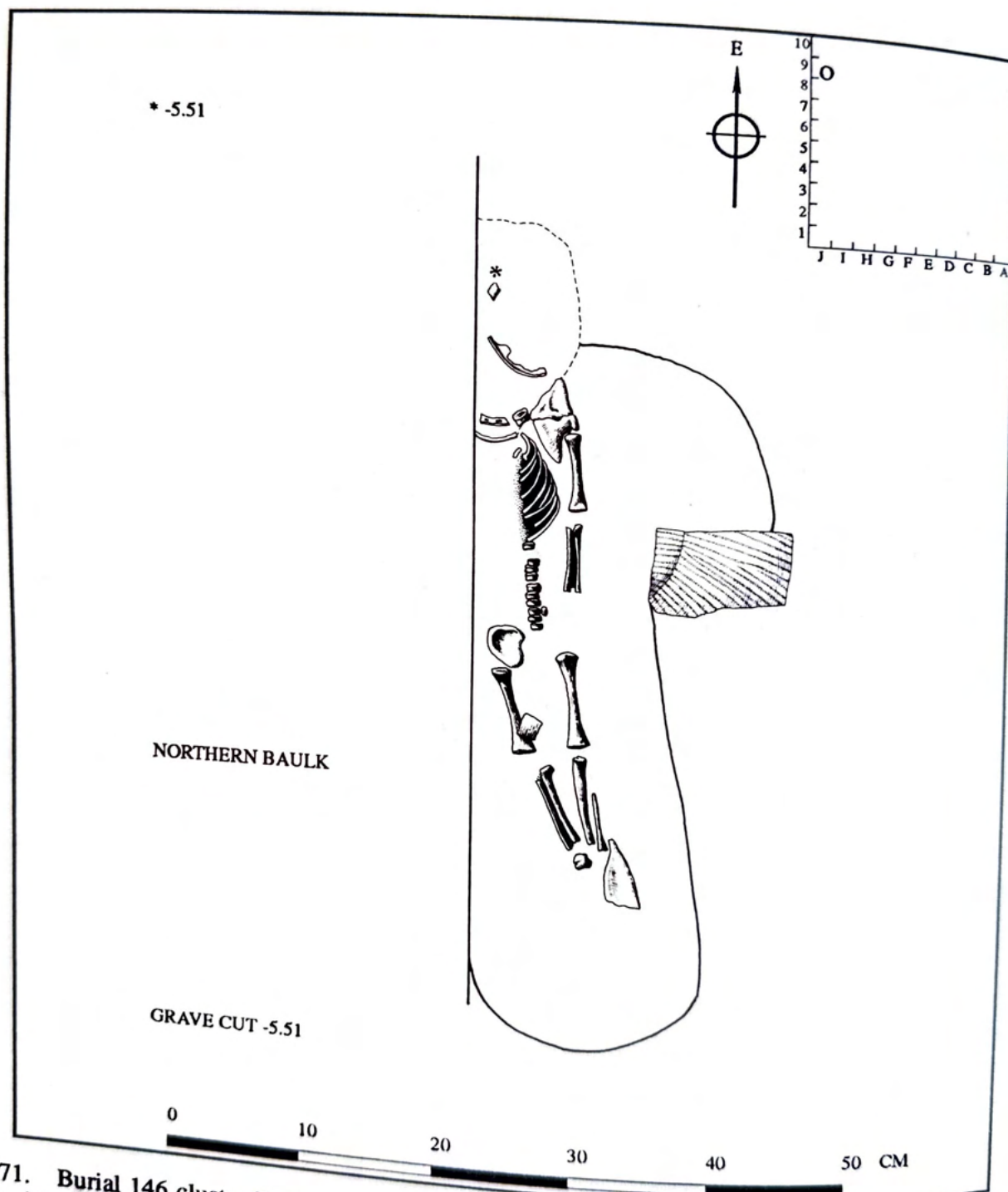


FIG. 171. Burial 146 cluster D stage 1 mortuary phase 2. The grave cut for this burial was particularly clearly visible at 5.51m below datum. The grave contained the body of a tiny infant, covered in red ochre. There was no evidence for the use of *tapa*. The interment occurred at about the same time as the earliest burials in clusters A to C

BURIAL CLUSTER D

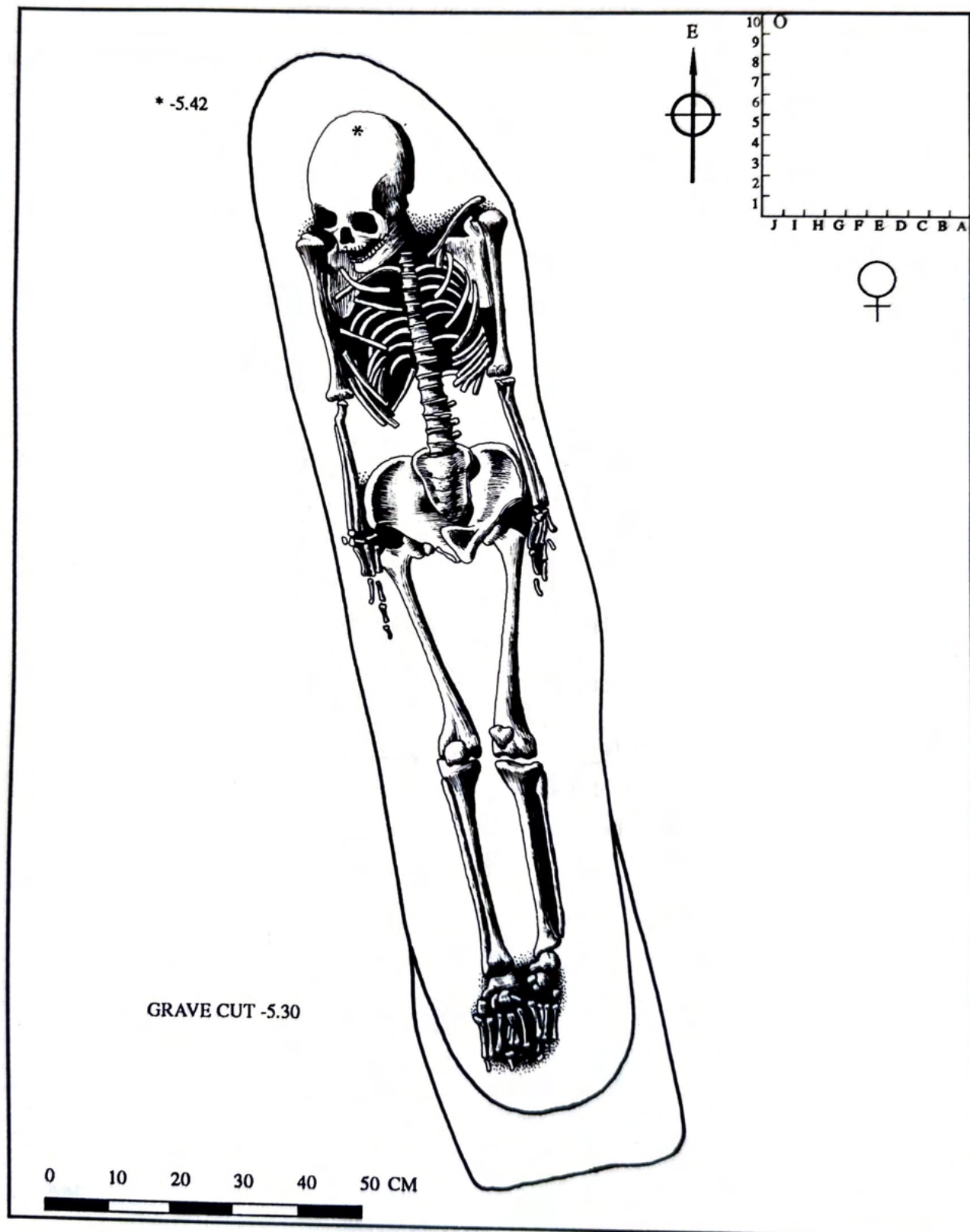


FIG. 172. Burial 142 cluster D stage 1 mortuary phase 2. This grave lies adjacent to and on the same orientation as B146 but 21cm higher. It contains the remains of an adult female. Red ochre and *tap* were found in association with the bones, but no other grave offerings were encountered

STAGE 2 MORTUARY PHASE 2

Stage 2 in this cluster incorporates four and possibly five further interments. Burials 116 and 117, containing an infant and adult male respectively, were interred 1.20m apart but at about the same time. Burials 133 and 134 lay just to the north of B117 and the graves were cut about 8cm higher. A further pit containing shellfish was excavated during this stage, and one further posthole was dug just west of B117 (Fig. 173). Burial 118 lies 50cm south-west of B117. It lies at the periphery of this cluster, and it may not belong to it (Fig. 177).

TABLE 30: *The mortuary goods, ages and sexes of burials from cluster D stage 2 mortuary phase 2*

	B118	B116	B117	B133	B134
Age	0 m	0 m	16	4 m	6 m
Sex	-	-	Male	-	-
Orientation	90°	85°	90°	80°	-
Depth of grave cut below datum	5.27	5.20	5.20	5.12	5.08
Red ochre	-	p	p	p	p
<i>Tapa</i>	-	-	p	-	-
Barrel-shaped shell beads	-	-	8	45	-
Cowrie shell	-	-	-	17	-
Cylinder-shaped bone beads	-	-	-	6	-
Pierced snail shell	-	-	-	1	-
Fish vertebra disc/bangle	-	-	-	7	1

Note: p = present, m = months

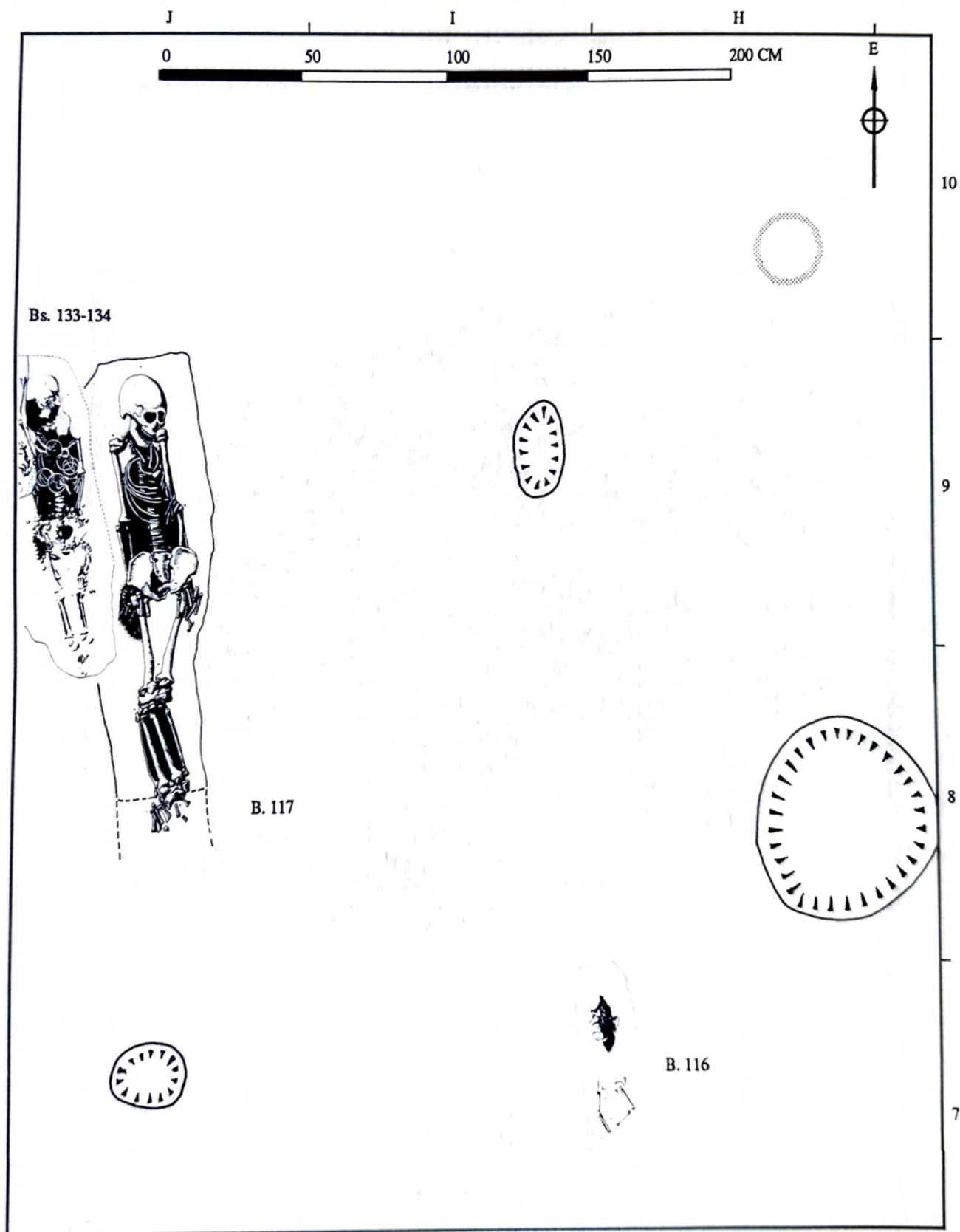


FIG. 173. The distribution of graves and associated features of cluster D stage 2 mortuary phase 2

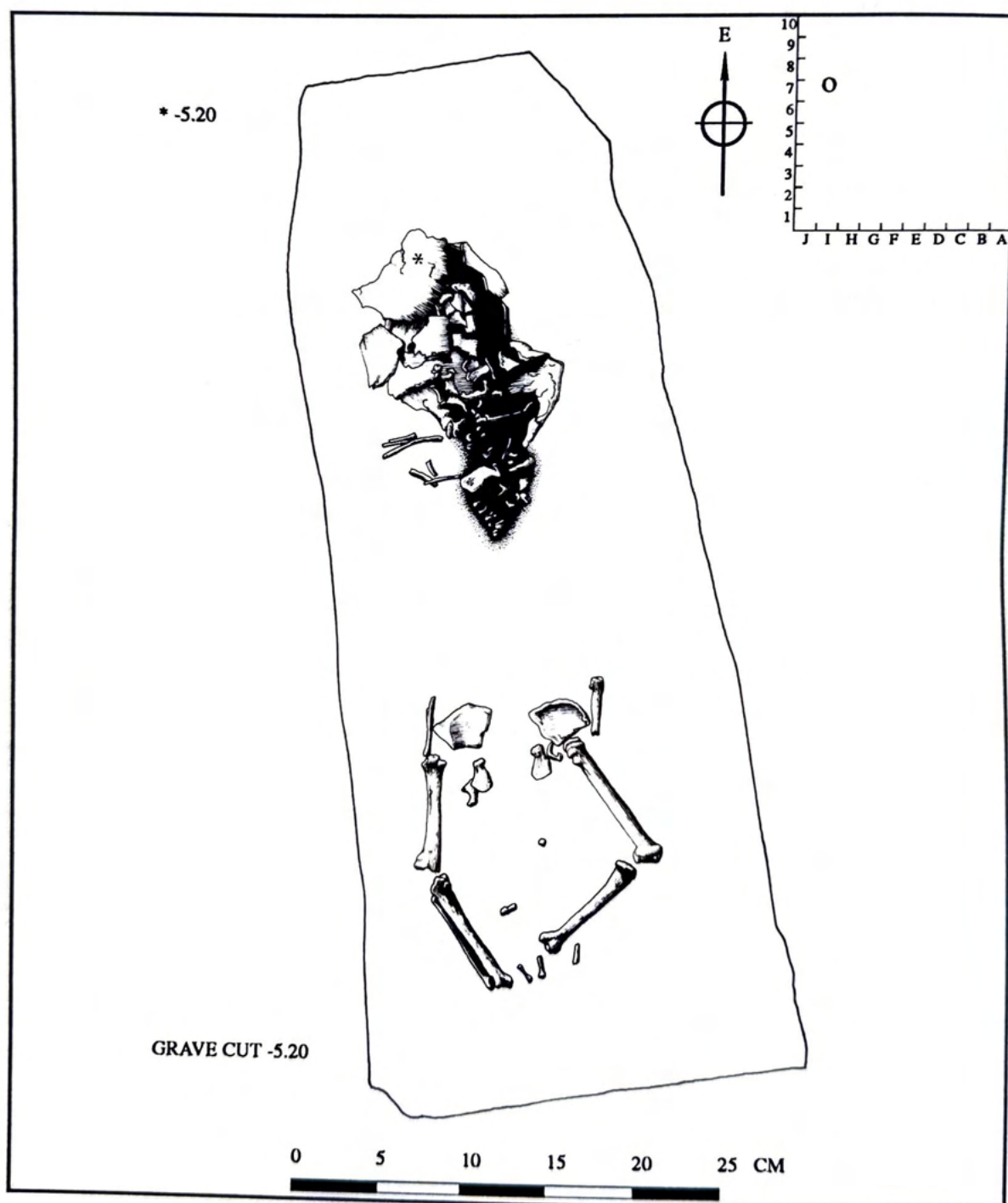


FIG. 174. Burial 116 cluster D stage 2 mortuary phase 2. This infant burial lies some 1.2m to the south-west of B117 and may not belong to cluster D. The bones were partially covered with red ochre, and no other grave goods were encountered

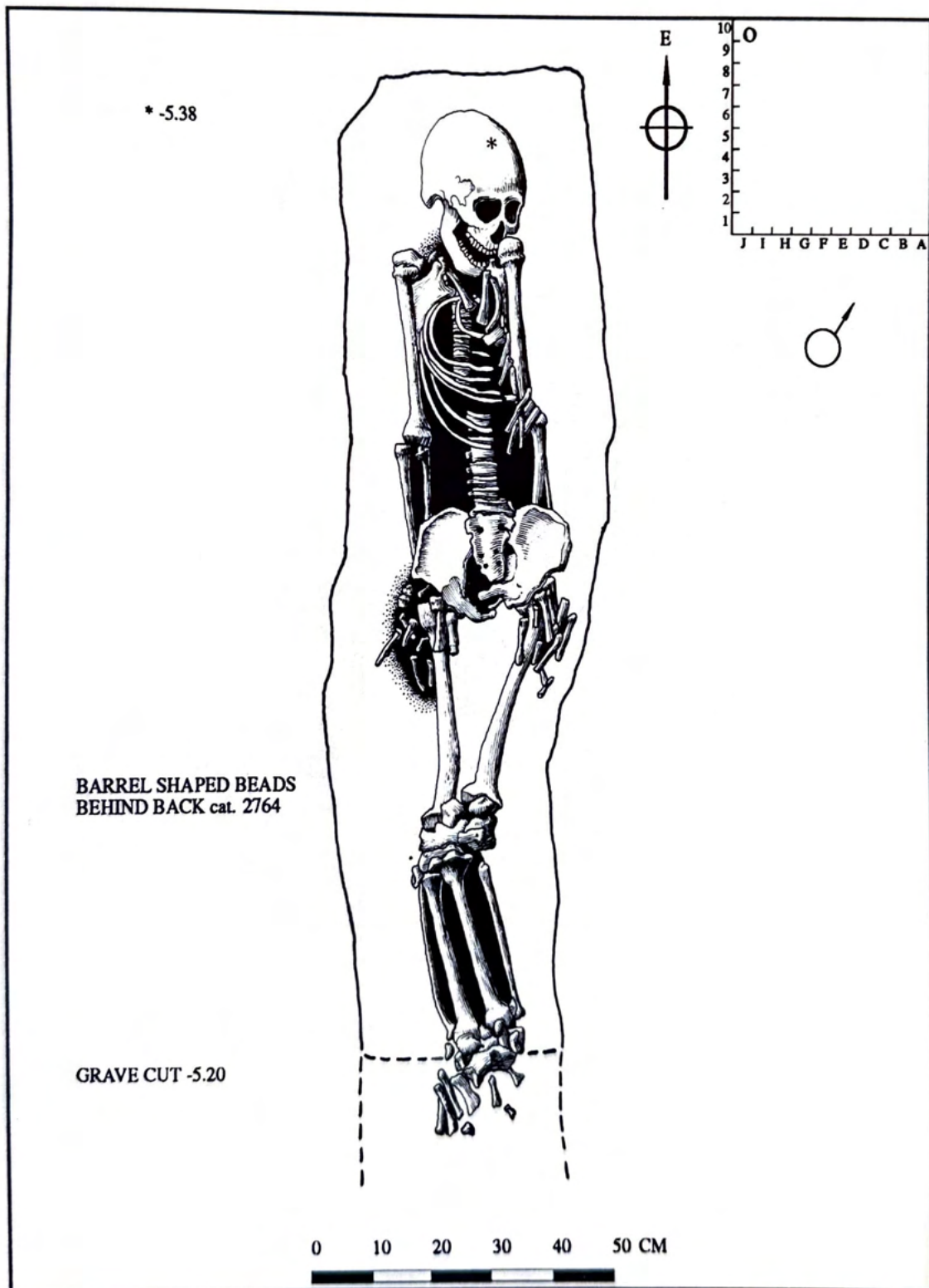


FIG. 175. Burial 117 cluster D stage 2 mortuary phase 2. This grave of an adult male was found 10cm above B142. There are no grave goods apart from eight barrel-shaped shell beads (cat. 2764), which were found under the chest area when the skeleton was being prepared in the laboratory. Red ochre and *tapa* were found over the bones. The orientation was due east

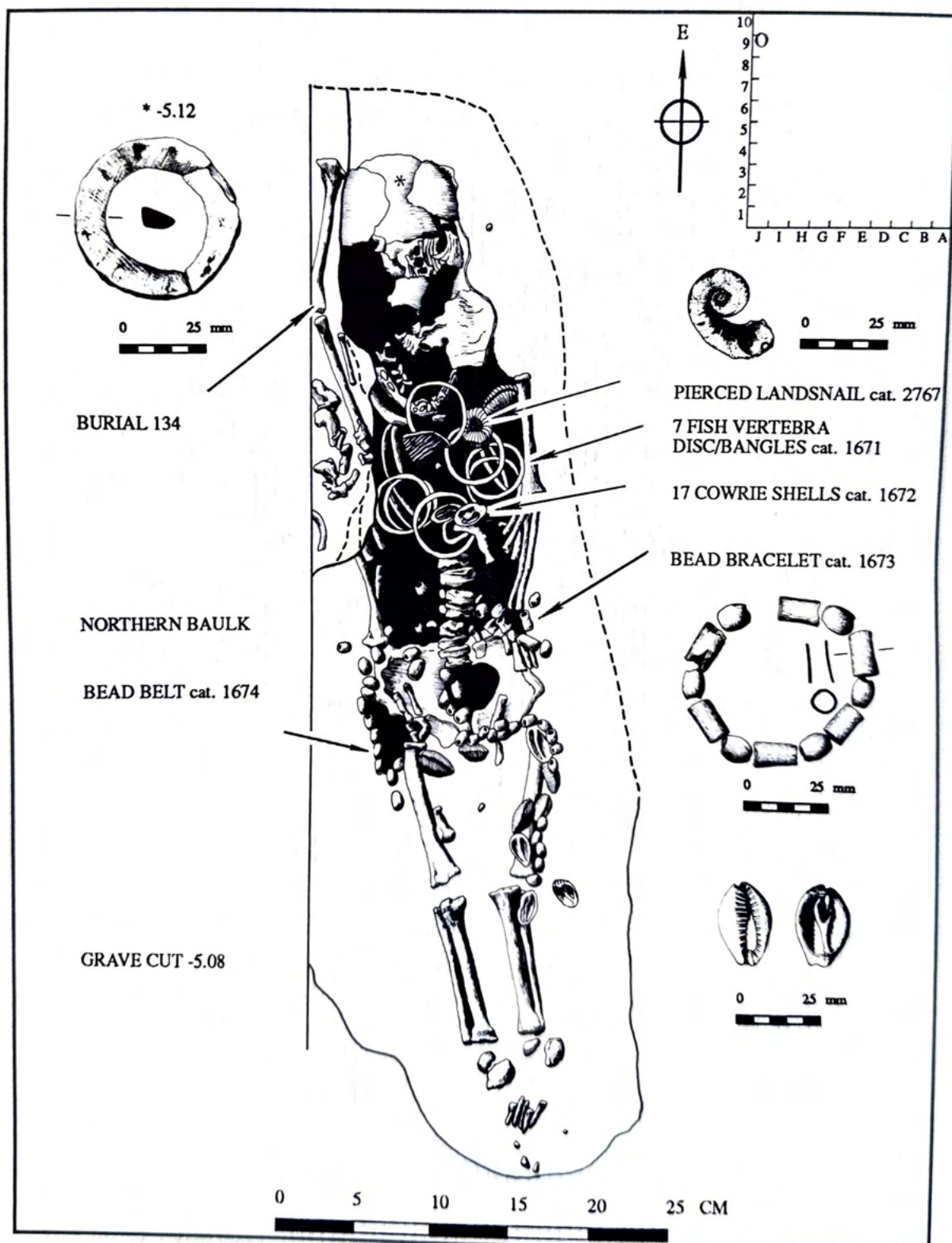


FIG. 176. Burials 133 and 134 cluster D stage 2 mortuary phase 2. See page 257

B133 overlies B117. The body lies at a depth of 5.18m, only 6cm below the grave cut. Several items of jewellery were found with the skeleton. Seven disc/bangles found placed over the chest were made of large fish vertebrae (cat. 1671). One of them remained in the initial stage of manufacture on interment. A pierced gastropod (*Rhiostoma housei*), possibly an earring, was found on the left shoulder (cat. 2767). A shell bracelet made up of five barrel-shaped and six cylindrical bone beads alternating with each other was found on the left wrist. A further string of forty barrel-shaped beads was found round the hips and down the left leg, while seventeen cowrie shells were found distributed over the body from the neck to the left knee. Red ochre covers the body, which was orientated 10° north of east. B134 overlies B133. Most of the body was located beyond the excavated area. It is impossible to be sure of the depth of the grave cut, but the left humerus lies at a depth of 5.08m below datum. No grave goods were encountered apart from a fragment of disc/bangle cut from a fish vertebra and placed over the left wrist (cat. 1701). The bones were covered in red ochre.

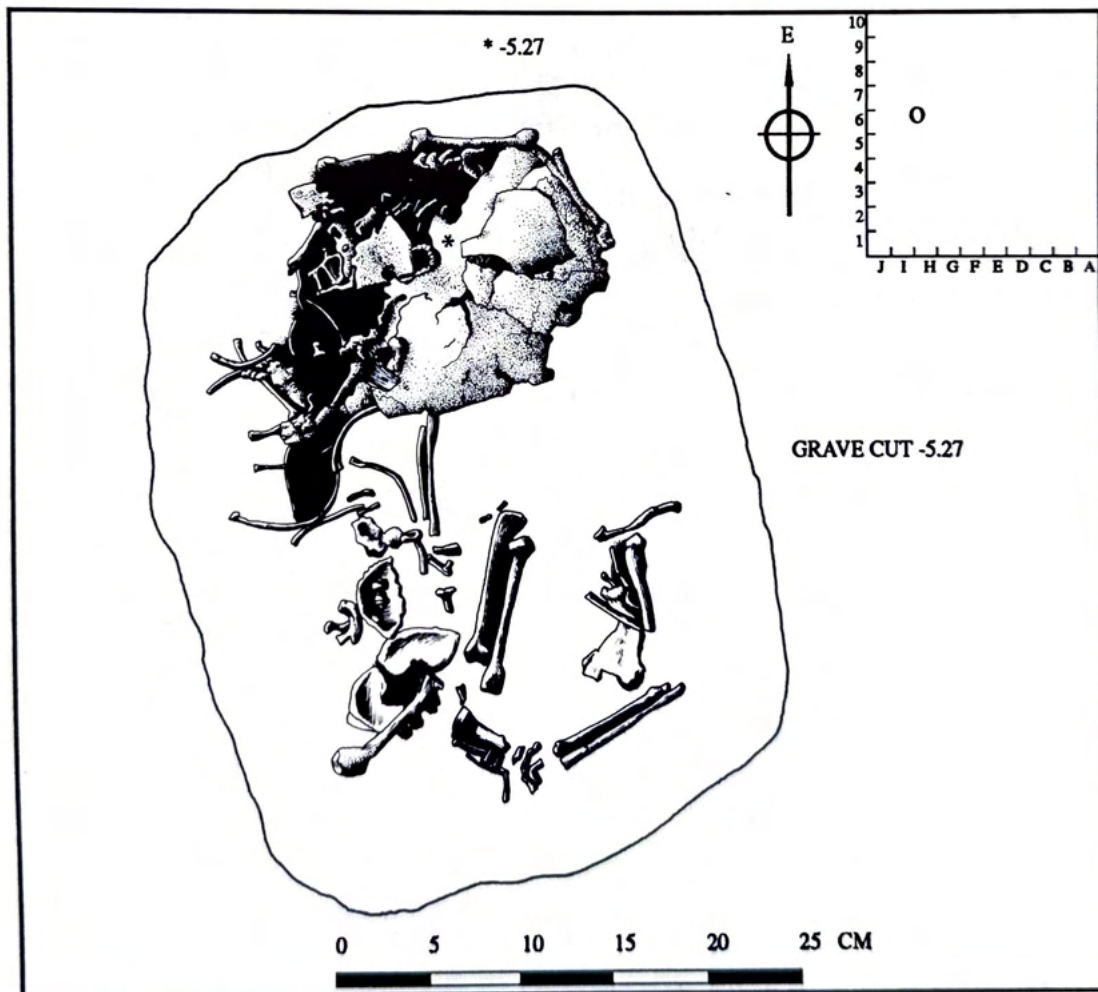


FIG. 177. Burial 118, mortuary phase 2. The inset box at the top right shows the location of the burial within the excavation square. The interment may not belong to cluster D

STAGE 3 MORTUARY PHASE 2

The two burials belonging to this stage were interred soon after those ascribed to stage 2. Burial 123, that of a child, lies directly over B133, while the grave for B122 is located immediately to the east (Fig. 178). A further circular pit was dug at about the time of burial of the child and adult female.

TABLE 31: *The mortuary goods, ages and sexes of burials from cluster D stage 3 mortuary phase 2*

	B123	B122
Age	2	52
Sex	-	Female
Approx. number of children	-	3+
Orientation	80°	80°
Depth of grave cut below datum (m)	5.00	5.00
Red ochre	p	p
Disc-shaped shell beads	120	105
Barrel-shaped shell beads	-	13
Burnishing stone	1	-
Pottery vessels	3	-

Note: p = present

BURIAL CLUSTER D

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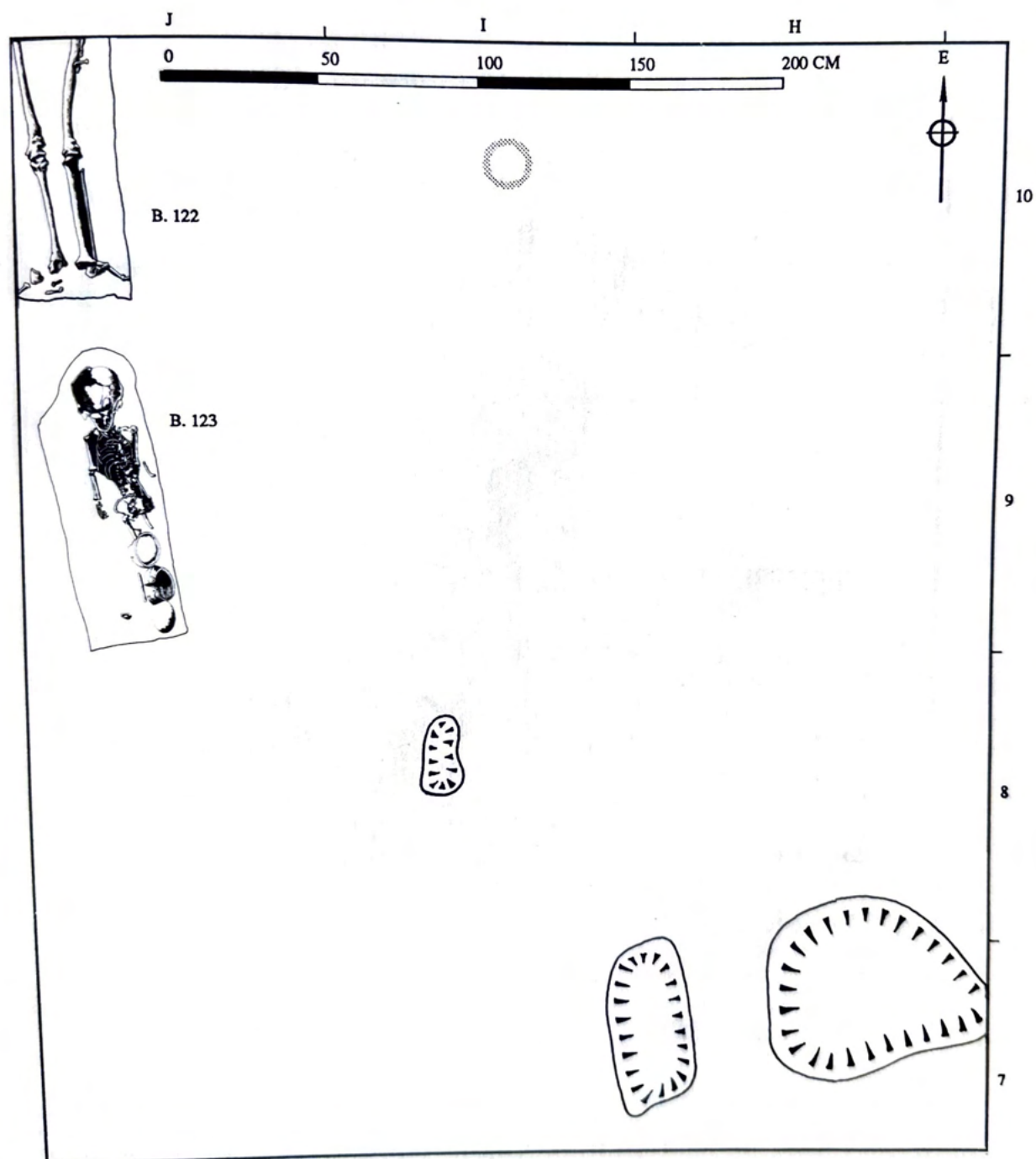


FIG. 178. The distribution of graves and associated features of cluster D stage 3 mortuary phase 2

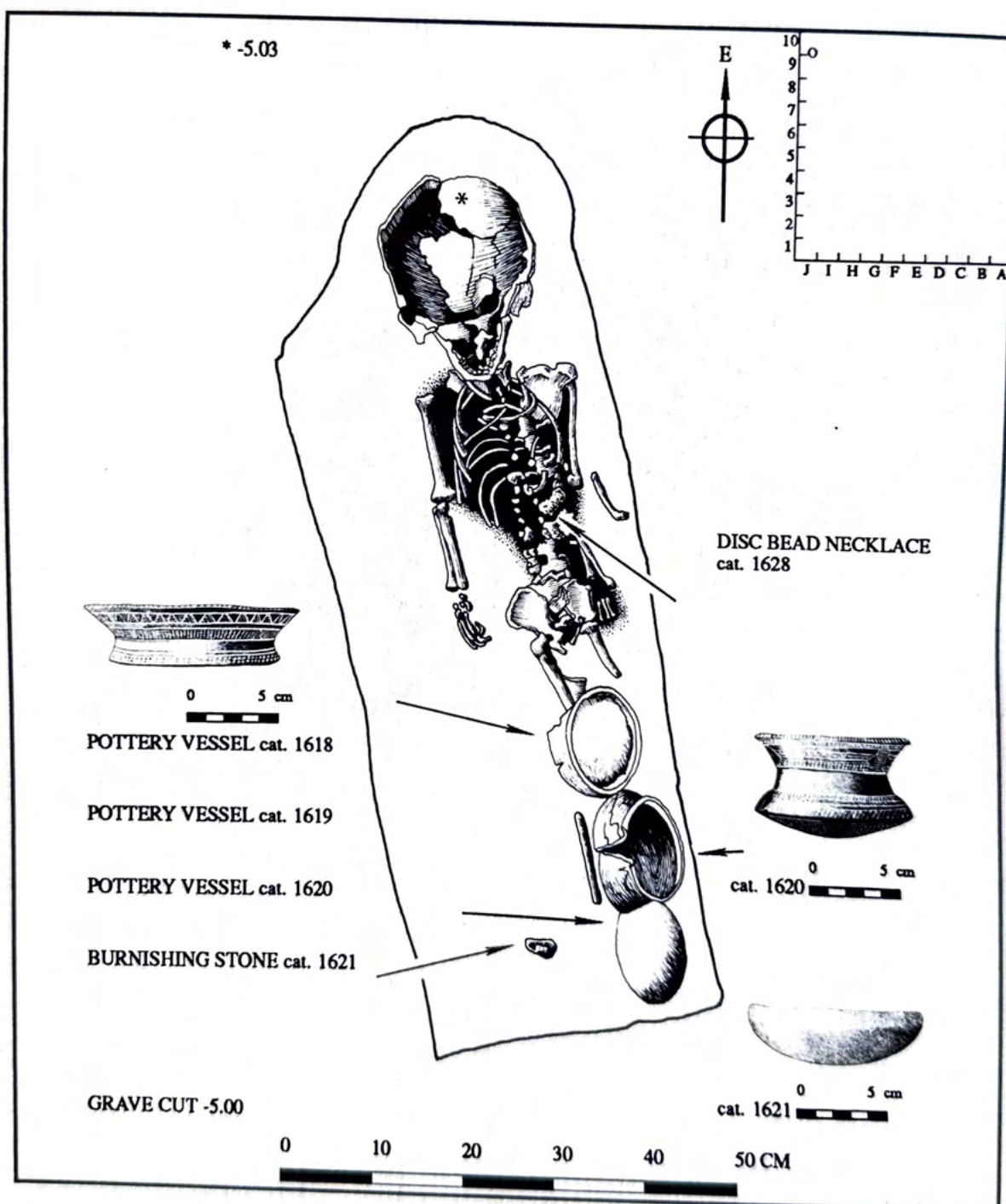


FIG. 179. Burial 123 cluster D stage 3 mortuary phase 2. This burial contains the skeleton of a child. Its grave was 13cm deep. It is one of the latest interments in cluster D and lies immediately over B133. Three complete pottery vessels were found (cats.1618-20), together with a white burnishing stone (cat. 1621) located near the right ankle. A necklace of at least 120 shell disc beads was found in place. The skeleton was covered in red ochre

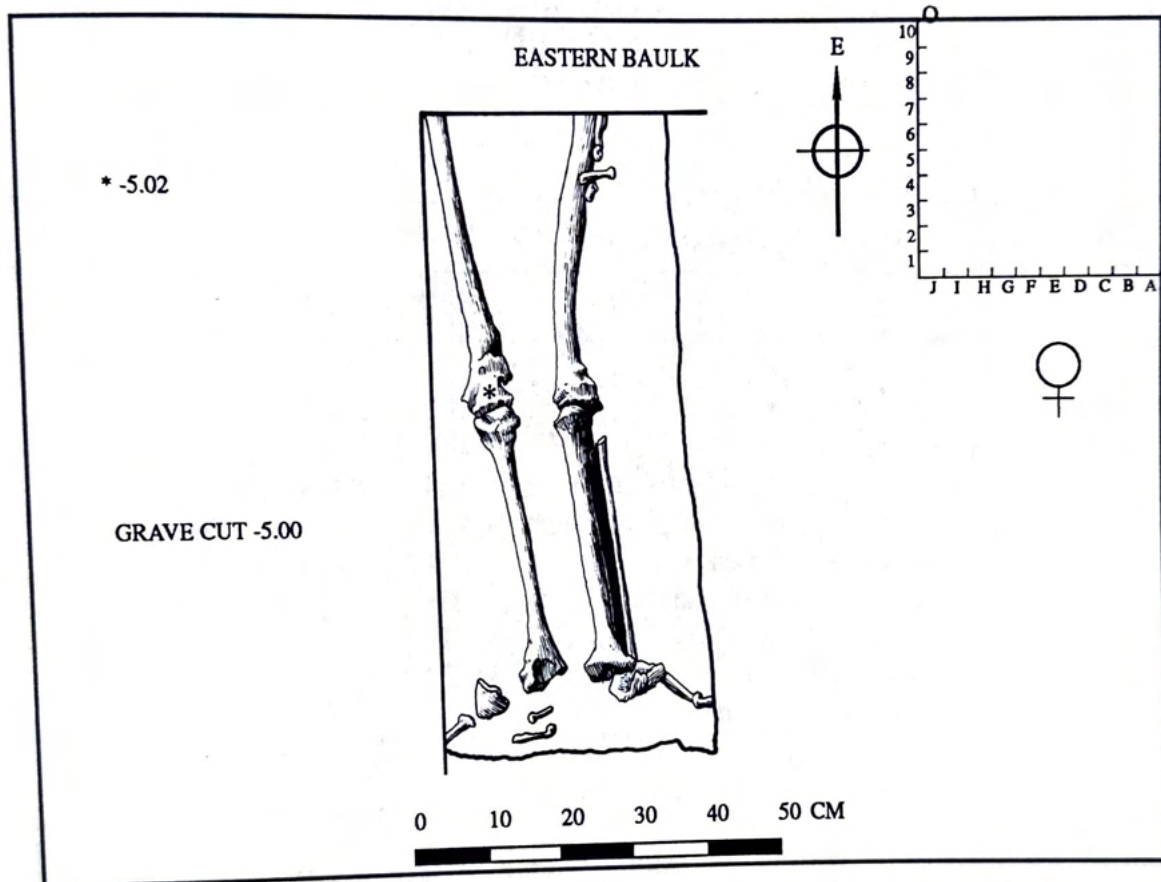


FIG. 180. Burial 122 cluster D stage 3 mortuary phase 2. Only the lower part of this adult skeleton was found in the excavated area. The grave is situated beyond the head of B123 and it contained the oldest person represented in the excavated area, a female aged about 52 at death. The cut of this grave was only found at the same time as the recognition of the leg bones at 5.02m below datum. The bones were covered in red ochre. Two types of beads were found in association, 13 barrel-shaped and 105 of the disc type. These were recovered when the limb bones were being removed from the baulk (cat. 2041)

STAGE 4 MORTUARY PHASE 3

There was a brief hiatus between the interment of stage 3 and 4 burials, measured in 22cm of accumulated deposits. During this interval, several circular pits were dug to the south of the cluster D burial area. These demarcate the cluster C and D areas and their relationship with both or either of the groups is possible. Some of these pits were covered with the beginning of the deposition of layer 10 lens 2, which runs past the cluster D graves. This thick midden began to accumulate just after the interment of burials 92 and 103, the two burials ascribed to stage 4. A further circular pit located about 40cm south of B92, as well as some further postholes, were dug just after the burials were effected (Fig. 181). There are two adult male burials in this stage.

TABLE 32: *The mortuary goods, ages and sexes of burials from cluster D stage 4 mortuary phase 3 and from stage 5 mortuary phase 4 (B44)*

	B103	B92	B44
Age	26	18	18
Sex	Male	Male	Male
Orientation	90°	90°	78°
Depth of grave cut below datum (m)	4.78	4.67	2.77
Red ochre	p	p	p
Disc-shaped shell beads	59	-	-
Barrel-shaped shell beads	56	-	-
Bored shell object	1	-	-
Pottery vessel	2	2	3
Turtle carapace ornament	-	-	1

Note: p = present

BURIAL CLUSTER D

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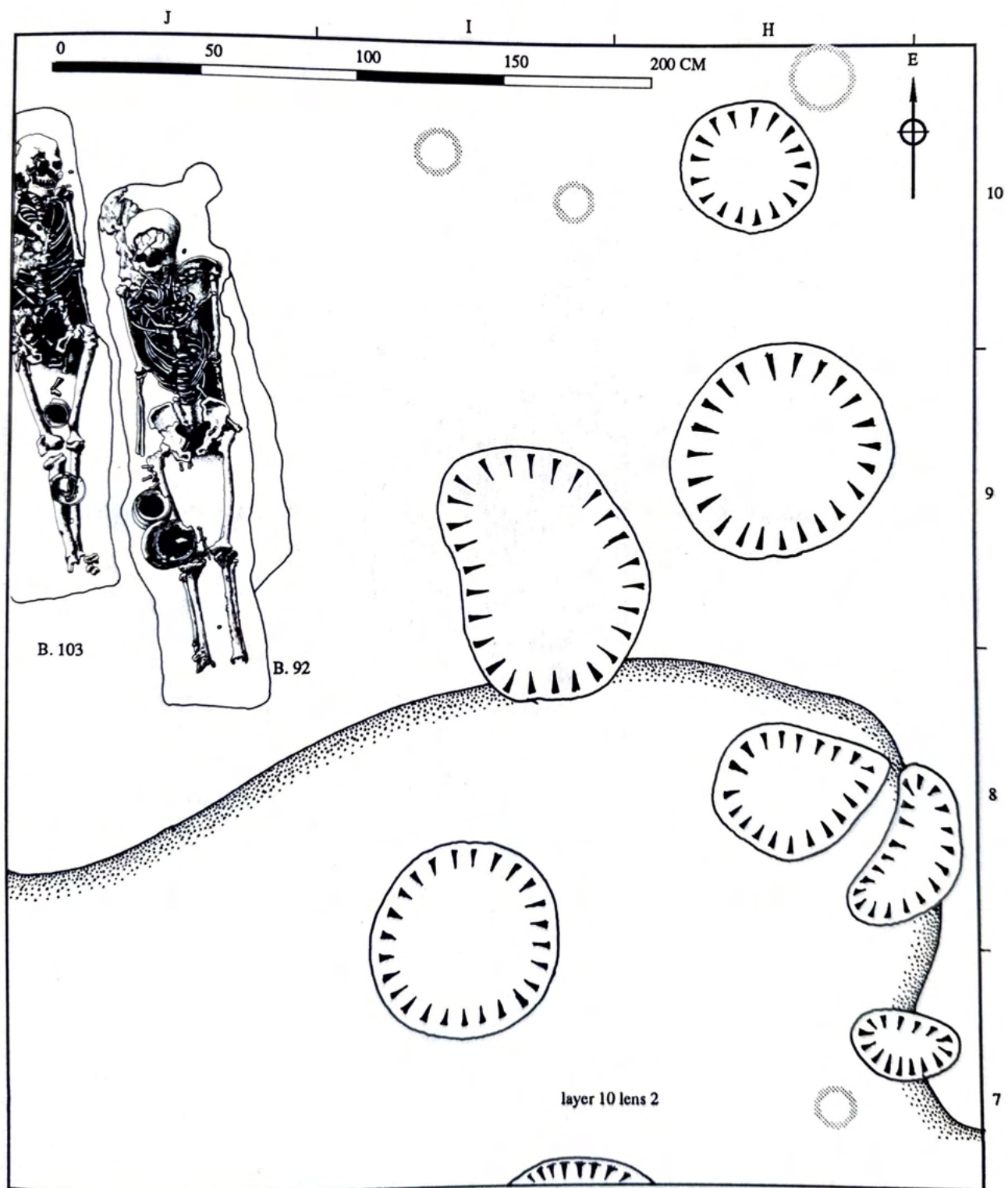


FIG. 181. The distribution of graves and associated features of cluster D stage 4 mortuary phase 3

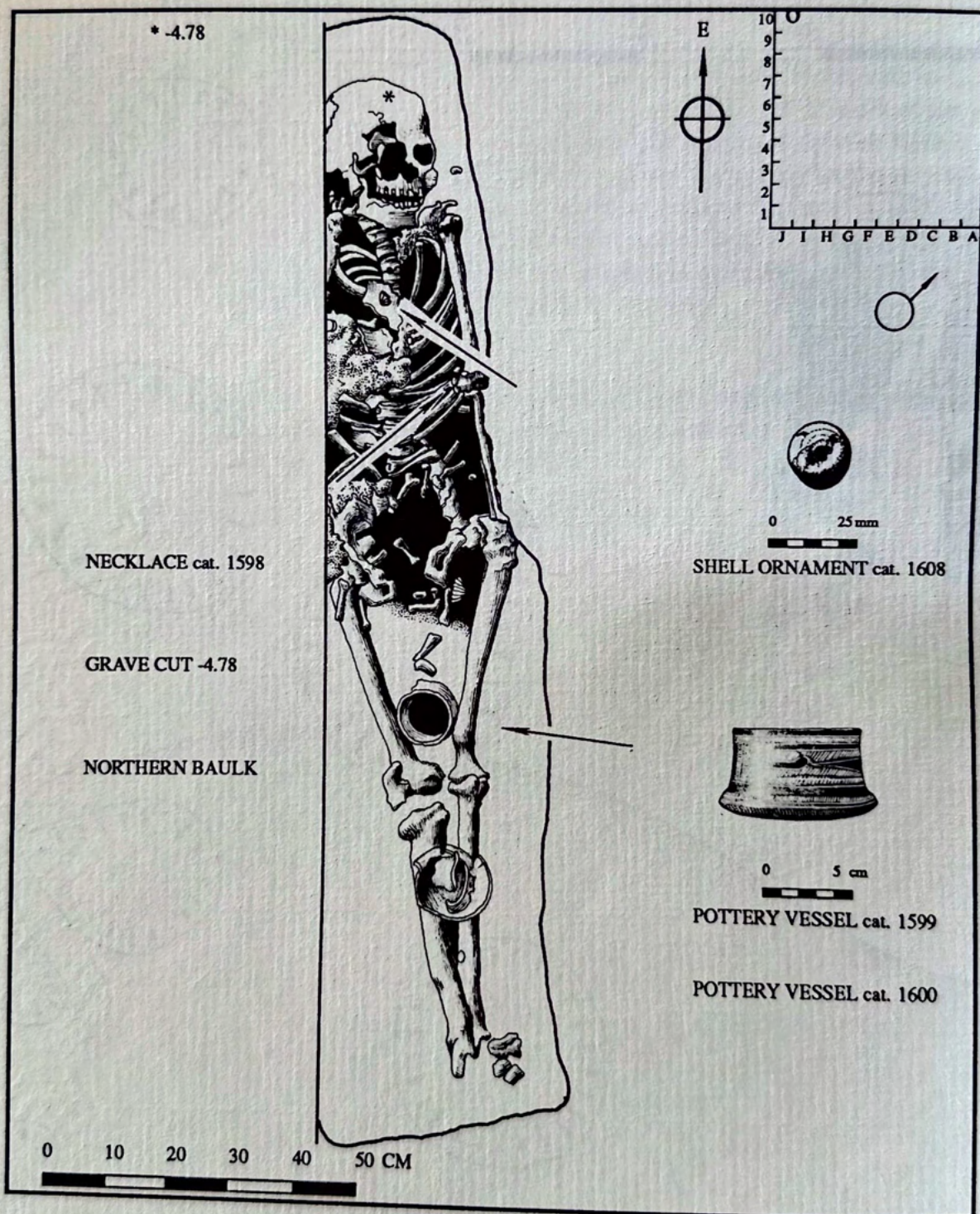


FIG. 182. Burial 103 cluster D stage 4 mortuary phase 3. The remains of this adult male were found lying supine in a grave dug from 4.78 down to 4.98m. Most of the bones were present in the excavated area. 59 shell disc and 56 barrel-shaped shell beads (cat. 1598) were found over the chest area. A bored shell object made from the end of a *Conus* shell was found after the removal of the skeleton. Two pottery vessels were found on top of the shins. Red ochre covered the whole body

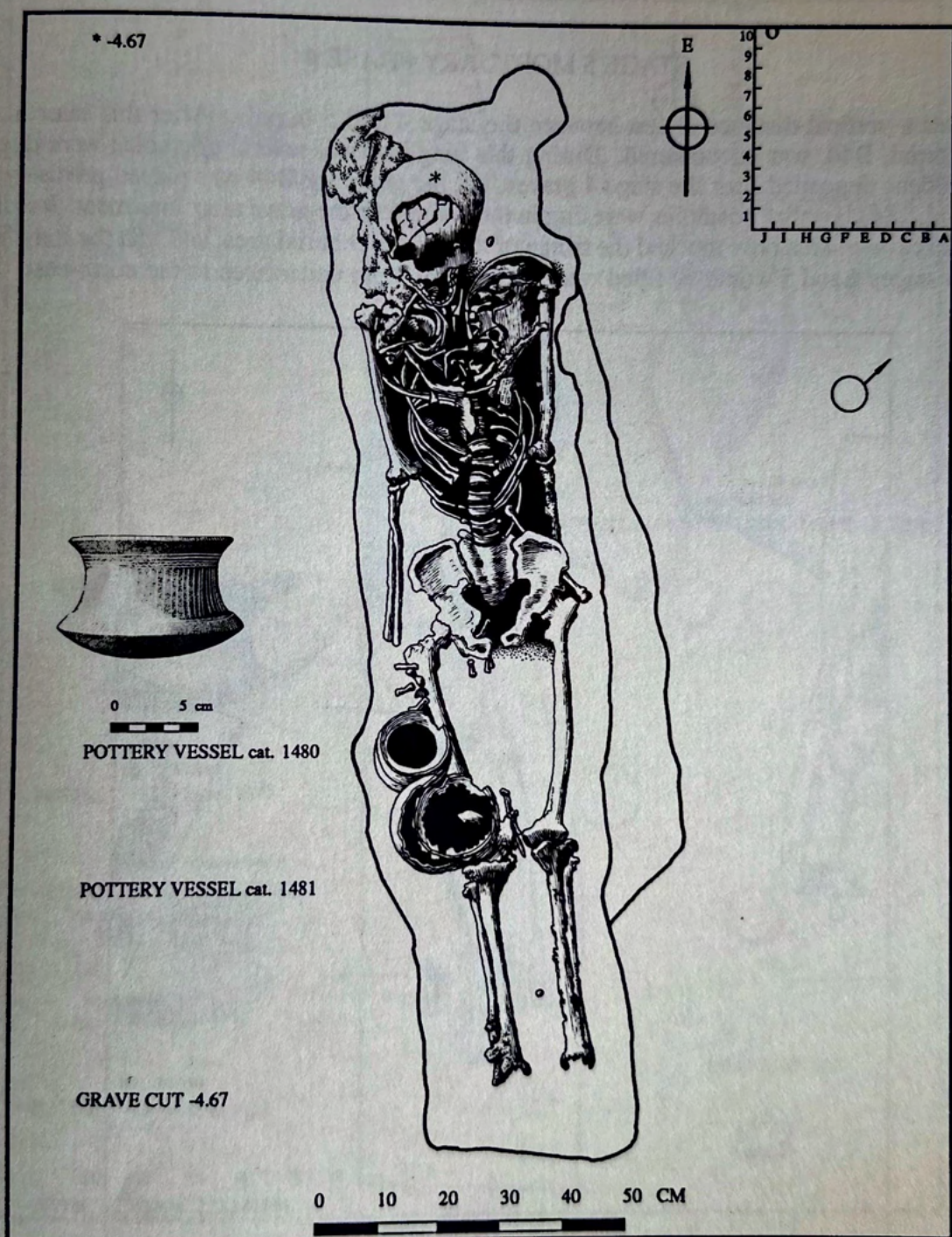


FIG. 183. Burial 92 cluster D stage 4 mortuary phase 3. The grave of an adult male was found on the right-hand side of B103. The grave was cut from 4.67 down to 4.93m. The body, particularly in the area of the chest, had been disturbed in prehistory. Two whole pottery vessels were found beside the right thigh (cats. 1480-1). Red ochre had been used in the mortuary rite

STAGE 5 MORTUARY PHASE 4

There was a vertical distance of 2m between the stage 4 and 5 burials. After this interval, one further burial, B44, was encountered. During this long interval, several postholes were dug and shell middens deposited over the stage 4 graves, but the grave for B44 was placed precisely over B103 (Fig. 184). Further postholes were dug in the vicinity of the grave after interment. It is likely that the excavated area only touched the fringe of the cluster D burial area, and that the long hiatus between stages 4 and 5 would be filled were excavations to be undertaken to the north-east.

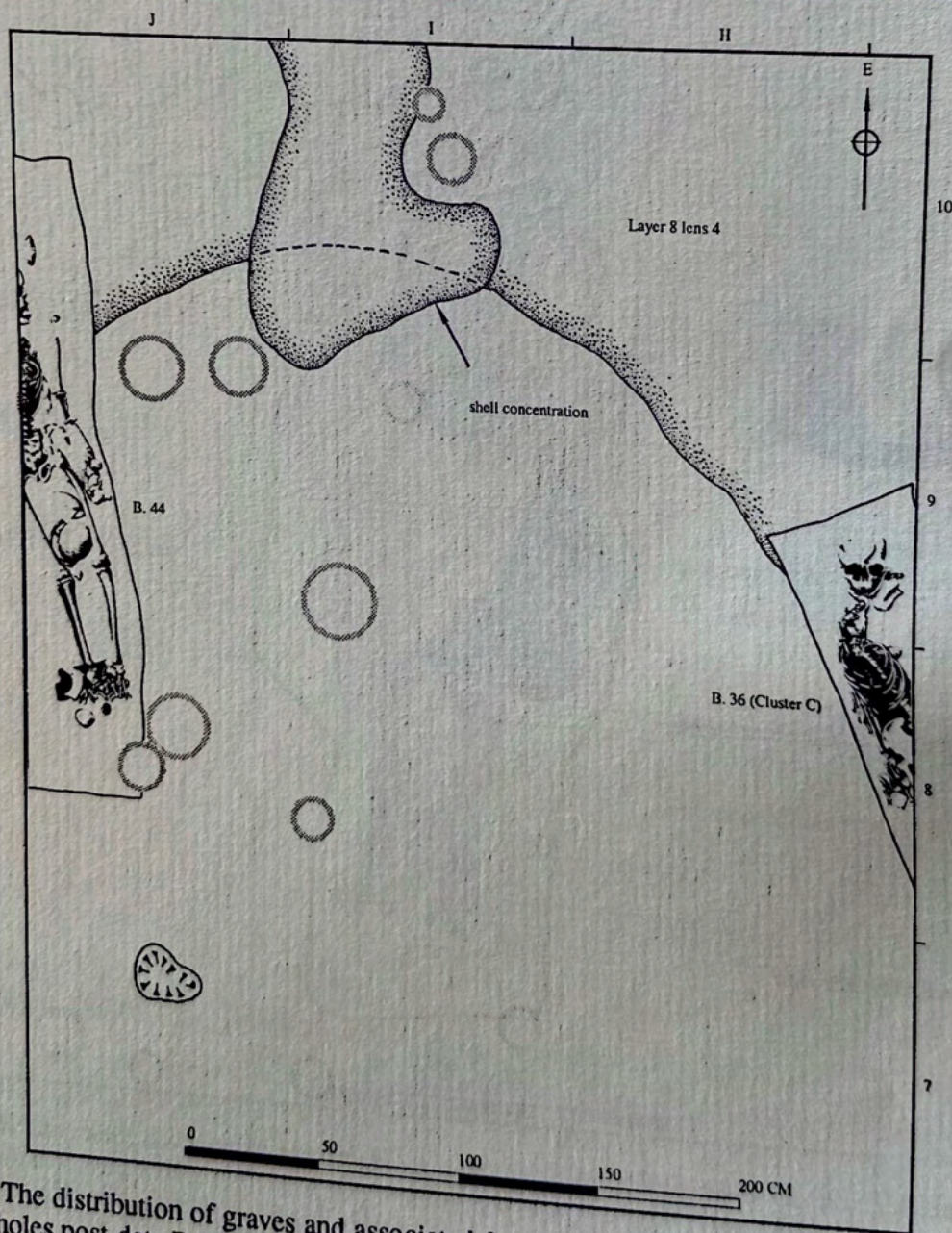


FIG. 184. The distribution of graves and associated features of cluster D stage 5 mortuary phase 4. The darker postholes post-date B44

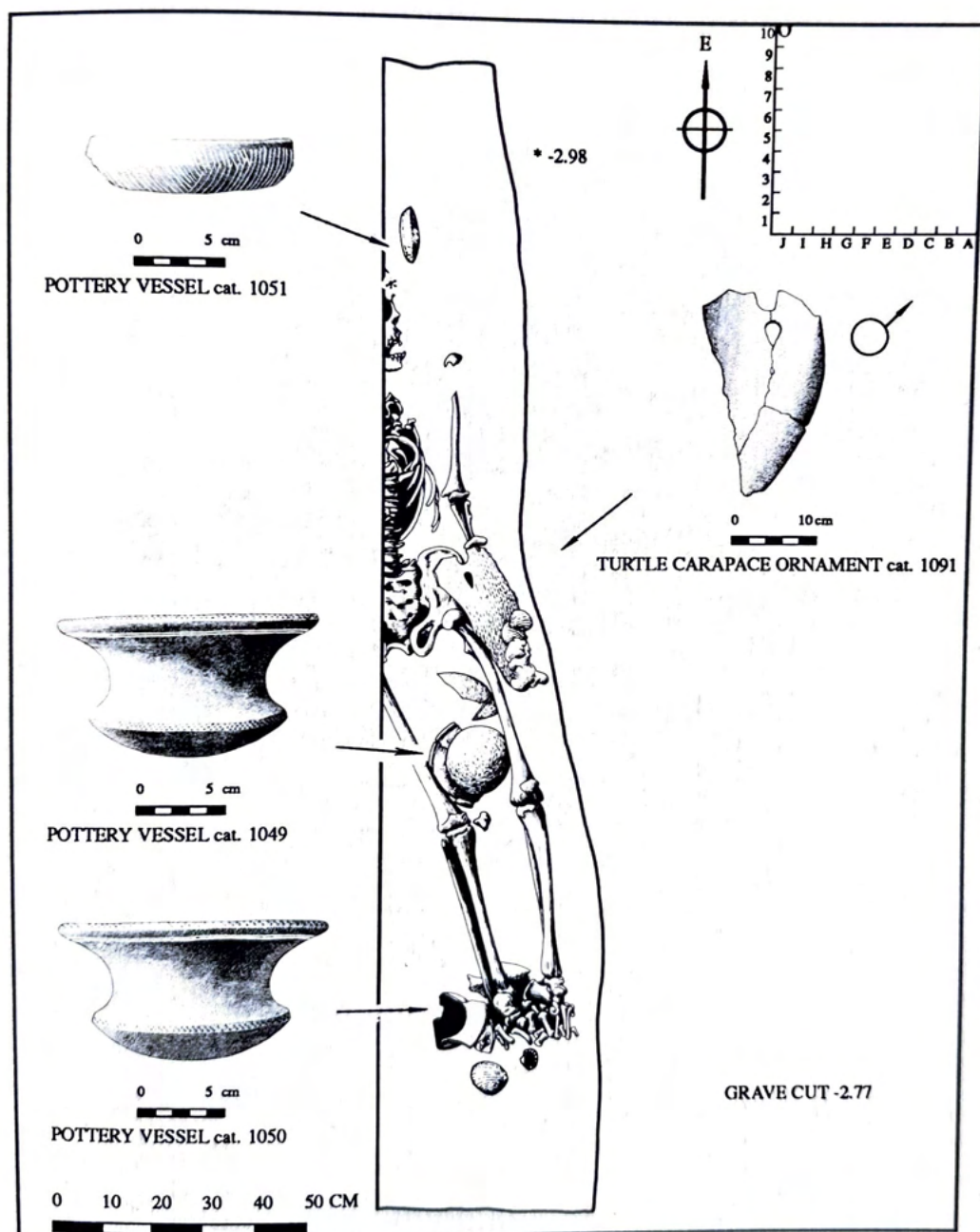


FIG. 185. Burial 44 cluster D stage 5 mortuary phase 4. The remains of a male of c. 18. The body was accompanied by three broken pottery vessels. The first was placed above the head (cat. 1051), the second was found between the knees (cat. 1049), and the third (cat. 1050) was located beside the right ankle. An ornament made of cut and shaped turtle carapace covered the left hand and wrist (cat. 1091). Red ochre was restricted to the head area

VIII. BURIAL CLUSTER E

ONLY the edge of this cluster was encountered in the excavation square. Burials belonging to three stages have been recognized. The earliest belong to MP2, and the other two stages to MP4. Two infant burials, however, were observed in the southern section. The earlier, B148, was barely visible. It comprised a spread of red ochre and one or two infant bones at a depth of 5.60m and below B132. The later was found at a depth of 5.30m, some infant bone with red ochre and *tapa* fabric being visible in section.

STAGE 1 MORTUARY PHASE 2

Not long before the first stage 1 interment, a pit was cut about 60cm to the north of the burial, and several more distant and probably unrelated postholes were dug (Fig. 187). Two further pits were later dug beyond the feet of B102, these dating between the cutting of the graves of burials 102 and 132.

TABLE 33: *The mortuary goods, ages and sexes of burials from cluster E stage 1 mortuary phase 2*

	B132	B124	B104	B102
Age	34	0 m	0 m	35
Sex	Male	-	-	Female
Approx. number of children	-	-	-	3+
Orientation	87°	85°	-	90°
Depth of grave cut below datum (m)	-	5.27	5.20	5.10
Red ochre	p	p	p	p
<i>Tapa</i> fabric	p	-	-	p
Disc-shaped shell beads	39000	-	-	-
Funnel-shaped beads	5	-	-	-
Short barrel-shaped beads	11	-	-	-
Bored canine tooth	1	-	-	16
Shell implement	-	-	-	1
Worked fish vertebrae	-	-	-	3
Bone fishhook	-	-	-	1
Pottery vessel	-	-	-	2
Burnishing stone	2	-	-	-

Note: p = present, m = months

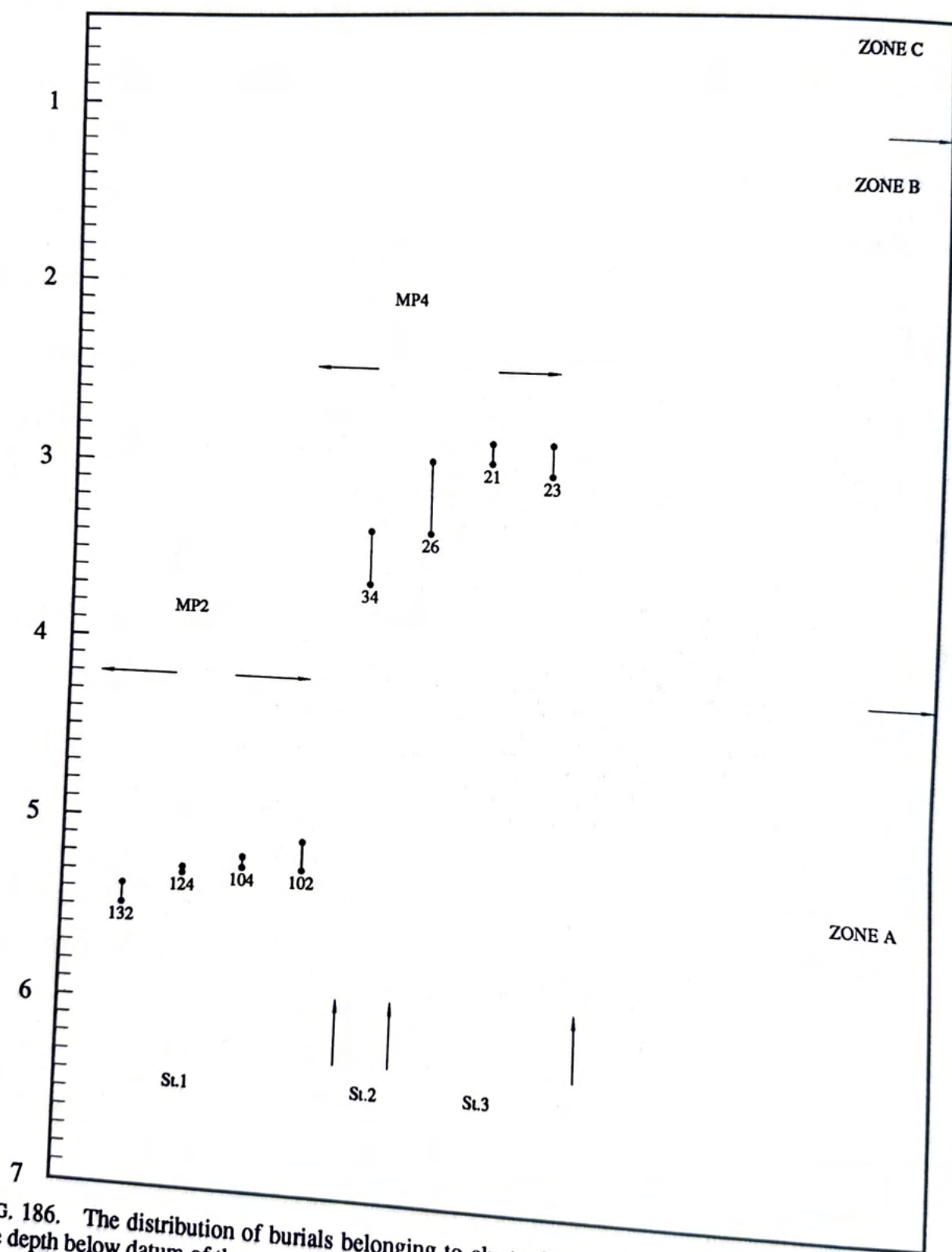


FIG. 186. The distribution of burials belonging to cluster E. The upper mark for each burial represents the depth below datum of the grave cut and the lower, the depth of the human remains. The left-hand scale shows depth below datum in metres

BURIAL CLUSTER E

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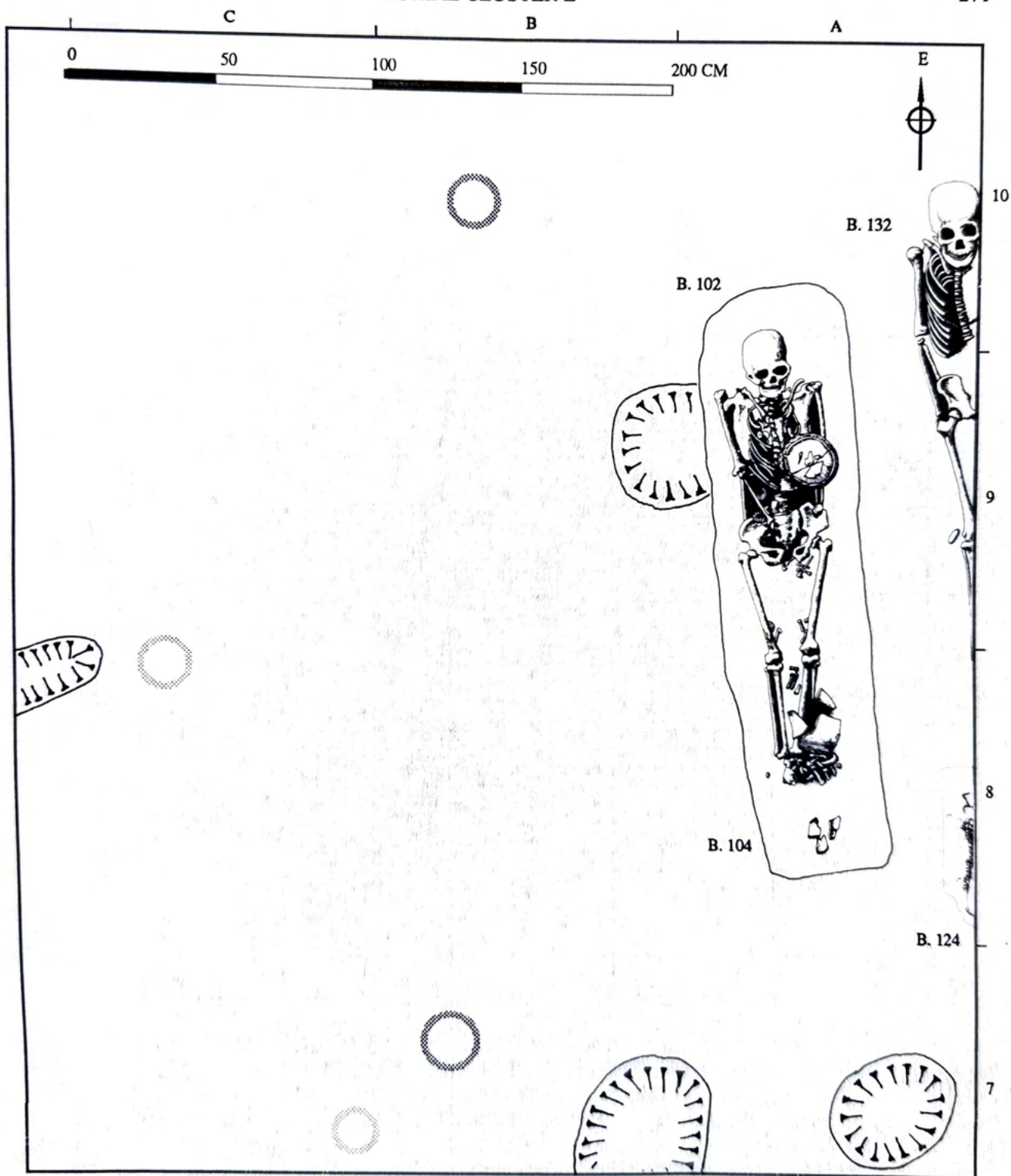


FIG. 187. The distribution of graves and associated features of cluster E stage 1 mortuary phase 2. Post-holes in lighter grey were contemporary or just prior to the burials, others postdate burials 102 and 132

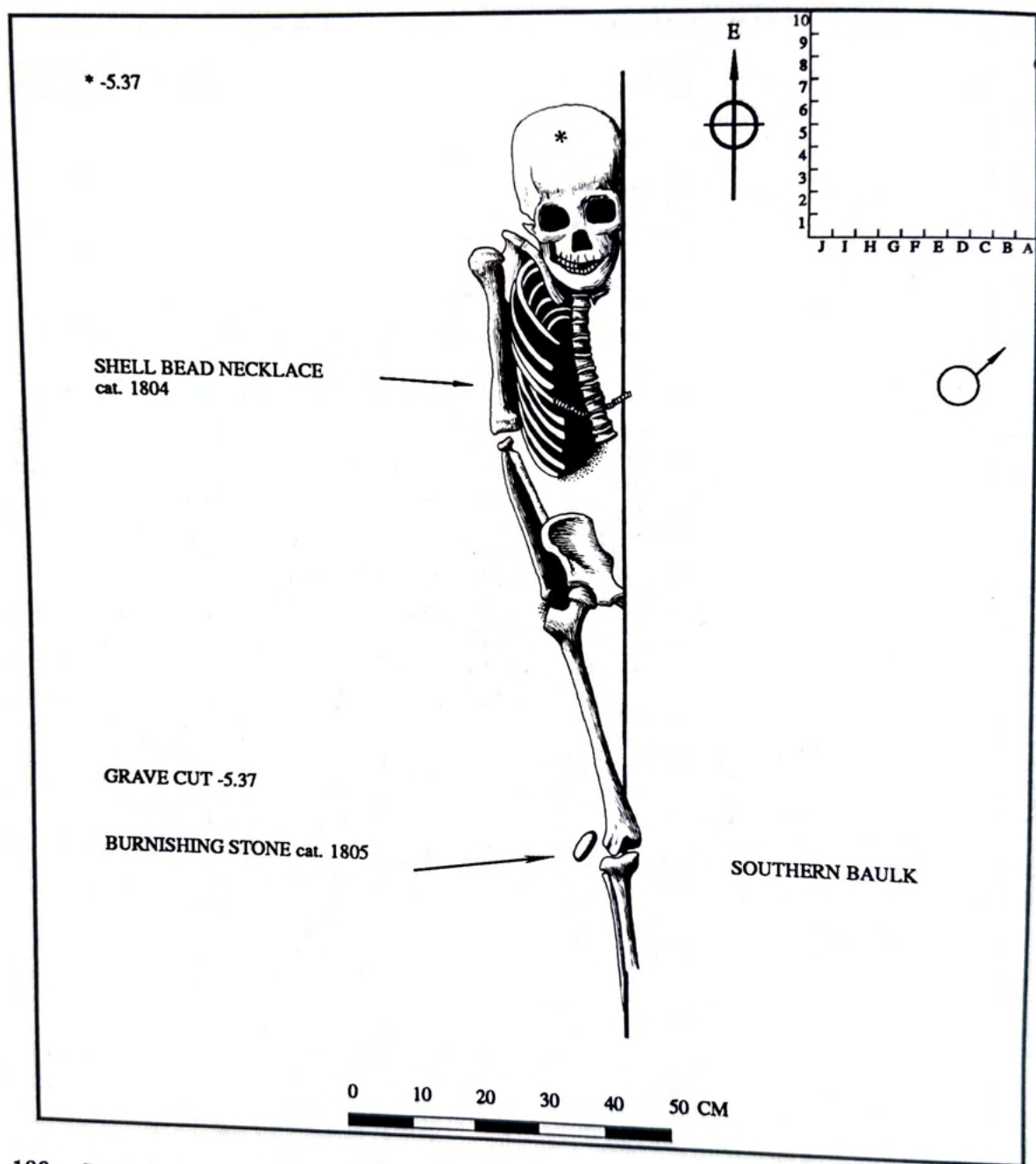


FIG. 188. Burial 132 cluster E stage 1 mortuary phase 2. This adult male burial is the earliest in this cluster. The body was laid out on the back at a depth of 5.48m, while the upper part of the cranium was found at 5.37m. The bones were covered in red ochre and traces of *tapa* survived. Three varieties of shell bead were found strung as a necklace (cat. 1804). Five have a funnel shape, eleven were short barrel-shaped beads and there were about 39,000 disc beads. All were found concentrated in the chest region. This is the latest burial to yield the funnel-shaped variety. They were superseded by the barrel-shaped variety which dominated in the later burials of MP2. During laboratory cleaning of the bones, part of the canine of a carnivore, pierced at the base, was found. It was probably used as a pendant (cat. 2769). Two burnishing stones were present, one (cat. 1805) at the right knee and the other (cat. 2014) on the left shoulder

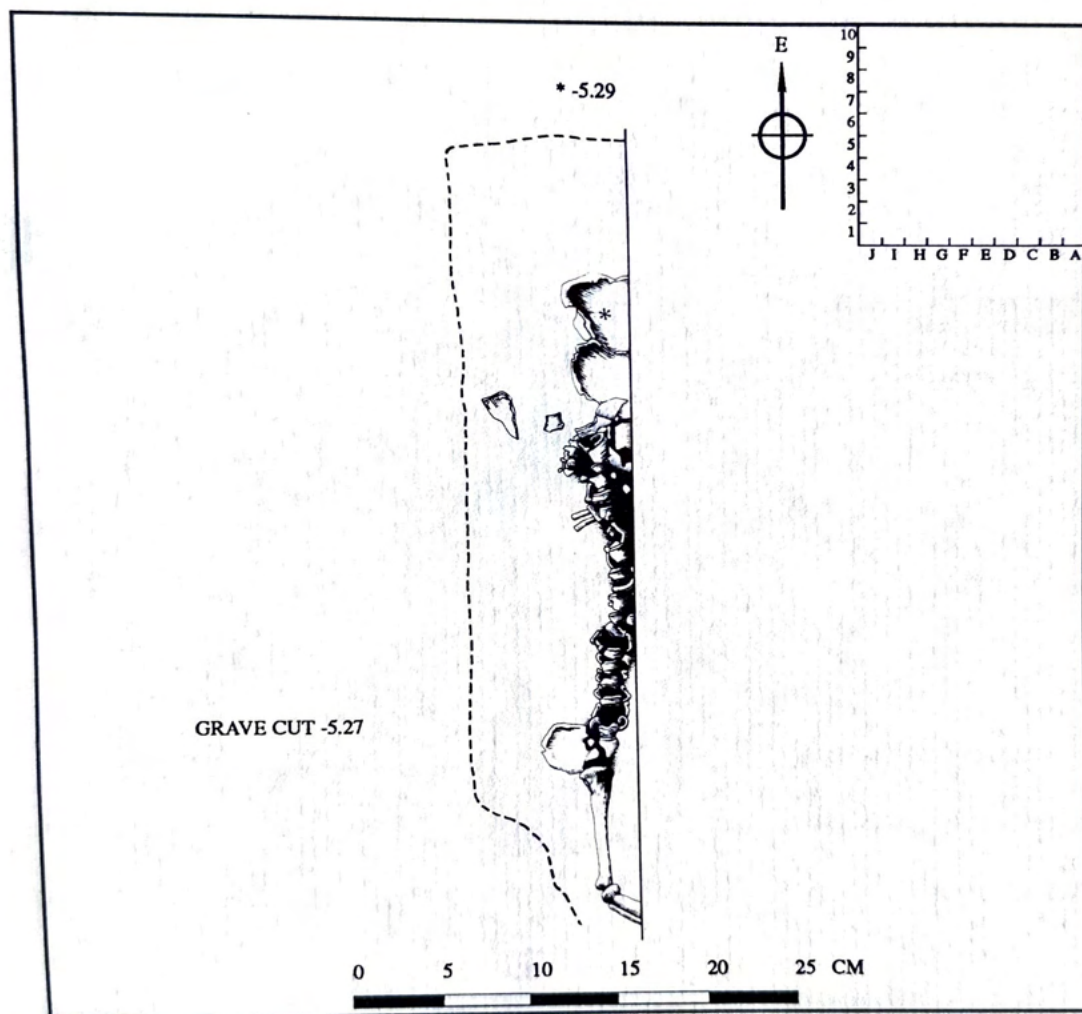


FIG. 189. Burial 124 cluster E stage 1 mortuary phase 2. The remains of a very young infant, badly disturbed by the later interment of B102. Only the right-hand side of the body was located in the excavated area. It was found beyond the feet and slightly later than B132. There were no grave goods, although the bones had been sprinkled with red ochre

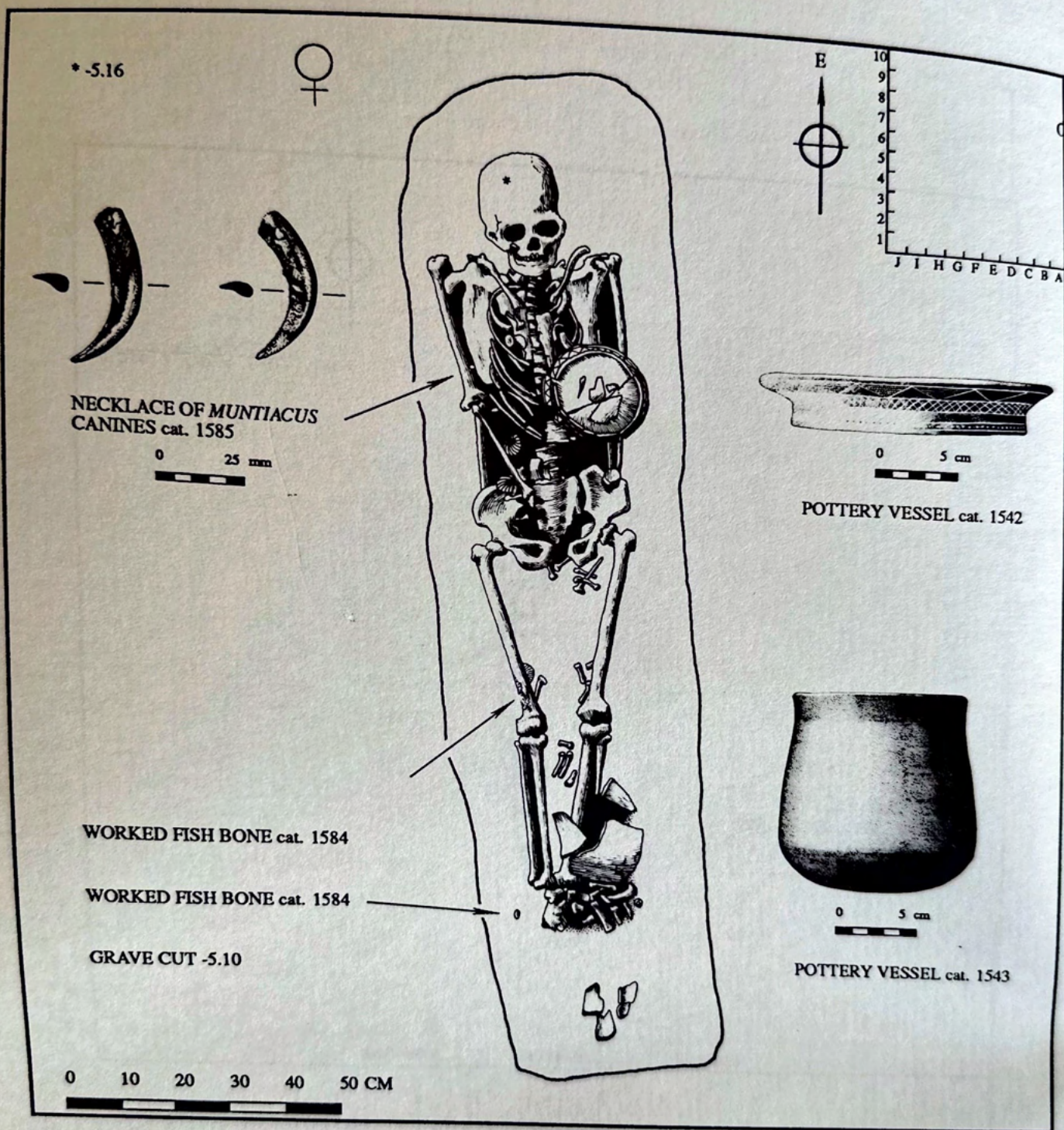


FIG. 190. Burial 102 cluster E stage 1 mortuary phase 2. Two pottery vessels, one (cat. 1542) were placed upside-down on the left side of the chest and the other (cat. 1543) over the ankles. Three shark vertebrae were found near the feet (cat. 1584), all being modified on the exterior surface by cutting and smoothing. Two had a hole bored through the middle. Sixteen pierced *Muntiacus muntjak* canines were found arranged as if they had been strung from the right shoulder down to the left hip (cat. 1585). During the laboratory preparation of the bones, a bone fish-hook and a shell blade with ground cutting edge were found (cats. 2765 and 1794). A second infant interment, B104 (Fig. 190), was found disturbed by the digging of the grave for B102. Only the ochre-stained bones of the skull, leg, arm and ribs were found

STAGE 2 MORTUARY PHASE 4

Stage 2 in this cluster is represented by B34, an infant interred at a depth of 3.35m.

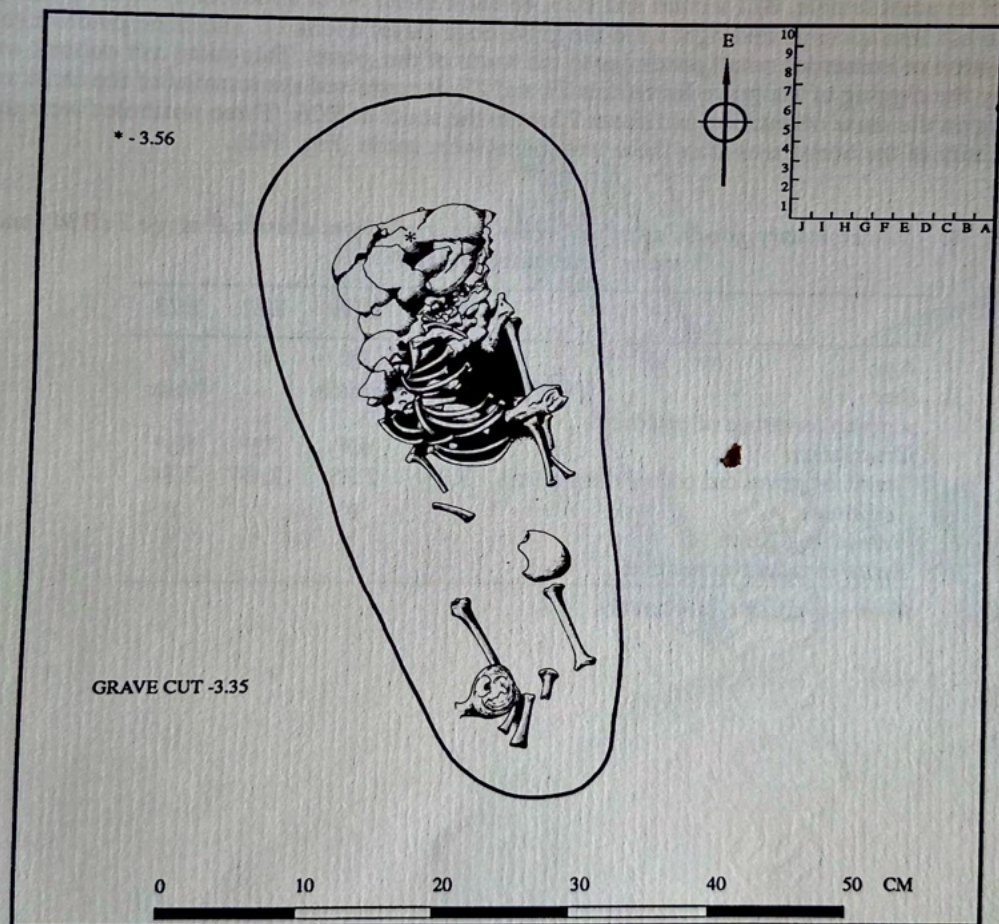


FIG. 191. Burial 34 cluster E stage 2 mortuary phase 4. The remains of an infant laid out with the head pointing to the north-east. No traces of red ochre and no grave goods were encountered. The grave was 28cm deep

STAGE 3 MORTUARY PHASE 4

There are three burials in this, the last stage recognized for cluster E. Burial 26 contained the remains of an adult female, B21 a child and B23, an adult male. At or about the time of interment of B26, an ash lens accumulated right up to the grave edge (layer 8 lens 1). The same juncture saw the excavation of numerous small postholes to the north of the grave. This same ash deposit was severed by the digging of the grave for burials 21 and 23. It contained the remains of the child and man, lying on the same orientation and about 25cm to the south of B26. Three postholes were dug in the vicinity of the burial area after these interments were made (Fig. 192).

TABLE 34: *The mortuary goods, ages and sexes of burials from cluster E stage 2 (B34) and stage 3 mortuary phase 4*

	B34	B26	B21	B23
Age	0 m	35	8	30
Sex	-	Female	-	Male
Approx. number of children	-	2-3	-	-
Orientation	65°	80°	72°	85°
Depth of grave cut below datum (m)	3.35	2.95	2.84	2.84
Red ochre	-	P	-	P
Burnishing stone	-	-	-	1
Turtle carapace ornament	-	-	-	1

Note: p = present, m = months

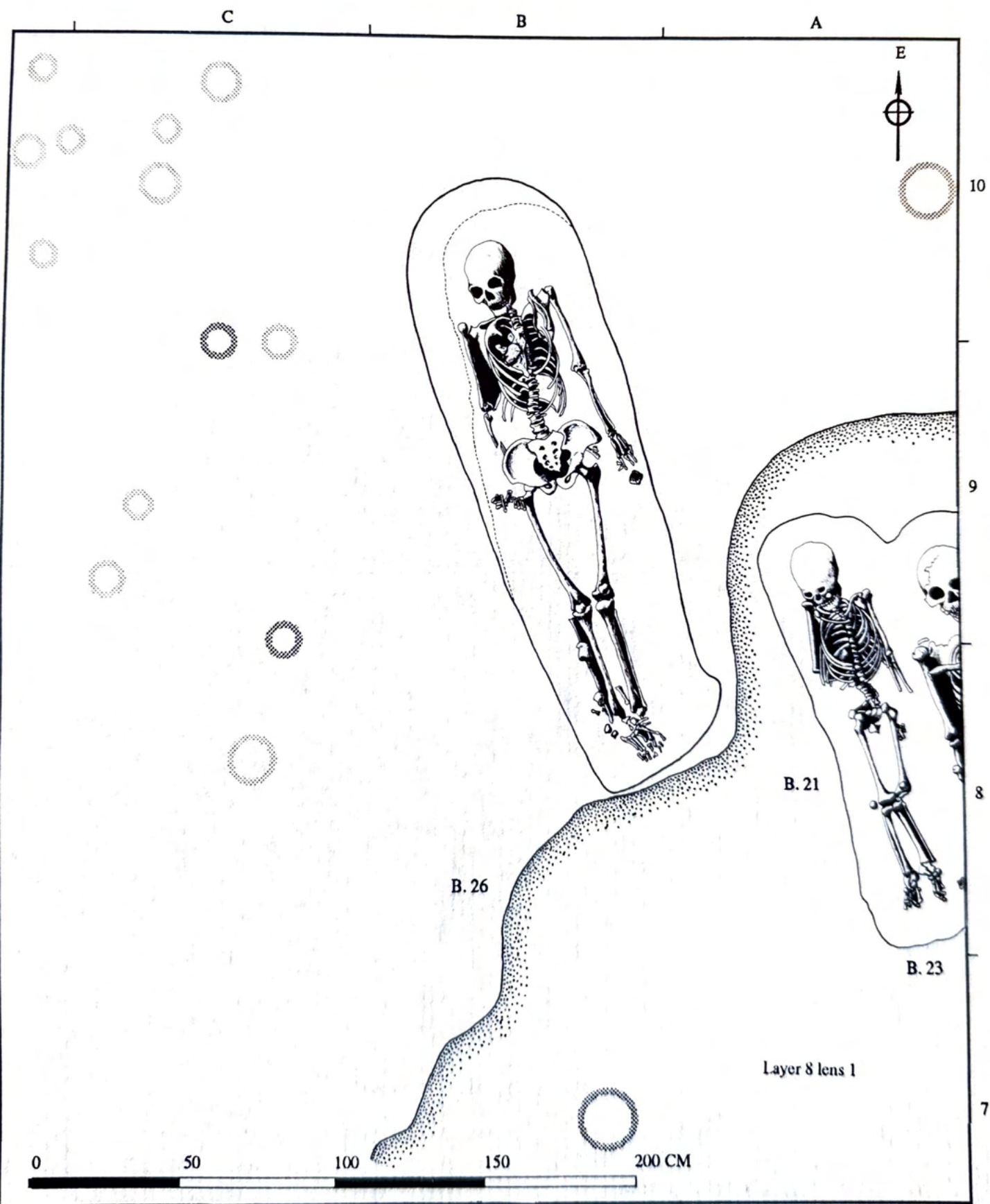


FIG. 192. The distribution of graves and associated features of cluster E stage 3 mortuary phase 4. The lighter postholes were just prior to or contemporary with burial 26, the others postdate burial 26

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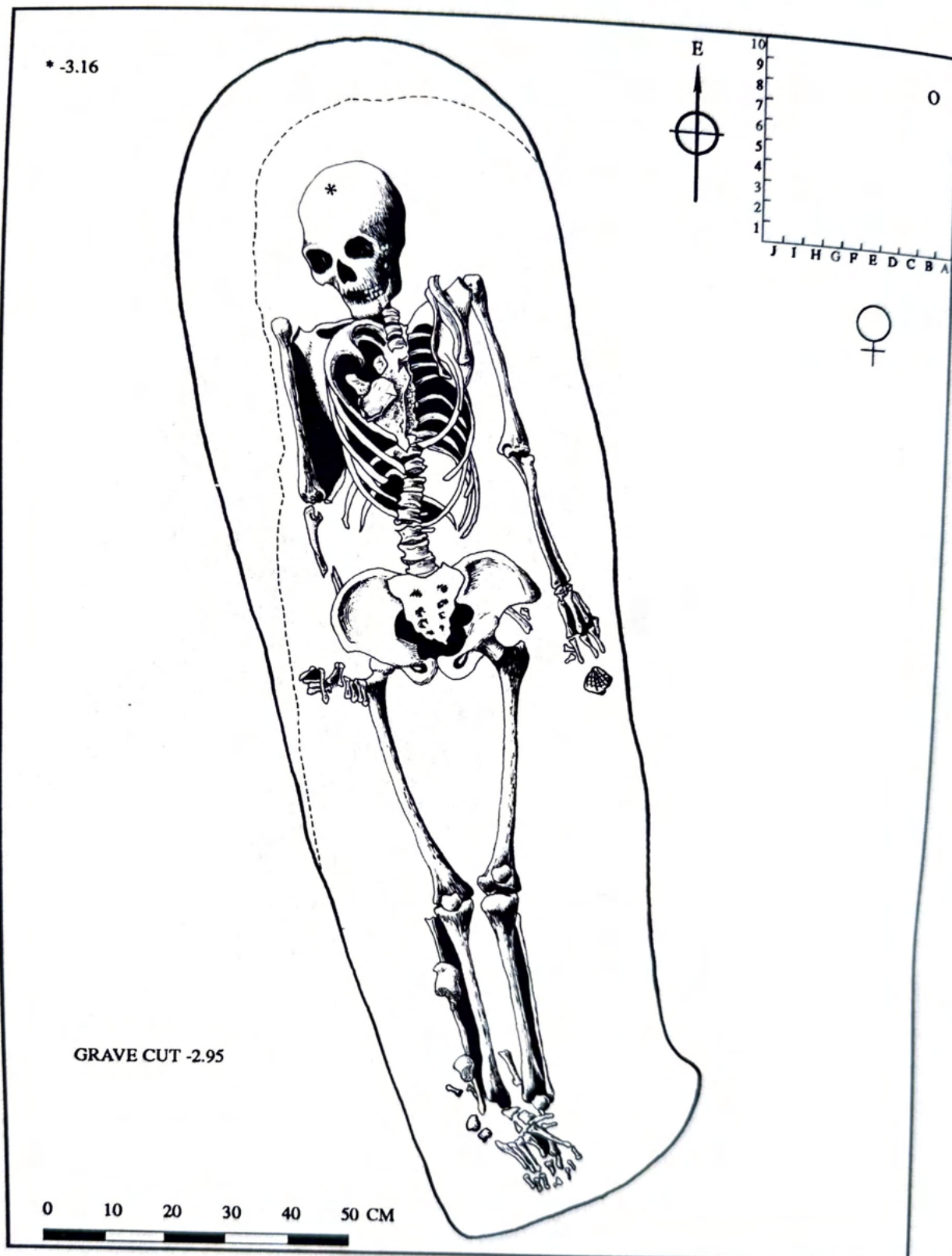


FIG. 193. Burial 26 cluster E stage 3 mortuary phase 4. This grave contained the skeleton of a female interred in a supine position with the hands by her side. Apart from a covering of red ochre over the head, no grave goods were found

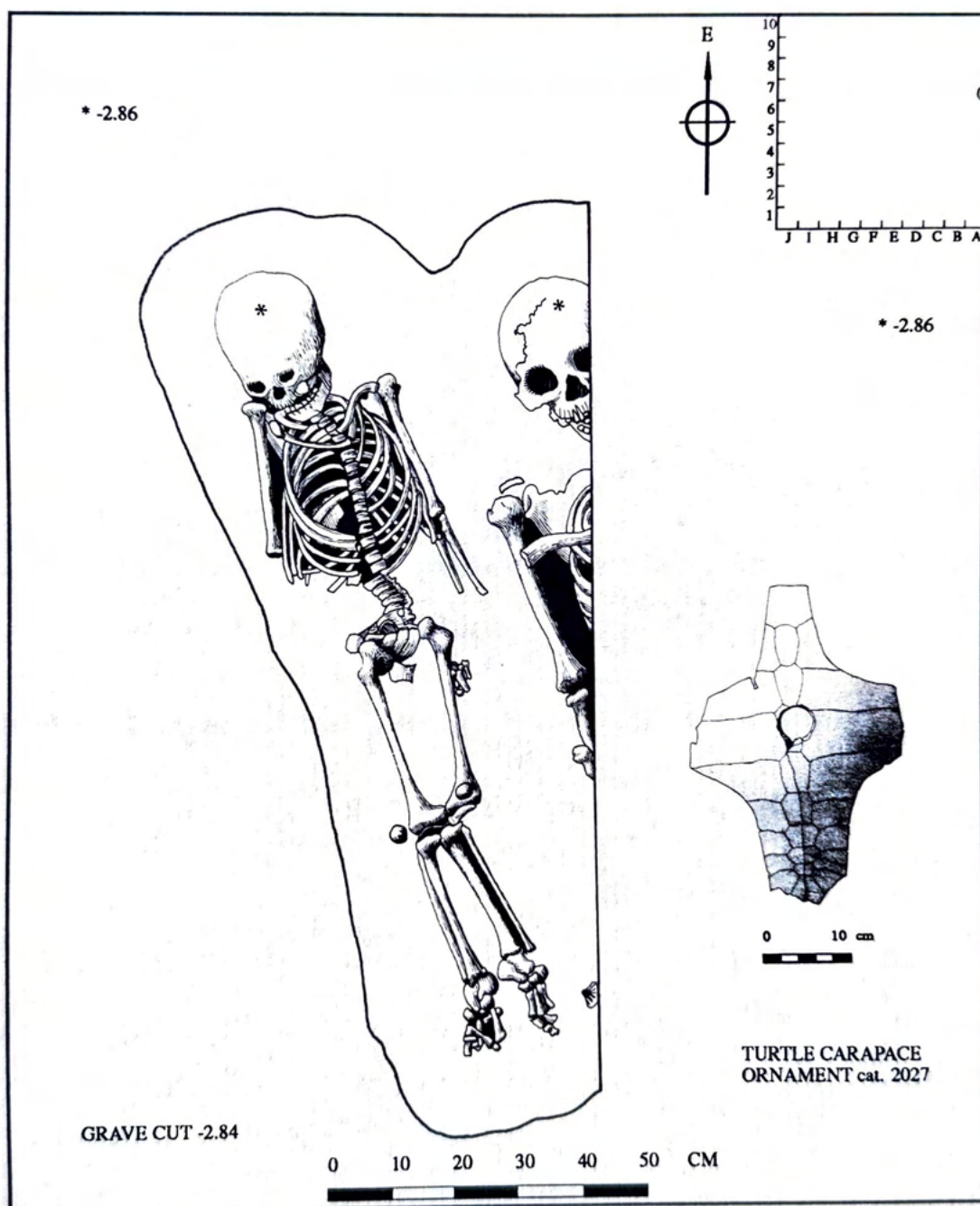


FIG. 194. Burials 21 and 23 cluster E stage 3 mortuary phase 4. The 8-year-old child was buried simultaneously with the adult male alongside. No grave goods were found, nor any trace of red ochre. Only part of the skeleton of the adult male was found within the excavated area, but when the balance of the remains were excavated from the baulk, a turtle carapace ornament was found over the legs (cat. 2027), while a burnishing stone was present in the stomach area (cat. 2026). No sign of red ochre was noted

IX. BURIAL CLUSTERS F AND G

CLUSTER F is second only to cluster C in terms of the number of burials and the duration of mortuary activity. Cluster G, on the other hand, is represented by only two burials, both being situated in the extreme north-western corner of the square with all but partial limb bones lying outside the excavated area. They are described at the end of this chapter only because they lie only 1m to the north of the edge of cluster F. There are nine successive stages encompassing thirty-three burials in cluster F itself, lasting from MP2 until the end of MP4. There are also some grounds for suspecting that this cluster continued into MP6 as well. The earliest burial in this cluster was encountered at a depth of 5.26m and the latest was cut from a depth of 2.60m (Fig. 195).

CLUSTER F: STAGE 1 MORTUARY PHASE 2

The commencement of mortuary activity in the cluster F area, which falls in the north-western corner of the square, occurred at the same time as the formation of an ash lens to the south of the stage 1 burials (Fig. 196). Six postholes were dug at the time the burials were interred. There are two adult females, three infants and a child in the first stage of this cluster.

TABLE 35: *The mortuary goods, ages and sexes of burials from cluster F stage 1 mortuary phase 2*

	B135	B112	B113	B105	B101	B99
Age	4 m	46	46	4 m	18 m	7-8 m
Sex	-	Female	Female	-	-	-
Approx. number of children	-	3+	2-3	-	-	-
Orientation	-	85°	85°	90°	105°	85°
Depth of grave cut below datum (m)	-	5.23	5.21	-	5.12	5.12
Red ochre	-	p	p	p	p	p
Tapa fabric	-	p	-	-	-	-
Disc-shaped shell beads	-	542	224	1043	626	230
Barrel-shaped shell beads	-	-	143	88	13	-
Short barrel-shaped shell beads	-	-	-	2	2	-
Pig scapula	-	1	-	-	-	-
Pottery vessels	-	1	1	2	1	2

Note: p = present, m = months

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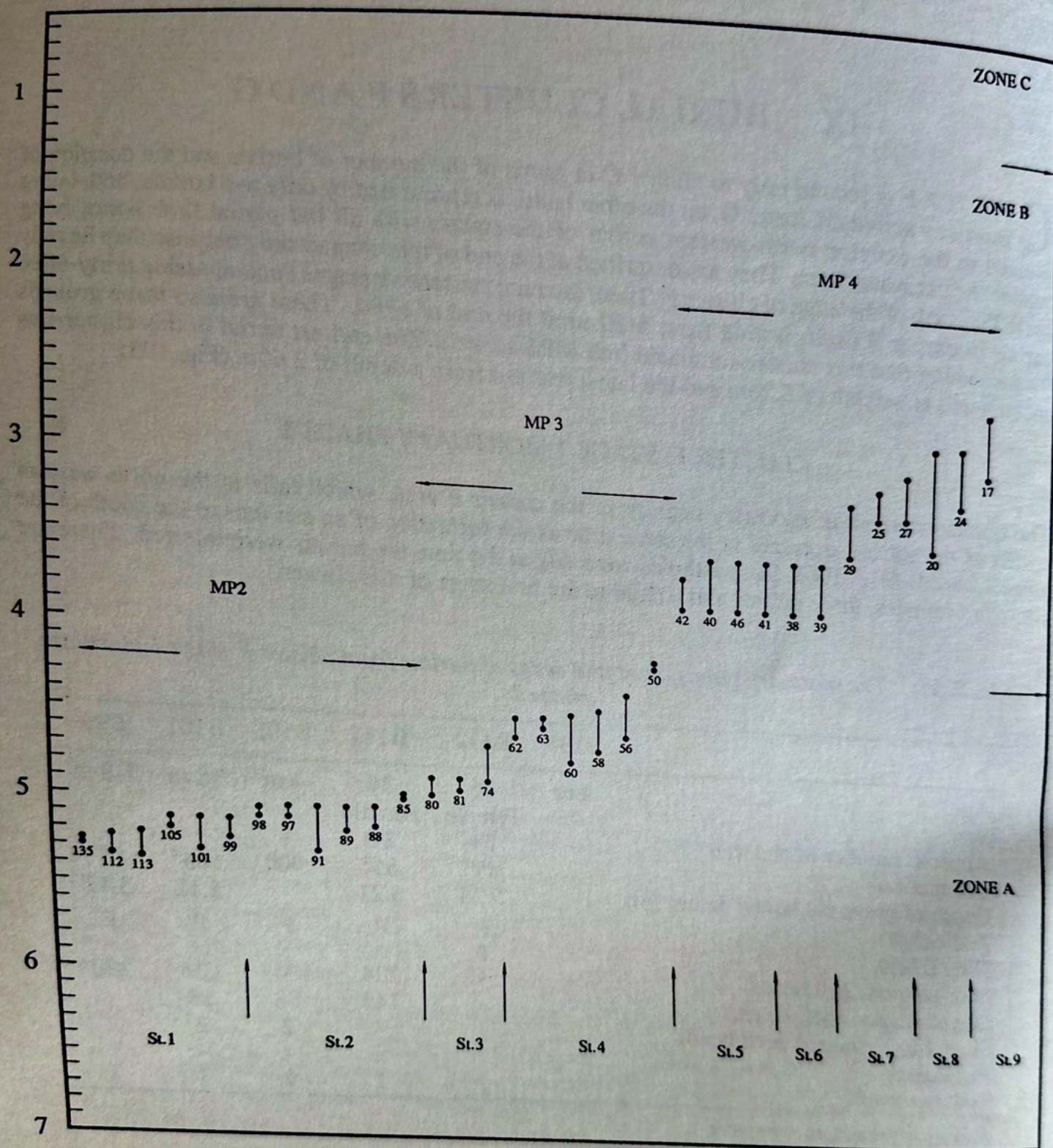


FIG. 195. The distribution of burials belonging to cluster F. The upper mark for each burial represents the depth below datum of the grave cut and the lower, the depth of the human remains. The left-hand scale shows the depth in metres below datum

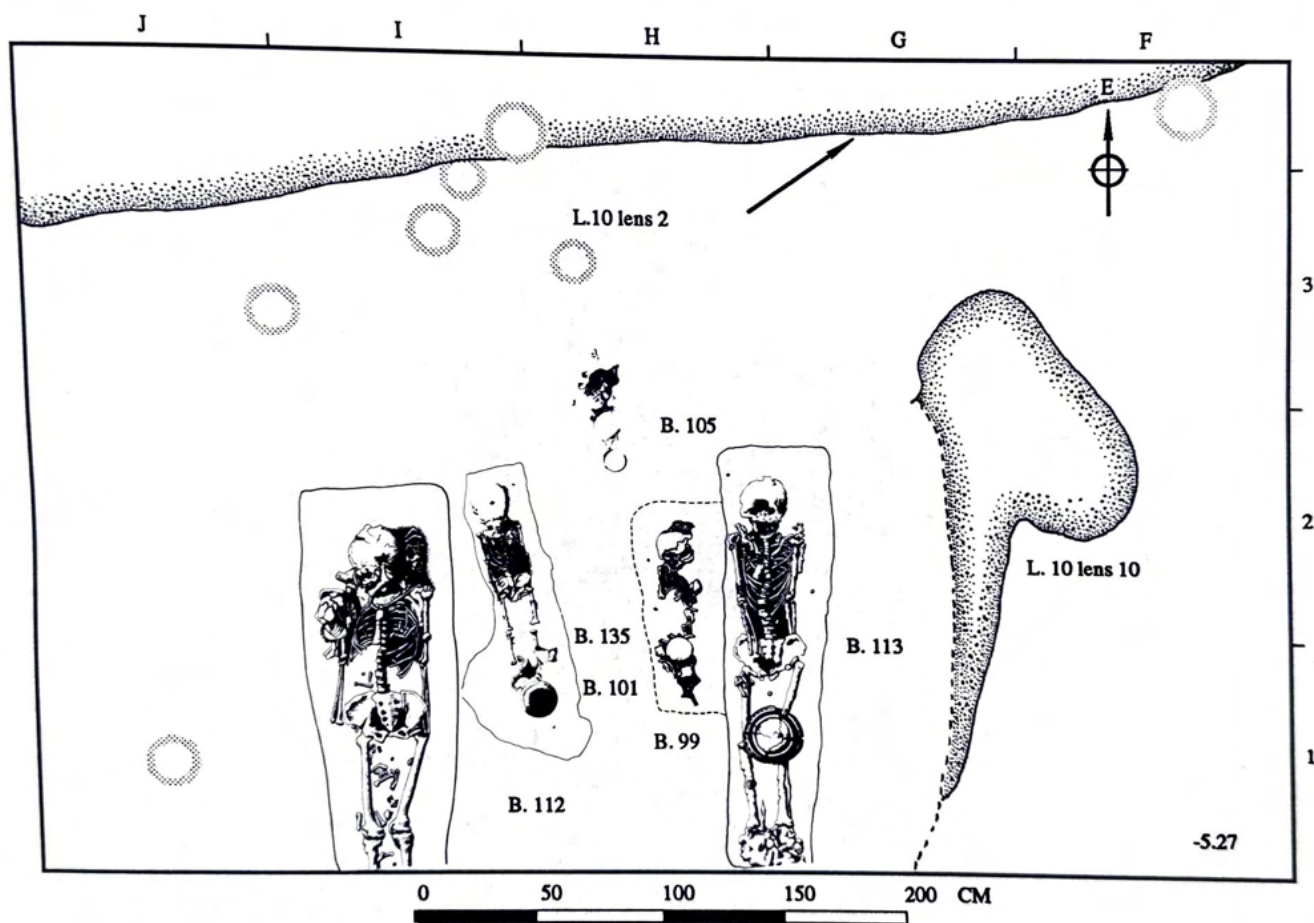


FIG. 196. The distribution of graves and associated features of cluster F stage 1 mortuary phase 2

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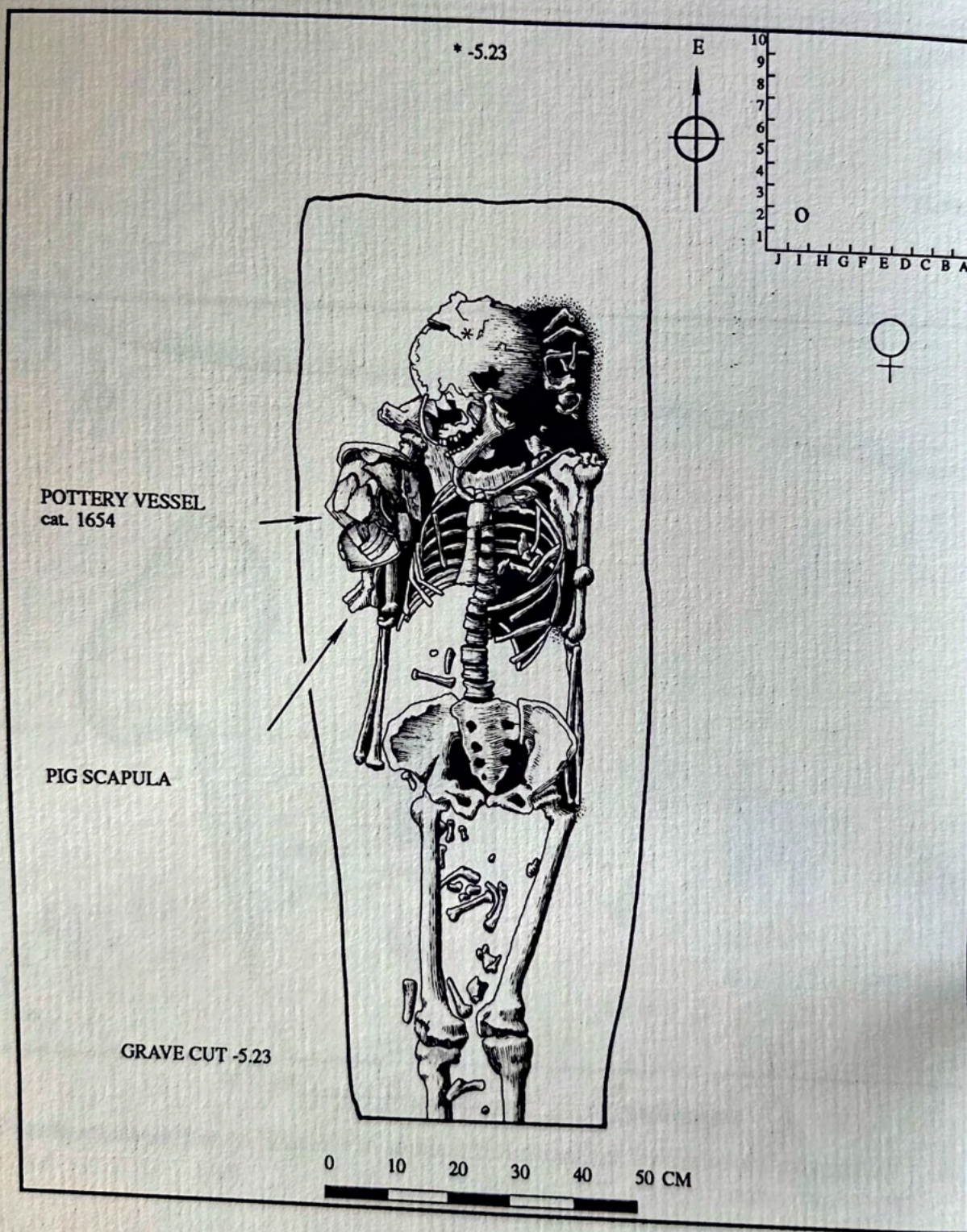


FIG. 197. Burial 112 cluster F stage 1 mortuary phase 2. The remains of an adult female. The grave was cut from at least 5.23m, the base lying at 5.34m. Only the head to the knee area was present in the excavated area, the rest lying in the western baulk. A broken pottery vessel (cat. 1654) and pig scapula were found over the right arm. There was also a necklace made up of 542 shell disc beads. The bones were covered in red ochre and traces of *tapa* survived

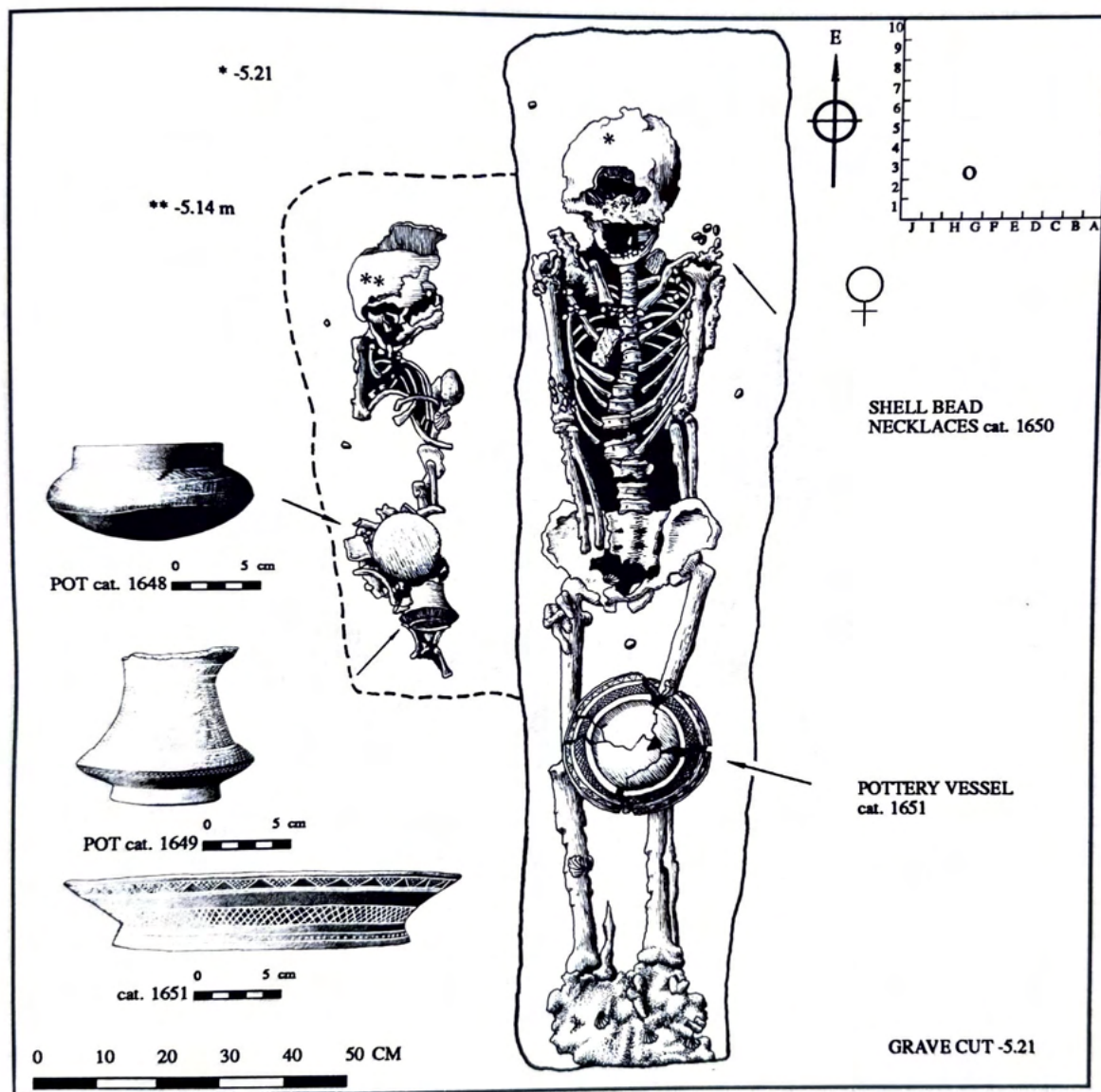


FIG. 198. Burials 99 (left) and 113, cluster F stage 1 mortuary phase 2. The adult female skeleton was covered in red ochre. A pottery vessel (cat. 1651) had been placed upside-down over the knees and a necklace made of over 140 barrel-shaped beads was present (cat. 1650), linked with 224 shell disc beads concentrated in the neck area. The woman probably wore a cap or headdress embroidered with shell disc beads, for when the skull was being cleaned in the laboratory a row of such beads was found. An infant was buried on the right-hand side of B113 and 9cm higher. It had been slightly disturbed in prehistory. The bones rested on a thin layer of red ochre. A shell necklace comprising 230 disc beads was found (cat. 1647). Two complete pottery vessels were lying over the leg bones (cats. 1648-9)

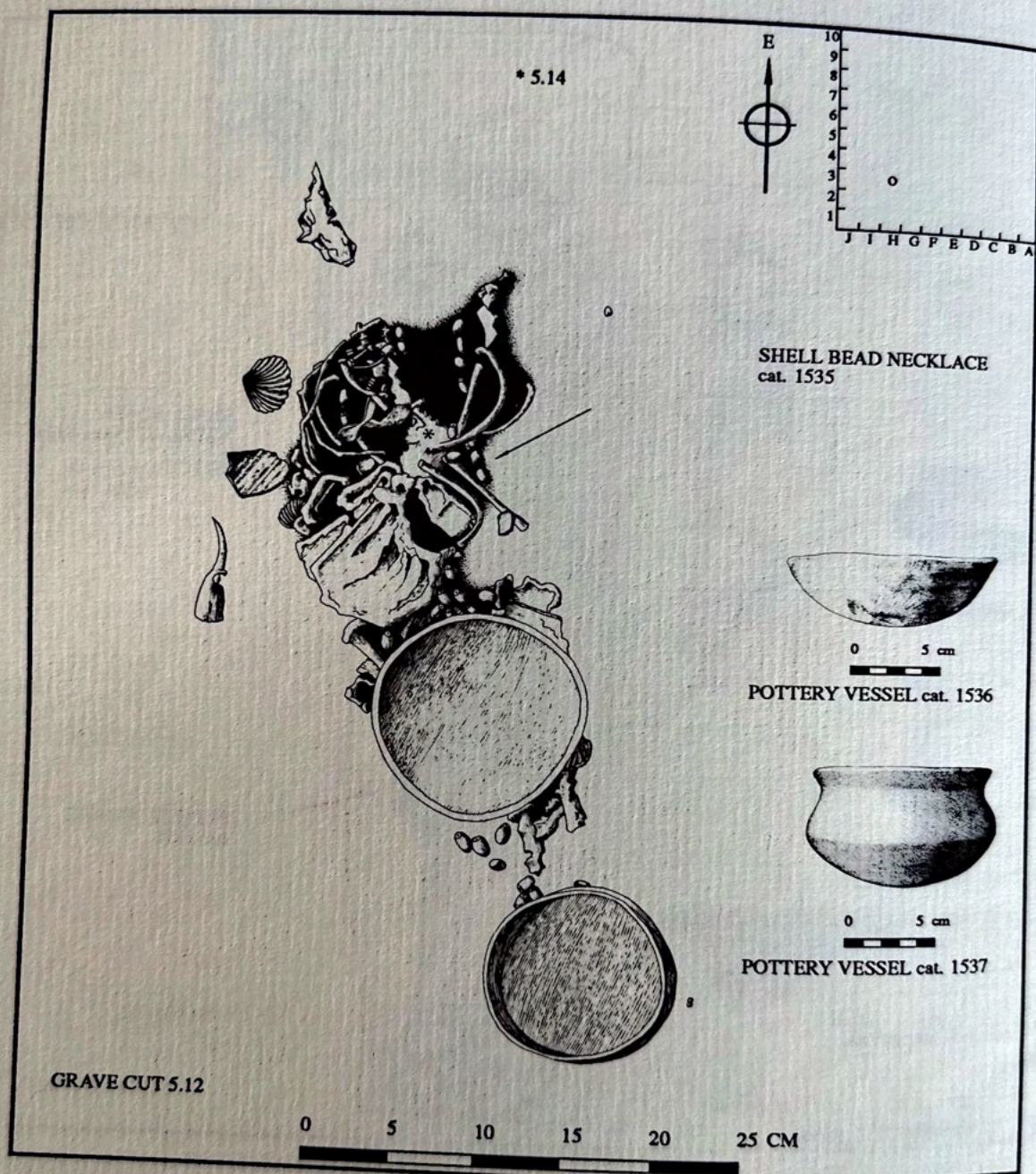


FIG. 199. Burial 105 cluster F stage 1 mortuary phase 2. The infant in this grave died when very young. Its grave had been disturbed in prehistory, disarticulating the bones and misplacing the skull. No clear grave cut was visible but the bones were encountered at a depth of 5.12m. Two intact pottery vessels survived over the legs (cats. 1536-7). Just over 1,000 shell disc beads (cat. 1535) were found, strung in separate rows, round the neck and down to the ankles. These were linked with 88 barrel-shaped and 2 short barrel-shaped shell beads. All the bones were stained with red ochre and the orientation is due east

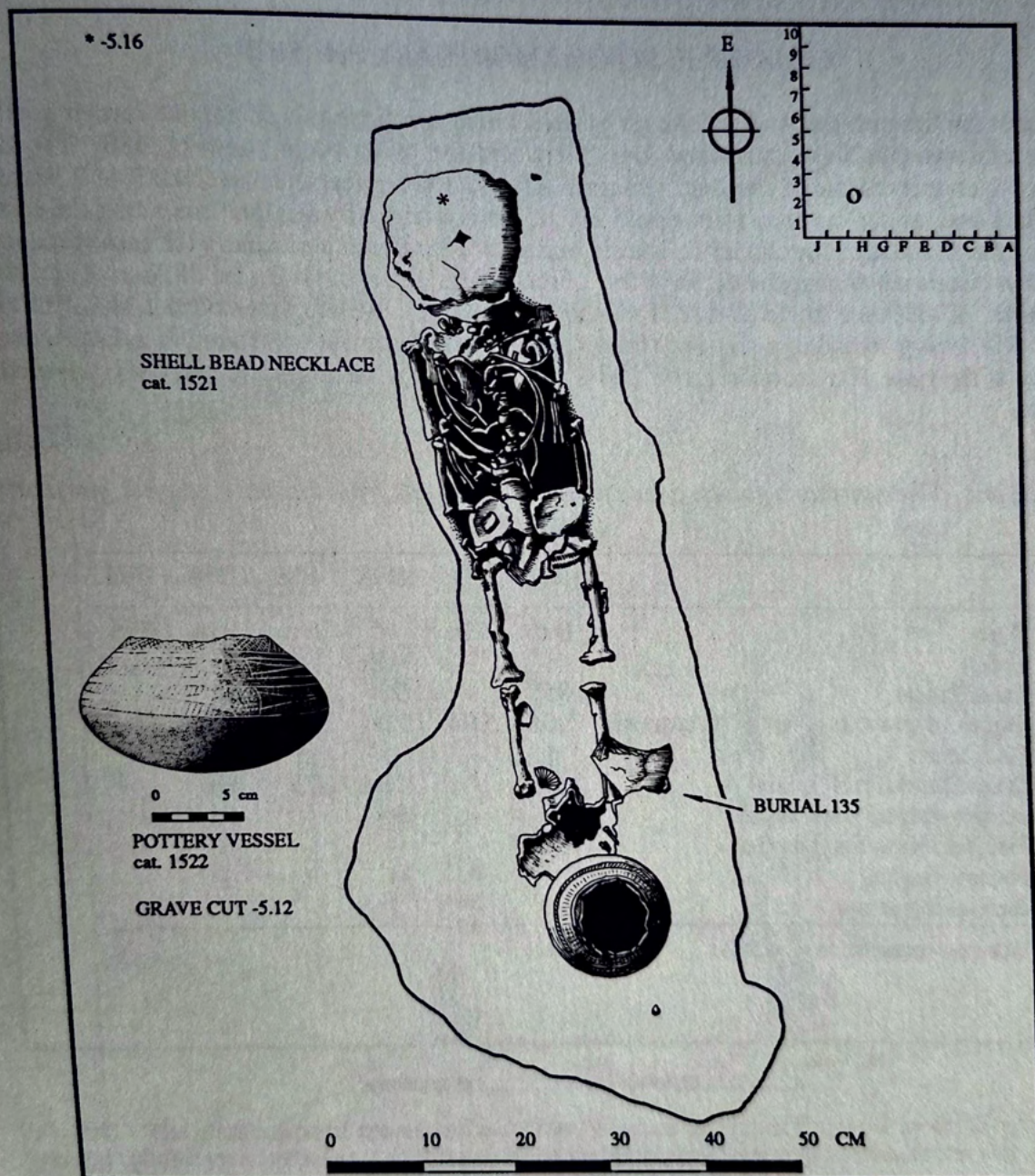


FIG. 200. Burial 101 cluster F stage 1 mortuary phase 2. This child skeleton was found cut down from a depth of 5.12 to 5.30m. It disturbed B135. The child was interred together with a complete pottery vessel, which was found over the ankles (cat. 1522). There was also a shell necklace comprising 15 barrel-shaped beads (cat. 1521) and a belt of 626 shell disc beads (cat. 1521). Red ochre had been sprinkled over the body. Several pieces of an infant skull were found in the ankle area, which had cut into and disturbed this interment. The actual depth of the grave cut for B135 is uncertain, but the skull fragments were identified at a depth of 5.26m

CLUSTER F: STAGE 2 MORTUARY PHASE 2

At or about the time of interment of the six burials which comprise this stage, one further posthole was dug and two pits were excavated, one 30cm and the other 10cm south of B88. The latter contained a concentration of shellfish remains. After the last interment, layer 10 lens 2 began to accumulate and, as can be seen from figure 201, it ran in a virtually straight line along the eastern margin of the burial area for cluster F. The six burials were interred at virtually the same time, only 2cm below datum separating the depth of five of the first six grave cuts. Burial 88, that of an infant, was interred in the same grave as that of an adult male (B91). All the other burials are of infants, the last, B85, being buried in a grave cut from 4.95m below datum. It was found in a disarticulated condition at the base of a scooped grave. No goods were associated, but the body was covered in red ochre.

TABLE 36: *The mortuary goods, ages and sexes of burials from cluster F stage 2 mortuary phase 2*

	B98	B97	B91	B89	B88	B85
Age	0 m	6 m	45	6 m	9 m	0 m
Sex	-	-	Male	-	-	-
Orientation	85°	-	90°	90°	84°	-
Depth of grave cut below datum (m)	5.05	5.04	5.04	5.04	5.03	4.95
Red ochre	p	-	p	p	p	-
Disc-shaped shell beads	-	-	1294	73	690	-
Barrel-shaped shell beads	-	-	93	-	16	-
Fish vertebra disc/bangle	-	-	-	-	3	-
Pottery vessels	-	-	4	1	2	-
Burnishing stone	-	-	2	-	-	-

Note: p = present, m = months

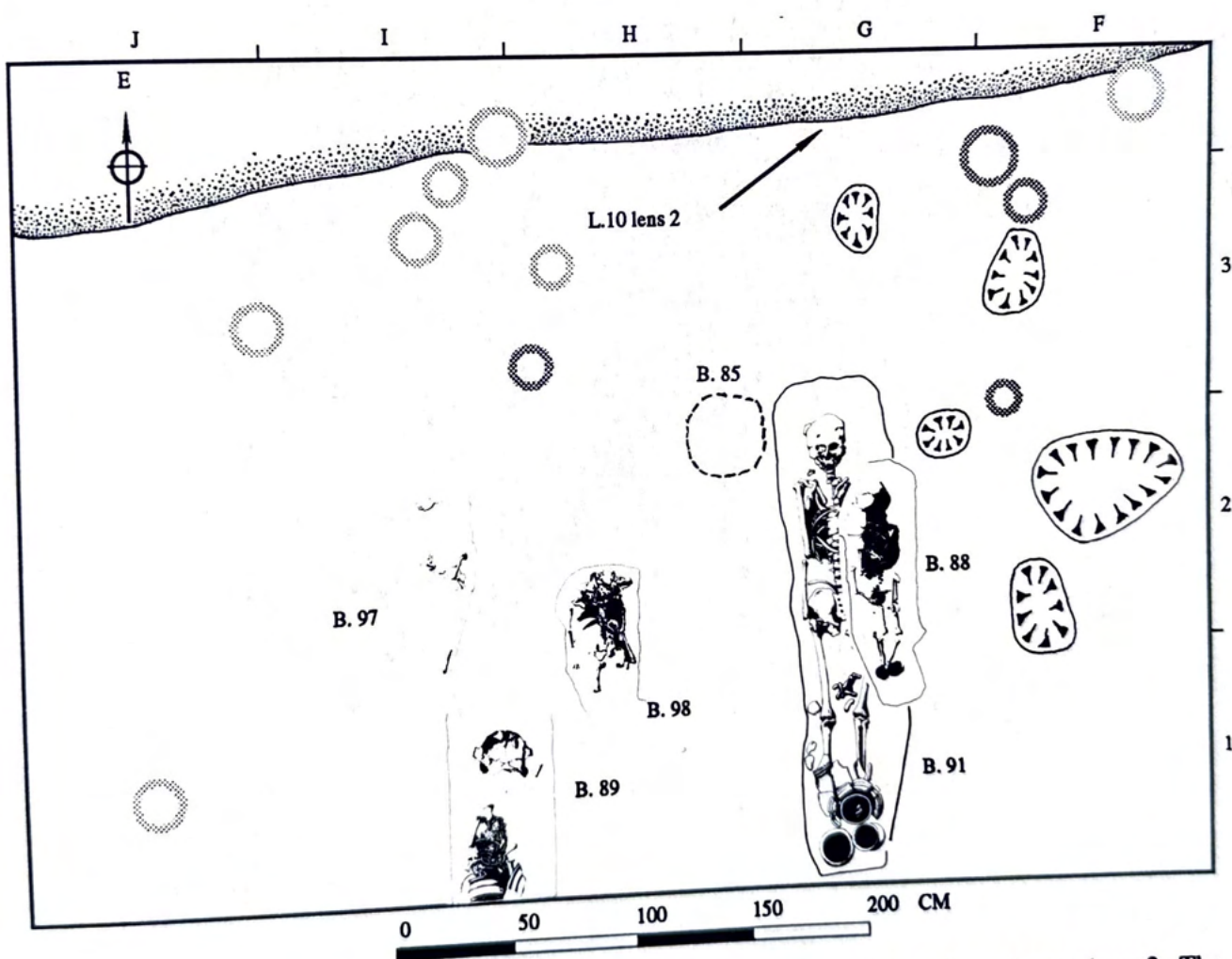


FIG. 201. The distribution of graves and associated features of cluster F stage 2 mortuary phase 2. The lighter postholes antedate stage 2, and those in the darker stipple were dug in association with the stage 2 burials

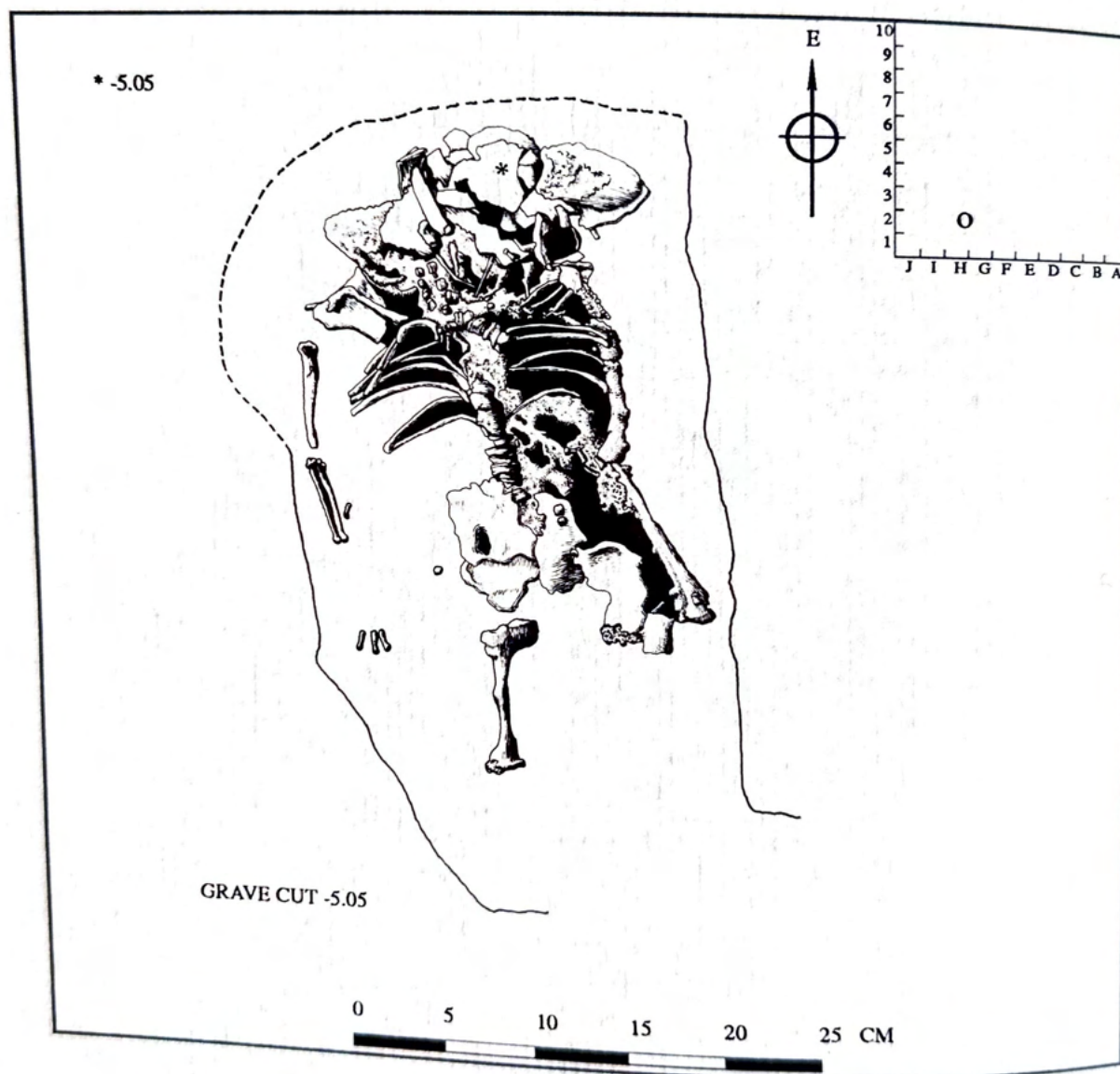


FIG. 202. Burial 98 cluster F stage 2 mortuary phase 2. This infant burial overlies B99 and was found between a depth of 5.05 and 5.12m. No grave goods were found, but the whole body was covered with red ochre. The orientation of the head is 5° north of east

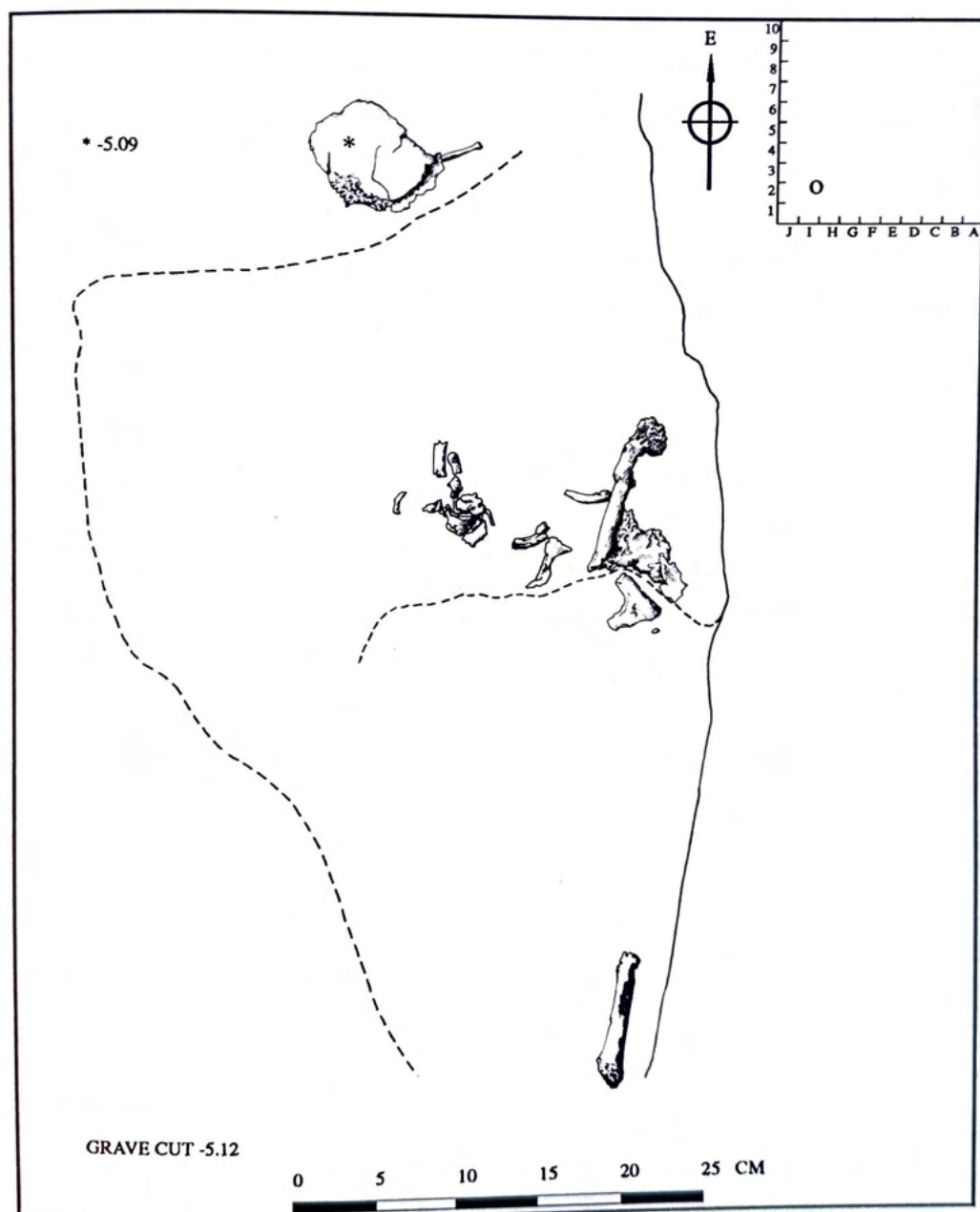


FIG. 203. Burial 97 cluster F stage 2 mortuary phase 2. The scattered bones of an infant were found adjacent to the grave of B101. It had been severely disturbed in antiquity, such that only the skull fragments, ribs and some limb bones were present. No evidence for grave goods or even of red ochre was encountered

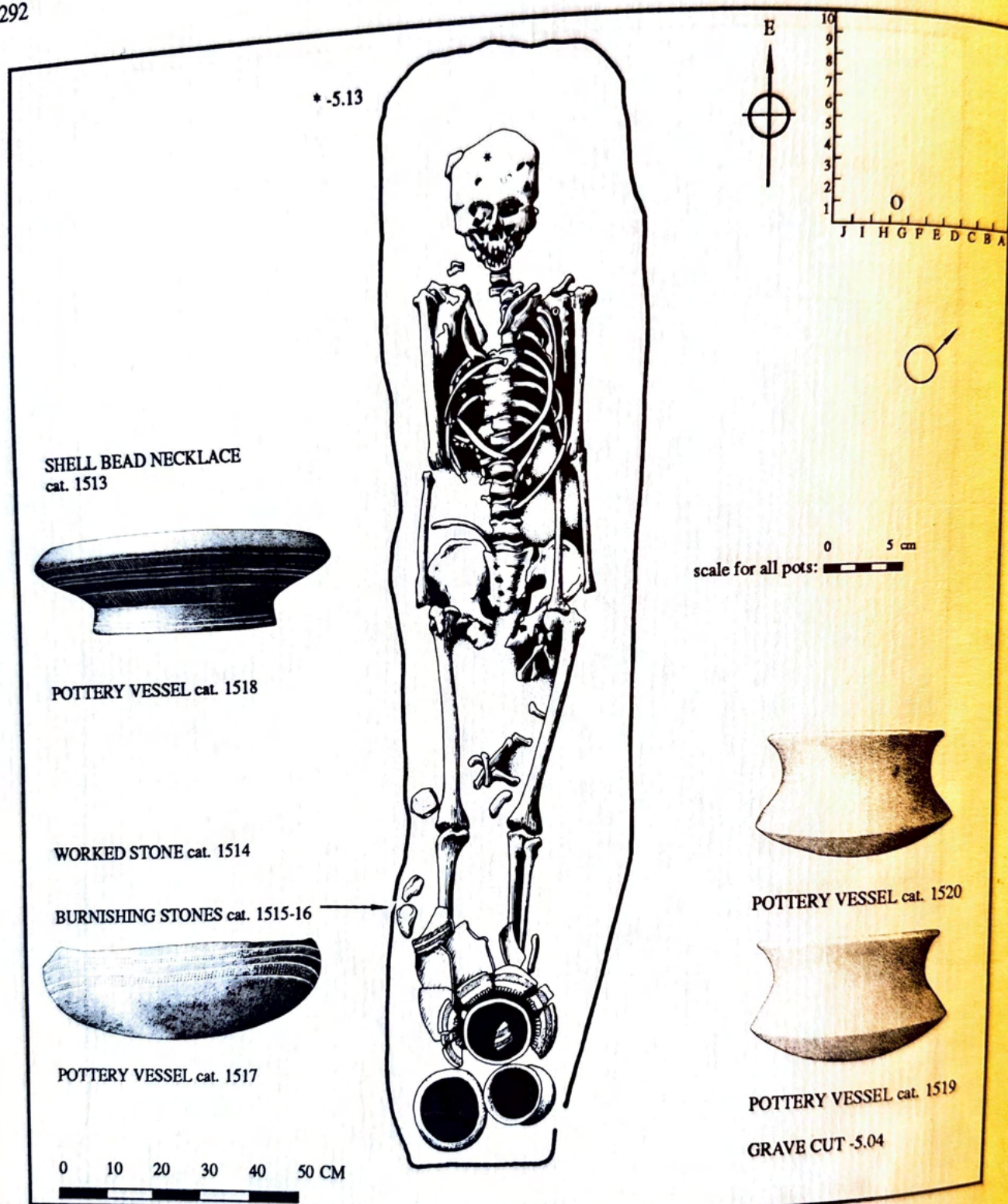


FIG. 204. Burial 91 cluster F stage 2 mortuary phase 2. The grave is located to the left-hand side and about 17cm above that of B113. The corpse had been laid out on the back with the head pointing due east. A group of four pottery vessels had been placed over the legs (cats. 1517-20). Two burnishing stones were found adjacent to a pottery vessel (cat. 1517). A necklace made up of 1,294 shell disc beads and 93 barrel-shaped shell beads was found over the chest (cat. 1513)

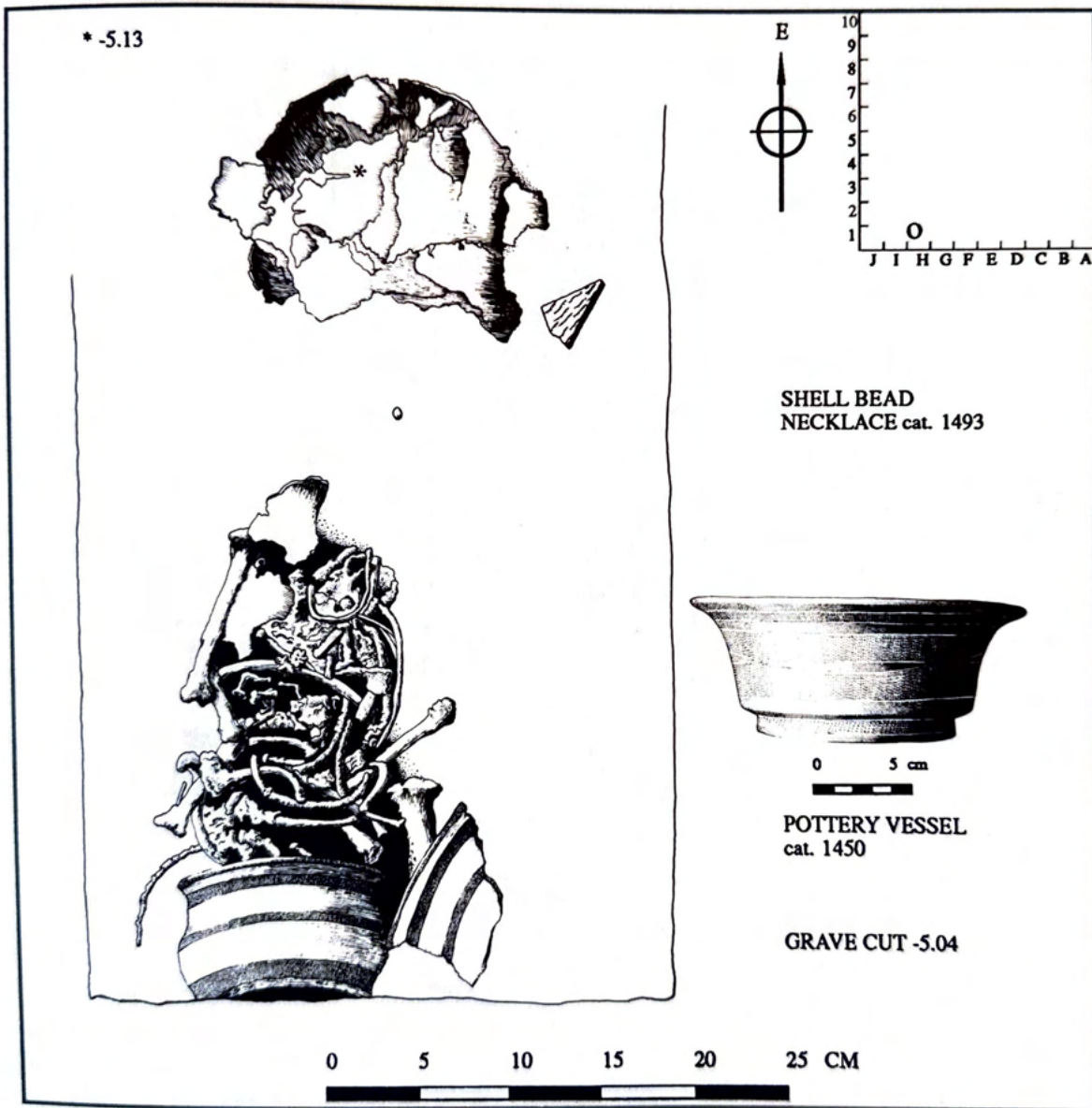


FIG. 205. Burial 89 cluster F stage 2 mortuary phase 2. This infant was found just beyond the feet of B101 but 8cm higher. Most of the bones had been disarticulated in antiquity. The grave itself was cut from 5.04 down to 5.18m and was probably dug into the edge of B101. A broken pottery vessel (cat. 1450) was found on the lower part of the body and a necklace comprising 73 shell disc beads was found round the neck. A clay net sinker (cat. 1440) was also found in this grave, although probably not as a primary grave good because it was uncovered while exposing the grave fill. Red ochre covered the body, which was orientated with the head pointing due east

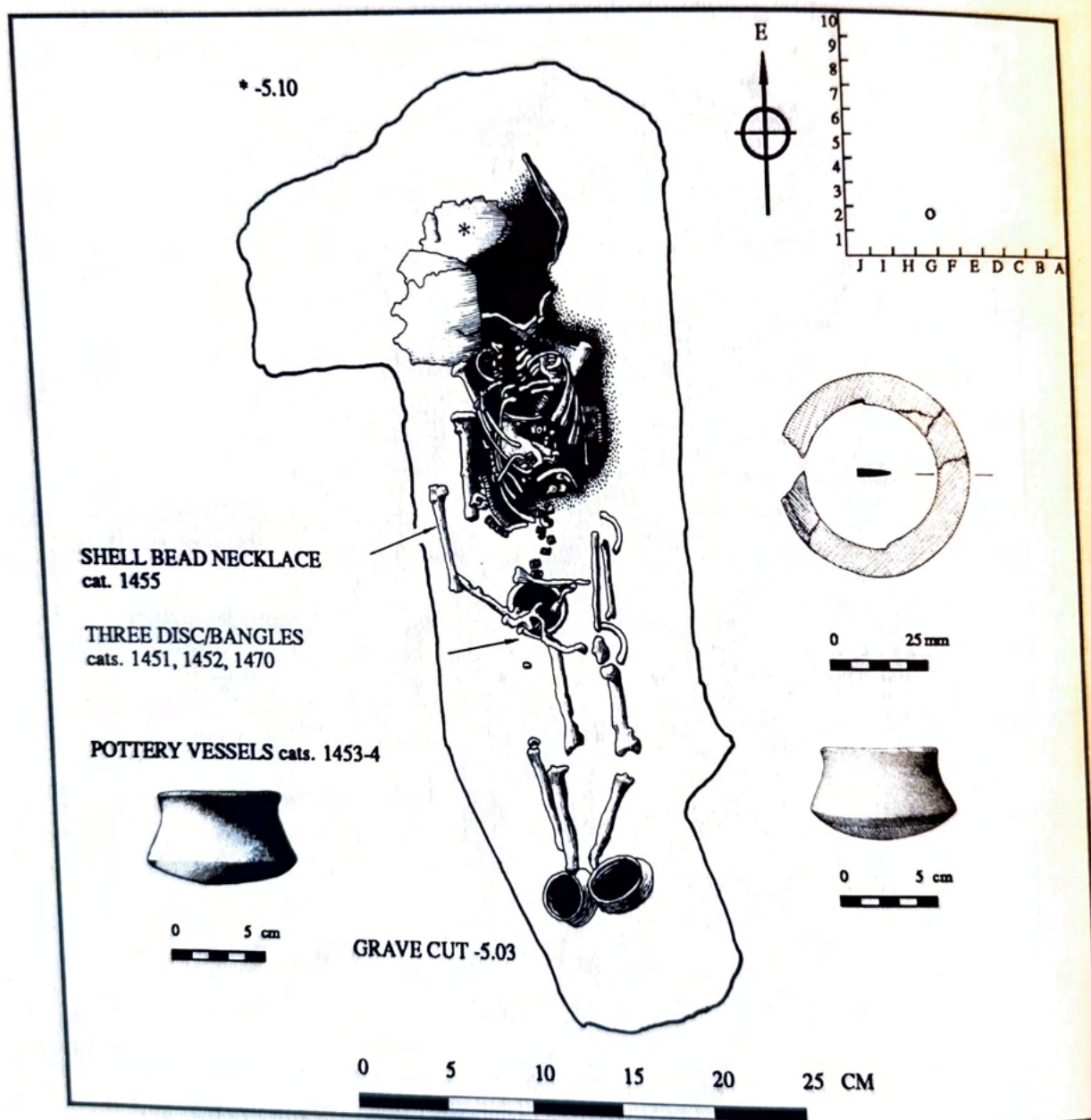


FIG. 206. Burial 88 cluster F stage 2 mortuary phase 2. This further infant burial had been disturbed by later prehistoric activity. The body had been buried on its back, and was covered in red ochre. Fragments of disc/bangles fashioned from fish vertebrae were found in the region of the right arm (cats. 1452 and 1470). A matching piece for one of them was located at the left elbow. A third disc/bangle piece, also made from a fish vertebra, was found near the left wrist (cat. 1451). A shell necklace comprising 690 disc beads and 16 barrel-shaped beads was found covering the area from the neck to the stomach (cat. 1455). Two pottery vessels cover the ankles (cats. 1453-4)

CLUSTER F: STAGE 3 MORTUARY PHASE 3

There are three graves in this stage of MP3. Two infants (burials 80 and 81) were interred first in a single grave followed by the burial of an adult male. Before the two infants were buried, a small pit and two postholes were excavated, along with a long shallow scoop parallel with and about 50cm south of B74. Three further pits were dug, along with twelve postholes, between the interment of burials 80-81 and B74. As is seen in figure 207, the edge of layer 10 lens 2 continued to run in a straight line along the eastern edge of the burial area.

TABLE 37: *The mortuary goods, ages and sexes of burials from cluster F stage 3 mortuary phase 3*

	B80	B81	B74
Age	0 m	0 m	39
Sex	-	-	Male
Orientation	45°	45°	80°
Depth of grave cut below datum (m)	4.85	4.85	4.65
Red ochre	-	-	p
Pottery vessels	-	-	3

Note: p = present, m = months

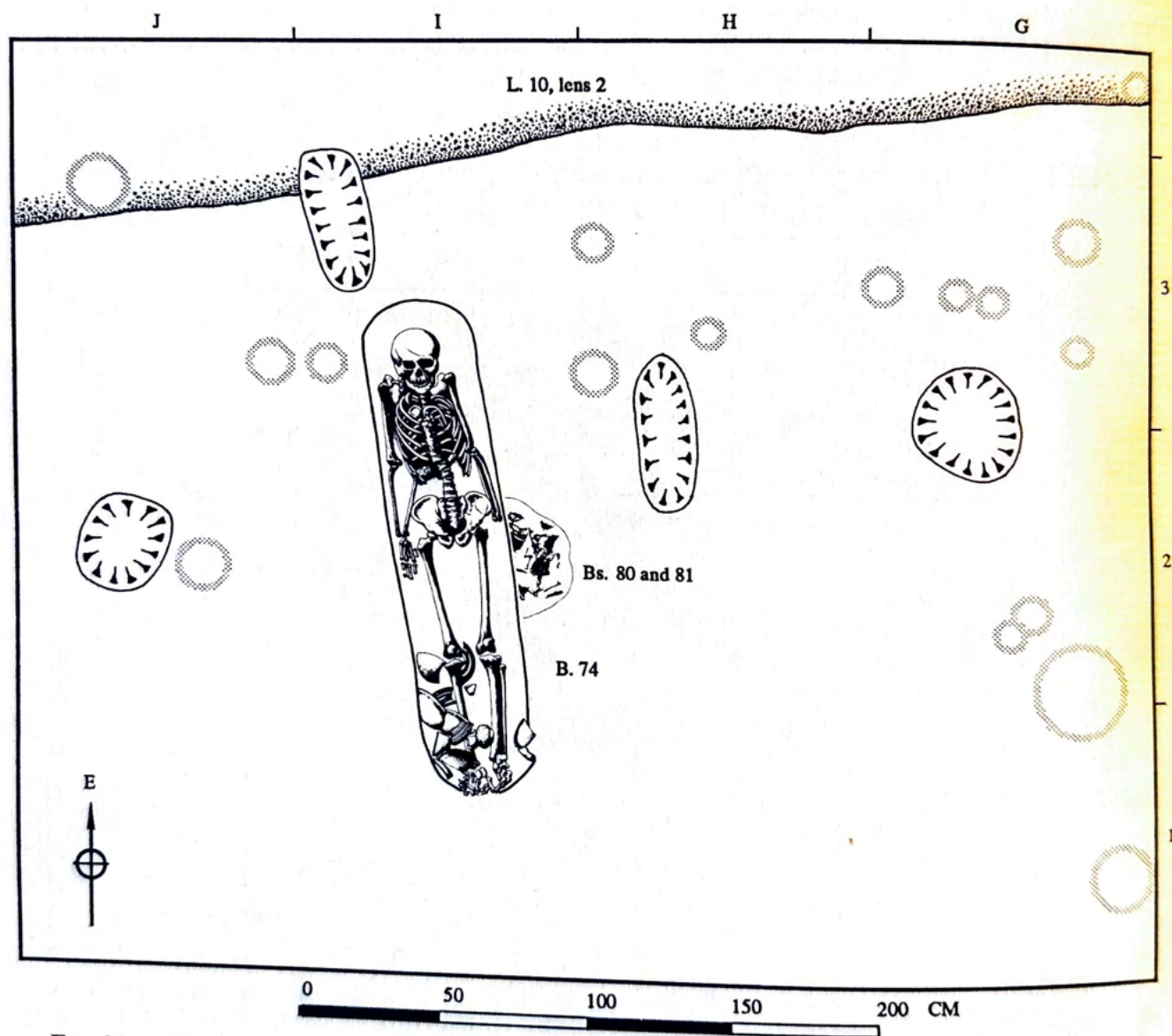


FIG. 207. The distribution of graves and associated features of cluster F stage 3 mortuary phase 3

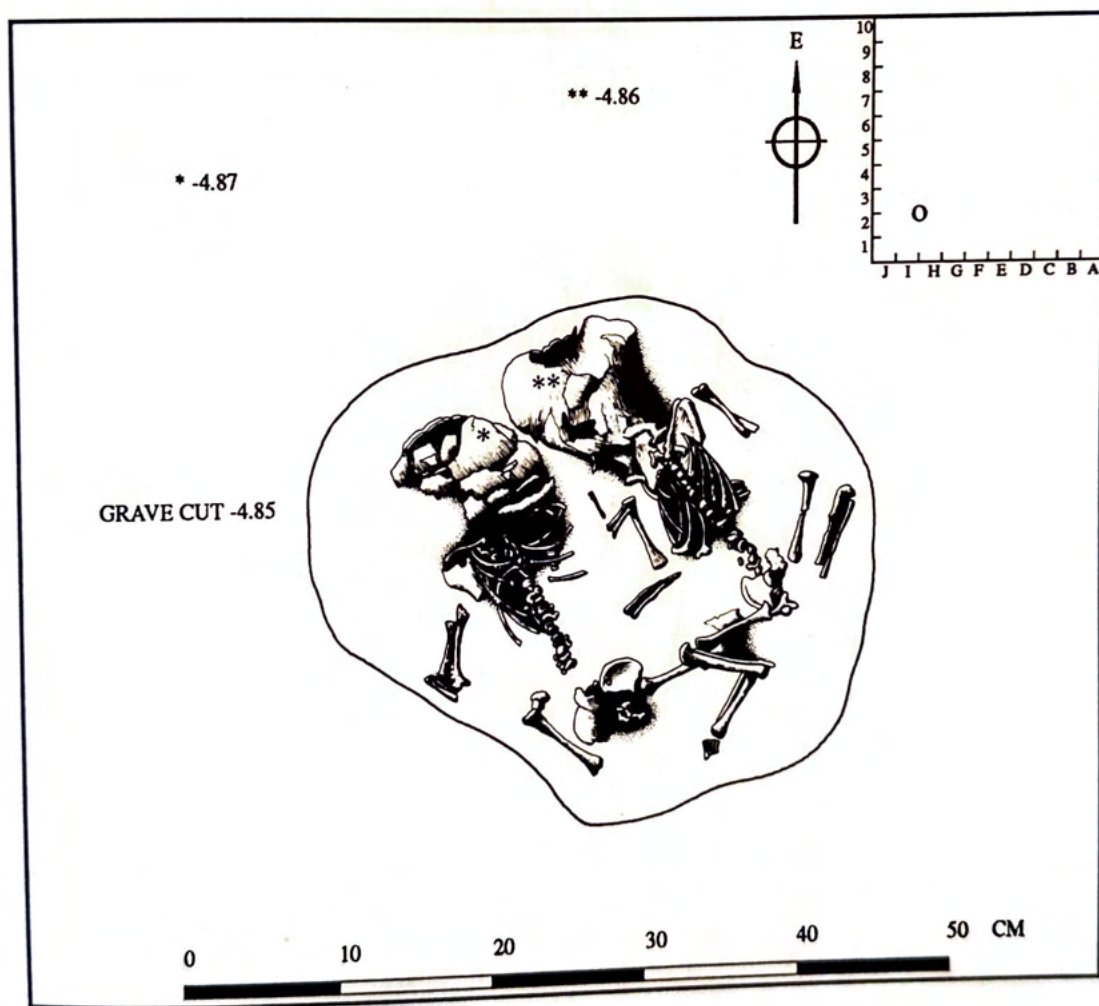


FIG. 208. Burials 80 (left) and 81 cluster F stage 3 mortuary phase 3. Two infants of identical size were found buried alongside each other with the heads pointing towards the north-east. The shallow grave was dug from a depth of 4.85m. They were presumably buried simultaneously, and neither showed any traces of the use of red ochre. No grave goods were found with them

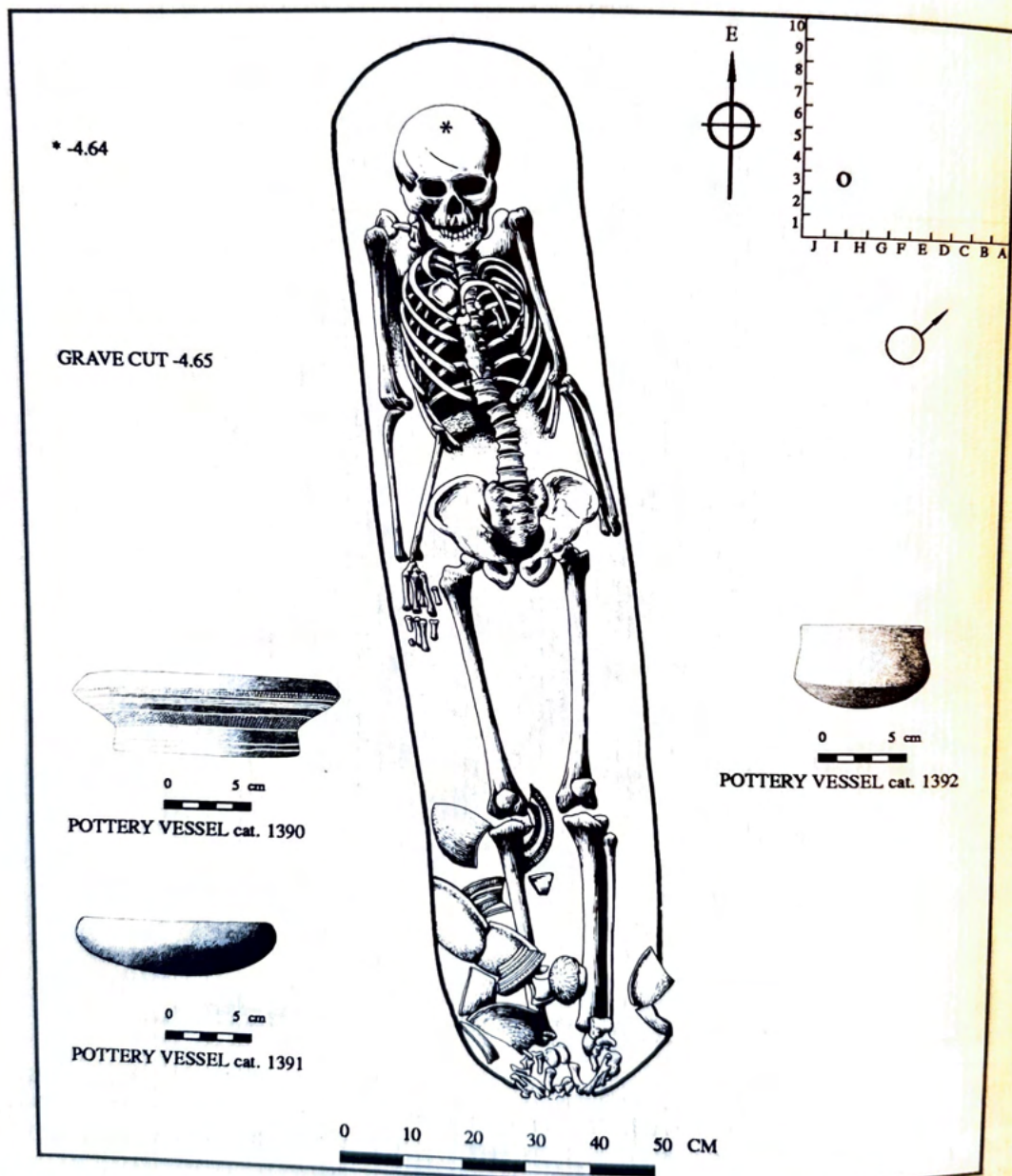


FIG. 209. Burial 74 cluster F stage 3 mortuary phase 3. The remains of a male aged about 39 years were found over the grave of burials 80 and 81. The corpse had been laid on the back, and was accompanied by three pottery vessels. One, placed between the ankles, was found complete (cat. 1392). The other two were broken and the sherds were located under and over the right knee to the foot area (cats. 1390-1). Red ochre covered the skeleton, which was orientated with the head pointing towards the east

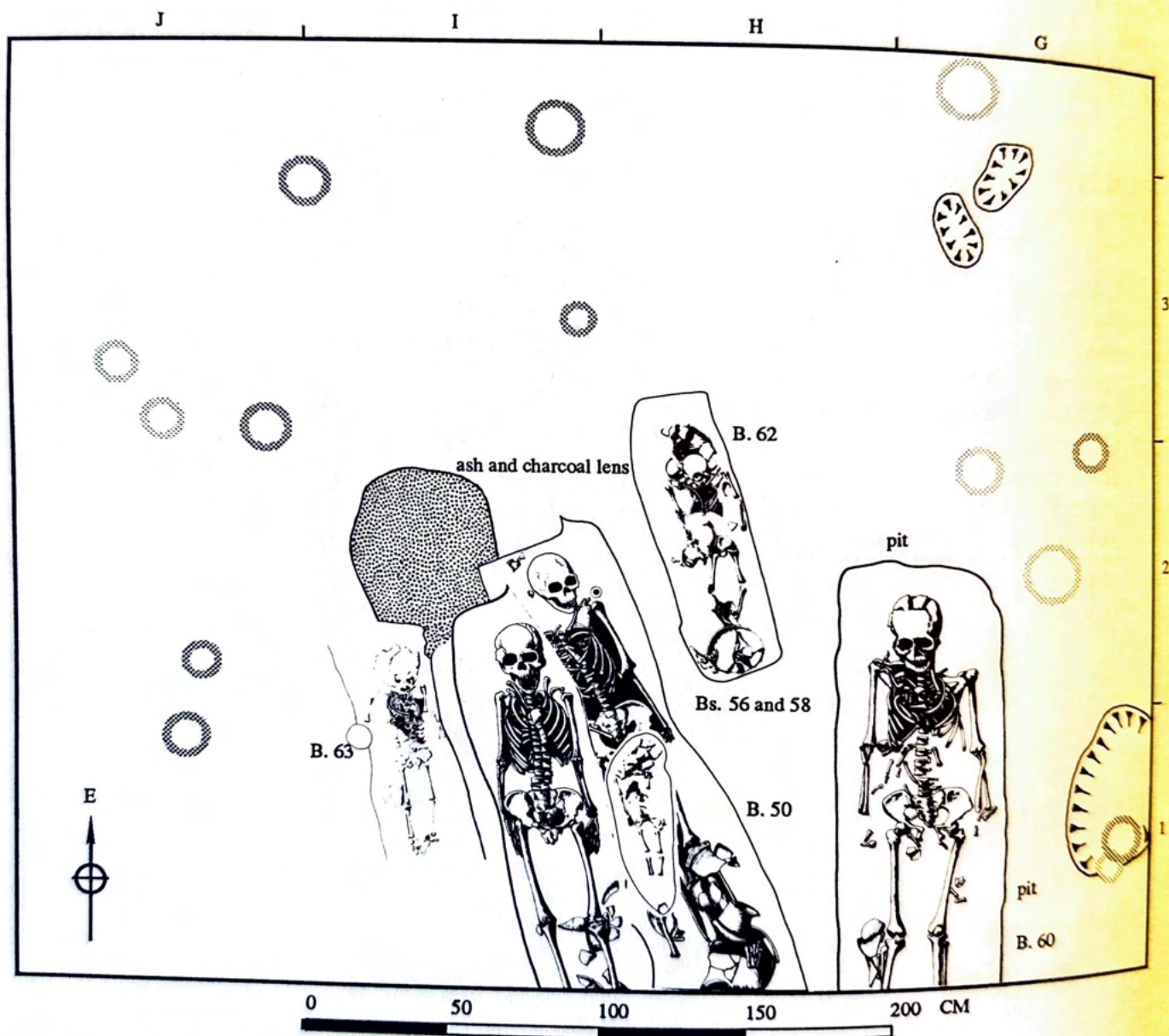


FIG. 210. The distribution of graves and associated features of cluster F stage 4 mortuary phase 3. The postholes represented by light stipple are either just prior to or contemporary with the burials. The other postholes are later than the burials in this stage

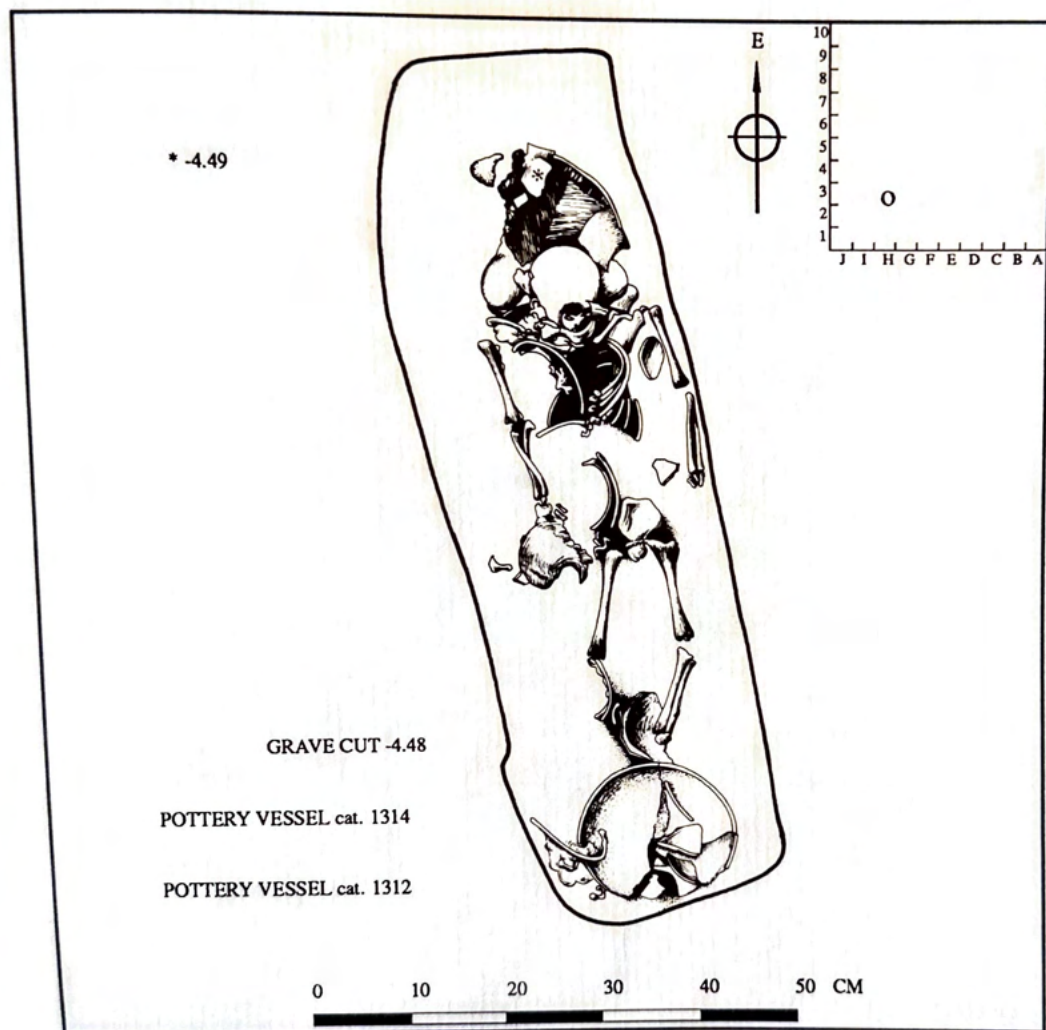


FIG. 211. Burial 62 cluster F stage 4 mortuary phase 3. The grave cut for this burial was particularly clear. The grave contained the remains of a 6-month-old infant although they had suffered some disturbance during the prehistoric period. The entire body had been covered in red ochre. Two broken pottery vessels were found at the feet (cats. 1312, 1314)

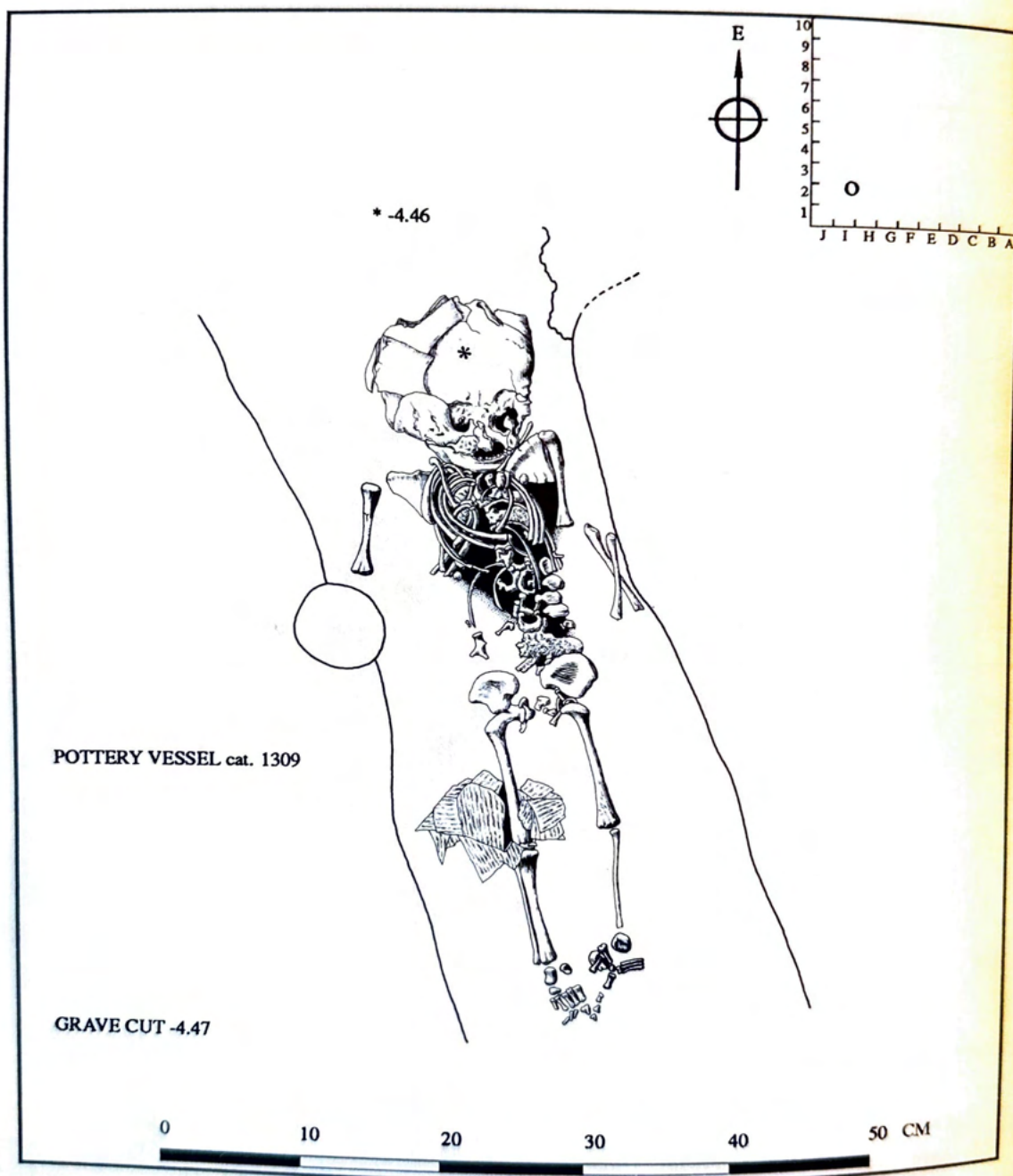


FIG. 212. Burial 63 cluster F stage 4 mortuary phase 3. This infant was buried when about 21 months old. The body was interred in a shallow grave. The skeleton was covered in red ochre and had been slightly disturbed during the prehistoric period. A broken pot was found over the infant's right knee (cat. 1309)

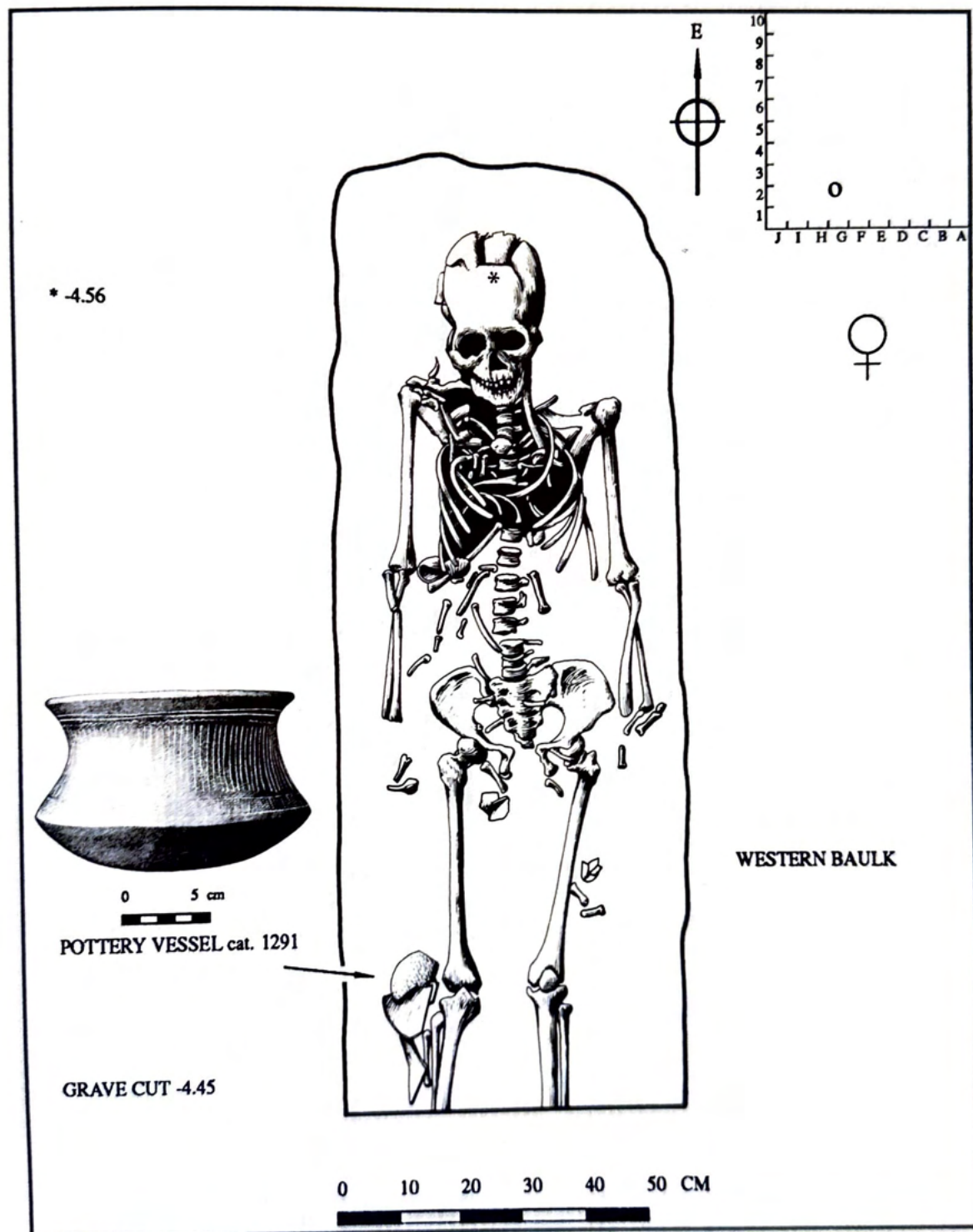


FIG. 213. Burial 60 cluster F stage 4 mortuary phase 3. The remains of a 19-year-old female. She was interred in a grave about 28cm deep and cut from a depth of 4.45m. Red ochre covered the bones. The grave goods comprise several sherds from a broken pottery vessel (cat. 1291) near the right knee and foot area

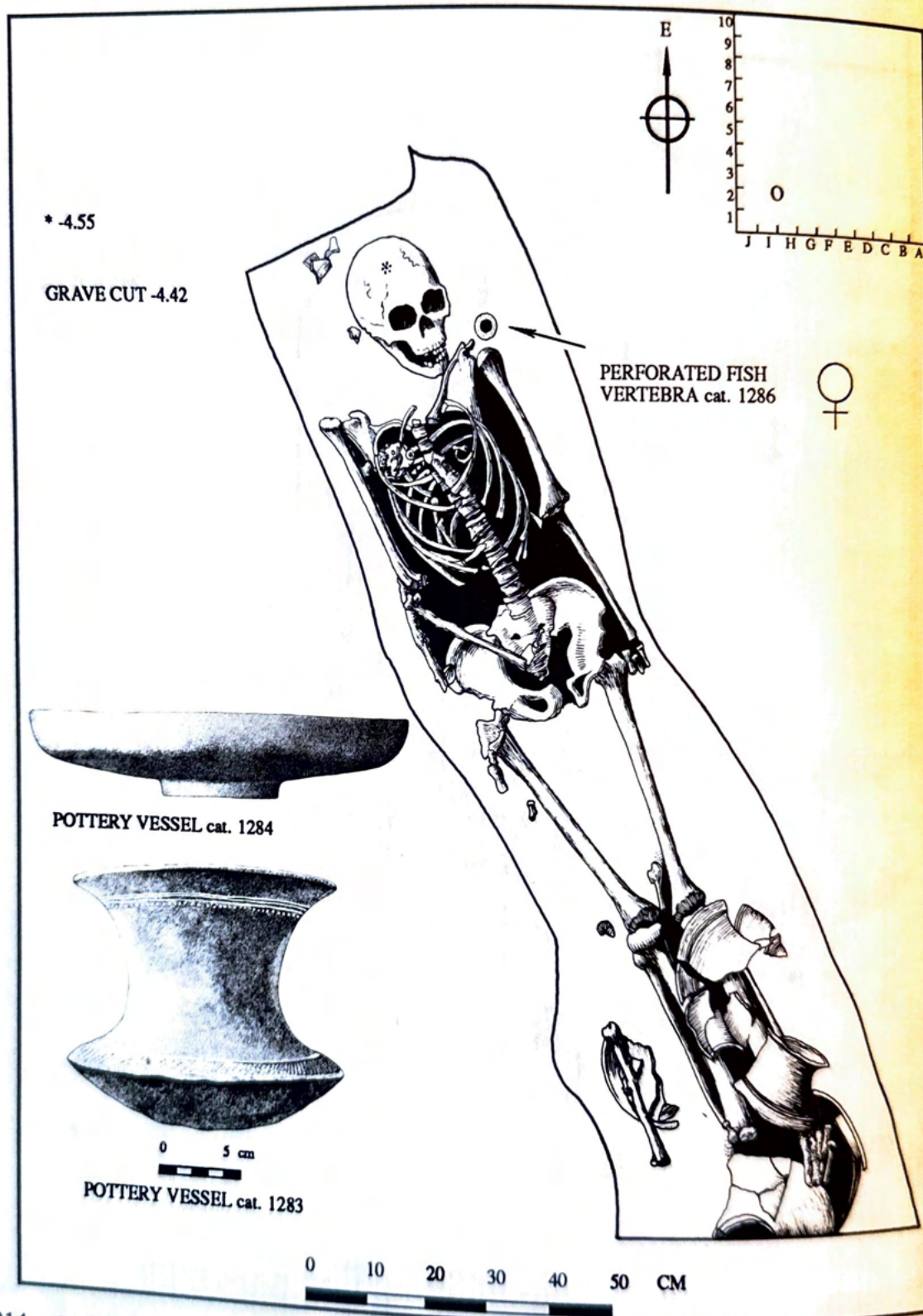


FIG. 214. Burial 58 cluster F stage 4 mortuary phase 3. This second burial of an adult female was found about 25cm to the north of B60. Beyond her left shoulder, there was a perforated fish vertebra ornament (cat. 1286), similar to that found with B102. Two broken pottery vessels were identified over the leg area, and red ochre was restricted to the upper part of the body

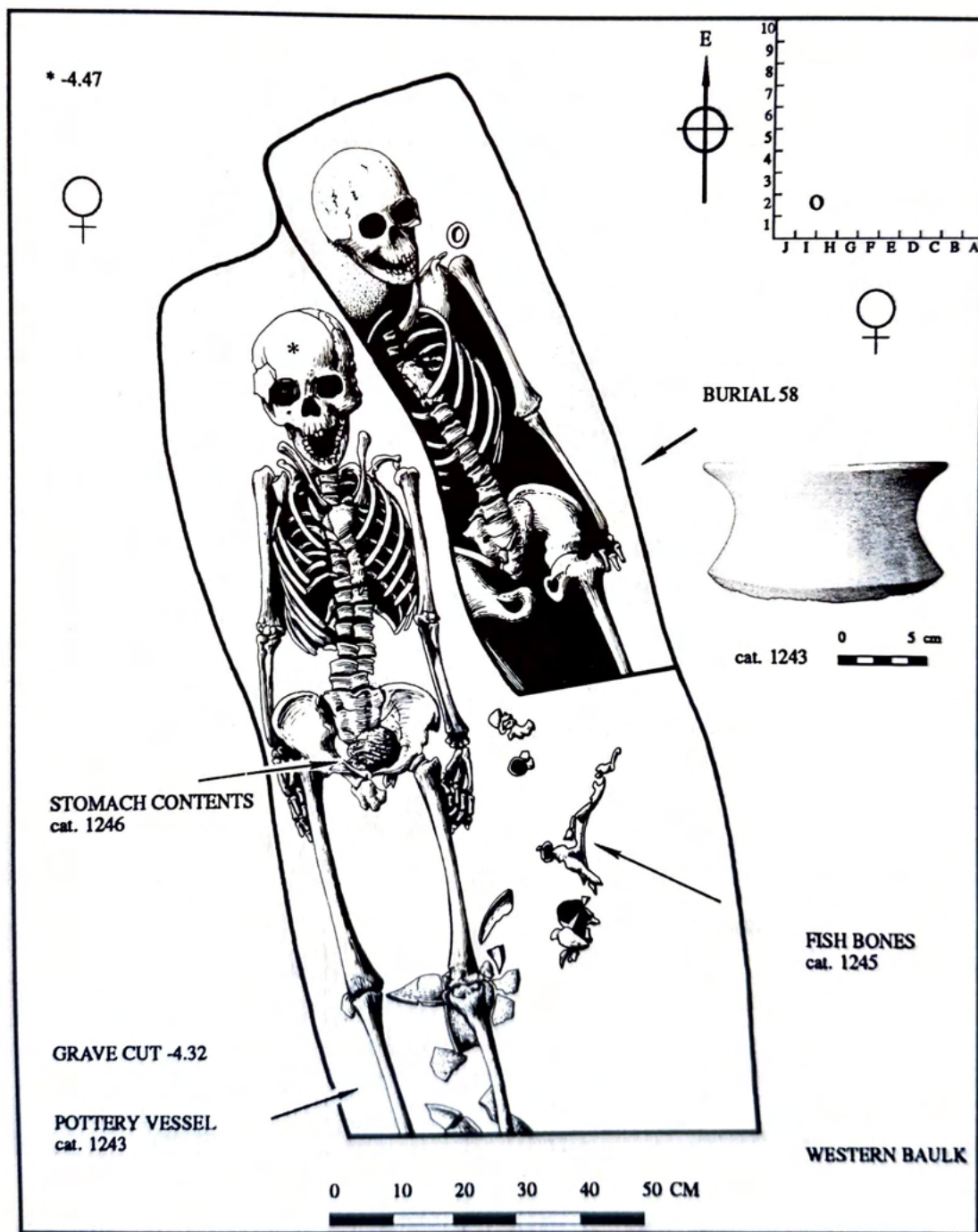


FIG. 215. Burial 56 cluster F stage 4 mortuary phase 3. A third adult female was interred in this grave, which overlies and partly cuts into the edge of B58. Red ochre was found over the body. The left leg rests on a sheet of potsherds which come from the same pottery vessel (cat. 1243). Food residue was found in the pelvic region

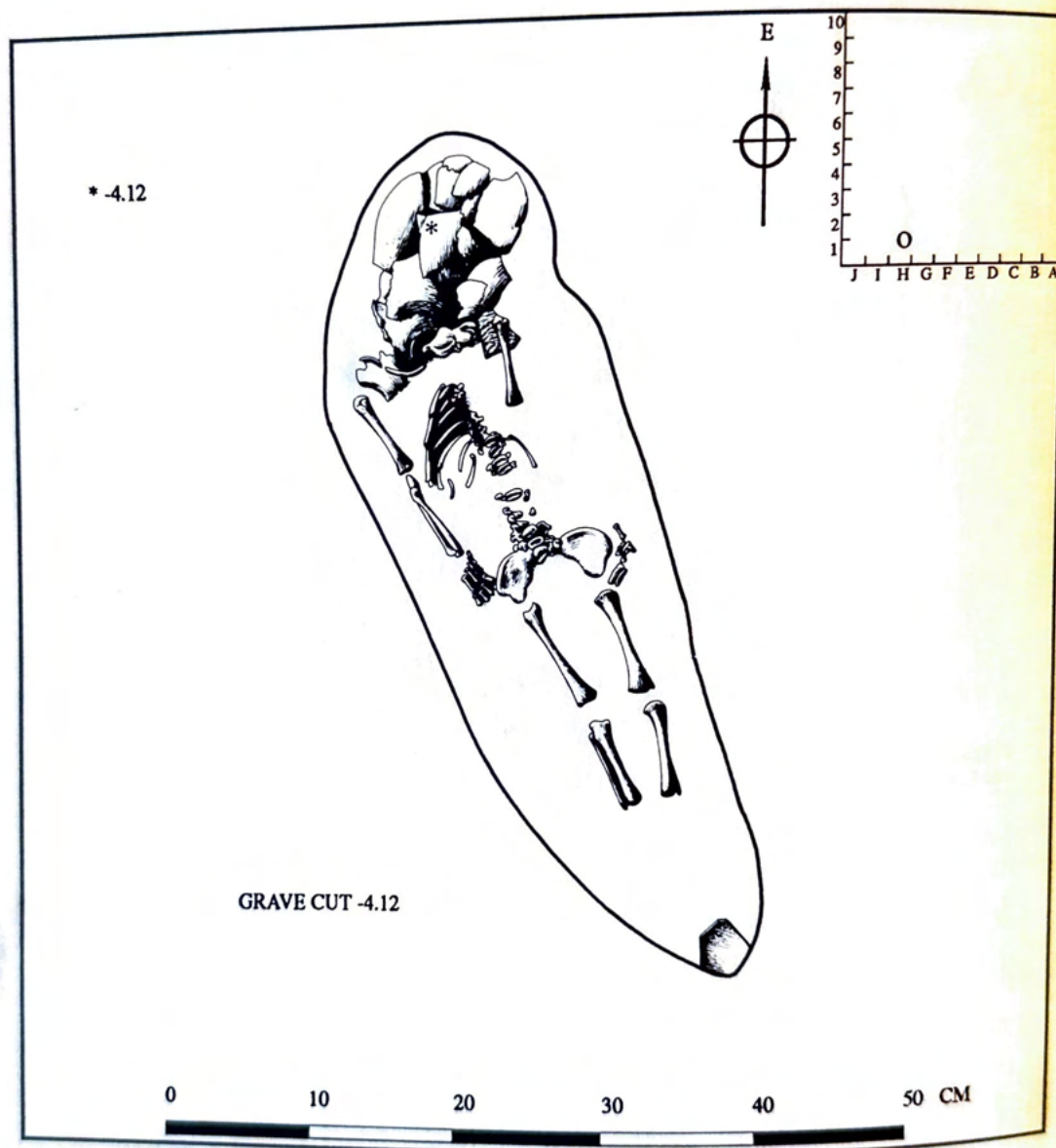


FIG. 216. Burial 50 cluster F stage 4 mortuary phase 3. The last burial in cluster F during the third mortuary period is of a newly-born infant. The bones had been slightly disturbed in antiquity and no grave goods were encountered

CLUSTER F: STAGE 5 MORTUARY PHASE 4

The last interment of stage 4 took place at a depth of 4.14m, while the earliest burial ascribed to stage 5 was placed in a grave cut from a depth of 3.67m. During the period represented by an accumulation of almost 50cm of cultural material, several pits and postholes were excavated. Thus a large pit was dug at the foot area of B56. Numerous postholes were dug in this area during the hiatus in burials, but only two cut into an earlier grave. It is also notable that lens 9 in layer 9 skirts the burial area at a depth of 4.02m. There are also three large postholes which run between burials 60 and 58. At a depth of 3.63m, layer 9 lens 7 was distributed round the burial cluster, and was deposited at about the same time as the renewal of mortuary activity with stage 5 (Fig. 217).

Just prior to the interment of the stage 5 burials, an ash lens was deposited under B42 (layer 9 lens 3), and a further lens of white ash and shellfish remains accumulated to the south-east of the burials (layer 9 lens 4). There are four burials in this stage, an adult female, an adult male, and two infants. The man lay to the south, the woman to the north and a child in between. The infant lay on the woman's left arm (Fig. 218).

TABLE 39: *The mortuary goods, ages and sexes of burials from cluster F stage 5 mortuary phase 4*

	B42	B40	B46	B41
Age	32	37	4 m	9 m
Sex	Male	Female	-	-
Approx. number of children	-	3+	-	-
Depth of grave cut below datum (m)	3.67	3.51	3.51	3.51
Orientation	72°	72°	72°	78°
Red ochre	p	-	p	p
Tapa material	-	p	-	-
Pottery vessel	-	-	-	1
Disc-shaped shell bead	-	-	-	41
Burnishing stone	2	-	-	-

Note: p = present, m = months

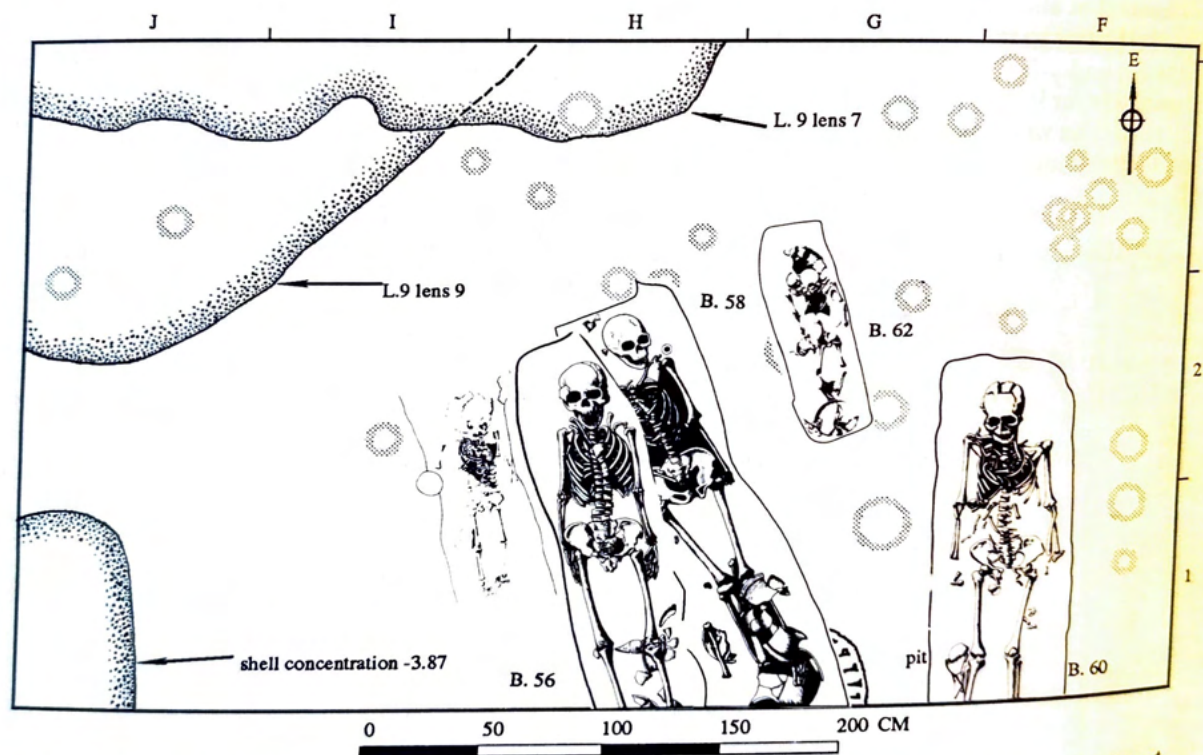


FIG. 217. The distribution of features intermediate between stages 4-5, cluster F mortuary phases 3 to 4

FIG. 218.
postholes
two posth

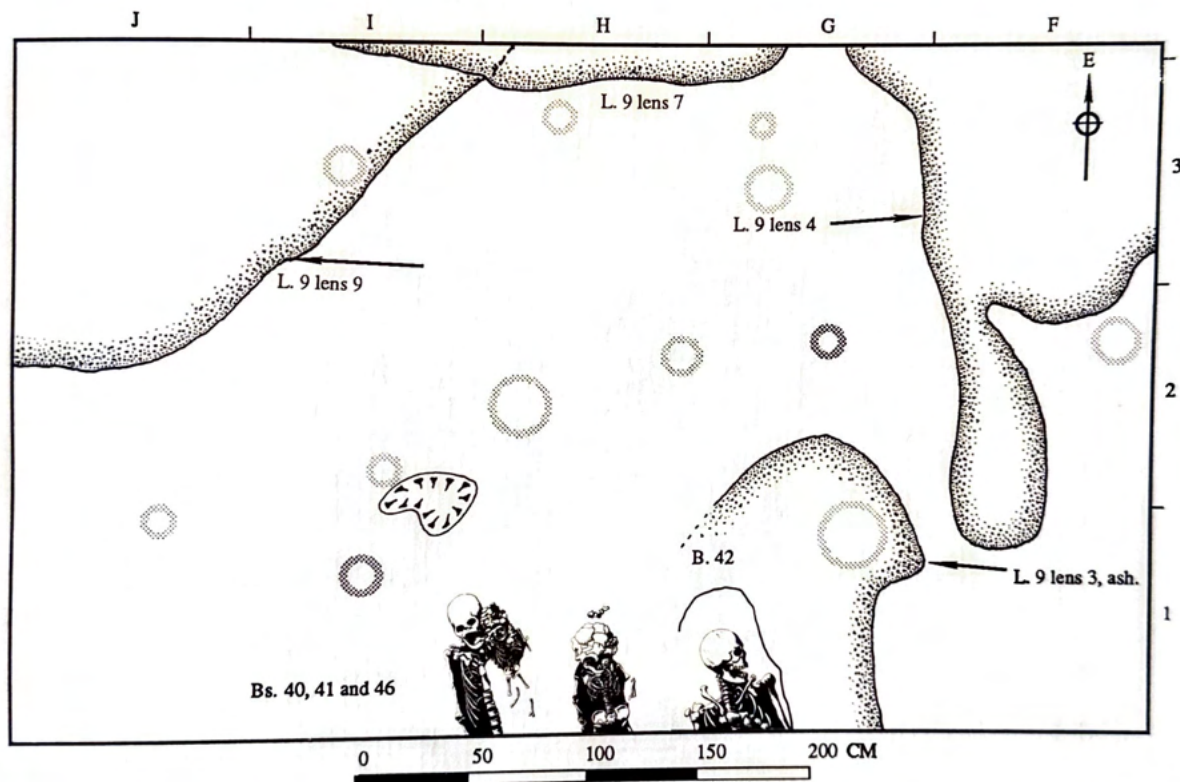


FIG. 218. The distribution of graves and associated features of cluster F stage 5 mortuary phase 4. The postholes depicted in light grey were dug just before the interment of the burials in this stage. The other two postholes are later than the burials

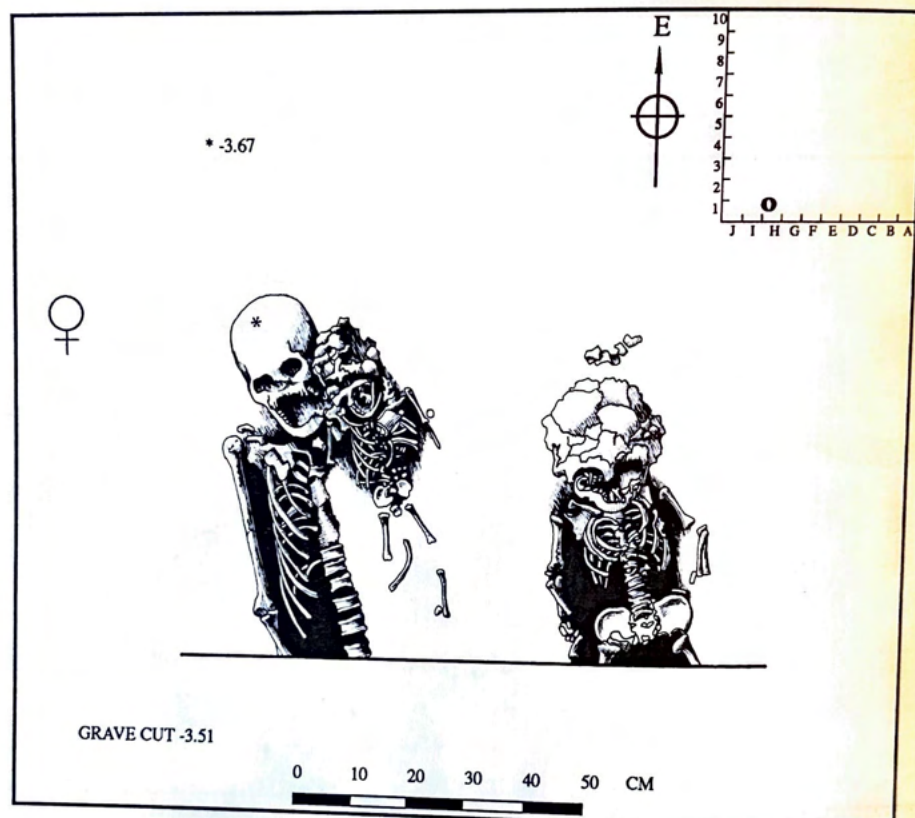


FIG. 219. Burials (from left to right) 40, 46 and 41 cluster F stage 5 mortuary phase 4. An adult female was interred directly underneath and in essence sharing the same grave as B38. The woman was interred at the same time as an infant, whose bones were found on her left shoulder. No grave goods were found in association, nor was there a trace of red ochre on the bones. The remains of a child (B41) were found in this grave, which was parallel with and situated about 40cm to the south of B40. It was covered by the body of B39, that of an adult female. Nineteen shell disc beads (cat. 1064) were recovered in the vicinity of the wrist and 22 disc beads, strung in three separate rows, were found on the chest. A pottery vessel (cat. 2032) was present near the ankles. Traces of red ochre covered the bones

FIG. 220. Burial 42 cluster F stage 5 mortuary phase 4. The skeleton was recovered from the burial area

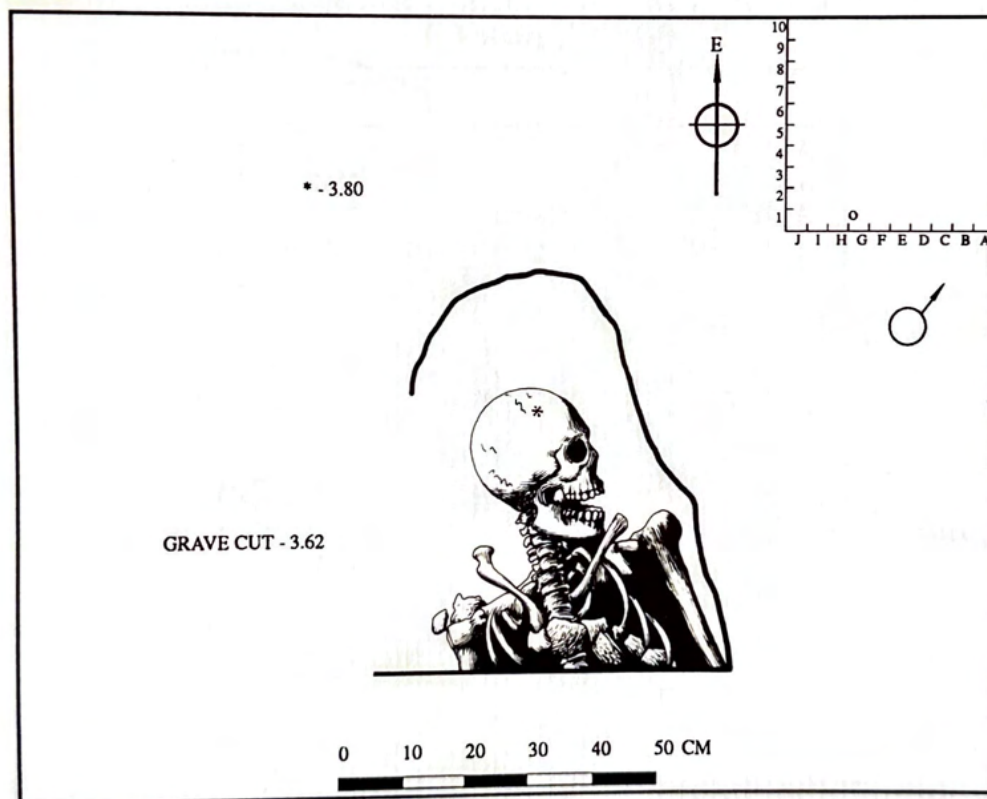


FIG. 220. Burial 42 cluster F stage 5 mortuary phase 4. Most of the grave for this adult male was located beyond the excavation square. The bones were covered in red ochre and, when the balance of the skeleton was recovered from the baulk to prevent the danger of looting, two burnishing stones were located in the foot area

CLUSTER F: STAGE 6 MORTUARY PHASE 4

The two burials belonging to this stage were interred on top of burials 40 and 41 and in virtually the same grave. They were thus only slightly later (Fig. 221).

TABLE 40: *The mortuary goods, ages and sexes of burials from cluster F stage 6 mortuary phase 4*

	B38	B39
Age	33	25
Sex	Male	Female
Approx. number of children	-	2-3
Depth of grave cut below datum (m)	3.51	3.51
Orientation	72°	72°
Red ochre	p	p
Tapa fabric	p	-
Pottery vessel	3	1

Note: p = present

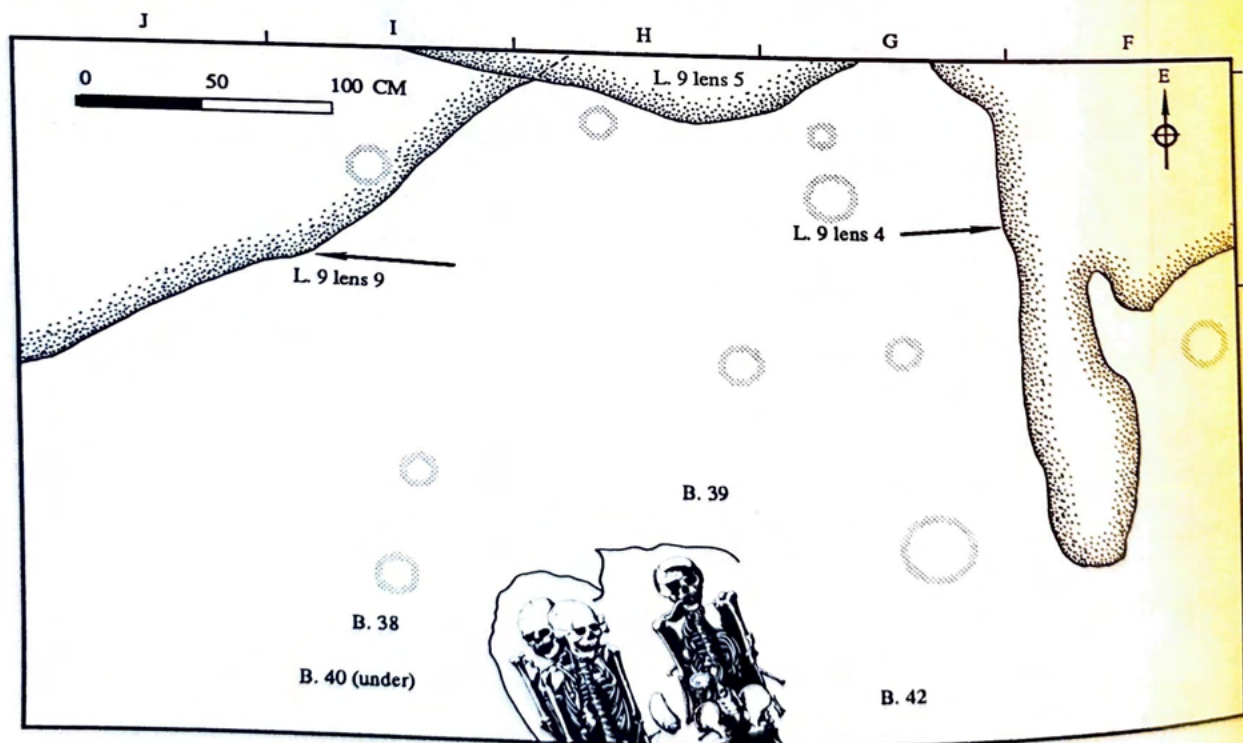


FIG. 221. The distribution of graves and associated features of cluster F stage 6 mortuary phase 4

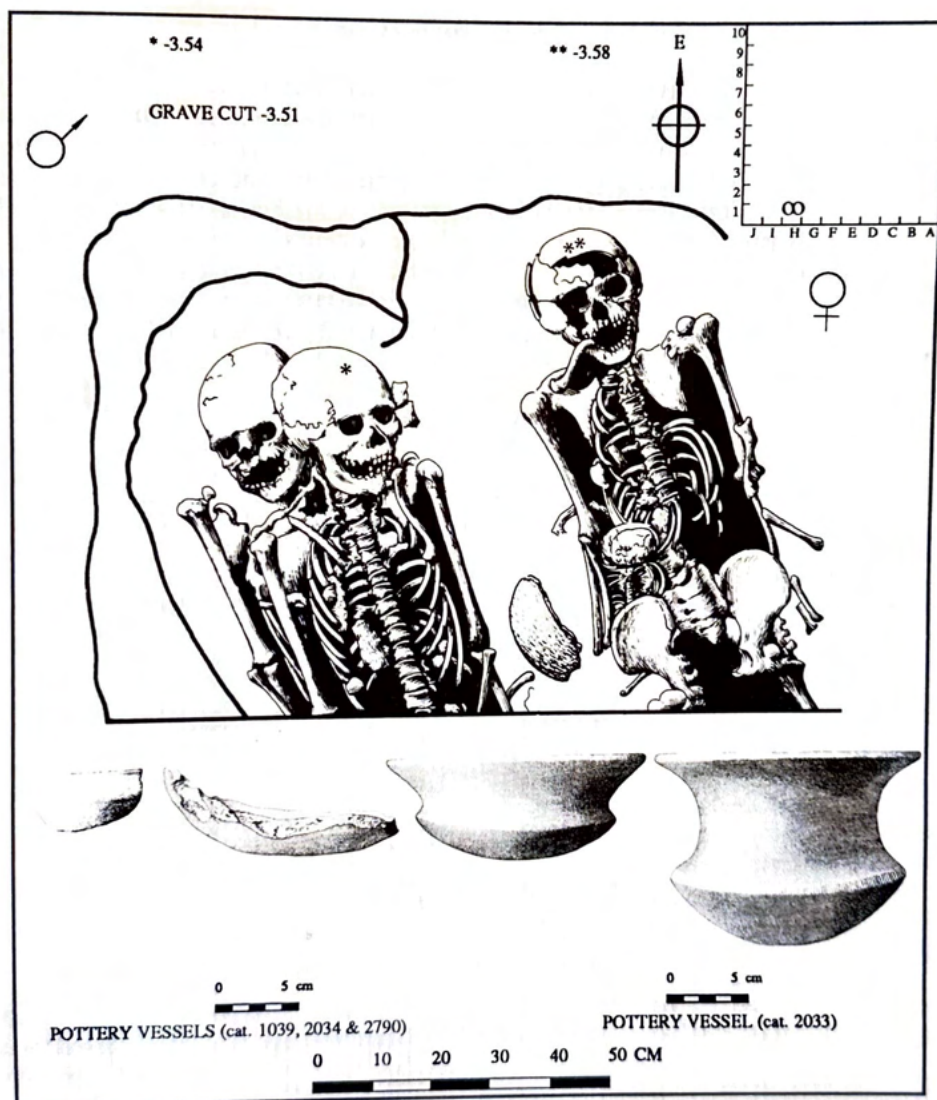


FIG. 222. Burials 38 (left, male) and 39 (female) cluster F stage 6 mortuary phase 4. B38 was located directly over burials 40 and 46, and on the same alignment. It contains the remains of a male who died in his early thirties. He was accompanied by three pottery vessels, all of which were broken in antiquity (cats. 1039, 2034 and 2790). Traces of red ochre were present over the forehead, and *tapa* fabric was identified under the pelvis. B39 comprises the remains of a female aged about 25 years. The skeleton was covered in red ochre and a complete pottery vessel was found in the vicinity of the ankles (cat. 2033)

CLUSTER F: STAGE 7 MORTUARY PHASE 4

The stage 6 burials were interred at a depth of approximately 3.5m, while the three burials ascribed to stage 7 were interred after 35cm of cultural material had accumulated. During this interval, a series of postholes was dug which skirts the burial area and may well represent an above-ground structure. Two lenses of ash and food remains also accumulated and both run round the graves of stages 6 and 7. The first, layer 8 lens 8, lies to the east of the burials at a depth of 3.31m, and the second, layer 8 lens 7, runs to the north and lies at a depth of 3.35m. A small shelly lens was virtually contemporaneous with the interment of B27, its edge being severed by the grave cut (Fig. 223). A circular pit was dug at about the time of the renewed burial activity associated with stage 7. There are three burials in question, burials 25 and 27 being adult females and B29, an adult male.

TABLE 41: *The mortuary goods, ages and sexes of burials from cluster F stage 7 mortuary phase 4*

	B29	B25	B27
Age	27	19	41
Sex	Male	Female	Female
Approx. number of children	-	2-3	1-2
Depth of grave cut below datum (m)	3.15	3.06	2.97
Orientation	60°	60°	80°
Red ochre	p	p	-
Pottery vessel	-	-	1
Disc-shaped shell beads	330	-	-
I-shaped shell bead	17	-	-
Burnishing stone	1	-	-
Turtle carapace object	1	-	-

Note: p = present

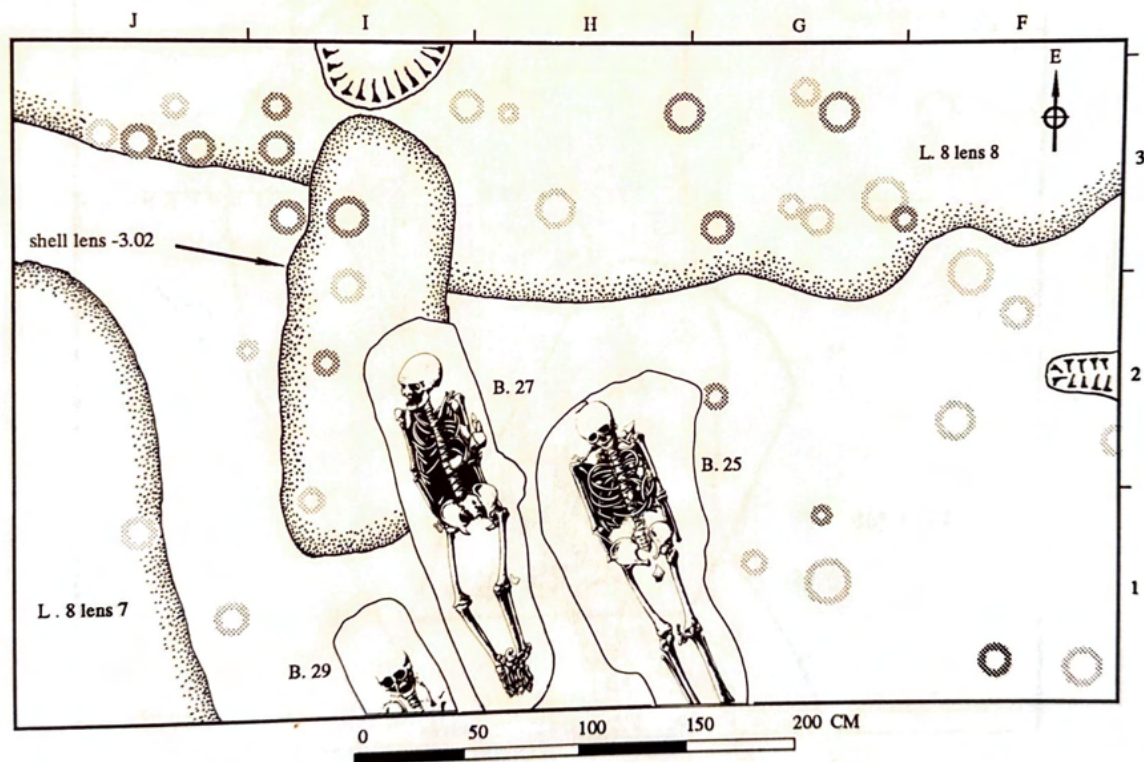


FIG. 223. The distribution of graves and associated features of cluster F stage 7 mortuary phase 4. The lighter-coloured postholes antedate the burials in this stage, the darker ones are contemporary with or later than the stage 7 burials

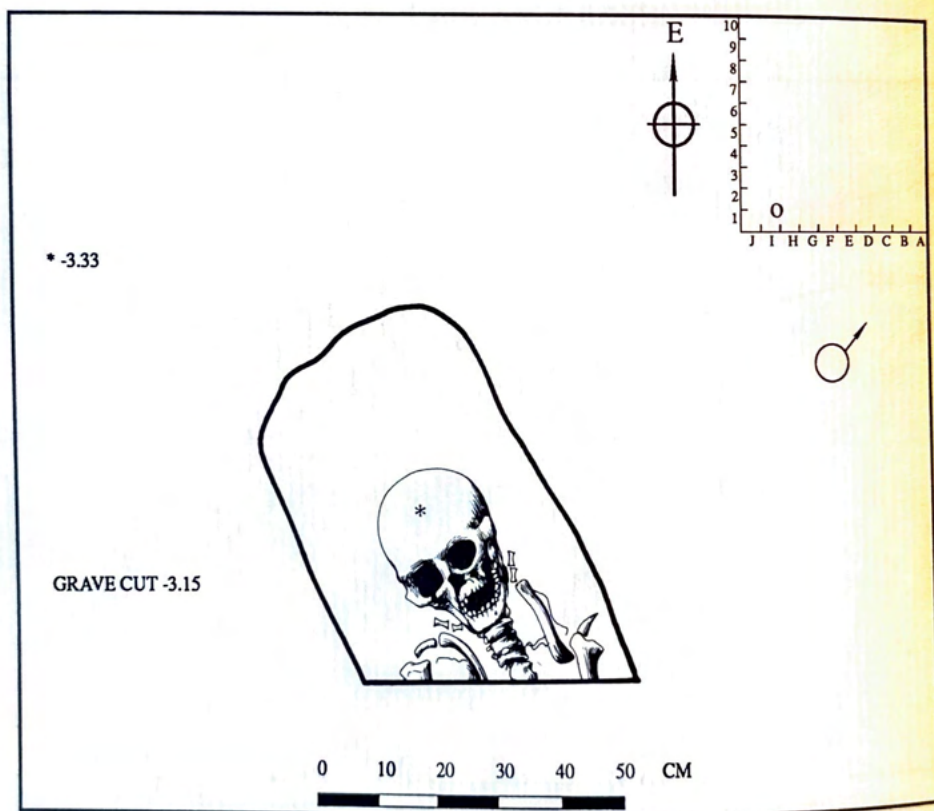


FIG. 224. Burial 29 cluster F stage 7 mortuary phase 4. Only the skull was found in the excavated area. The grave contained the remains of an adult male wearing a necklace made up of I-shaped and shell disc beads (cat. 995). The bones bore traces of red ochre. With the removal of the balance of the skeleton, a burnishing stone (cat. 2174) and a turtle carapace object (cat. 2031) were recovered

FIG. 22
hands b

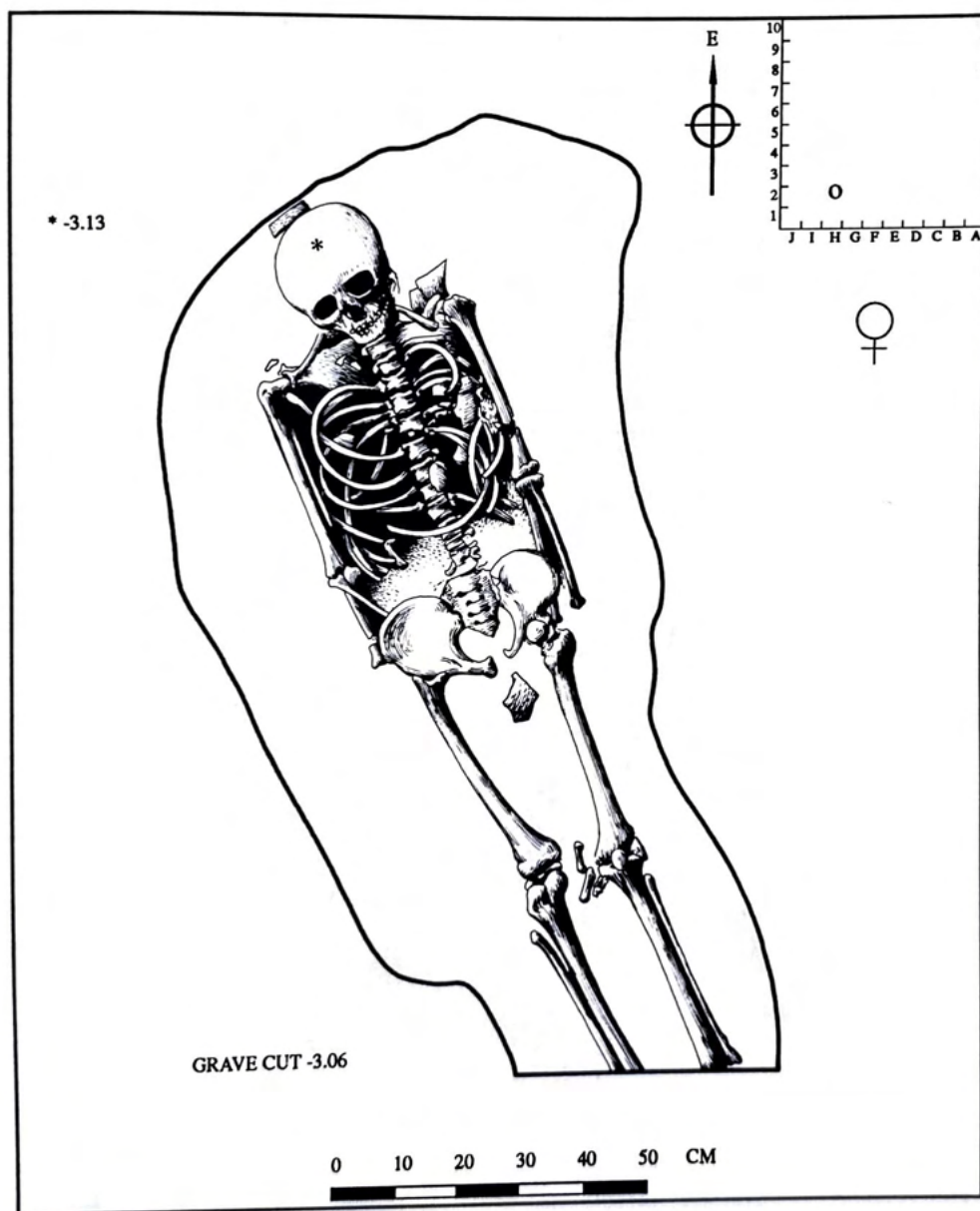


FIG. 225. Burial 25 cluster F stage 7 mortuary phase 4. This adult female was buried on the back with the hands beside the body. No grave goods were found, but red ochre covered the bones

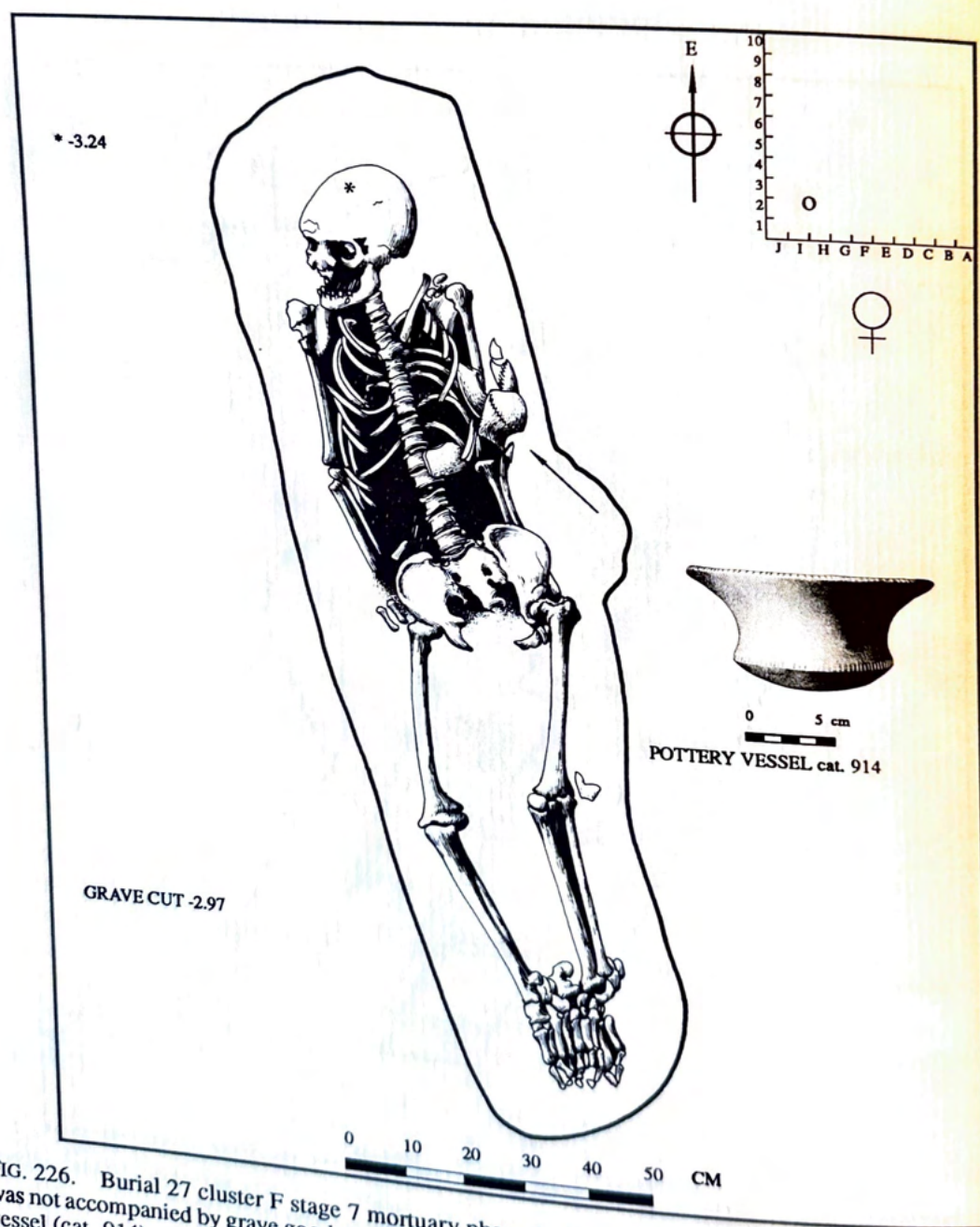


FIG. 226. Burial 27 cluster F stage 7 mortuary phase 4. Apart from one pottery vessel, this adult female was not accompanied by grave goods nor were any traces of red ochre seen on the bones. The broken pottery vessel (cat. 914) was found over the left arm

CLUSTER F: STAGE 8 MORTUARY PHASE 4

The two burials in this stage, burials 20 and 24, were interred about 20cm higher than the latest burial in stage 7. Burial 20 represents a child, and B24 an adult male. Only two postholes were cut in the interval between stages 7 and 8 (Fig. 227).

TABLE 42: *The mortuary goods, ages and sexes of burials from cluster F stages 8-9 mortuary phase 4*

	B20	B24	B17
Age	12	25	12
Sex	-	Male	-
Depth of grave cut below datum (m)	2.81	2.80	2.60
Orientation	47°	60°	65°
Red ochre	p	p	p
Pottery vessel	2	3	-
Burnishing stone	1	-	-
Turtle carapace ornament	-	1	-
Anvil	1	-	-

Note: p = present

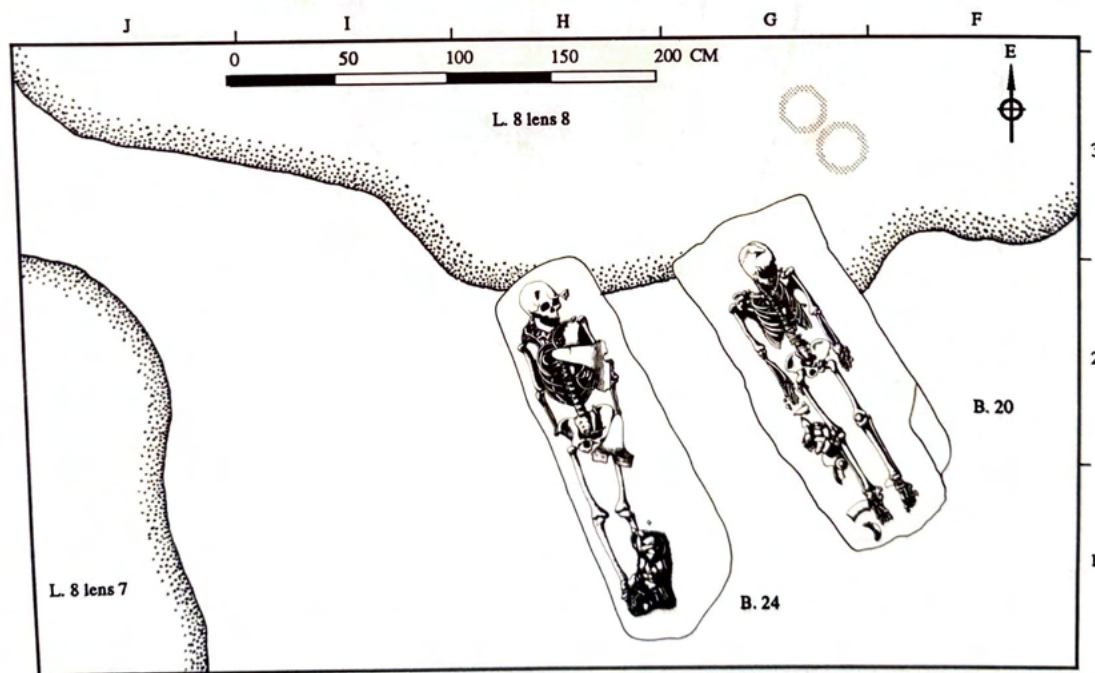


FIG. 227. The distribution of graves and associated features of cluster F stage 8 mortuary phase 4

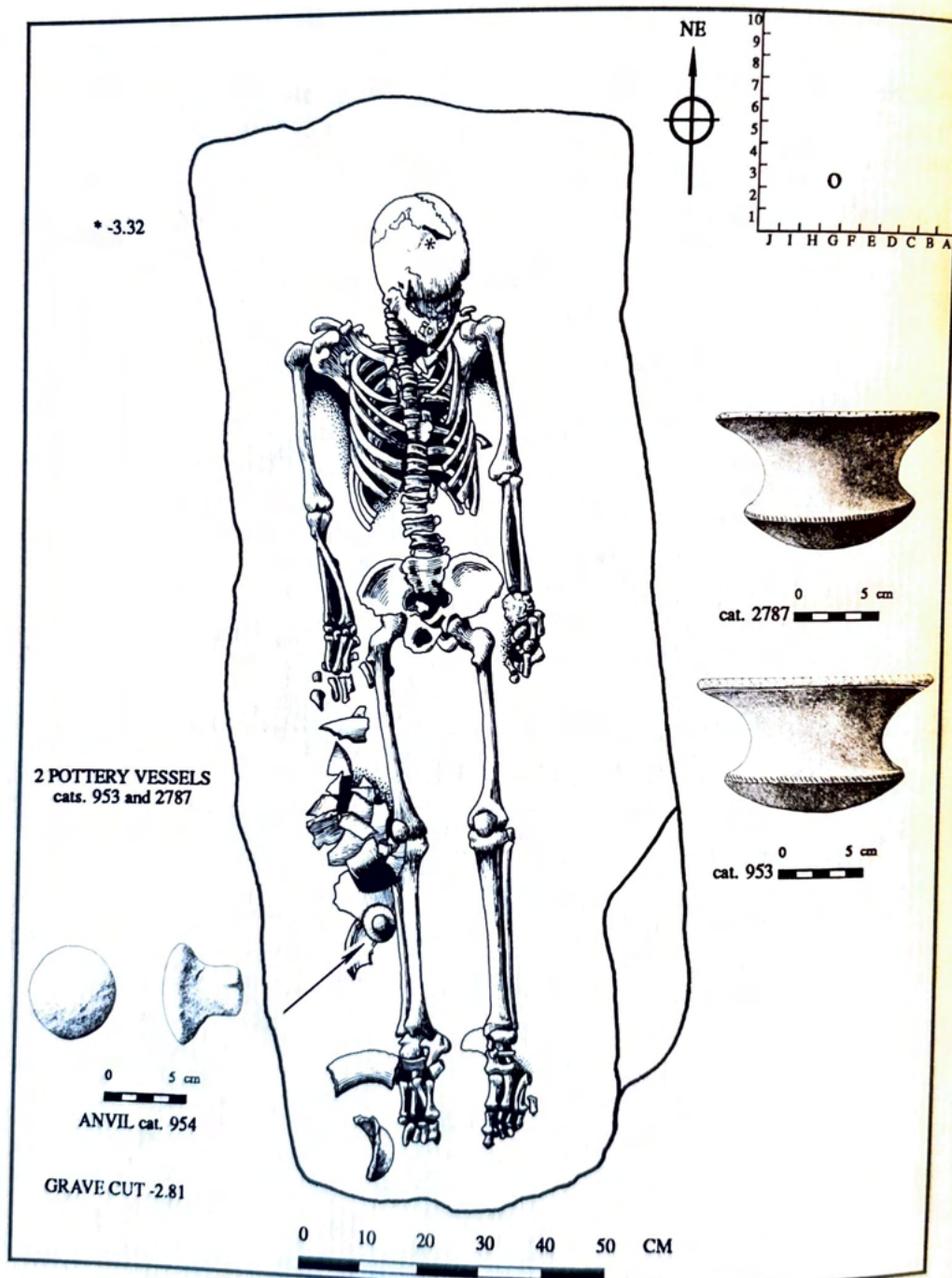


FIG. 228. Burial 20 cluster F stage 8 mortuary phase 4. This burial of a child aged about 12 years was interred at an unusual orientation, the head pointing to the north-east. Two broken pottery vessels (cats. 953, 2787) were found to the right of the right leg, together with a potter's anvil (cat. 954) and a burnishing stone (cat. 2190). The anvil is reproduced at 25%

FIG. 229.
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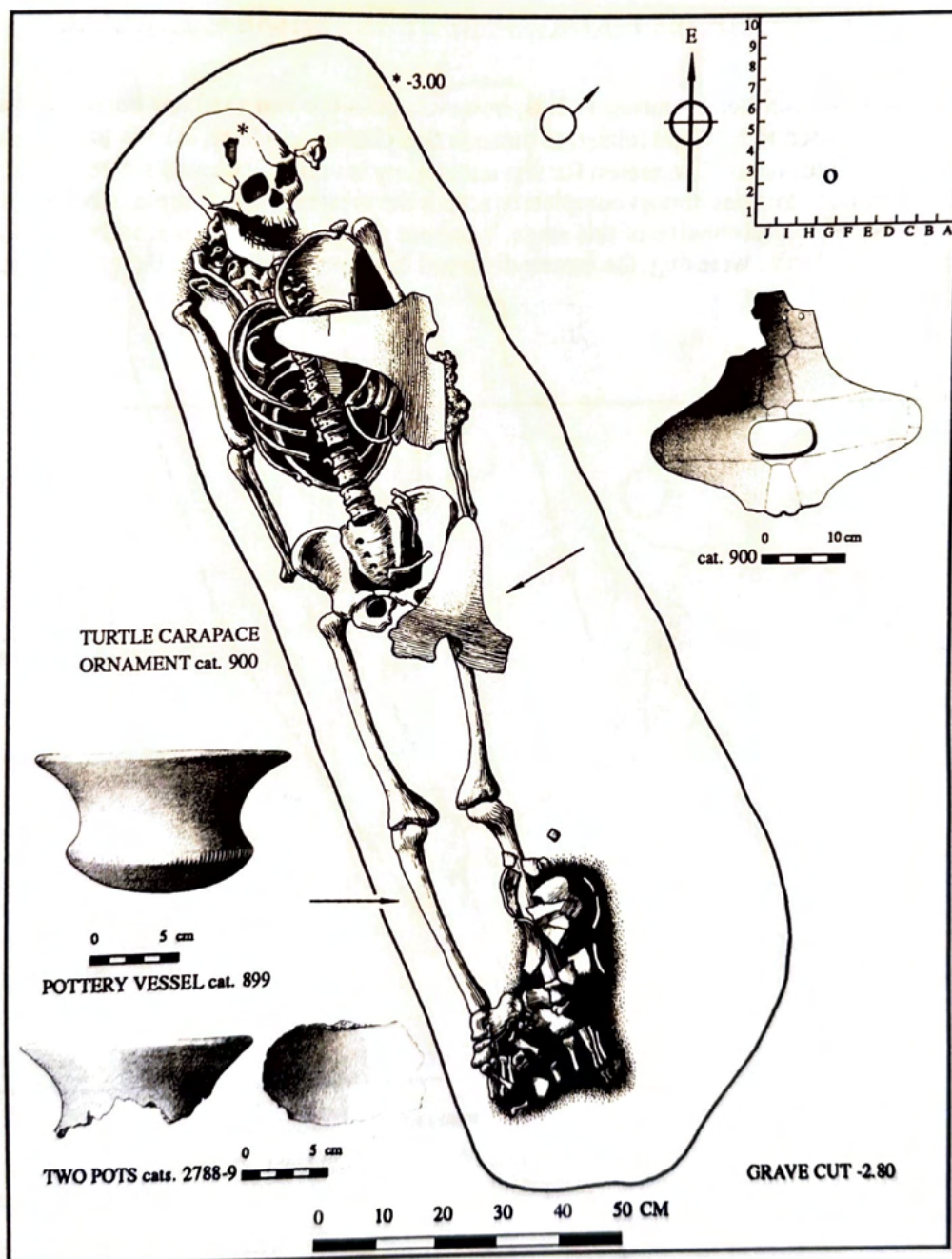


FIG. 229. Burial 24 cluster F stage 8 mortuary phase 4. The adult male in this grave was interred with a turtle carapace ornament (cat. 900), which had been broken in antiquity. One part was placed over the left arm and chest, and the other was found over the upper left thigh. Pieces from three complete pottery vessels had been placed over the ankles (cats. 899, 2788-9)

CLUSTER F: STAGE 9 MORTUARY PHASE 4

This is the last stage ascribed to cluster F. It is, however, possible that the later burials in this part of the site and ascribed to MP6 are related to those in this cluster.* Indeed, B13 is located directly over the cluster F interments. The reason for this uncertainty is that B13 clearly relates to the group of interments which stretches almost completely across the western half of the excavation square. Burial 17 is the sole representative of this stage. At about the same time as the body was interred, several pits and postholes were dug, the former disposed in an oval form round the grave (Fig. 230).

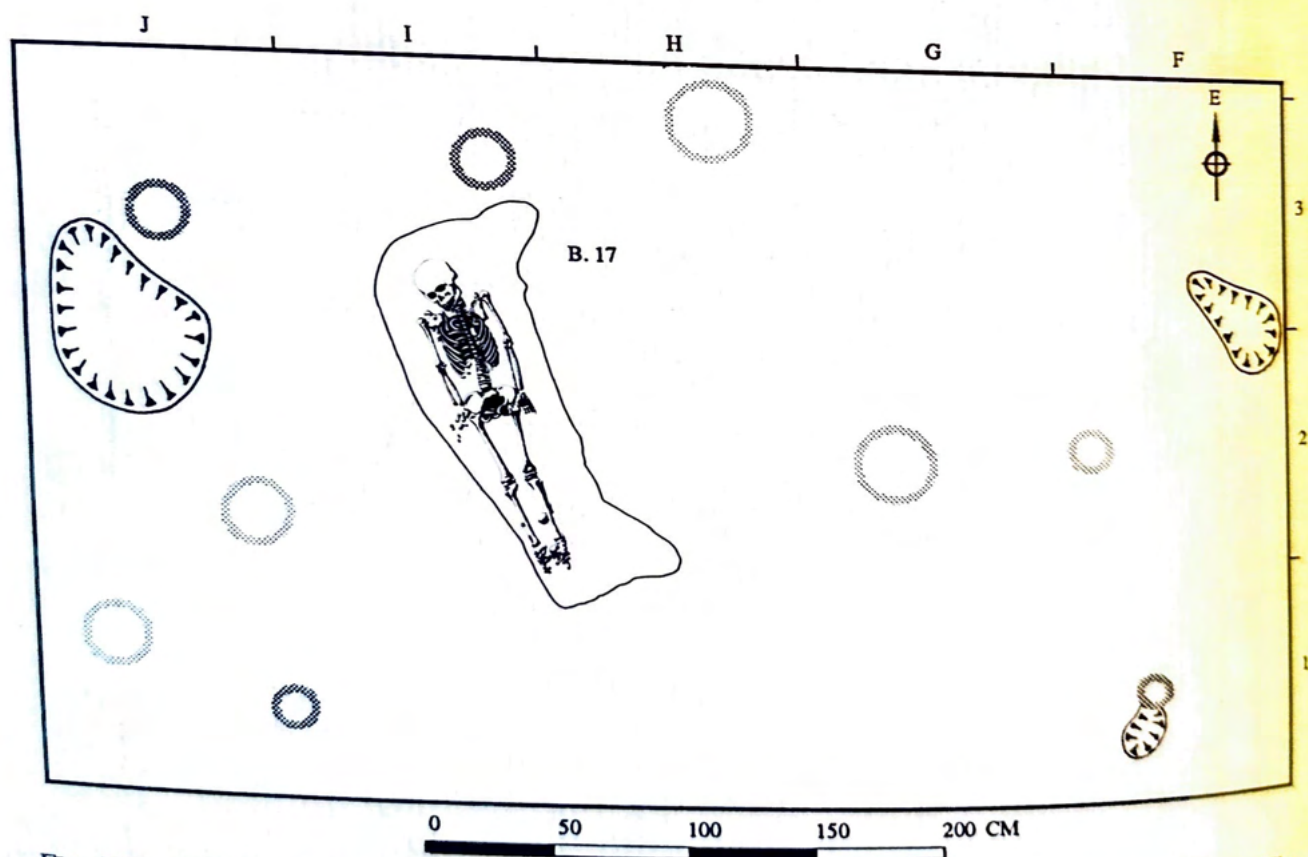


FIG. 230. The distribution of graves and associated features of cluster F stage 9 mortuary phase 4. The postholes depicted by a lighter stipple are just prior to or contemporary with the burials, those in the darker stipple being dug just after the interments of this stage

*The full interpretation of the mortuary data will be addressed in a later section of this report.

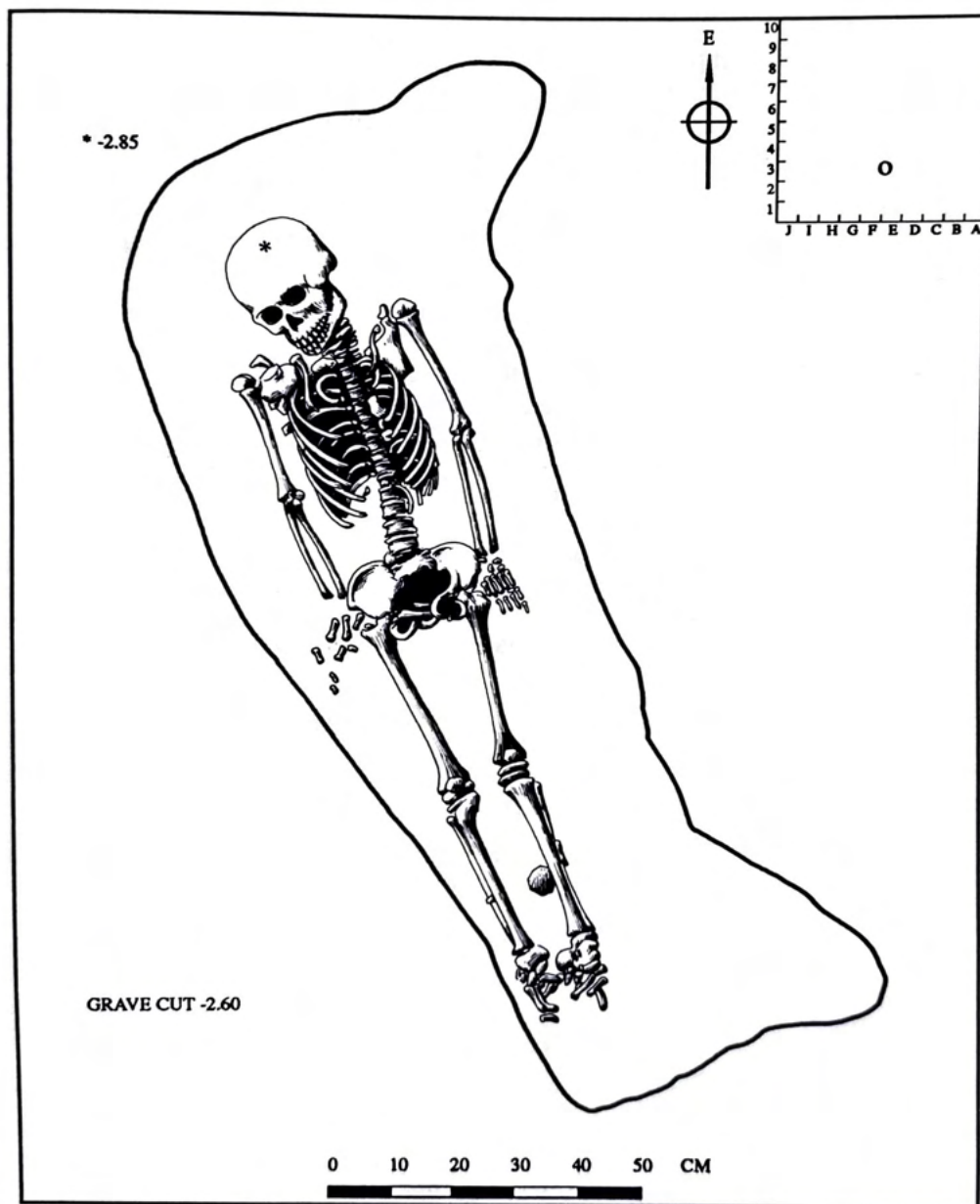


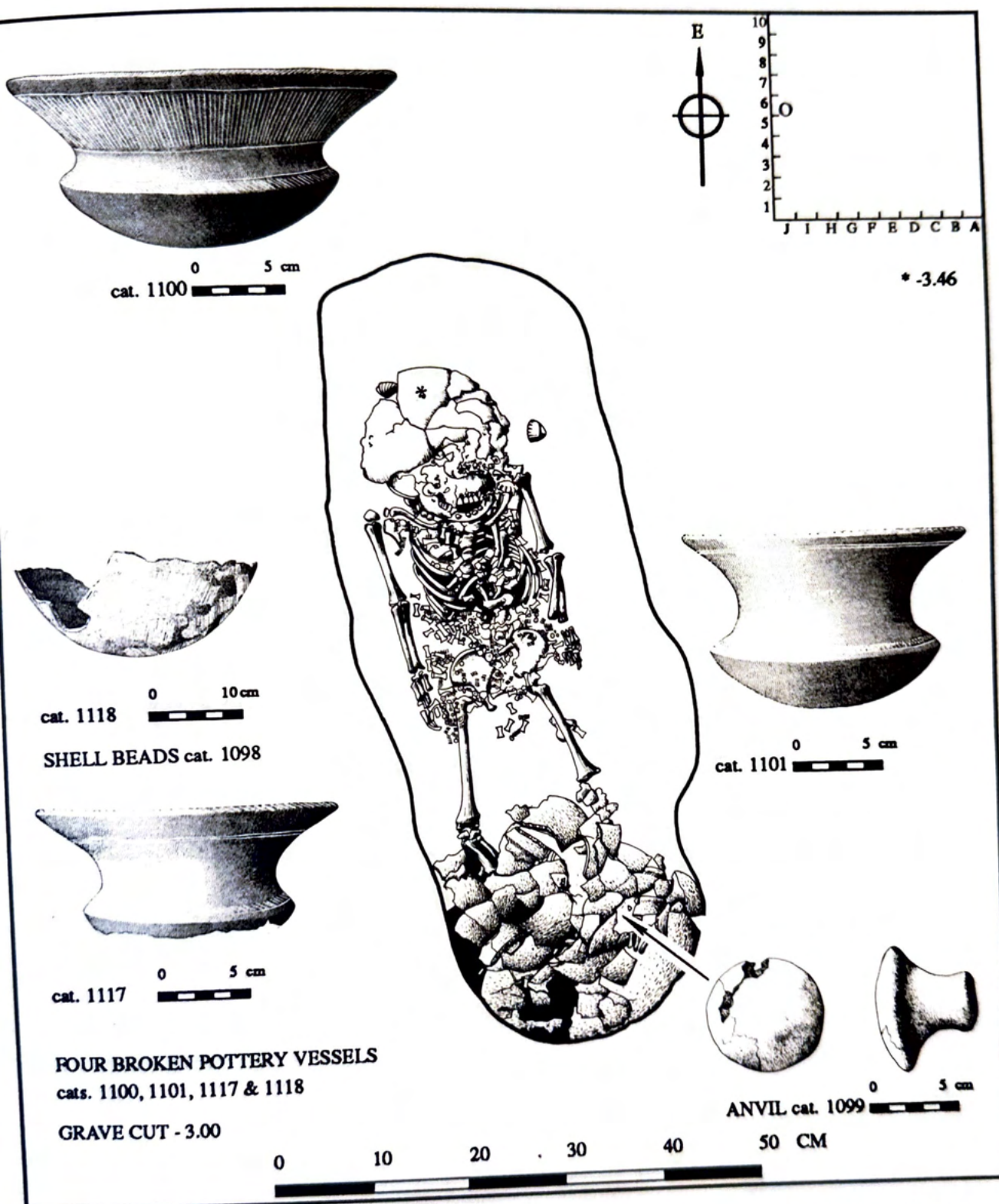
FIG. 231. Burial 17 cluster F stage 9 mortuary phase 4. The 12-year-old was buried with no grave goods, but with traces of red ochre on the skull. The skeleton lay on the back with the hands by the sides

CLUSTER G: MORTUARY PHASE 3

Burials 76 and 86 involve adult males, and are only partially present in the excavated area. The former was encountered at a depth of 4.62m and the latter was 12cm lower. Only partial remains were visible, but after the excavations were complete the entire skeletons were removed to deter the possibility of looting. In the case of B86, the skull and left arm were encountered. The skeleton lay directly underneath the leg bones of B76. When the balance of B86 was removed, two pottery vessels were found (cat. 2019-20) in the area of the knees. In the case of B76, a bone point (cat. 2017) was found, together with a complete pottery vessel (cat. 2016) in the foot area.

BURIAL 33, MORTUARY PHASE 4

Burial 33 was located at the northern edge of the excavated area and did not fall within any earlier cluster. Since it was hard up against the northern baulk, it was not possible to ascertain the degree to which the area had been prepared for the burial, but an extensive shell midden, layer 8 lens 5, came to within a metre of the southern edge of the grave and was laid down at about the same time that the grave was cut. The grave was relatively deep and the child was interred with an anvil. Its position in the sequence is, however, enigmatic. If it is significantly earlier than the MP5 graves, then it displays a changing mortuary tradition prior to the interment of burials 14-16. It is conceivable that the upper part of the grave was removed by subsequent disturbance and only the lower part of the cut was recognized at a depth of 3m. In either case, this is the sort of problem which can only be resolved by expanding the area excavated to recognize a broader pattern of change in the mortuary tradition.



232. Burial 33 mortuary phase 4. The grave contained the remains of a child, and was cut from a depth of 3.0m down to 3.46m. The child had been laid out on the back with the hands by the side and the head pointing 10° north of east. The bones were covered in red ochre. The chest area was covered in disc- and ring-shaped shell beads and four smashed pottery vessels had been placed beyond the ankles. As with B16, there was also a small anvil placed in the ankle area. The child was buried with a rich array of grave goods, in a situation which bore no relation to earlier clusters and indeed, on much the same north-south axis as clusters 15 and 16.

X. MORTUARY PHASE 5

WITH mortuary phase 5, we encounter new and quite distinct mortuary behaviour. With the possible exception of cluster C, distinct clusters of burials, which had been added to in the same areas over a depth of 3.5m, were no longer used. Instead, four or possibly five burials only were interred in large, deep graves with outstandingly rich grave goods. The first of these, B15, involved a 35-year-old woman. There followed B43, that of a 30-year-old man whose grave, most unfortunately, only impinged slightly into the excavated area. Two child burials followed, first B16, that of an infant aged about 15 months and then a second infant, of the same age, in B14.

TABLE 43: *The mortuary goods, ages and sexes of burials associated with mortuary phase 5*

	B22	B15	B43	B16	B14
Age	21	35	30	15 m	15 m
Sex	Male	Female	Male	-	-
Approx. number of children	-	3+	-	-	-
Orientation	60°	74°	-	85°	80°
Depth of grave cut below datum (m)	2.82	2.50	2.45	2.43	2.35
Red ochre	-	p	p	p	p
Disc-shaped shell beads	-	120787	56200	12247	269
I-shaped shell beads	-	950	435	200	-
Cylindrical shell beads	-	-	1	-	-
Short barrel-shaped shell beads	-	-	7	-	-
Horned shell disc	-	2	-	-	-
Large shell disc	-	-	2	-	-
Small shell disc	-	1	-	-	-
Pottery vessels	2	8-10	1	4	4
Clay anvil	-	1	-	1	-
Burnishing stone	-	2	-	1	-
Clay pellet	-	1	-	-	-
Pierced mammal canines	-	5	1	-	-
Turtle carapace ornament	-	-	1	-	-
<i>Polymesoda</i> container	-	1	-	-	-
Clay cylinders	-	many	-	many	-
Shell headdress	-	1	-	-	-
Shell disc/bangle	-	1	1	1	-

Note: p = present, m = months

When the woman in B15 was interred, there were no other burials in the excavated area. The site of her grave did not overlie any earlier burial, nor did a grave subsequently overlie hers. Some time before her interment, an adult male was buried in a very narrow and shallow grave adjacent to her own grave (Fig. 233). This burial also stood out because it was not interred as part of any cluster. Whether or not these features are associated with its proximity to a later unique burial is not known, but the regularity and long tradition of the mortuary practice at the time that B22 was interred is highly suggestive. Although stratigraphically it belongs to MP4, it is described below because of its close proximity to and possible association with B15.

The chosen area for the grave for B15 received some attention prior to the interment. A small spread of ash lies over the eastern end of the grave such that when the grave was cut it severed this lens. At what appears, archaeologically, to have been an event contemporaneous with the funeral, a rich midden deposit containing an abundance of shellfish was laid down to the west of the grave and two further lenses of ash, charcoal and food remains were deposited immediately to the south of the grave (layer 7 lenses 1 and 3, Figs. 234 and 235).

The grave for B15 is outstandingly large (Fig. 236). It measures 3m by 1m and attained a maximum depth of 95cm. The body was placed centrally within it, supine with the arms straight by the sides. She probably wore a jacket embroidered with shell disc beads, for approximately 120,000 such beads, often disposed in strings, were found over and under the chest area (Fig. 237). There were also about 950 I-shaped shell beads, but these were not disposed as in a necklace. Indeed, there is some indication that they were worn over the chest and under the arms. Much of the jewellery found with this burial was unique within the site. Two shell discs (cat. 892) were found over the ear area of the skull. These may well represent the surviving parts of a headdress (Fig. 238). There were two 'horned' shell discs (cat. 896), one placed over each shoulder. A shell disc/bangle (cat. 893) was found on the left wrist, the first such disc/bangle found at Khok Phanom Di. A further and smaller shell disc was found on the lower chest area (cat. 910). Five pierced canines from a small carnivore were located on the upper chest area, and they had probably been strung as beads (cat. 905). Between eight and ten pottery vessels, all broken in antiquity, were associated with the burial either by being placed in the vicinity of the body or over a pile of clay cylinders which covered the body. One of the former group (cat. 913) is unique in form, and decorated with complex incised ornamentation. A clay potter's anvil (cat. 911) was found to the right of the right ankle, next to a *Polymesoda* valve containing two burnishing stones (cat. 908). A clay pellet-bow pellet was found near the left hand (cat. 909). After interment, the burial and grave goods were covered in an abundance of red ochre, but no traces of *tapa* cloth were encountered. The burial ritual then involved the building up over the body of a large accumulation of unfired clay cylinders thought to represent stored clay. These nearly reached to the surface of the grave, but on top of the pyramid of clay there were two coarser, cord-marked vessels which had been smashed in antiquity and then carefully balanced on top of the clay cylinders (Fig. 236). Finally the grave was filled, the soil filling containing a considerable number of unopened *Anadara* valves.

Not long after the interment of B15, an infant aged about 15 months was buried 70cm to the north (B16). As with B15, an ashy lens was deposited shortly before the grave was cut. This is not the only parallel between the two burials. Once again, the chest area of the infant was covered in shell disc and I-shaped shell beads, and many were found under the upper part of the body as well. Some were disposed as a long necklace, and others in the form of a shell belt. A shell disc/bangle was located on top of the left wrist, while four broken pottery vessels covered the lower part of

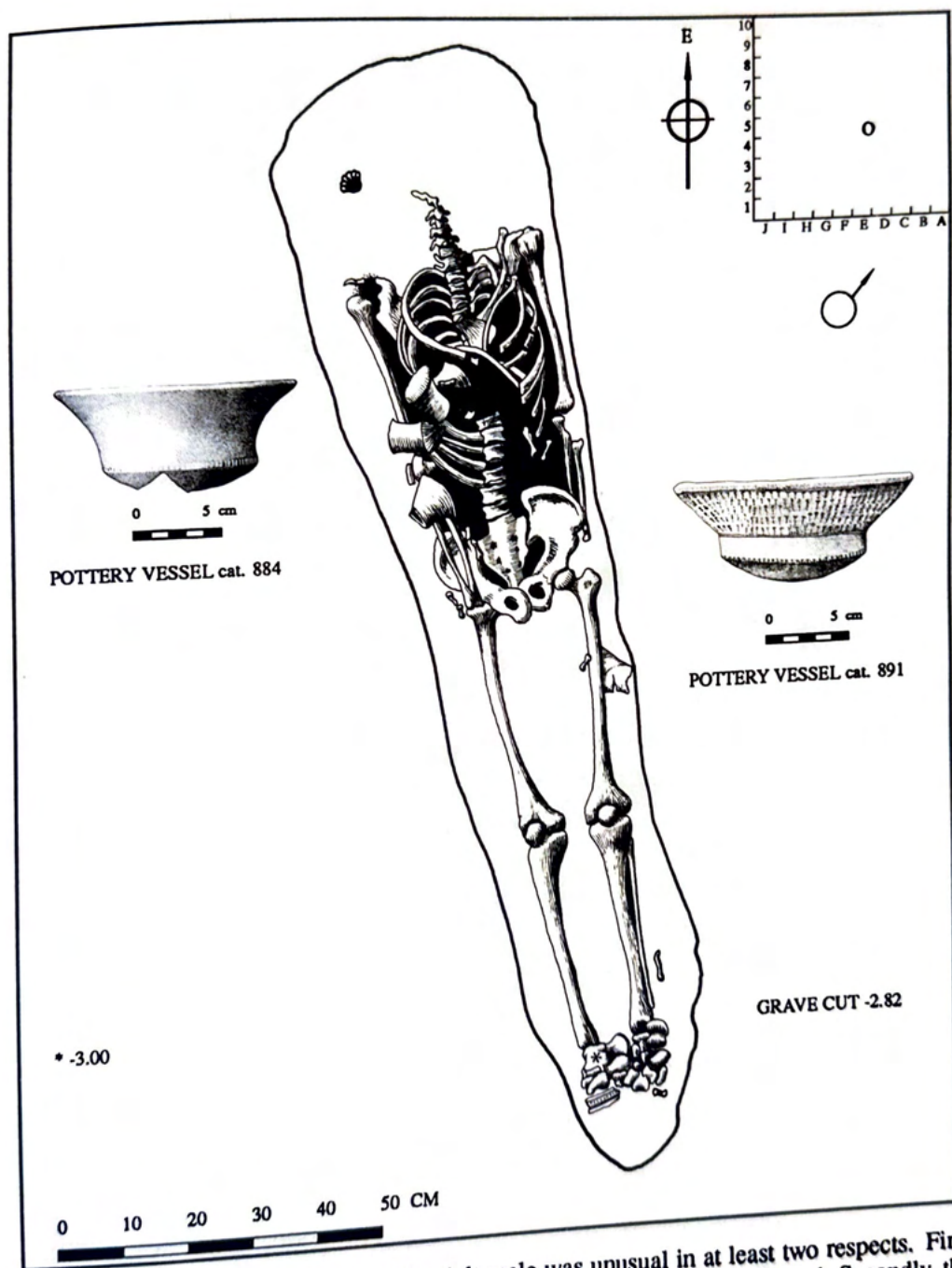


FIG. 233. Burial 22 mortuary phase 4. This adult male was unusual in at least two respects. Firstly, the corpse was buried headless, the only instance of this in any of the burials encountered. Secondly, this male was the only one ascribed to MP4 without a turtle carapace ornament. Nor was it associated with any red ochre

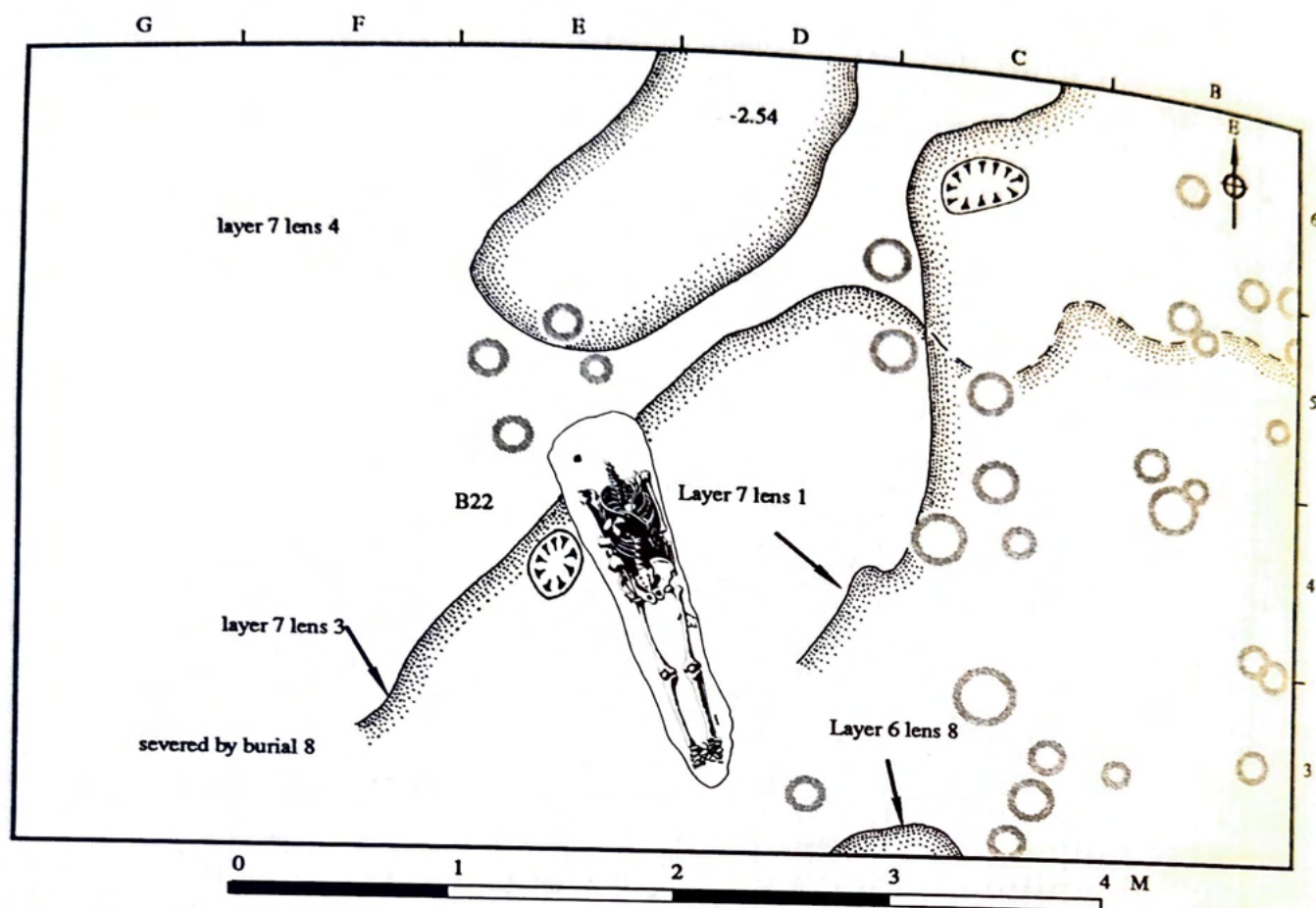


FIG. 234. The distribution of burial 22 and associated features antedating the interment of burial 15

the body. Under these, there was a miniature clay anvil placed as in B15, beside the right ankle (Fig. 201). The body had been liberally covered in red ochre and clay cylinders were placed over the body almost up to the surface of the grave. The grave itself, though designed to receive a small child, was almost 2m long and reached a depth of 82cm. It was also very carefully cut, with straight edges and squared corners.

Burial 14 was slightly later and unique in that the grave was roughly circular. Two very large pottery vessels were encountered, with their mouths facing each other (Fig. 202). One of these vessels was superbly decorated with curvilinear incised designs (cat. 853), and the other had a plain surface (cat. 852, Fig. 203). These vessels contained the remains of an infant aged about 12 months, laid out on an orientation of 10° north of east. Two carinated vessels lay at the child's feet (cats. 787 and 854) and 269 shell disc beads were found over the stomach area (cat. 788).

Only the foot bones of B43, that of a 30-year-old male, were found within the excavated area. The grave cut was recognized at a depth of 2.45m and the base was found at 2.72m. As a precaution against the likelihood of looting, it was decided to remove as much as possible of the skeleton from the baulk area at the end of the excavation, and during this procedure two large shell discs were

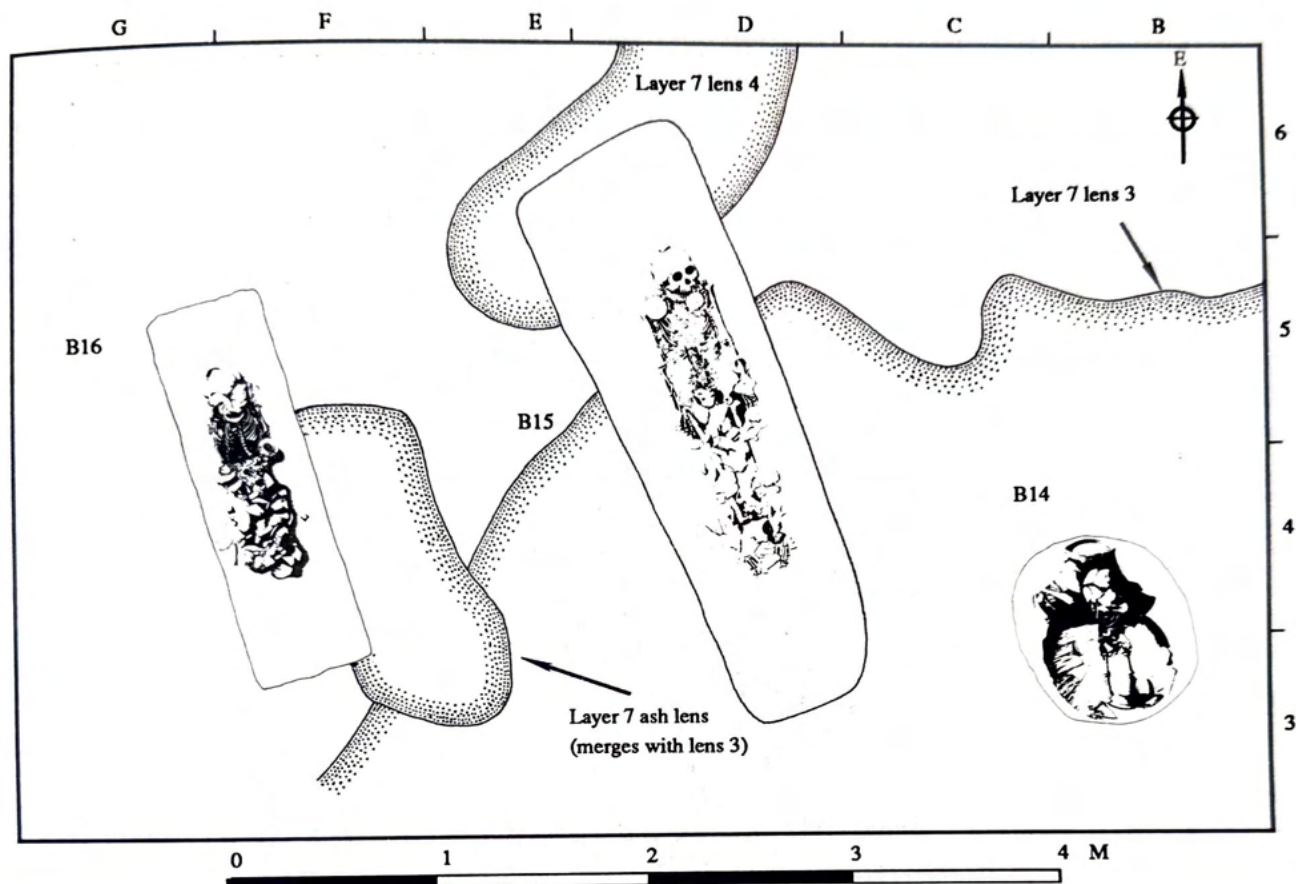


FIG. 235. The distribution of graves and associated features of mortuary phase 5

recovered, one under each shoulder (cat. 2036). One of these was cut on the back as if to remove a central tab to create a disc/bangle. There was also a shell disc/bangle (cat. 2018) at the right wrist, but it had been broken into three pieces during antiquity. A turtle carapace ornament (cat. 2037) was found and approximately 56,200 shell disc and 435 I-shaped beads (cat. 2035) covered the chest area. This same area also yielded a pierced small mammal's canine similar to those from B15 (cat. 2768). Enough was found to make it clear that here was a further outstandingly rich burial and again, only further excavation will disclose whether there was more than one focus of very rich burials during MP5.

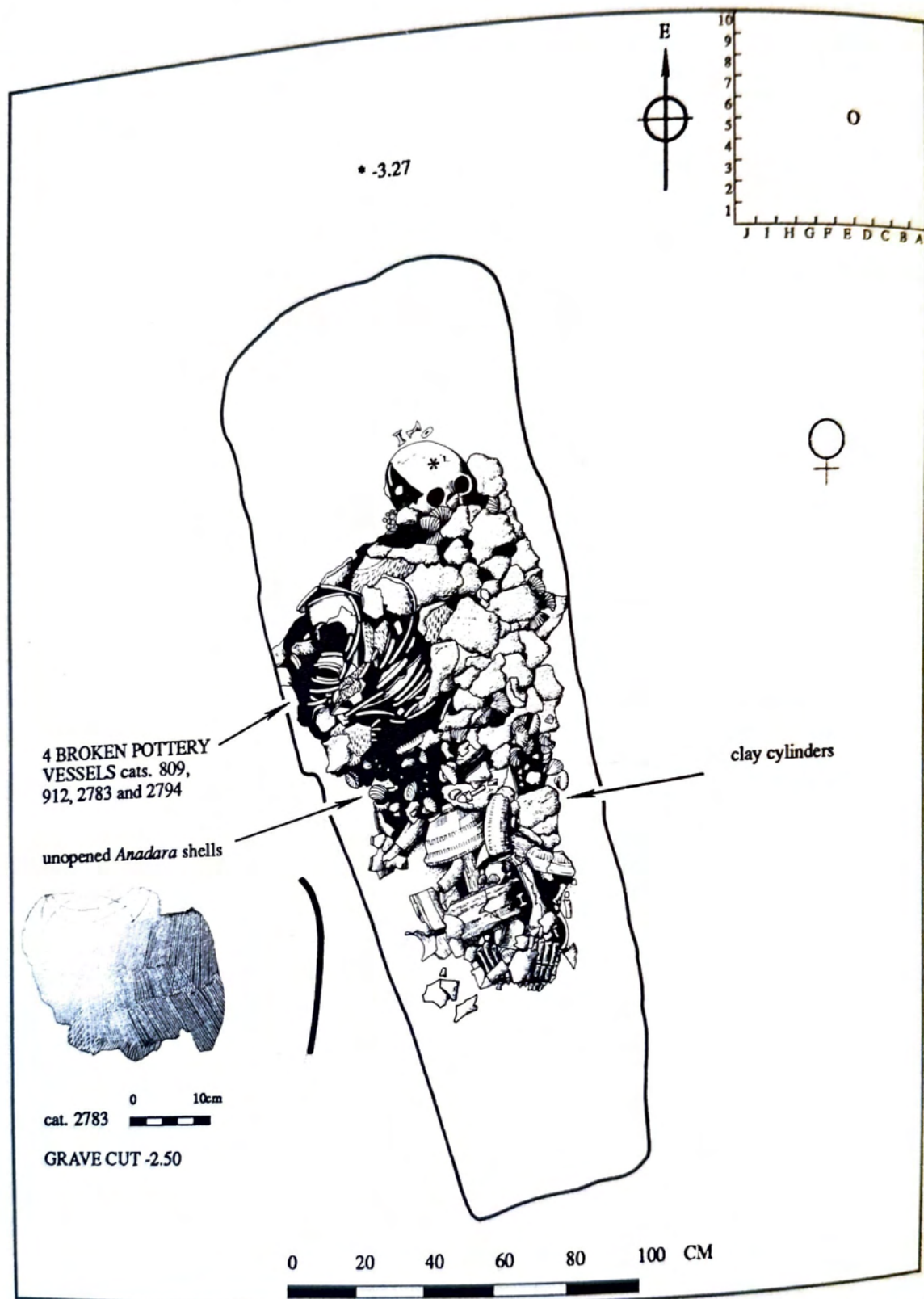


FIG. 236. Burial 15 mortuary phase 5. This illustration shows the burial with the clay cylinders surmounted by broken pottery vessels still in place

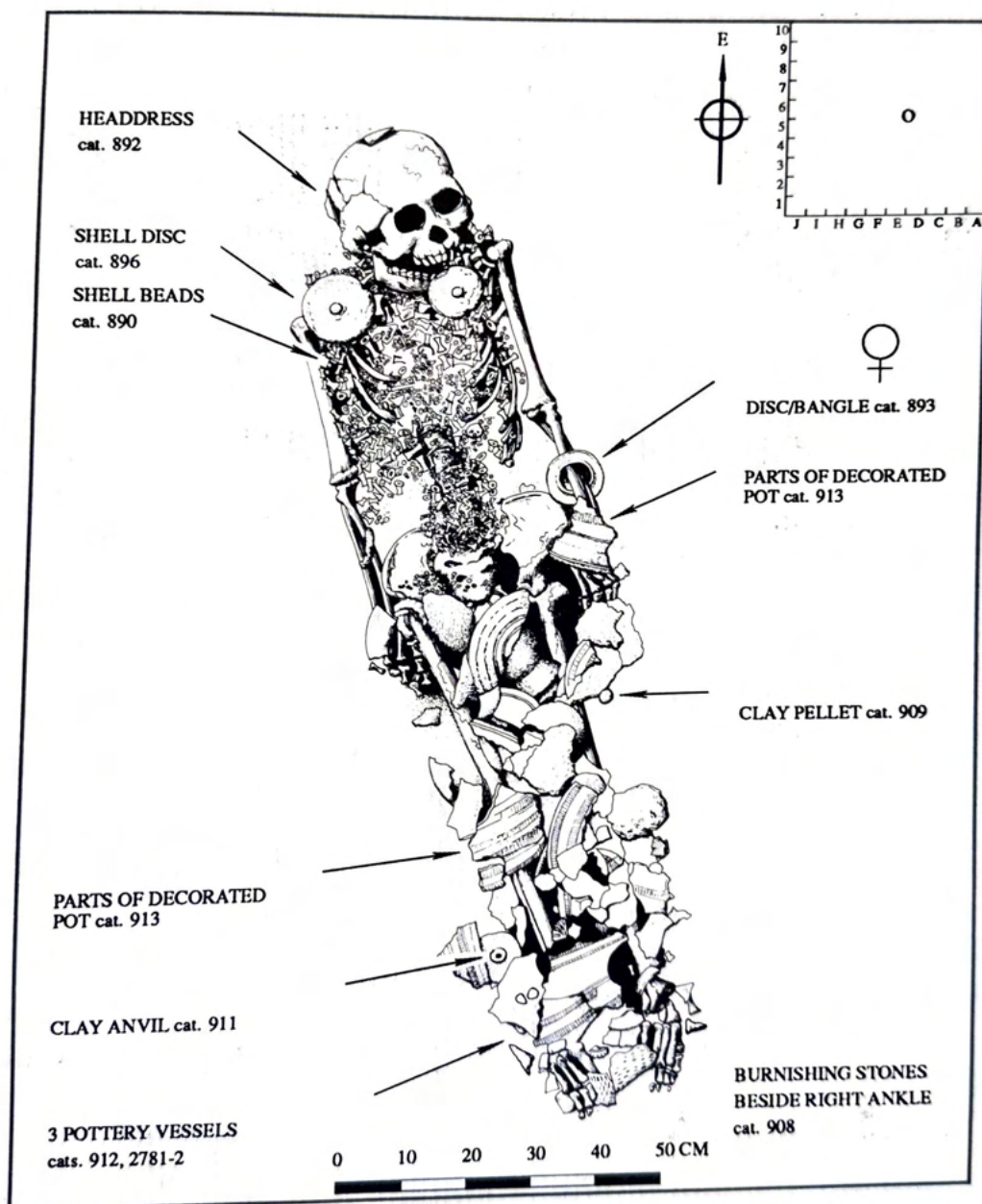


FIG. 237. Burial 15, mortuary phase 5. The burial after the removal of the pyramid of clay cylinders which covered it

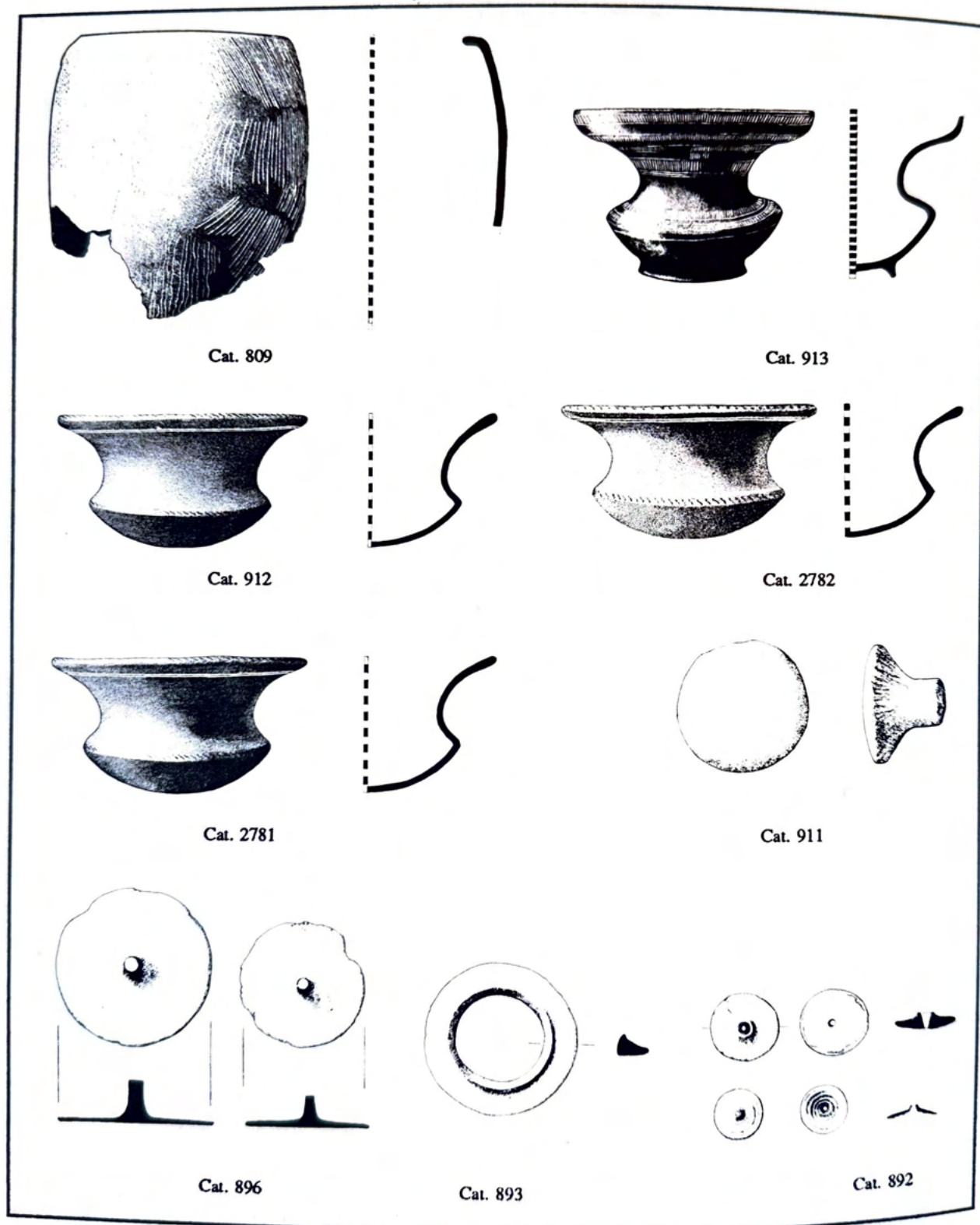


FIG. 238. The principal artefacts from burial 15. The scales for the pottery vessels are 0.5cm units. All other artefacts are reproduced at 25 percent

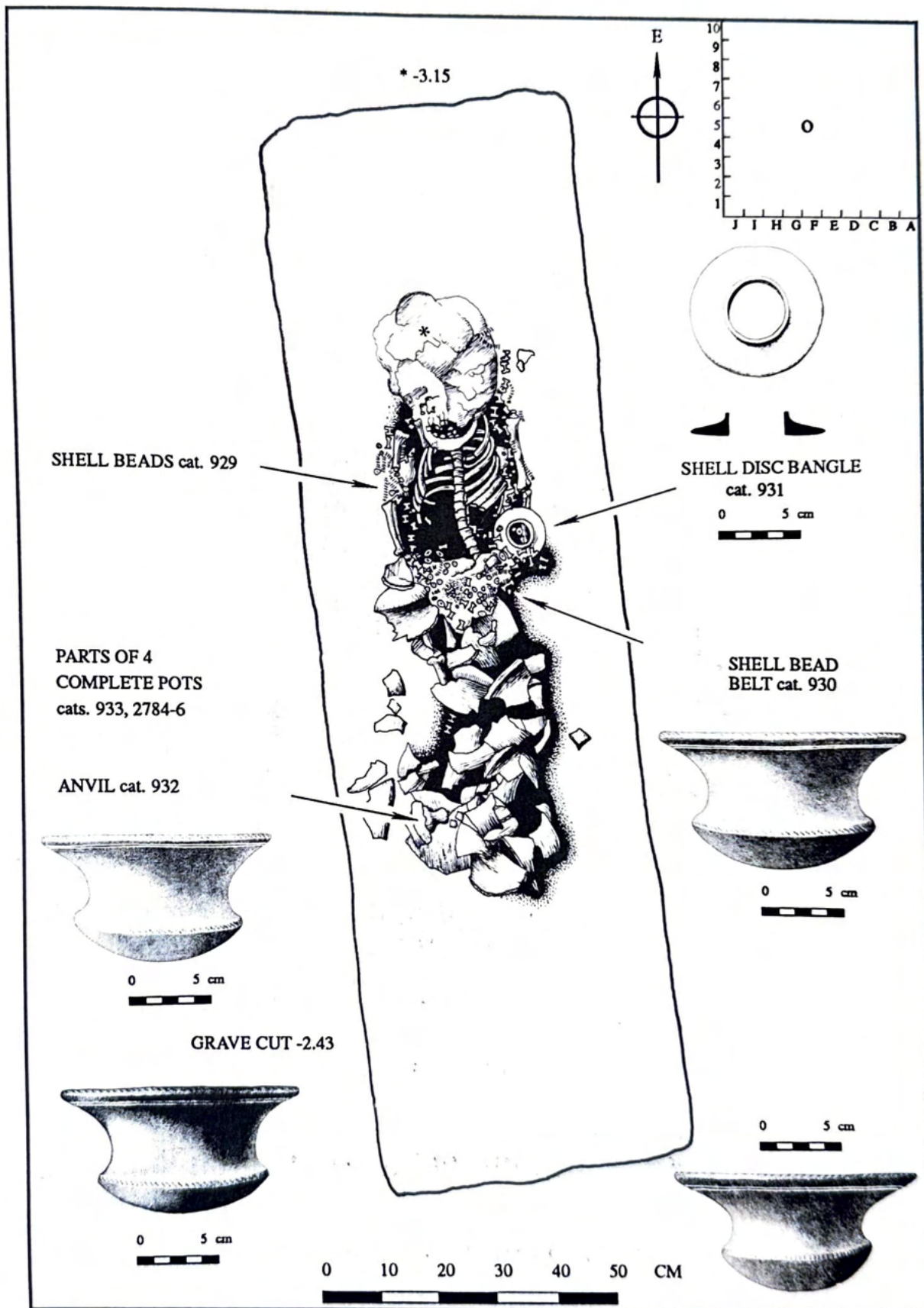


FIG. 239. Burial 16 mortuary phase 5, after the removal of the clay cylinders which covered the body

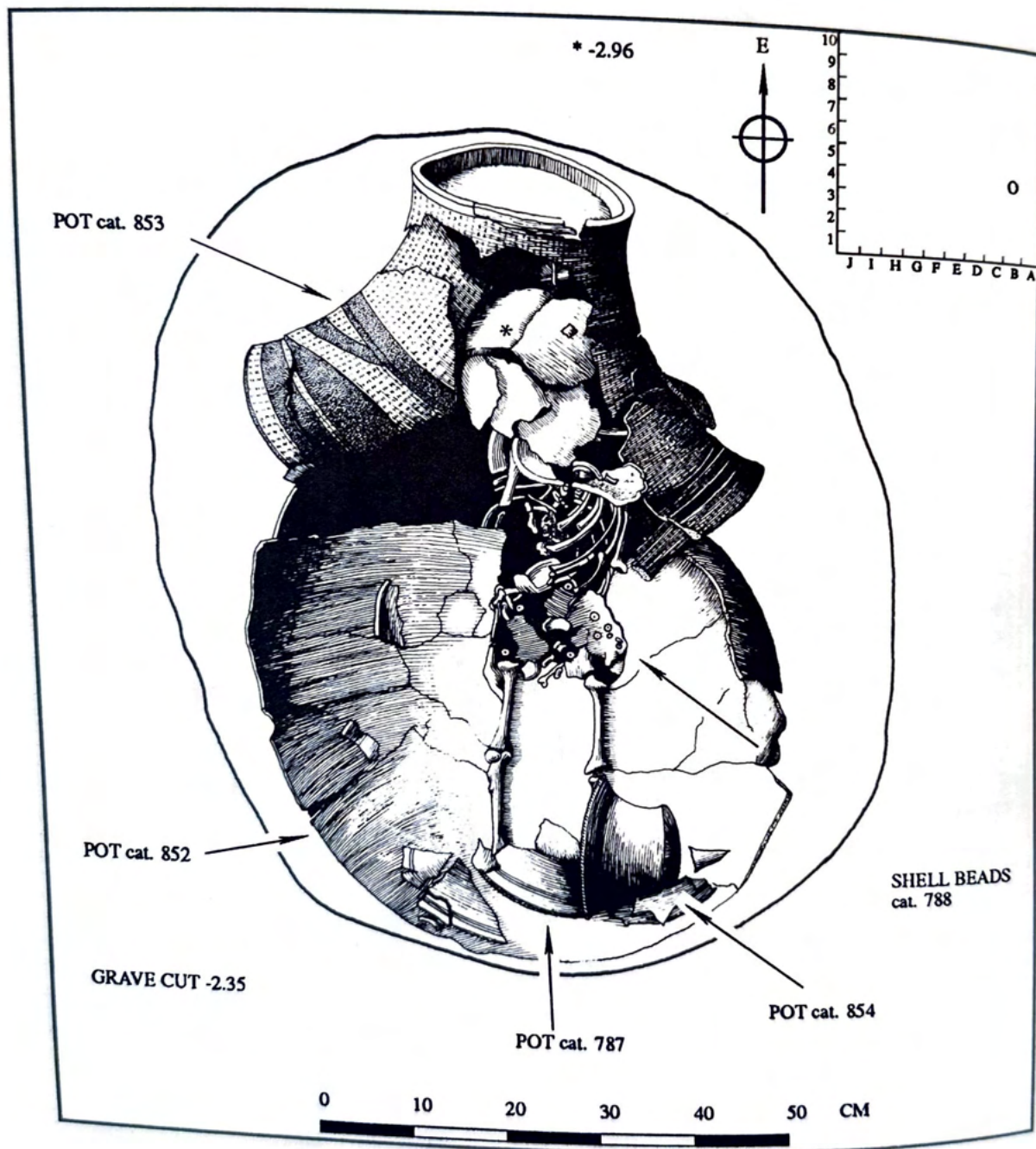


FIG. 240. Burial 14 mortuary phase 5

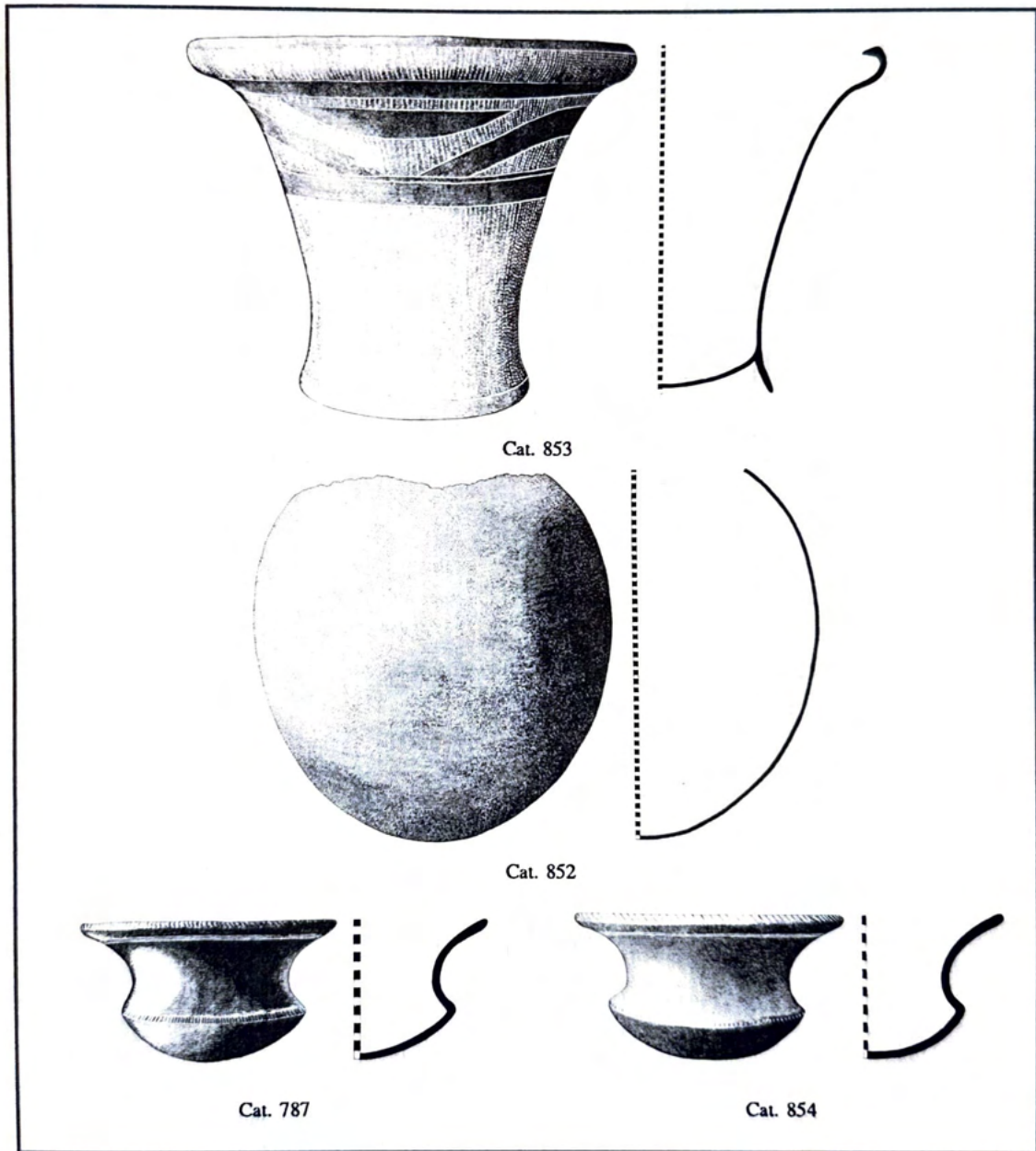


FIG. 241. The complete pottery vessels from burial 14 mortuary phase 5. The scales are in 0.5cm units

XI. MORTUARY PHASE 6

THERE was a hiatus in mortuary activity in the north-eastern part of the site during MP5, with the sole exception of B43, which just reached into the excavated area. It will be recalled that B15 was interred from a depth of 2.50m, that is 15cm higher than the final burials ascribed to cluster C during stage 10. The other burials in MP5 were interred at depths of 2.43 and 2.35m respectively. There was, therefore, a hiatus reflected in a build-up of 35cm of deposit between the end of MP5 and the beginning of phase 6. Human activity in the area during this hiatus is reflected in a number of ash and midden spreads. At 2.20m below datum, layer 6 lens 8a built up next to the location of the grave for B19. This grave was cut from a depth of 198cm. There was also, during the hiatus, much digging of postholes but only two cut into the graves for burials 35 and 36 (Fig. 242). When burial activity recommenced in the part of the site excavated, we find a further change in the manner of the interments and their distribution. On the one hand, burials 6, 18 and 19 were interred in an area which had not been used hitherto for burials, and their graves were marked by a raised structure. Directly to the west of this chamber, there was a row of burials surrounded by a configuration of postholes which strongly suggest a further mortuary building, but not so elaborate. The three burials in the former group were relatively rich, whereas those in the latter had few grave goods. In no case, however, was any body accompanied by the wealth of grave goods which were encountered during MP5.

There are two primary burials under the raised chamber in the north-eastern corner of the excavation square. Both were interred in graves cut from 1.97–1.98m below datum. They lie parallel with each other. Following the interment of these two adult females, a structure was raised over them. It comprised successive smoothed horizontal surfaces which reached a combined height of just over half a metre. Twenty-nine stratigraphic units were identified, most of which ran the width of the structure. The layout of this structure, when viewed in plan, comprised a nearly square chamber 4 by 4.1m in extent, but its eastern edge is not clearly defined and some hint of floor levels proceeding into the eastern baulk were noted. It is, therefore, likely that the building had more than one chamber. It is remarkable that, during the build-up of the successive layers which comprise the platform above burials 18 and 19, very few postholes or other signs of disturbance were noted. Moreover, the platform edges are very clearly defined in two ways. First, there is a set of large postholes, with diameters of about 20cm, which define the edges of the chamber. Secondly, the remains of a wall foundation were identified running along the same axis as the postholes and, in effect, providing the basic plan of the structure seen in figure 243. This clay wall foundation overlies the postholes, and in sealing them suggests that there were at least two phases of wall construction. The first comprised a platform with a timber wall frame and in the second the timber was replaced by a foundation made of clay. Given the lack of disturbance in the layered structure, the clear horizontal bedding of the platform's constituent layers and the discrete edge of the structure as seen in the section (Fig. 244), it is considered probable that the initial construction was a single event which followed very soon after the interment of burials 18 and 19.

The intimate relationship between B19 and the structure overlying it can be seen in the central position it occupies between the northern and southern walls. Again, the alignment of the walls is

identical with that of the underlying graves. Burial 18 is almost entirely located within the confines of the structure but, as has been mentioned already, there is a reasonable probability that there are further remains of the structure beyond the excavated area.

Burial 6 involved the cutting of a grave for a child through the structure of the platform to gain access to the two burials below. The body was then placed over and essentially within the same grave as B18. Subsequent prehistoric disturbance involved the digging of at least three large pits into the structure and one such pit removed the legs of burials 6 and 18. It also ruled out the possibility of being sure whether the filling of the grave for B6 involved rebuilding the structure and replacement of the sealed floor which survives over some of the platform's surface. If it is true that the structure was built in one limited timespan, then the interval between the interment of B18 and B6 need not have been long. Indeed, the rebuilding of the structure in its second phase could have been associated with the interment of B6 (Figs. 247 and 248).

At this stage of our enquiries, it is not possible to decide whether the structure represents a house foundation constructed over ancestral graves, or whether we have encountered a raised mortuary structure. The balance of evidence now available tends to support the latter alternative. First, when viewed within the context of contemporary events in the surrounding area, we find that a series of interments was made directly in front and to the west of the structure. Both around this second set of burials and on and round the platform itself, there is a notable lack of accumulated occupation material. Indeed, the disposition of ash and shell lenses relative to the graves is more suggestive of ritual behaviour associated with the dead than with the remains of occupation. Of course, final resolution of this issue is not yet possible but it is felt that the balance of evidence now available indicates a ritual rather than an occupation structure.

TABLE 44: *The mortuary goods, ages and sexes of burials associated with the mortuary structure belonging to mortuary phase 6*

	B18	B19	B6
Age	42	25	9
Sex	Female	Female	-
Approx. number of children	3-4	2-3	-
Orientation	65°	65°	65°
Depth of grave cut below datum (m)	1.97	1.98	1.55
Red ochre	p	p	p
Tapa fabric	-	p	-
Disc-shaped shell beads	9969	1600	17786
H-shaped shell beads	700	-	656
Small cylindrical shell beads	-	-	2
Shell disc	-	-	1
Pottery vessels	-	4	-
Clay anvil	1	1	-
Burnishing stones	-	2	1
Shell bead disc/bangle	-	1	-

Note: p = present

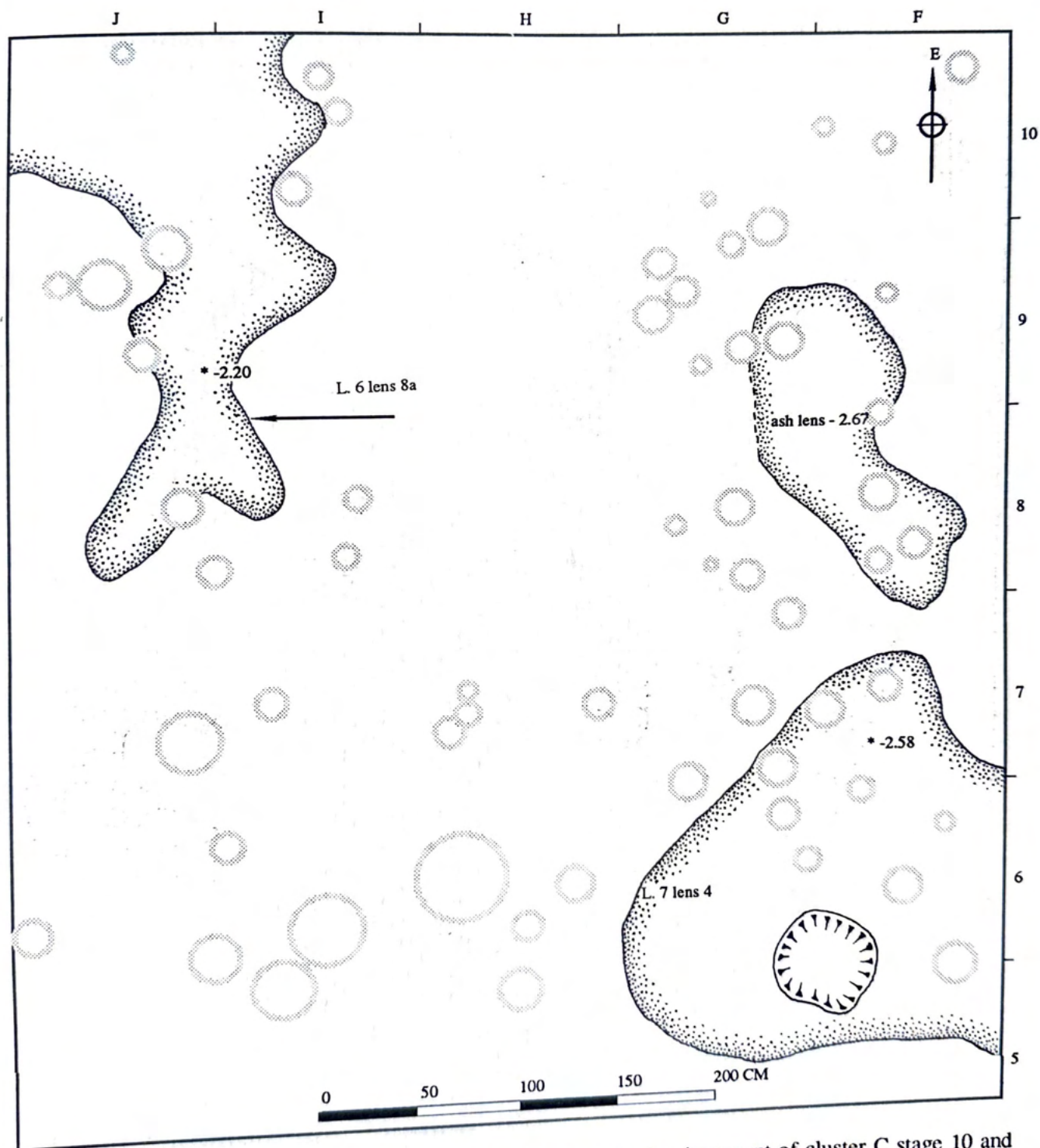


FIG. 242. The distribution of features which date between the last interment of cluster C stage 10 and commencement of mortuary phase 6

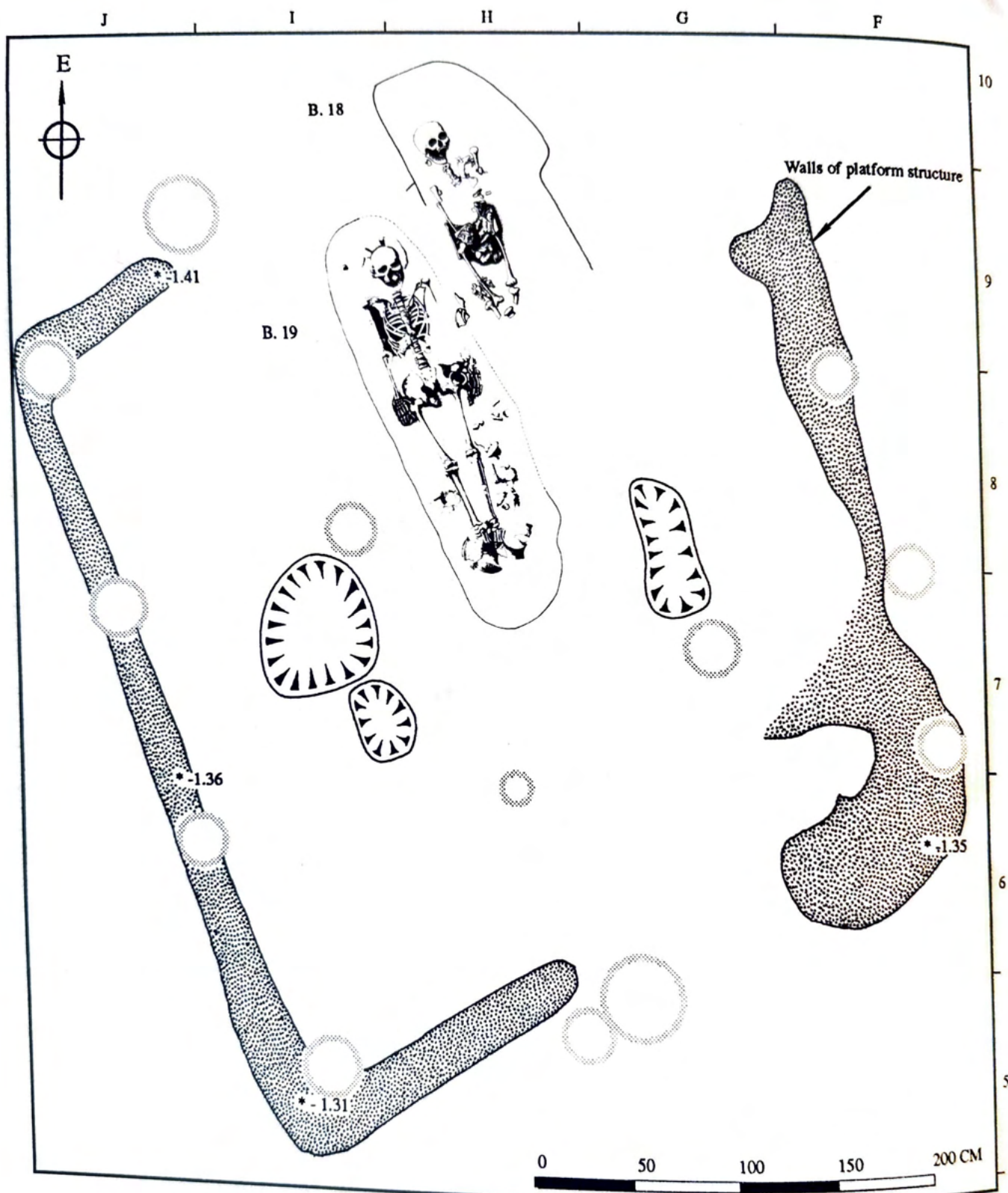


FIG. 243. The burials from under the mortuary structure ascribed to mortuary phase 6

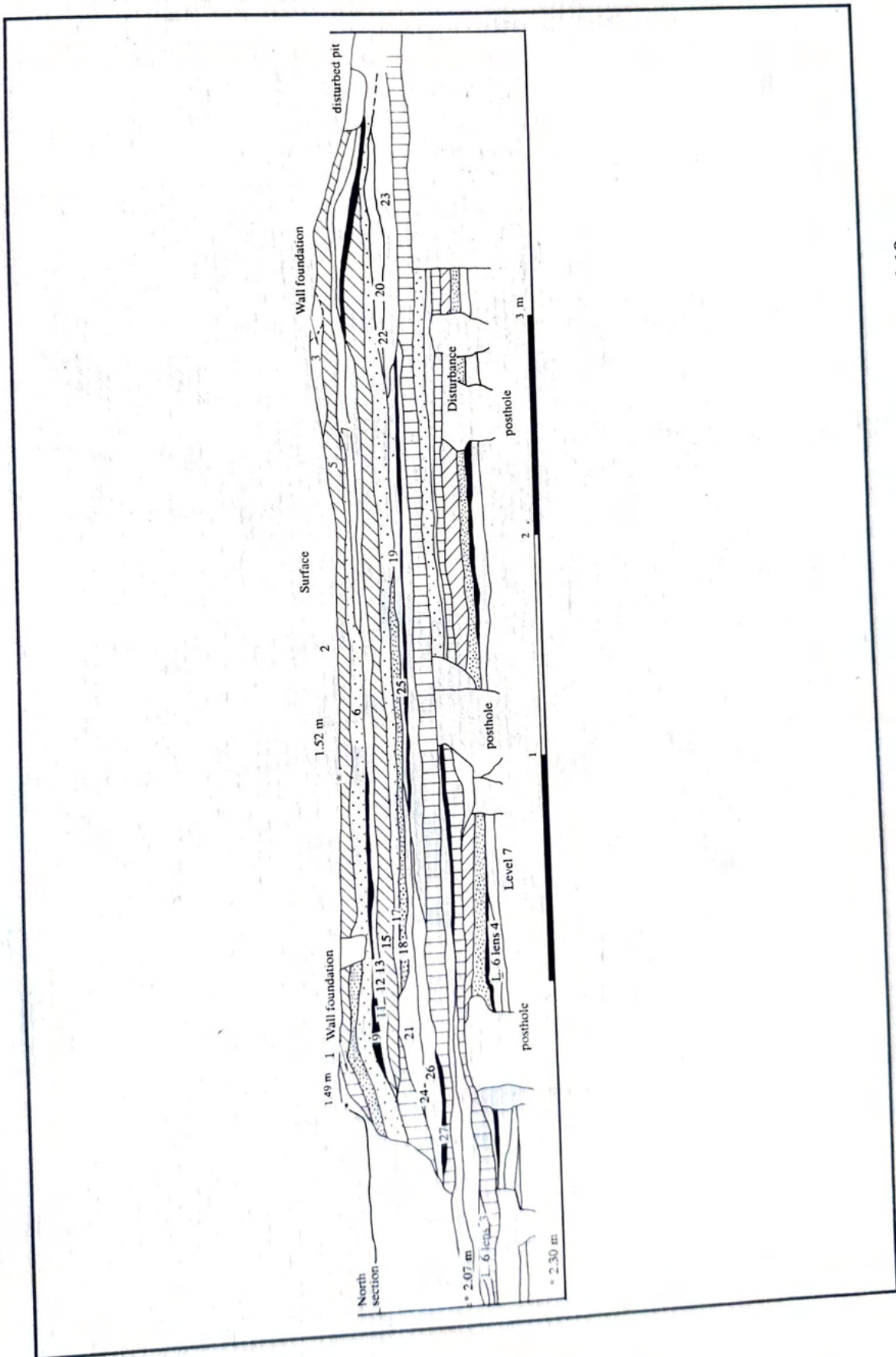


FIG. 244. Cross section of the raised ritual structure built over burials 18 and 19

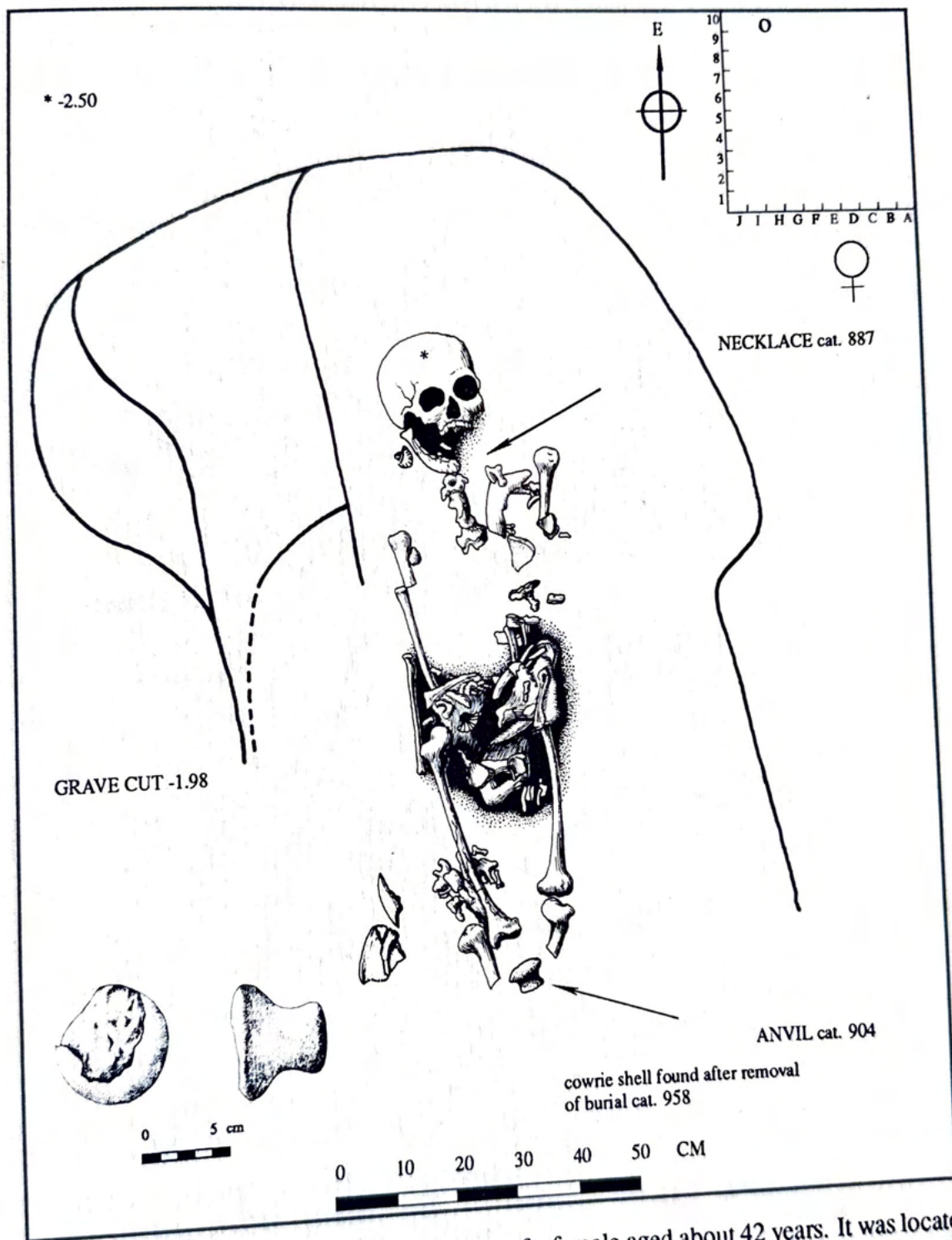


FIG. 246. Burial 18 mortuary phase 6. The remains of a female aged about 42 years. It was located under the raised mortuary structure, the grave having been excavated from a depth of between 1.97 and 2.00m. The burial was seriously disturbed, first by the interment of B6, and then by a pit which damaged both these burials. It thus survived from the knees up, this part of the body being associated with red ochre and necklaces made up of over 10,000 shell disc and H-shaped beads. They were found scattered in the area of the neck. A clay anvil was found between the knees

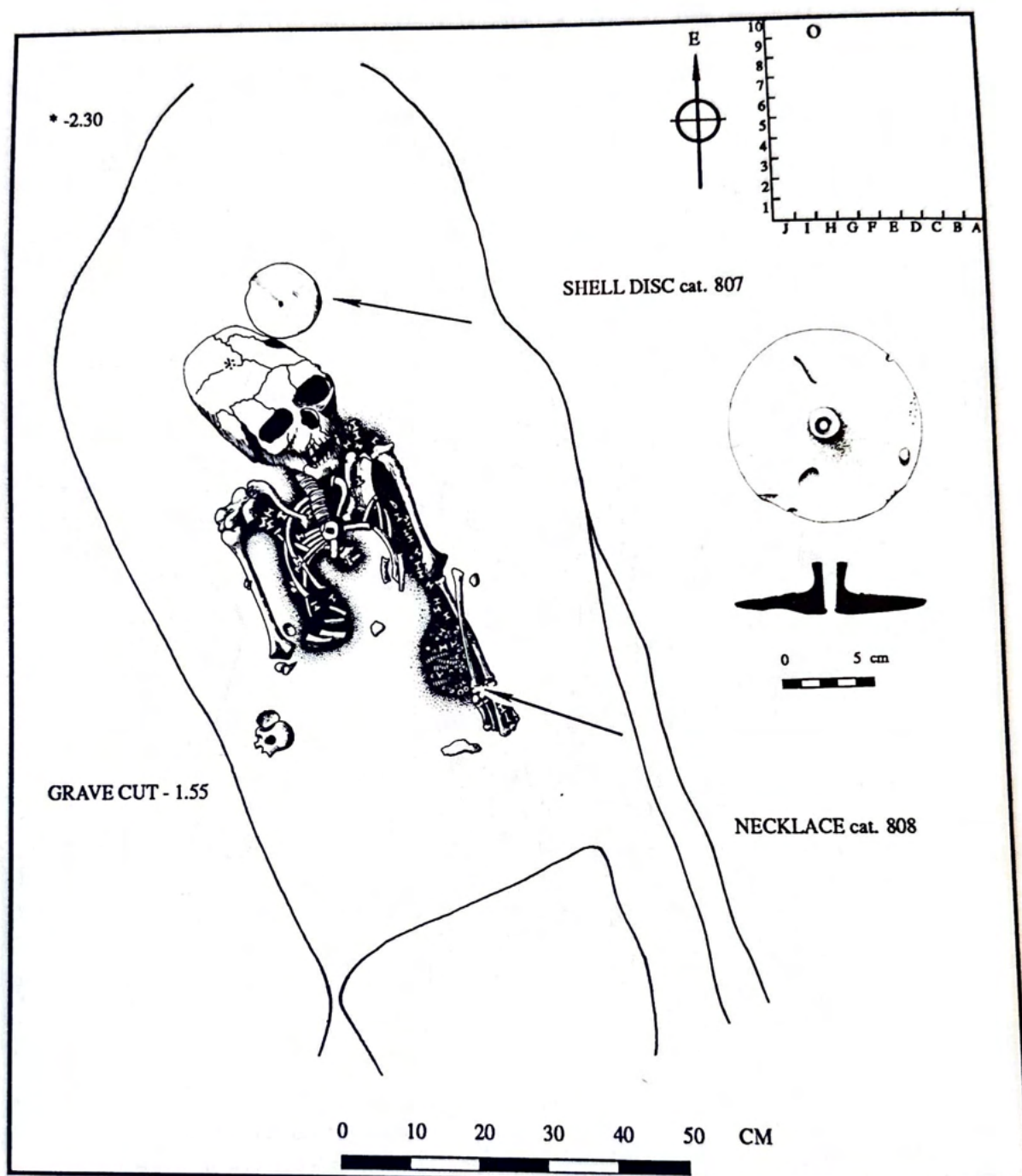


FIG. 247. Burial 6 mortuary phase 6. The remains of a child aged about 9 years. It was badly disturbed when a later pit was dug through the lower half of the grave. As far as can be judged, given the disturbance in the vicinity of the burial, the grave was cut down from 1.55 to a depth of 2.43m. The surviving part of the body was associated with much red ochre as well as shell bead necklaces (cat. 808) and a large shell disc (cat. 807). The necklaces were made up of at least 17,786 disc-shaped, 656 H-shaped and 2 small cylindrical beads. They were disposed in rows over the chest area and along the right arm. The large shell disc was made of tridacna shell and was placed to the right and slightly behind the skull. A fragment of burnishing stone was found near the body, but may not have been in primary association

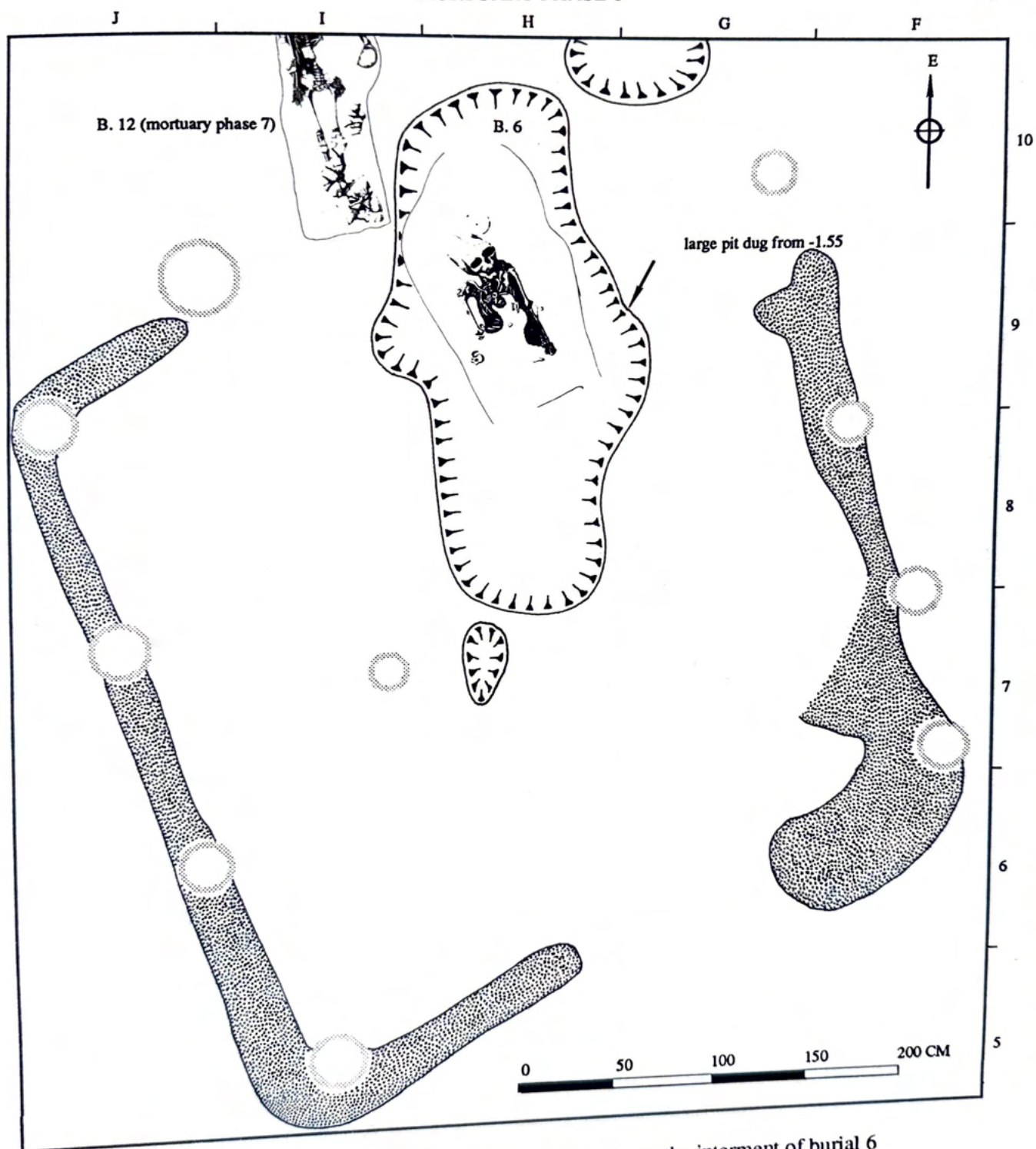


FIG. 248. The distribution of features which date to the interment of burial 6

CLUSTER H

A group of eight burials, described here as cluster H, was found to the west of the raised structure. Their distribution overlay the areas which had, during mortuary phases 2–4, been used for the interment of both cluster A and F burials. This cluster differs from the MP5 interments, and those found under the raised mortuary chamber, because it included individuals of both sexes as well as infants and juveniles. Unlike earlier clusters, however, they were laid out in a straight line with no superpositions or reuse of earlier graves. The graves themselves were deeper than those characteristic of phases 1–4, but this cluster revealed a paucity of grave goods when compared with the burials of MP5 and other burials in MP6. Prior to the interment of B13, the first in this cluster, a shell midden was deposited (layer 6 lens 6, Fig. 249) and there was evidence for localized burning on the southern edge of the cluster area which effectively overlay and sealed the graves of burials 14 and 15. This burnt area (layer 6 lens 5) was subsequently cut by burials 2 and 4. A further patch of burnt soil and ash, lens 4 in layer 6, was laid down between the graves of burials 13 and 9 at a depth of 2.04m. This was contemporaneous with or slightly earlier than the interment of burials 2, 5, 7, 8 and 9. At the same time, a shell concentration, layer 6 lens 3, was deposited to the east of and only 50cm to 1m from the edges of burials 2, 4 and 8. Contemporaneous with the interments, a whole new series of postholes was excavated. While there is no clear arrangement in the form of a structure, the disposition of postholes on each side of B4, allied with a roughly straight alignment to the east of the cluster, suggest the possibility that a raised structure was placed over the burials of this cluster. A circular pit was also placed between burials 2 and 4. There are two further points in favour of the presence of a mortuary structure. First, there are several instances where postholes were replaced by others. Secondly, when the burial phase was over, two further shell middens accumulated. Layer 6 lens 2 presents a complementary distribution with the graves, the edge running just to the east of the line of postholes in front of the burials. The second lens, layer 6 lens 1, lies on the opposite side of the graves (Fig. 250).

TABLE 45: *The mortuary goods, ages and sexes of burials from cluster H mortuary phase 6*

Item	B13	B7	B8	B9	B5a	B5b	B2	B4
Age	35	21 m	15	30	0 m	0 m	9 m	26
Sex	Female	-	Male	Male	-	-	-	Female
Approx. number of children	1-2	-	-	-	-	-	-	3+
Orientation	60°	60°	65°	65°	70°	250°	60°	65°
Depth of grave cut below datum (m)	2.24	2.01	2.01	1.97	1.97	1.96	1.95	c 1.95
Red ochre	p	-	p	p	-	-	p	p
Shell-disc beads	3	9	-	3	-	-	-	-
Pottery vessels	3	1	2	2	-	-	1	-
Clay anvil	-	-	-	-	-	-	-	1
Burnishing stones	8	-	-	-	-	-	-	2
Turtle carapace ornament	-	-	1	-	-	-	-	-
Turtle plastron ornaments	-	-	-	2	-	-	-	-
Bone object	-	-	-	1	-	-	-	-
Fish vertebra disc/bangles	-	4	-	-	-	-	-	-

Note: p = present, m = months

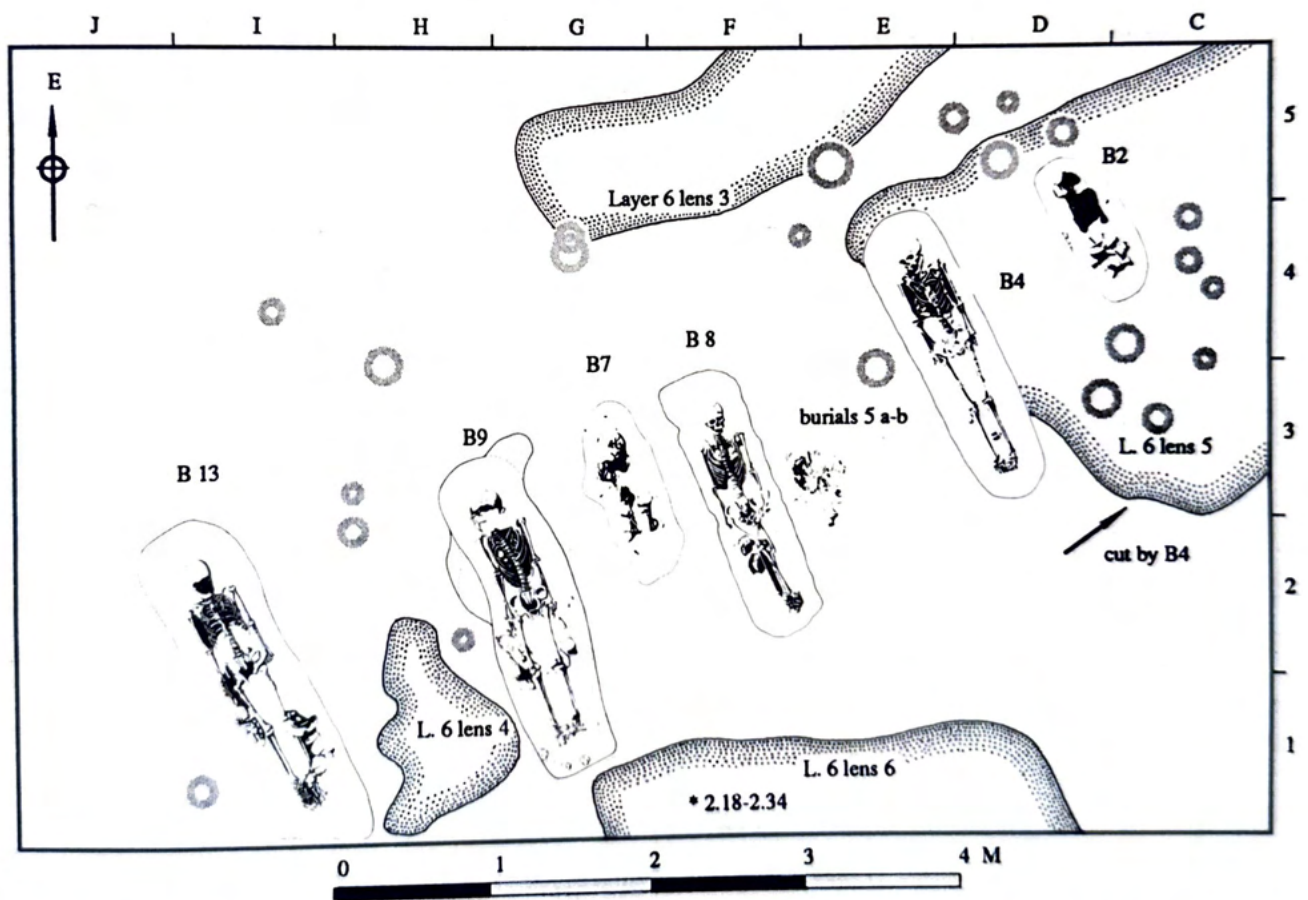


FIG. 249. The distribution of graves and associated features of mortuary phase 6 cluster H

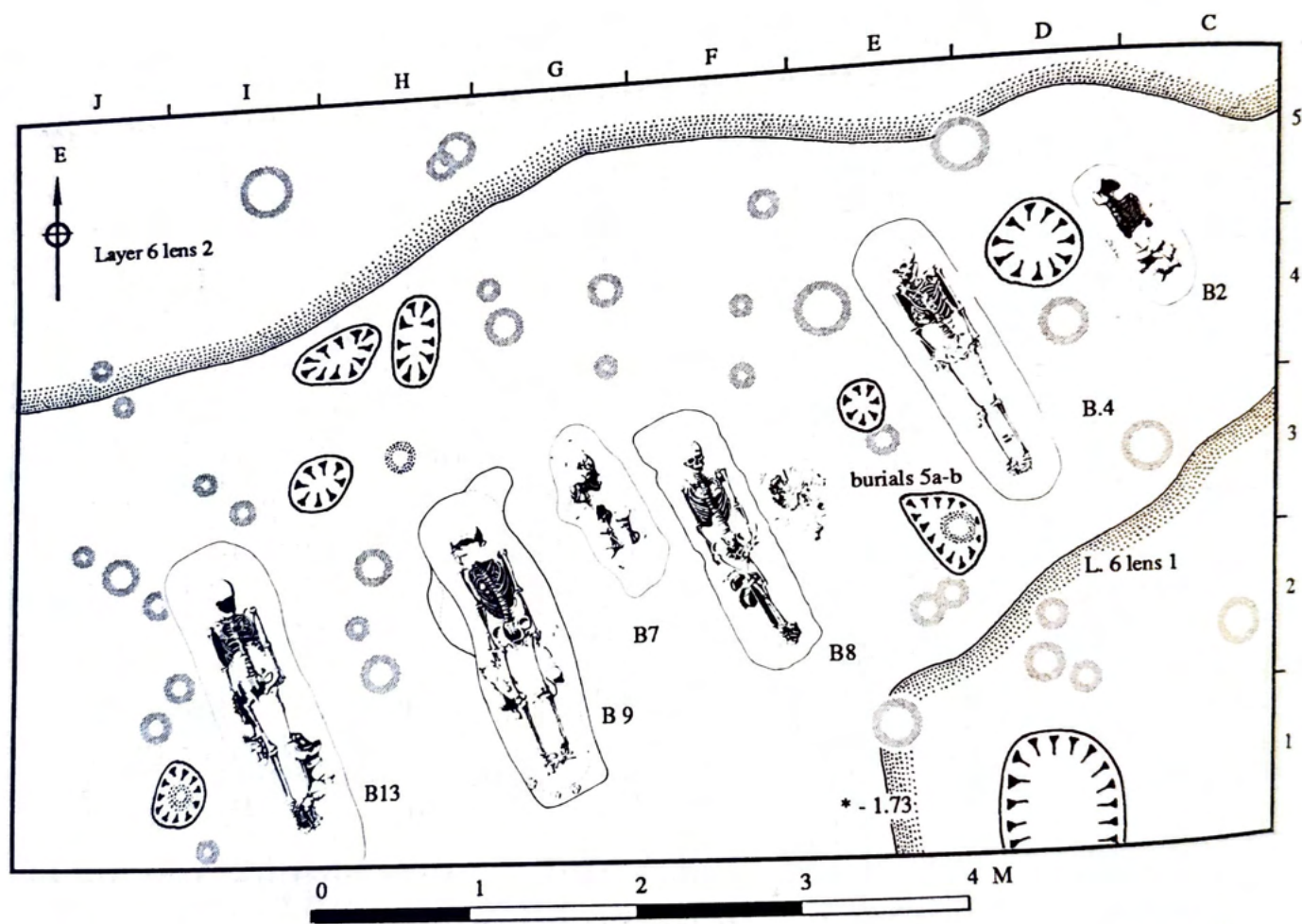


FIG. 250. The distribution of graves and late associated features of mortuary phase 6 cluster H

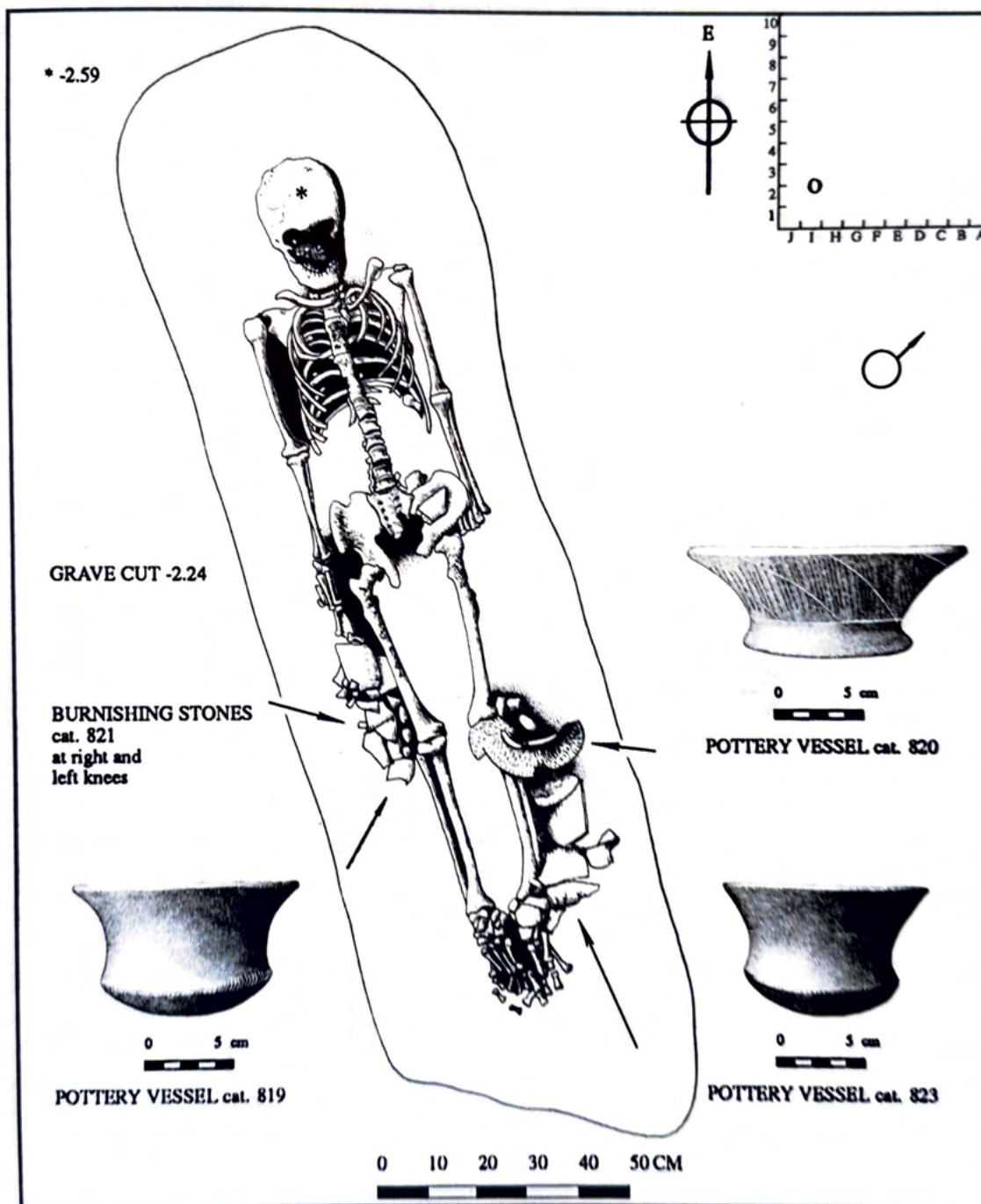


FIG. 251. Burial 13 cluster H mortuary phase 6. The body of this adult female was interred on the back with the hands by the sides in a grave cut from 2.24 down to 2.78m. Three broken pots were found with the body, one (cat. 819) beside the right thigh, the second (cat. 820) over the left knee and the third over the left ankle. Eight burnishing stones were also recovered from the vicinity of the right and left knees and the bones bore traces of red ochre

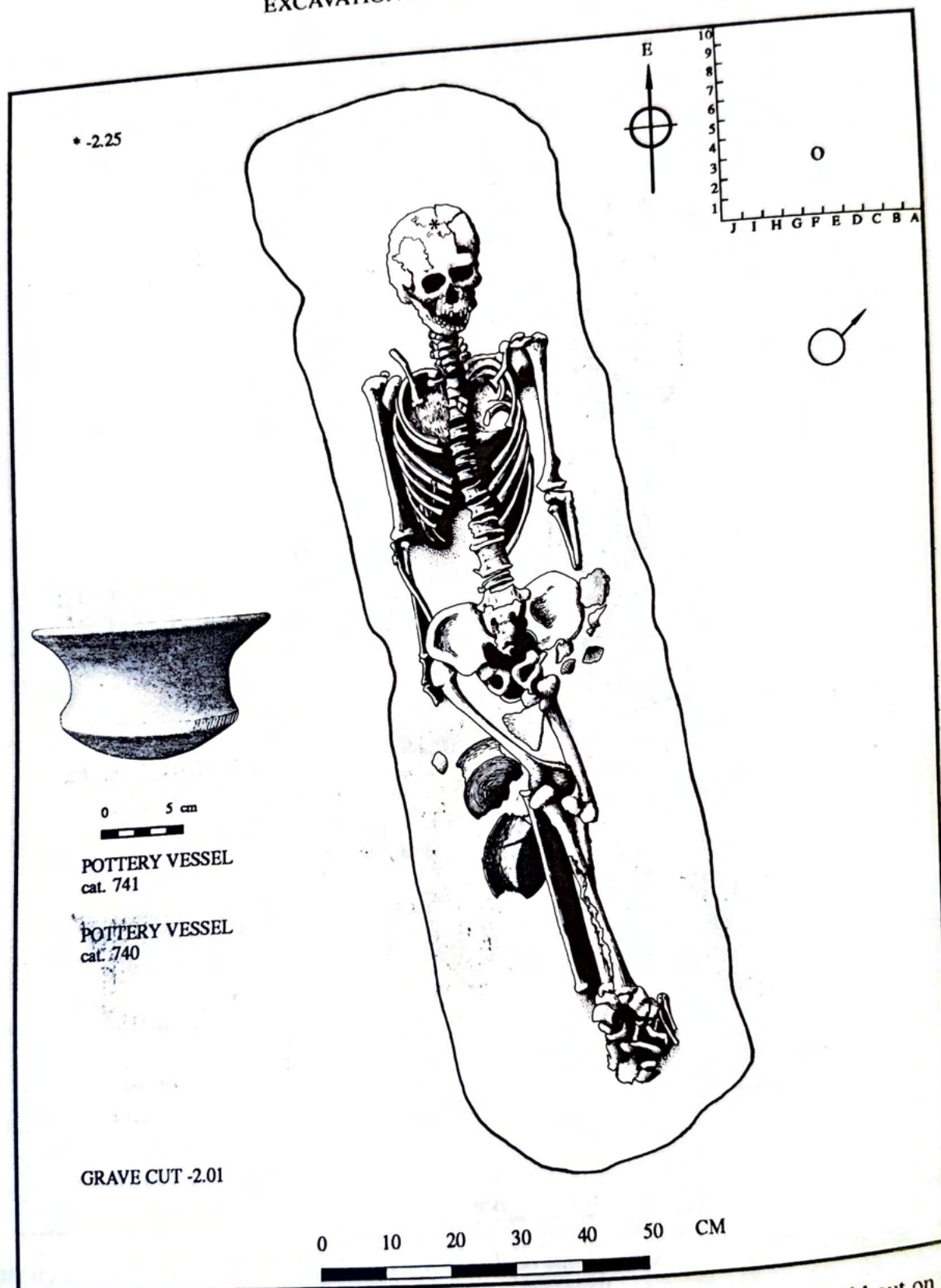


FIG. 252. Burial 8 cluster H mortuary phase 6. The skeleton of a 15-year-old male laid out on the back but with the right knee raised. Two pots were found in association, both being broken in antiquity (cats. 740-1). Both were found in the vicinity of the right knee. Traces of red ochre remained on the forehead

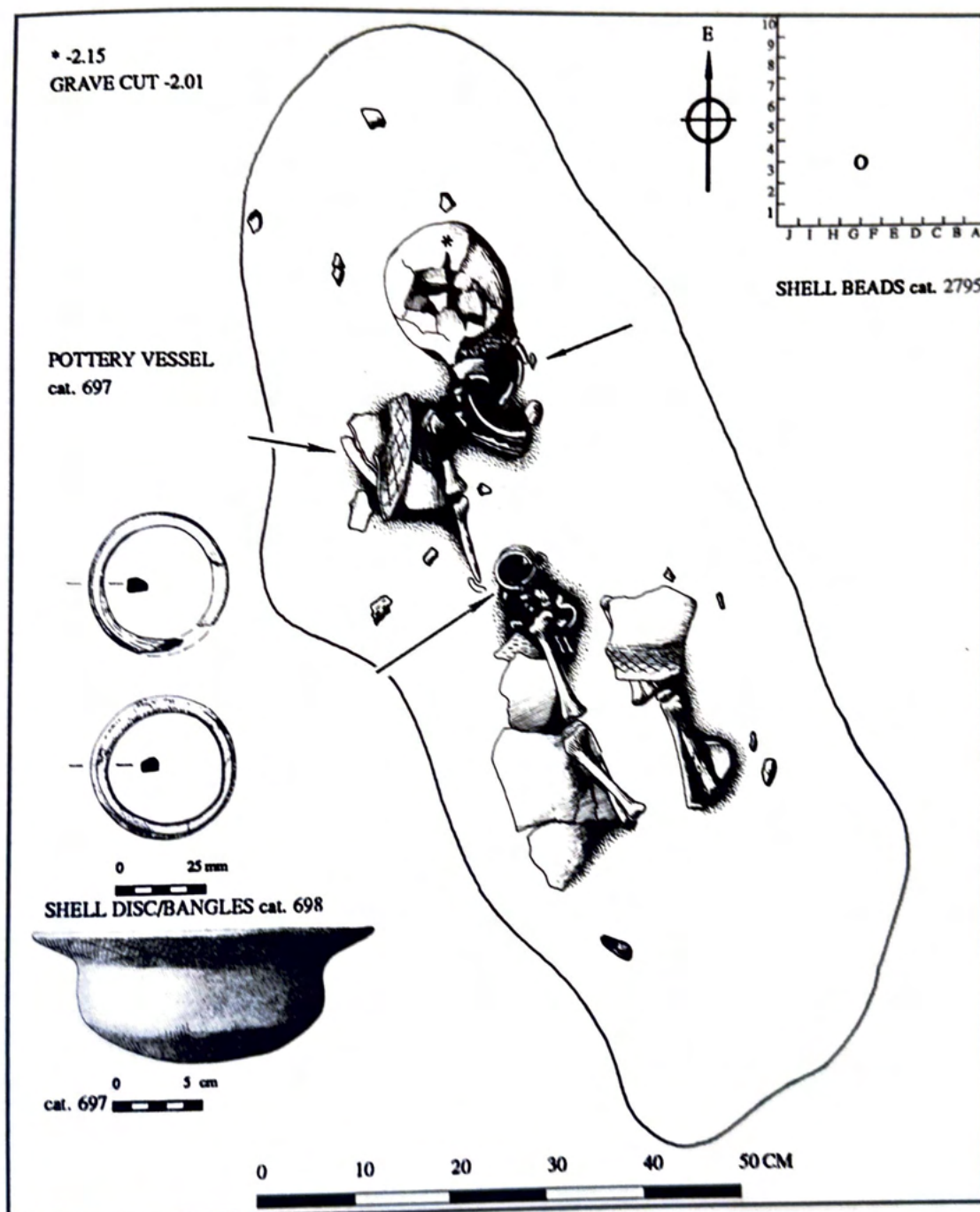


FIG. 253. Burial 7 cluster H mortuary phase 6. The remains of a 21-month-old infant were found in this rather shallow grave placed between burials 8 and 9. The bones were found to be disturbed but still in reasonable anatomical order. The fragmentary remains of a whole pottery vessel were found beside the right shoulder with some sherds being over the left thigh and to the right of the right leg (cat. 697). A set of four disc/bangles fashioned from fish vertebrae were found in the vicinity of the right wrist (cat. 698) and nine disc-shaped shell beads in the neck area (cat. 2795)

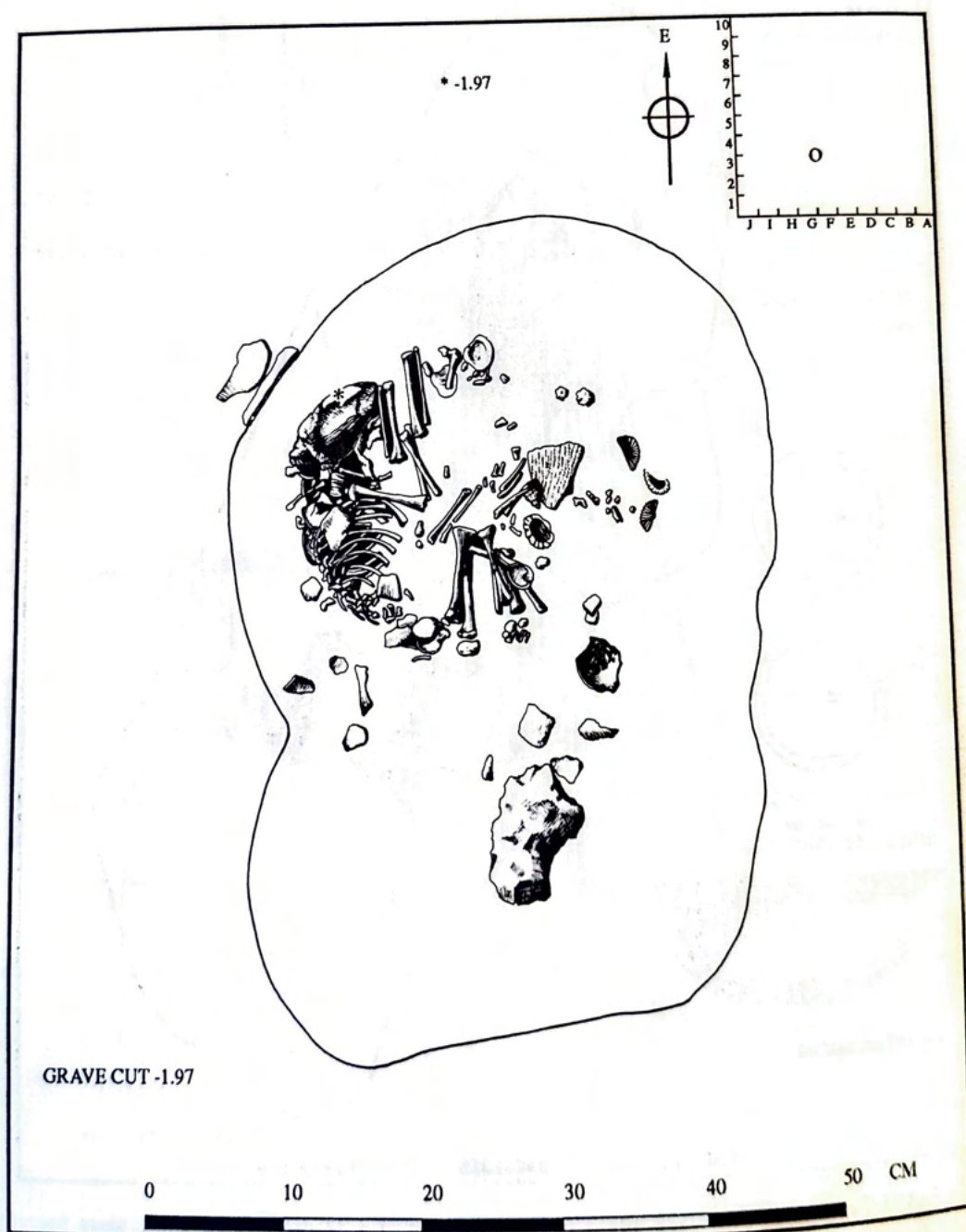
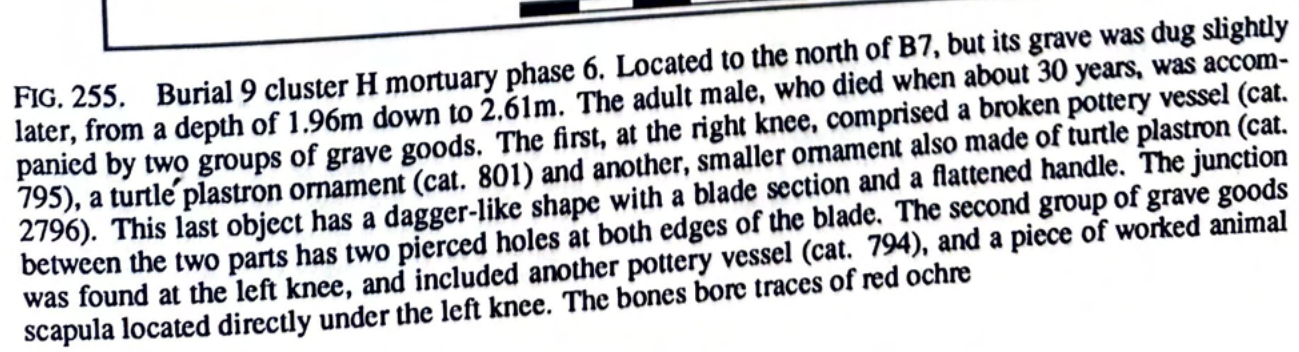


FIG. 254. Burials 5a (right) and 5b, cluster H mortuary phase 6. These two new-born infants were buried simultaneously in a shallow scoop between burials 4 and 8. No grave goods were encountered nor was red ochre noted. The infants were placed in the grave in a crouched or foetal position



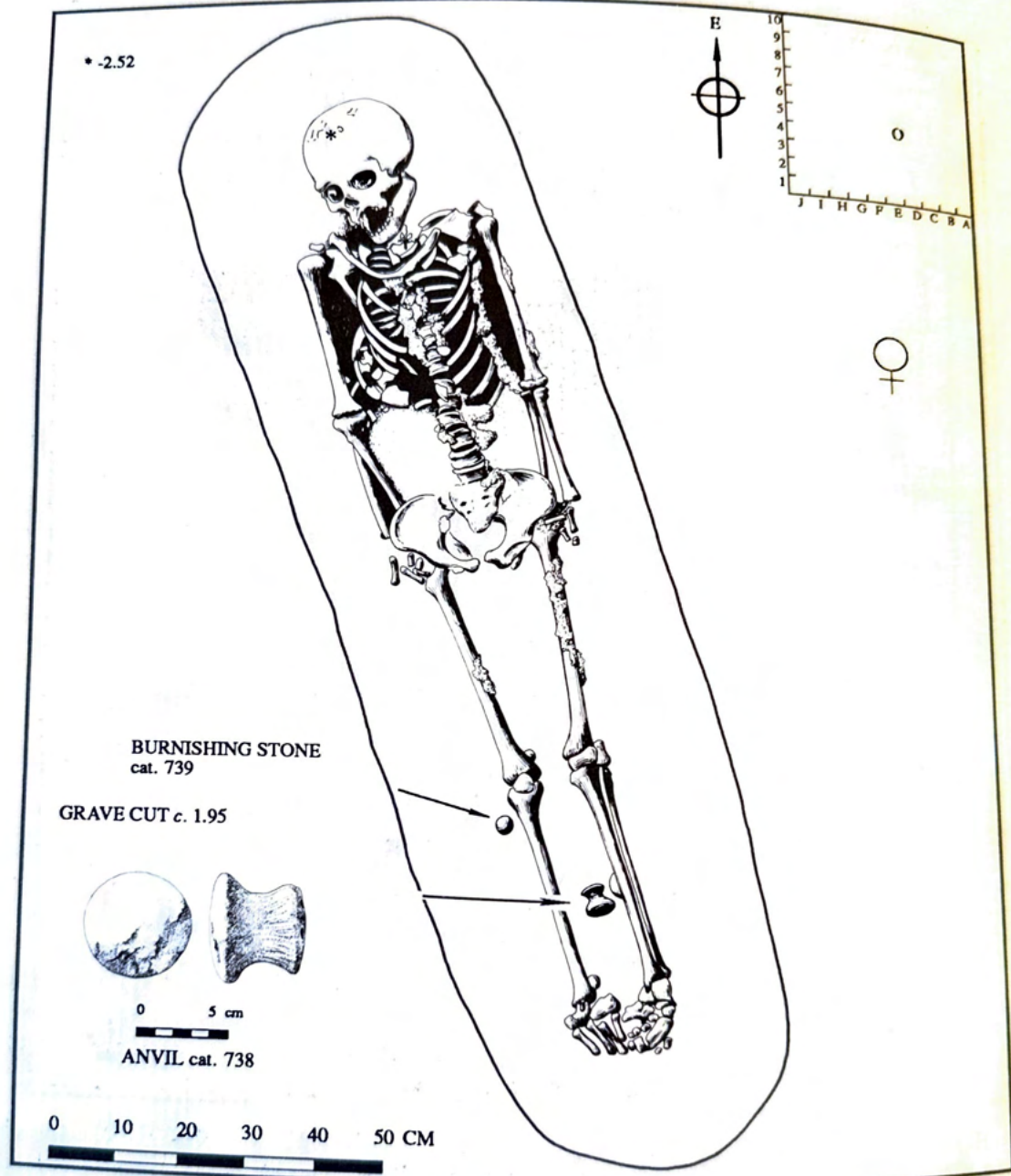


FIG. 256. Burial 4 cluster H mortuary phase 6. The grave for this 26-year-old female was cut from a depth of *c.* 1.95m down to 2.57m, although at a depth of 1.77m the surface of the grave was marked by a sprinkling of red ochre. The body was laid out on the back with the arms by the side. Two burnishing stones (cat. 739) were found beside the right knee and a potter's anvil was located between the ankles. Red ochre was present on the frontal bone of the skull

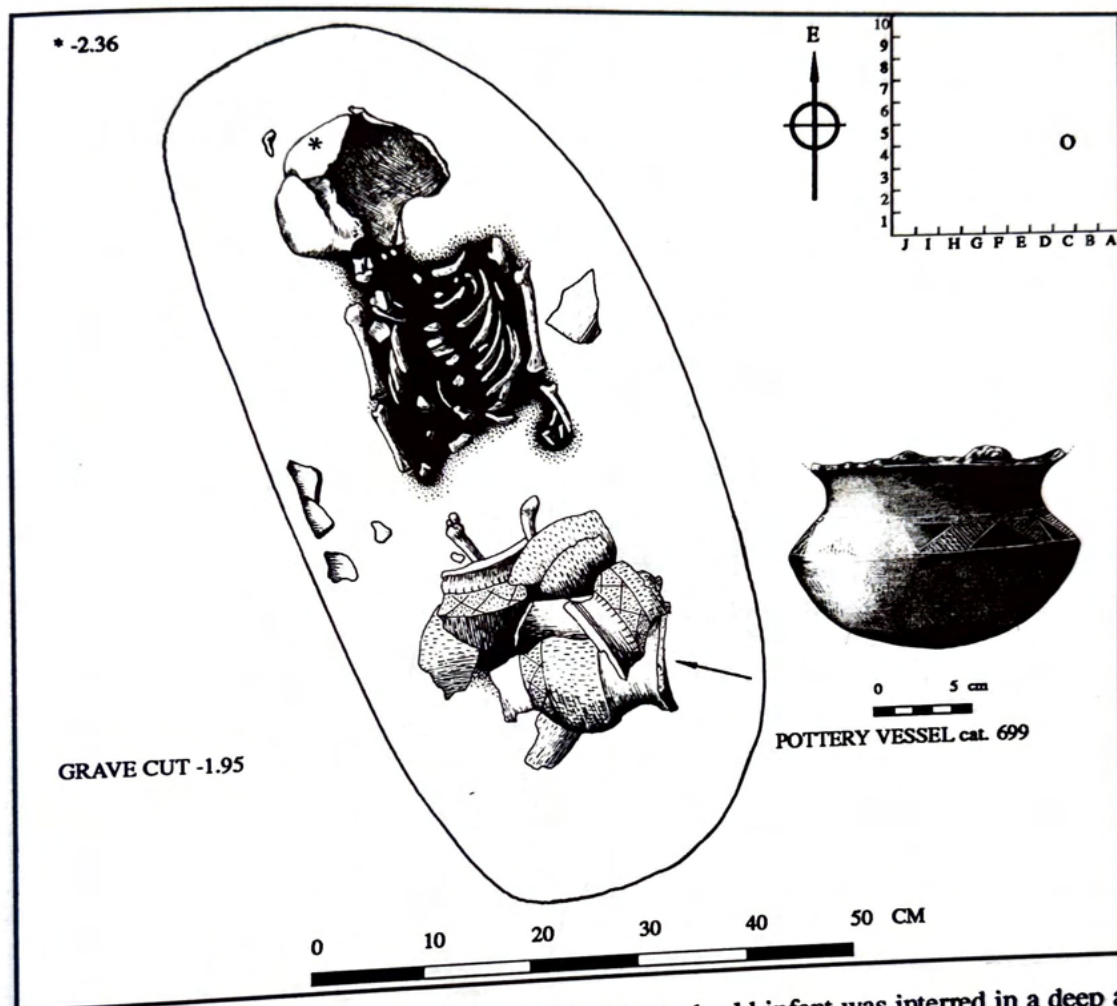
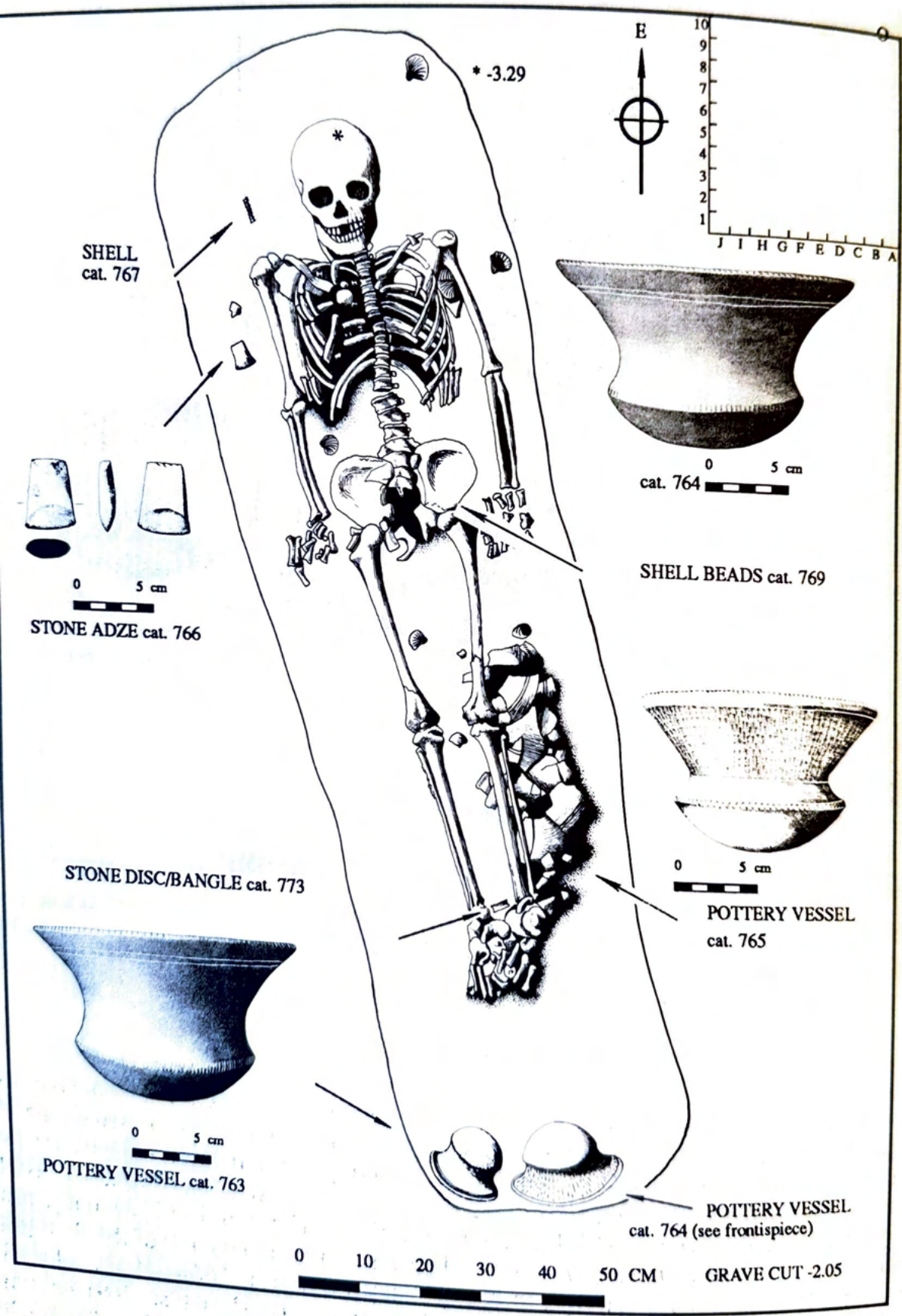


FIG. 257. Burial 2 cluster H mortuary phase 6. This 9-month-old infant was interred in a deep and very clear grave, cut from 1.95 down to 2.43m. A broken pottery vessel (cat. 699) had been placed over the ankles

CLUSTER I

Burial 11. This grave, which was cut from 2.05m down to 2.45m below datum, contains a 12-year-old likely to have been female. It is found in the quadrant D, in the area used during MP7 for cluster I, and is therefore assigned to this cluster. The body was laid out in a supine position with the hands by the sides. There was a wide range of grave goods. Two complete pottery vessels were located beyond the ankles (cats. 763-4) and a third, which had been broken in antiquity, was found to the left of the left calf (cat. 765). A worked shell was in place to the left of the skull (cat. 767) and a stone adze was found to the right of the right upper arm (cat. 766). H-shaped shell beads were distributed round the chest and arm area in the form of a necklace (cat. 769) and fragments of a stone disc/bangle were also recovered from between the ankles (cat. 773). The whole body had been covered in red ochre.

EXCAVATION OF KHOK PHANOM DI



XII. MORTUARY PHASE 7

THE final mortuary phase identified at Khok Phanom Di comprises five burials. Four of these have been ascribed to cluster I and the last, B12, is a solitary one and only partially present in the north-eastern corner of the excavated area. All but one of the four burials in cluster I were also only partially found within the square. Burial 11, the complete one, was interred at a depth of 2.05m and has been described as part of MP6. The grave cuts for the other three were encountered at 1.45, 1.40 and 1.20m respectively below datum. It is arguable therefore, that B11 should be given a special status as stage 1 of this cluster, but for the sake of coherence the four interments are treated as a group. Certainly, they lie on the same axis and no intercutting of graves occurred. Moreover, no cluster underlay this group of four graves. They were the first and last to be found in this part of the excavation square.

Before the first interment was made, a deep and large concentration of ash was encountered at a depth of 2.30 and extending down to 2.54m. This ash spread out from the central concentration and it was 24cm thick at its greatest extent. It was subsequently cut with the digging of the grave for B11. At the same depth, 2.30m, a charcoal spread developed on the southern side of the grave for B11. It contains a number of *Anadara* shells. In the area west of the later burial area for cluster I a considerable number of postholes were dug, with particularly intensive activity being encountered in the period just before the digging of the B11 grave. Two further lenses rich in shells and ash were deposited to the west of the burial area, but never closer than 2.5m from the edge of B3. The three burials which impinge significantly into the square are seen in figure 259. Only the foot bones of B10 extend into the excavated area. The grave was cut from 1.40 to 2.00m. No grave goods were encountered. It is clear that the postholes form a dense concentration which runs along the western edge of the mortuary area.

TABLE 46: *The mortuary goods, ages and sexes of burials from cluster I mortuary phases 6-7 and from burial 12*

	B11	B3	B10	B1	B12
Age	12	4 m	15 m	9	12
Sex	Female	-	-	-	-
Depth of grave cut below datum (m)	2.05	1.45	1.40	1.20	1.30
Orientation	65°	55°	65°	55°	65°
Red ochre	p	p	-	p	p
Disc-shaped shell beads	12	49	-	-	730
H-shaped shell beads	57	12	-	-	30
Pottery vessels	3	2	-	2	4
Clay anvil	-	-	-	2	-
Burnishing stone	-	-	-	1	-
Stone adze	1	-	-	-	-
Shell disc/bangle	-	4	-	3	-

Note: m = months

EXCAVATION OF KHOK PHANOM DI

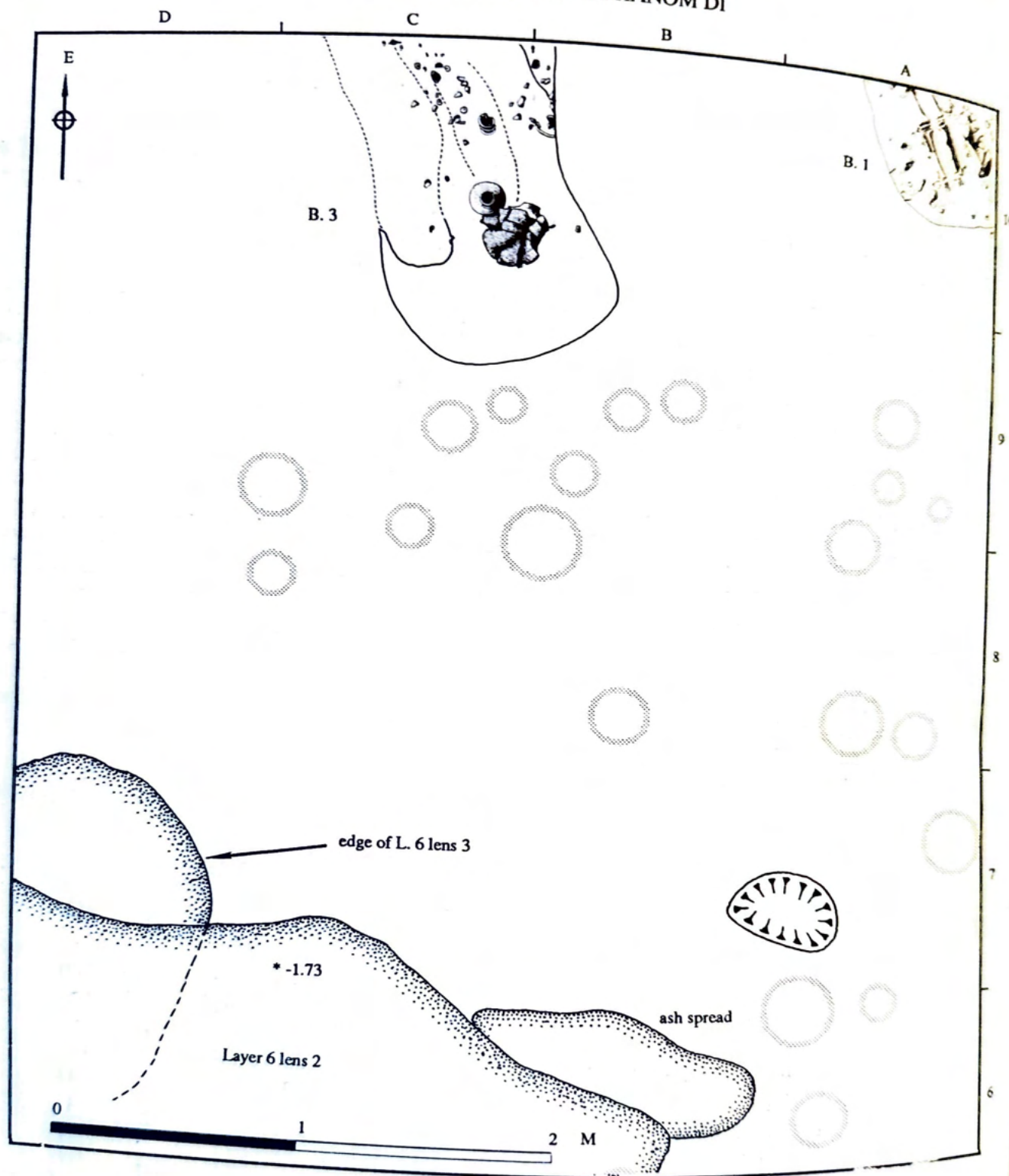


FIG. 259. The distribution of graves and associated features of mortuary phase 7 cluster I

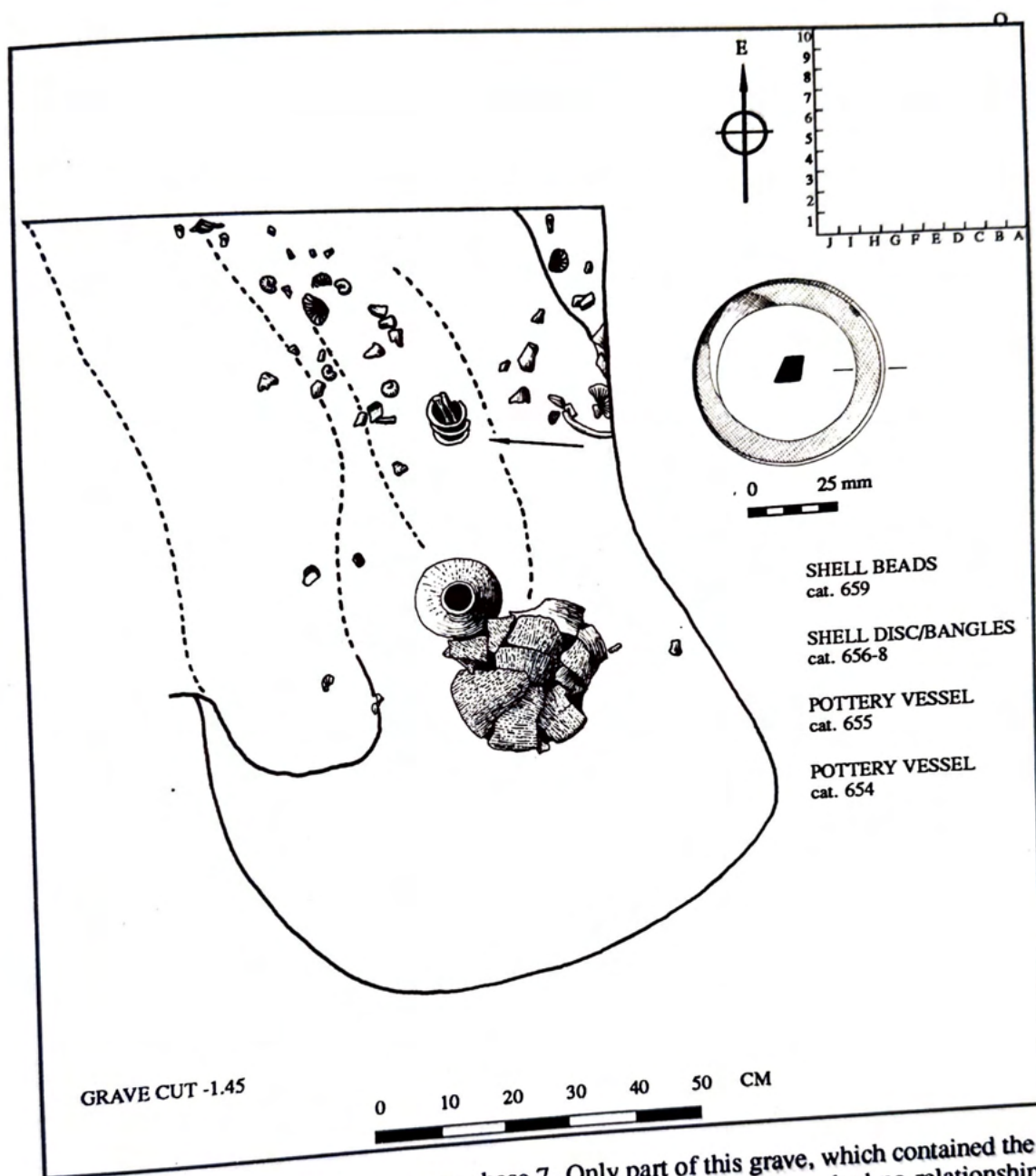


FIG. 260. Burial 3 burial cluster I mortuary phase 7. Only part of this grave, which contained the remains of an infant, was located within the square and the fragments of human bone had no relationship to each other in anatomical terms. The grave was cut down to 2.18m from a depth of 1.45m below datum. Two pottery vessels were discovered in what would have been the area of the feet. One (cat. 654) was complete and up-turned. The second was fragmentary (cat. 655). Four shell disc/bangles were found over the radius and ulna (cat. 656-8). A series of shell beads was found adhering to the ribs, and they were probably part of a necklace (cat. 659)

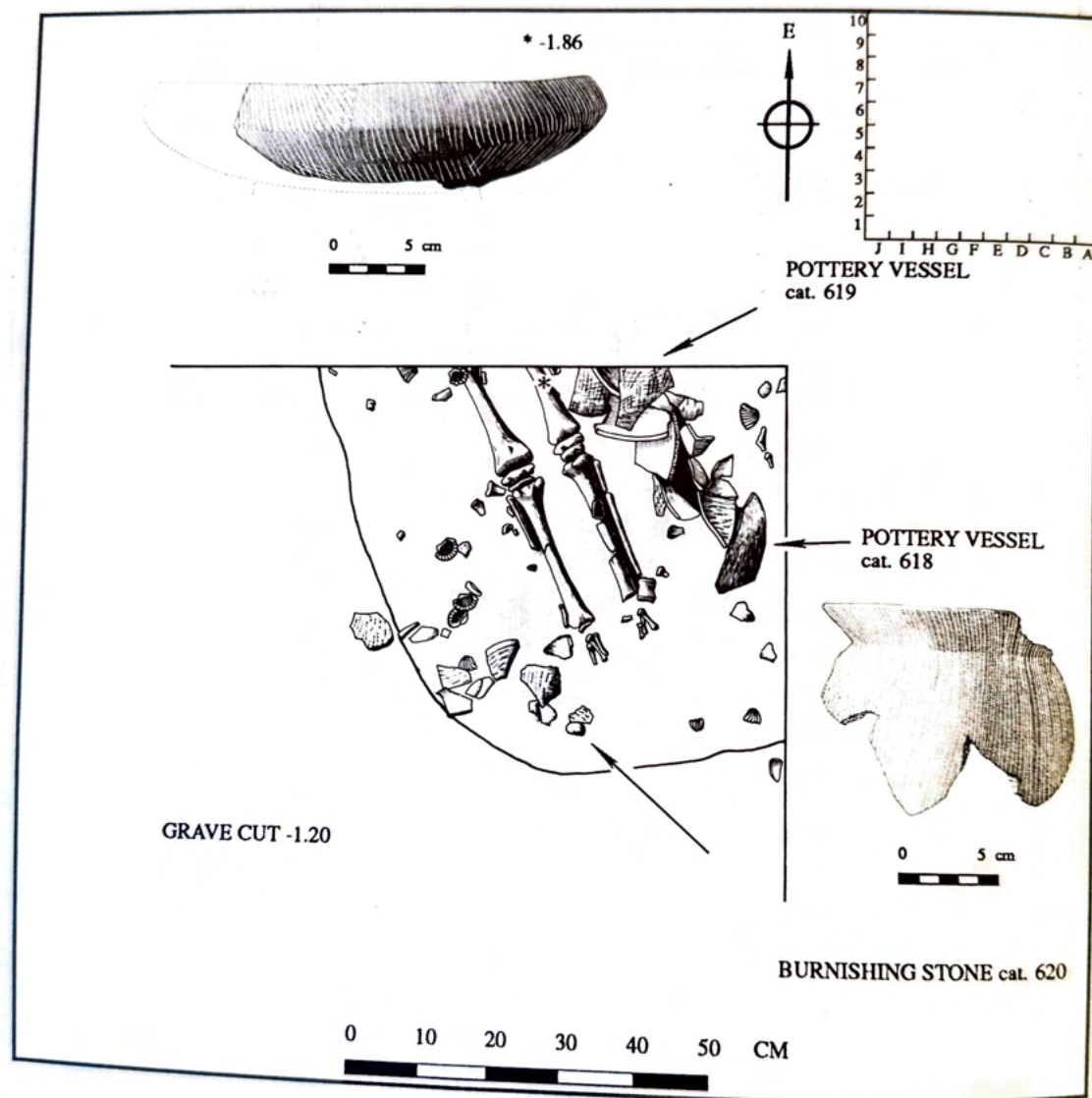


FIG. 261. Burial 1 cluster I mortuary phase 7. The remains of a 9-year-old juvenile, but only the lower legs were present in the excavated area. Two broken pottery vessels were found to the left of the left leg (cat. 618-19). Other artefacts in the area of the feet included a burnishing stone (cat. 620) and three shell disc/bangles were found on the left wrist (cat. 2039). This grave was cut from 1.20 down to 1.90m below datum

MORTUARY PHASE 7

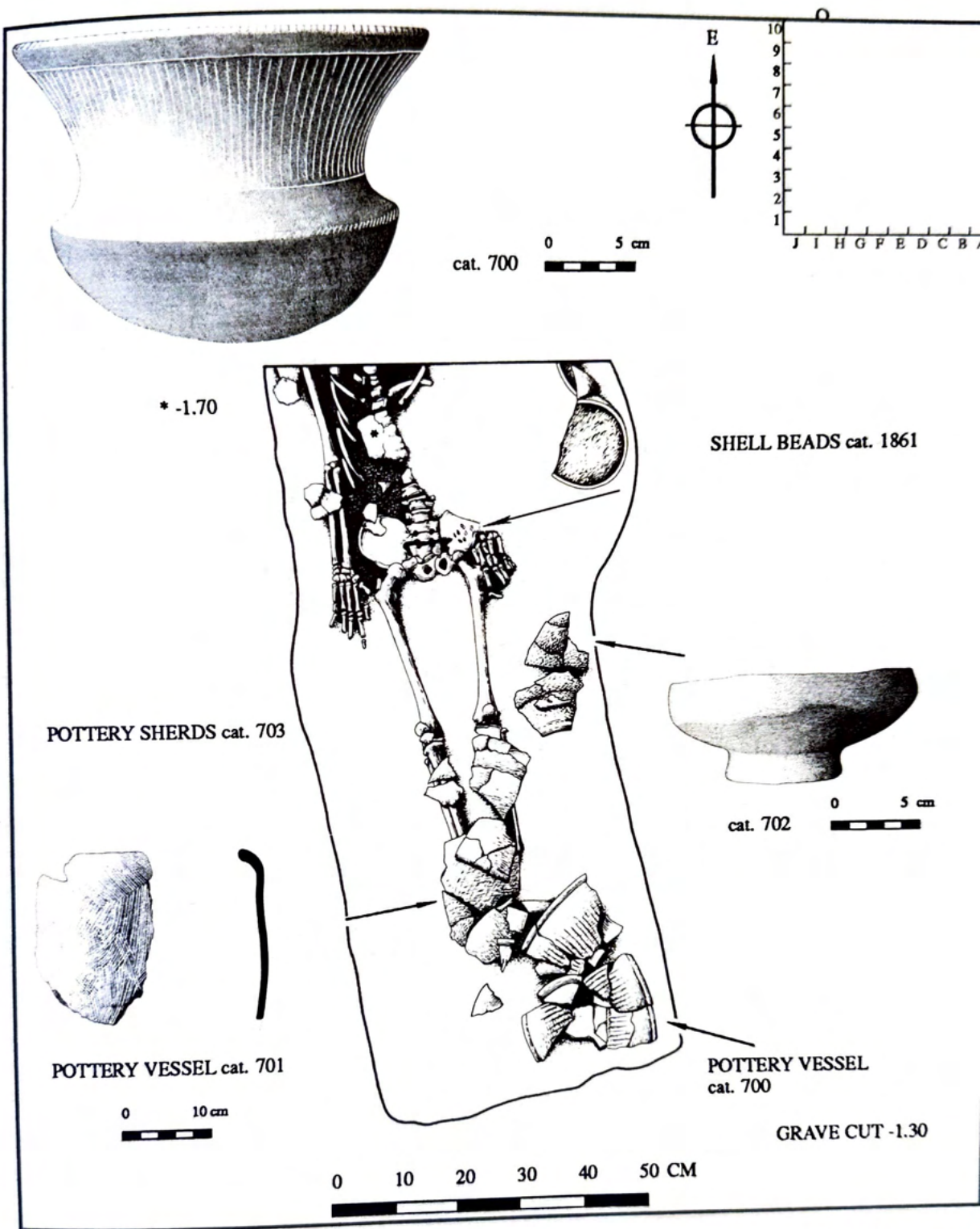


FIG. 262. Burial 12 mortuary phase 7. This is the only burial at this depth in this part of the site. The grave was cut from a depth of 1.30m down to 1.85m. Only the lower part of the body was found in the excavated area. It represents a 12-year-old child. The hands were laid flat on the ground beside the body, the area of which had been cut into by a later posthole. Three and possibly four complete pottery vessels were recovered, together with shell disc and H-shaped beads round the waist and neck areas. These may have been a belt and a necklace respectively.

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