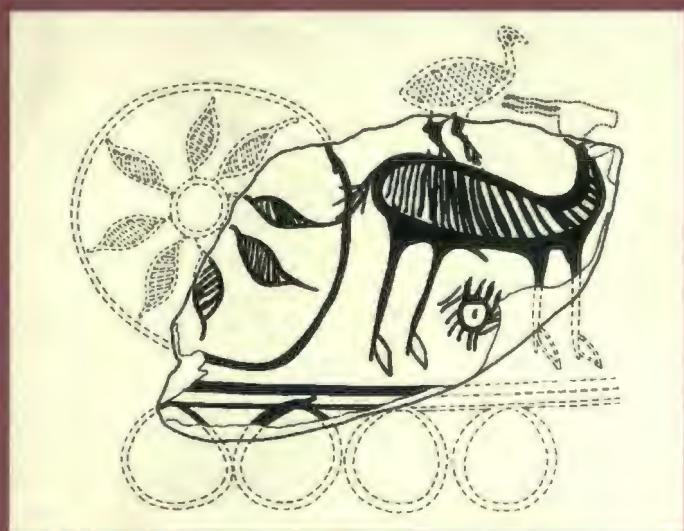


EXCAVATIONS AT  
**KALIBANGAN**  
THE HARAPPANS

(1960-1969)

PART - I



B.B. LAL

JAGAT PATI JOSHI  
MADHU BALA

A.K. SHARMA  
K.S. RAMACHANDRAN



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APPENDIX  
**A. GHOSH**



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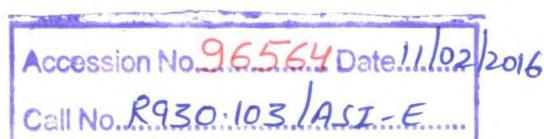
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1. *Painted Potsherd*
2. *Humans Skull with the Evidence of Shell Ring*
3. *Square Steatite Seal*
4. *Terracotta Human Head*

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## **FOREWORD**

I am very greatly delighted to present to scholars the second book entitled Excavations at Kalibangan; The Harappan, Part-1, which embodies the account of valuable contributions of the excavations. In this series the first book on Early Harappans had already been published in 2003 by the Archaeological Survey of India as Memoir No 98.

In fact, after the partition (in 1947) extensive explorations were carried out in various places to search Harappan sites in India, since both the major Harappan sites, Mohenjodaro and Harappa, remained with the present-day Pakistan. Kalibangan was the first Harappan site which was explored and subsequently excavated after Independence, in 1960-69.

The excavations at Kalibangan have undoubtedly produced very good results and established Fabric A to F in pottery, added a unique finding of the earliest ploughed field from the early Harappan period and traces of earliest earthquake marking the end of the early Harappan and Harappan. Scale, cylindrical seal, charging bull, inscribed pottery, fire-altars, wells, bathing platforms, linga-with-yoni, plumb bob, etc. are the noteworthy findings, along with the plans of citadel, the city and burial ground, from Harappan Period.

However, for this long-pending report and its enormous delay, the senior author, Prof. B. B. Lal, states in the Preface of the book: "Better Late than Never". The completion of the report has only been possible due to painstaking approach of the authors, after their retirements: Prof. B. B. Lal and Late Shri Jagat Pati Joshi, both former Directors General of Archaeological Survey of India.

This Part-1 on the Harappans throws light on chronology; three-mounds concept of the settlement; fortified citadel and city; stratigraphy and structures; chess-board plan of the city; ritual platform, fire-altars, wells; representative pottery, plain as well as decorated, with their design-repertoire; cylindrical seal, square seals and sealings, with scientific studies of steatite seals; crafts and industries.

The academic community which has eagerly been waiting for this report for a long time will surely welcome it.

I have great pleasure in placing on record my appreciation of my colleagues in the Archaeological Survey of India, for their joint efforts for the completion of the report. My special thanks are due to Dr. B. R. Mani, Additional Director General, Dr. D. N. Dimri, Director (Publication), Shri Daljit Singh, Superintending Archaeologist (Publication), Shri Vishnu Kant, Assistant Superintending Archaeologist, Delhi Circle, Dr. Sujeev Nayak, Assistant Superintending Archaeologist (Publication), Shri Hoshiaar Singh, Production Officer (Publication), Shri Abinash Mohanty, Assistant Archaeologist and others who have provided assistance with ardent zeal in bringing out this publication. M/s. Aravali Printers, New Delhi, deserve my thanks for their co-operation and publishing this book.

*R. Tewari*

**Place: New Delhi  
Date: 31/01/2015**

**(Rakesh Tewari)  
Director General  
Archaeological Survey of India**



## PREFACE

The first volume of the report on the excavations at Kalibangan was prepared in 2000 and published by the Archaeological Survey of India in 2003. In it we had given an account of the settlement in so far as it related to the Early Harappan times (Period I). In the present volume, which consists of two parts, we place before the reader an account of the Mature Harappan settlement (Period II). We once again deeply apologize for the inordinate delay in the publication of these two volumes, which has been due to reasons beyond our control, as mentioned in the Preface to earlier volume. However, "Better late than never" is the maxim which gives us some solace, and we earnestly hope that the archaeological fraternity will forgive us for the delay.

As in the case of the earlier volume, in the present one too the credit of organizing the work must go primarily to Shri Jagat Pati Joshi. He has taken pains to piece together the field-drawings, making them presentable. He has also analyzed the stratigraphy of the site, paying attention to each and every trench. Along with Ms Madhu Bala, he has examined the vast store of antiquities recovered from the site, selecting them for the purpose of this report and writing on them. Ms Madhu Bala has also written the chapters on small finds and pottery. Shri A.K. Sharma was in charge of the cemetery area and has contributed a detailed chapter on the burials, besides K.S. Ramachandran who has written on some of the pot-burials excavated by him. Prof. Bala Subramaniam of IIT and Jagat Pati Joshi have contributed a chapter on Harappan measuring instruments from Kalibangan. Way back, in 1955, the late Shri A. Ghosh had carried out explorations in certain parts of the Ghaggar and Drishadvati valleys and had duly recorded his findings in a diary. Since the material is related to the subject-matter of this Report, an opportunity is taken to include here his field-notes, along with a paper on the subject, which he presented at the All India History Congress, Jaipur, on December 29, 1951. Shri R.K. Sharma, has carried out detailed scientific studies of the fragments of the seals at the science laboratory of the Archaeological Survey of India, Dehradun (Uttarakhand).

Because of such a diverse authorship, it is but natural that the style of presentation and language vary from chapter to chapter. Further, since the report had to be submitted to the Director General, ASI, by the dead-line of May 2007 and most of the chapters poured in just before that, no worthwhile editing was possible. Thus, the reader is requested to look more for the contents of the chapters rather than go into the nuances of the style and language.

As the seniormost amongst the contributors, I have great pleasure in placing this report in the hands of the reader, hoping once again that we would be forgiven for the extraordinary delay.

New Delhi:  
May 30, 2007

B.B. Lal



## **ACKNOWLEDGEMENTS**

In the preparation of this report technical assistance has been received from many persons and the authors would like to record their deep sense of gratitude and appreciation to them.

In the field, Sarvashri N.C. Ghosh, M.D. Khare, C. Margbandhu, J.S. Nigam, B.M. Pande, K. Raghavachary, J.P. Srivastava, K.M. Srivastava and I.K. Sharma, provided field supervision during nine seasons of work, besides students of batches from 1962 to 1969 of the School of Archaeology (now elevated to the Institute of Archaeology) and students of Punjab University, Chandigarh. The survey maps were prepared by Sarvashri S.P.Jain, A.K. Roy and late Vidya Ram. The drawings were prepared by late Rambabu, J.S. Dubey, L. Dutt, Lalit Jain, Mahendra Singh Panesar and late Amir Singh. Late B.P. Asthana, late R. Chatterjee, late V.V. Dutta, late Ranjit Gupta, Late M.B. Limaye and Shri G. Lakshmi Narayan did all the photography in the various field seasons.

In the headquarters, the supervision of drawing work, including their digitization was done by Shri Vijay Kumar. The digital drawings were prepared by Adwin Incorporation, Delhi, Shri Jassuram finalized the sections and S.K. Sharma prepared drawings of distribution map and charts of seals, sealing and graffiti. Shri Puran Chand Mukhia finalized all the drawings and made them press-ready. He also prepared many other drawings of beads and cemetery incorporated in the report. Shri Ramakant Dwivedi, and Dr. Khushal Girhe, of Prehistory Branch, Nagpur prepared drawings of the lithic tools. The small finds were photographed by B.R. Rajput, Ravindra Kumar and R.K. Jatta. The prints and digital photography of the small finds has been done by Rajat Dilwali of Ms. Kinsay Brothers, New Delhi. Shri Vishnu Kant provided assistance in the analysis of inscribed material and preparation of list of figures. Smt. Anjali Negi typed out the entire manuscript with care and precision and made it press-ready on computer. Various services were provided by Smt. Ramkali. Shri Narendra Kumar Sharma has been of considerable assistance in the location and recording of antiquities and pottery which have been stored for years at Purana Qila.

The work could not have been completed if Smt. Kasturi Gupta Menon, IAS and Shri Babu Rajeev, IAS, and the successive Directors General of ASI, had not provided the facilities and infrastructure to the authors at Purana Qila for writing the report. Dr. R.S. Fonia provided infrastructural help to the project. Shri A.K. Sinha, Director (Publication), Dr. B.M. Pandey and Dr. P.K. Trivedi, former Directors (Publication), Dr. Arundhati Banerji (former Superintending Archaeologist), Dr. Madhulika Samanta (Superintending Archaeologist), Hoshiar Singh (Production Officer) and other officials of the Publication Section rendered valuable assistance. Finally we must say that this report is a joint effort of the entire team of technical hands who have put in combined effort for the completion of the project.



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# INTRODUCTION AND A SUMMARY OF THE RESULTS

B.B. LAL

CHAPTER

# 1

**A**lthough in the earlier report on the excavations at Kalibangan we had given a detailed account of the location of the site and its environment, it may not be out of place here to recall some of it, since we don't expect the readers to remember all that; and perhaps some of them may not have even seen the earlier report.<sup>1</sup>

Located on the left bank of the now-dry Ghaggar (ancient Sarasvati) river in Hanumangarh District of Rajasthan, Kalibangan (Lat. 29° 29' N; Long. 74° 08' E) is one of the most important sites excavated on the Indian side of the border after Independence. As would be seen a little later, it has made some very valuable contributions to our knowledge of the Harappan Civilization (also known as the Indus/Indus-Sarasvati Civilization). The site is about 6 km south of the nearest railway station, called Pilibangan, which lies between Hanumangarh and Suratgarh. From Delhi, it is a little over 300 km by road in a north-westerly direction (cf. Fig. 1.1).

As one moves in this area, one sees during the winter season luscious fields of wheat interspersed with those of mustard, the latter welcoming the visitor by waving their lovely yellow flowers. But all this is a recent development. In the 1950s when we were exploring the area we were greeted by nothing but sand, often swirling up in the air and blinding us. The

recent environmental change has come up because of the canal that has been laid out in the dry bed of the Ghaggar (Sarasvati). Likewise, one can well imagine that during the Harappan times when the mighty Sarasvati itself was flowing past the site the environment must have been no less green. Indeed, the discovery of a ploughed field with criss-cross furrow marks, ascribable to the Early Harappan times,<sup>2</sup> fully endorses such a view.

The ancient site consists of three mounds (Fig. 4.1). Of these, the one in the middle (called KLB-2) is the largest, though it has been badly eroded on the southern side. It measures approximately 240m east-west and seems to have been not less than 360m north-south. That on the west (called KLB-1) measures roughly 240m north-south and 120m east-west. As would have been observed, the longer axis in both the cases is north-south, i.e. almost at right angles to the adjacent river, which is somewhat unusual, since normally habitations stretch along the river. Anyway, both the mounds rise to a height of approximately 10m above the surrounding plains. The third mound, named KLB-3, is a bit away to the east of KLB-2 and is very much smaller in area, approximately 70m x 50m, and only 2.5m in height. The reason for this small size of the last-named mound lies in the fact that it was not a residential complex but was used only for a limited (ritualistic) purpose.

<sup>1</sup> B.B. Lal, J.P. Joshi et al. 2003, *Excavations at Kalibangan : The Early Harappans*, New Delhi : Archaeological Survey of India.

<sup>2</sup> *Ibid.*, pp. 95-98.

## *Excavations at Kalibangan - The Harappans (1960-69)*



Fig. 1.1

## *Introduction And A Summary of the Results*

The excavations have revealed two periods of occupation at Kalibangan: viz. Period I, Early Harappan, datable to circa 3000-2700 BCE; and Period II, Mature Harappan, ascribable to circa 2600-2000 BCE, there being a gap of about a hundred years between the two. The settlement of Period I had to be abandoned around 2700 BCE because of an earthquake, the details of which have been given on pp. 99-100 of the earlier Report. However, here it may be well worth while to recall that this is the earliest evidence of an earthquake, recorded in any archaeological excavation.

The remains of Period I, with at least four structural sub-periods and a total deposit of about 1.65m, were met with only in the lower levels of KLB-1. When, after the above-mentioned interval of about a century or so, the people returned to Kalibangan, they chose to break new grounds, besides, of course, re-occupying the abandoned mound, viz. KLB-1. This two-fold layout of the settlement (we shall talk about the third mound a bit later) was an altogether new feature, which also throws fresh light on the socio-political philosophy that seems to have emerged by the Mature Harappan times.

Of the two parts of the new settlement, that on the east (KLB-2) was what may be called the 'general' habitation area, where merchants, agriculturists and other 'common men' had their houses. It has been nicknamed as the 'Lower Town', as against the other part which has been called the 'Citadel', having a relatively elevated position, high mud-brick-platforms bearing special kinds of structures on them, and a complex system of fortification-walls. (In fact, this kind of differential nomenclature was started long back (1946) when Wheeler duly established the presence of a fortification-wall around Mound AB at Harappa.) However, it is important to note that even

the so-called 'Lower Town' at Kalibangan was also found to be fortified - a discovery which triggered the search for a similar disposition at other Harappan sites.

Since the southern part of KLB-2 has considerably been eroded, it is difficult to estimate the original north-south extent of the settlement. However, as already stated, it is likely to have been about 360m. The fortification-walls on the east and west, though eroded, are traceable in their basal parts, indicating that the east-west extent of KLB-2 was around 240m. It may, incidentally, be added that the fortification-walls did not form a perfect rectangle on plan, but a parallelogram (Fig. 4.1). These walls were made essentially of mud bricks, although at one place a good deal of debris of kiln-fired bricks was also observed immediately by the side of the mud-brick wall, raising a question whether or not a burnt-brick revetment was also provided - maybe at some weaker points. Since the Mature Harappan settlement at Kalibangan lasted over half-a-millennium, parts of the fortification-walls which gave way in the course of time had to be renewed. In these rebuilt parts it was observed that whereas in the earlier construction the size of the bricks used was 10x20x40cm, in the later it was 7.5x15x30cm. However, no great importance need be attached to these sizes: in the initial stage the builders may have thought it appropriate to use large-sized bricks in the massive construction of the fortification and later on when only limited parts were reconstructed, smaller bricks may have been found good enough. It may, however, be added that the residential houses were made by and large of bricks of the smaller size, viz. 7.5x15x30cm. Of the gateways of the fortifications at least two were clearly identified, one in the north-western part, opening on the river-side, and another on the western side providing

communication with the Citadel, the northern part of which too had a gate on its eastern side. Though the relevant eastern part of KLB-2 was not excavated, it is possible that there was a gateway on this side as well, providing a passage towards KLB-3. Further, since the southern part of KLB-2 is completely eroded, nothing can be said about the existence of a gateway on this side, although common sense would argue for one.

The town within the fortifications was laid out in what is generally called the grid-pattern, though strictly speaking the result was not a perfect grid, since while most of the north-south streets ran all through the length of the township, the east-west ones were often staggered. Of the streets which ran all the way from north to south as many as four were duly identified. Besides, there was a shorter north-south street in the south-western part of the settlement. It seems likely that on the north-eastern side there also existed a corresponding short-length north-south street. Further, the 'north-south' streets, which in fact were not oriented exactly along the cardinal directions, did not follow the alignment of the fortification-walls; these latter ran almost along the cardinal directions. One wonders at this deviation in the case of the streets. A likely guess may be that the streets were laid out slightly obliquely in order to break the velocity of the piercing northern winds that are so common in this region during the winters. Two of the north-south streets coalesced at the north-western gateway which, as already mentioned earlier, opened at the river-front. Of the east-west streets, three were identified in the central part of the township and one along the inner side of the fortification in the north. It is likely that a similar street also existed along the inner side of the fortification-wall on the south, but since

the mound is considerably eroded in this part, one cannot be too sure of it.

It is interesting to note that the lanes/streets were laid out more or less in a set ratio of width, *viz.* 1:2:3:4, with the respective measurements being approximately 1.8m, 3.6m, 5.4m and 7.2m. Bullock-carts could easily ply through all these except the lane which was only 1.8m wide. An important feature was noticed at the crossing of the wider streets. At the exterior corners of the houses over there, wooden fender-posts were provided in order to protect the corners from being damaged by vehicular traffic (Fig. 6.46). Also, full care was taken by the civic authorities that no encroachments were made on the streets, although the site witnessed as many as nine structural phases accounting for a total vertical height of about 10m (Fig. 6.3). The only kind of construction to be seen in these streets was that of narrow platforms (*chabiutarās*) adjacent to the entrances to the houses, which seem to have been used by the occupants for a chit-chat with the neighbours, as is the case even now in the nearby villages. However, these streets are devoid of drains, such as one sees at Mohenjo-daro. The sullage, ejected through house-drains, was deposited in jars placed in pits immediately outside the house (Figs. 6.20 and 6.20(a)); arrangements, however, seem to have existed for the occasional cleaning of the jars.

The streets and lanes, mentioned earlier, divided the town into blocks, each block comprising a few houses. Though the size of the houses varied, depending evidently on the financial status of the respective owners, an average house appears to have consisted of a courtyard, on two or three sides of which there were the living rooms. Sometimes these could be two-deep, i.e. one behind the other. Piercing the wall on the fourth side of

## *Introduction And A Summary of the Results*

the courtyard there was a large entrance. The large size of the entrance to these ancient houses may be understood by the analogy of the modern houses in the adjacent villages which too have such large entrances, through which bullock-carts are admitted into the courtyard and parked there. Maybe the same was the practice in the bygone days. Within the courtyard of these (ancient) houses have been discovered elongated troughs made of mud bricks, in a few of which there were also placed the broken lower halves of earthen jars. Once again, on the analogy of what obtains in the courtyards of houses in the adjacent villages, it may well be conjectured that in the third millennium BCE too the Kalibanganites provided fodder and drinking water in these troughs and pots for their cattle. In the courtyard of one of the houses has been discovered a well, lined with wedge-shaped bricks (Figs. 6.47 and 6.49), evidently for ready supply of water, even though the river was not far off. Steps in the courtyard, adjacent to one of the rooms, suggest that some of the houses may have been double-storeyed. The evidence available from a collapsed roof suggests that it was constructed by using wooden rafters, bamboos and reeds overlain with clay. Mention may also be made of a house which seems to have belonged to a well-to-do person. It had a flooring of kiln-fired terracotta tiles, decorated with a pleasing design of intersecting circles (Figs. 6.45 and 6.46(a)). In a nearby room there was a pile of jars, evidently used for the storage of grains (Fig. 6.45). Mud or mud bricks were commonly used for flooring purposes. However, in the upper levels of the site a very interesting feature was noted. Over here, the floors consisted of a soling of broken, burnt terracotta nodules interspersed with charcoal, over which was laid a layer of clay. When these were discovered we could not

interpret the significance of the burnt-nodule-cum-charcoal soling. Luckily for us, some civil engineers from neighbouring Hanumangarh happened to visit the excavations. When we consulted them about this special feature they told us that this is what they do even now. They explained that while the burnt nodules make the soling hard, the pieces of charcoal prevent the sub-floor dampness from traveling up along the walls, besides acting as a termite-killer. Should not the Kalibanganites of more than 4000 years ago be given full marks for this ingenuity?

Special interest attaches to the fact that one of the rooms was earmarked for ritualistic purpose. This is indicated by the presence in it, at successive levels, of what have been termed as 'fire-altars' in the absence of a much better term, though these are not to be confused with the Parsi fire-altars. Sunk into the floor to a depth of about 25 cm and lined with clay, these were roughly rectangular with somewhat rounded corners, and measured approximately a metre in length and 50cm in width (Figs. 6.60-6.68). Within each of these altars there invariably stood a stela, made of clay (sometimes burnt), measuring about 30-40cm in height. It was usually circular on plan, with a diameter of about 15cm, but could sometimes be faceted. Inside the altars there also lay a number of circular-biconvex 'cakes' of clay, apparently placed as offerings. These altars contained ash and charcoal showing their association with fire. Another noteworthy feature of these altars was their placement. These were so located that anyone using them had to face the east—something which may have had an extra significance in the ritual. (Please mark a similar disposition of the seven contiguous fire-altars met with in the Citadel area (Figs. 5.42-5.44).

Some scholars have expressed a view that the fire-altars were cooking hearths. This is not tenable. In the first place, there already existed in the Kalibangan houses U-shaped hearths (*chūlhās*) which were used for cooking. Such *chūlhās* are in use even today and their rims provide a good base for the placement over them of the cooking vessels. On the other hand, the thin and tall stela, present in the centre of each fire-altar, cannot be expected to hold the base of a cooking pot. Why then shy away from accepting new evidence?

In marked contrast to the 'Lower Town' the western part (KLB-1) was consciously located on a higher ground provided by the ruins of the earlier occupation, so as to give it an eminence. As stated earlier, it is being called the 'Citadel'. It was surrounded by a fortification-wall, which covered an area of about 240m north-south and 120m east-west. Rectangular towers were also provided at the corners and on either side of the entrance on the southern side. The complex was further subdivided into two parts by an east-west medial wall, which too was provided with towers. The southern part had many platforms on which special structural features were located. Because of erosion over the millennia the evidence of the superstructures has been lost in many cases, but at least two of the platforms clearly showed religious association. On one of these, as many as seven contiguous 'fire-altars' were discovered. Though two of these have been disturbed by a subsequent drain, the central stela (now fallen) and fragments of terracotta 'cakes' were discovered in the others (Figs. 5.42 – 5.44). Immediately to the south of these 'altars', the lower half of a jar was found embedded into the ground. It contained ash and charcoal, providing evidence that most probably fire was kept ready

for the ritual. Close to these altars there were a well and a bathing pavement with drain, indicating that anyone who performed the ritual was expected to have a bath. There is one more interesting point about these 'altars'. Their row ran north-south and immediately behind the row was a wall, also running north-south. Thus, any one offering worship had to face the east, which is a noteworthy aspect of the ritual. Incidentally, it may be recalled that the same kind of location of fire-altars was noticed in the Lower Town.

It may incidentally be pointed out that Kalibangan does not stand alone in providing the evidence of 'fire-altars'. Banawali in the Sarasvatī valley itself and Lothal in Gujarat also do the same.

On another platform in the southern half of the Citadel was discovered a pit, measuring about 1.3m x 0.9m internally and lined with kiln-fired bricks. In it were found, besides ash and charcoal, bovine bones and antlers, indicating some kind of animal sacrifice (Figs. 5.38 – 5.40). That animal-sacrifice was a part of the Harappan rituals is indicated not only by certain scenes portrayed on the Harappan seals, but also by the engravings on a terracotta 'cake' found at Kalibangan itself (Figs. 21.69 and 21.69(a)). On one of its sides is depicted a human figure pulling forward an animal by a rope that had been tied around the latter's neck. On the other side is a deity which, on the basis of its posture and head-gear, seems to represent Śiva, depicted on so many Harappan seals.

The platforms were separated from one another by passageways, to allow free movement of the worshippers. However, an important point to note is that the only entrance to this platform-complex (from the south), though wide enough, was in a stepped fashion. Such an arrangement debarred any vehicular traffic from getting

entry into this complex. Indeed, this was an appropriate arrangement, since on the one hand the worshippers were expected to move around on foot and, on the other, they had to be saved from the menace of intruding vehicles. There was another access into this southern part: that was from the northern section, through the medial wall. But here again it was a stepped entry. So, even from this side vehicles were prohibited.

It would be of further interest to note that on the edge of one of the towers flanking the southern entrance there were post-holes (Fig. 5.18(a)), suggesting that perhaps on certain ceremonial occasions flags were also flown, their staves being inserted into these holes.

The northern part had an altogether different kind of planning. There were no platforms, but only residential houses, laid out on the two sides of a street that ran in a north-westerly direction up to a gateway which opened on the river front. Some of these houses were very large, indicating that their occupants must have been some important personages. It has been surmised, though without any inscriptional corroboration, that they were probably priests who supervised the rituals performed on the platforms in the southern part of the complex. There was yet another notable feature in the northern part. Between the medial wall, separating the above-mentioned two parts, and the houses in northern part there was a mud-brick paved street, running east-west (fig. 5.26). If imagination is given further free run, it may well be that a procession led by the priests marched ceremoniously on this paved passageway and entered the southern part by means of the stepped passage through the medial wall, referred to in one of the preceding paragraphs. The

idea of a 'procession' seems to find some sort of support from a seal from Mohenjo-daro which depicts, in the upper register, a deity within a pipal-leaf enclosure and kneeling devotee in front and, in the lower register, seven wig-wearing figures, one behind the other, as if in a procession.

Habitation also extended to the southern side of the Citadel, but the area was not fortified. No large-scale excavation was done over here. At the same time, it was observed that the houses in this area were of a smaller size compared to those met with in the northern part of the Citadel or in the Lower Town. In one section a heap of broken pottery, ash and charcoal were also encountered and it is likely that it may have been occupied by potters. Perhaps, in an overall picture, it may be conjectured that while the Citadel may have been occupied by the elite including priests and the Lower Town by merchants and agriculturists, in this unfortified area with smaller dwellings may have lived the less privileged ones who may have functioned as the 'labour class', attending to the needs of the occupants of the other two areas. That the Harappan society was economically and socially stratified, seems to be clear from the evidence of other Harappan settlements as well. For example, at Harappa itself while we have the towering and fortified Citadel and the 'Lower Town', also fortified, there are the 'workmen's quarters' right in the shadow of the Citadel, to its north.

To the east of the Lower Town, at a distance of about 80 metres, there was yet another complex, named KLB-3. It covered an overall area of about 70 x 50m, of which only a part was excavated. In it no residential houses were met with, but only fire-altars of which at least five examples were identified, wholly or

partly. In these, the usual contents, namely a stela, terracotta 'cakes', ash and charcoal were found. Interestingly, a little away from the fire-altars a mud-brick wall was also discovered. Measuring 1.65 m in thickness, it was exposed to a length of about 12m. The exact purpose of this wall, however, remained to be determined. Whatever be the answer to this particular query, it is certain that these fire-altars were used by congregations and not individually by house-holders like the ones found in the Lower Town.

At this point one might ask a question: While the presence of individual fire-altars in the houses in the Lower Town is easily explainable, what is the explanation for the provision of congregational fire-altars in the Citadel on the one hand and in KLB-3 on the other? A variety of guesses can be hazarded. Perhaps one of these may be that while the groups of the fire-altars perched on a high mud-brick platform in the well-fortified Citadel were to be used by the 'high-ups', those located in the lowly area of KLB-3 were meant for the lowly ones of the population, such as those living in the unfortified area to the south of the Citadel. There could be other explanations too, but, I am afraid, all these will remain in the realm of conjecture.

The Harappans are known to have buried their dead. While during the course of the excavations at Mohenjo-daro no graves were located, the same were duly discovered at Harappa. The usual method of the disposal of the dead was to intern the body in a rectangular or oblong pit, sometimes lined with mud bricks and in certain cases also provided with an overhead tumulus, again of mud bricks. The body was laid supine in an extended

position, with the head to the north. Alongside the body, a good deal of pottery, some other grave-furniture and even food were placed, perhaps in the belief that these might be of use to the departed in his/her journey to the next world. While this mode of burial (called here Type I) was also practised by the Kalibanganites, there came to light two new types (named II and III). The cemetery at Kalibangan was located at a distance of about 300m to the west-south-west of the Citadel, in a flat area which, though now sometimes flooded, must have anciently been above the flood-level.

Over a dozen examples of Type I graves were excavated. In all these cases the pit was rectangular, with either sharp or rounded-off corners and large enough to take in an extended human body. Usually placed at the bottom of the pit, the body lay supine in an extended position with the head to the north. The face could be skywards or turned to the left or right. In one case, the grave-pit was found lined with mud bricks which were also plastered (Figs. 22.40- 22.43). On the analogy of an example from Harappa,<sup>3</sup> it may not be unjustified to assume that, overlying the grave, there may have been a mud-brick tumulus which, however, has since disappeared because of erosion. The body, as usual, lay supine in an extended pose, the head being to the north but turned westwards. An interesting feature of this grave was that it contained over seventy pots, nearly half of which lay to the north of the head and the rest underneath the body. It may also be noted that in another grave the body lay prone instead of supine and the head was to the south instead of north. Also, the legs and arms were somewhat folded. Had this kind of disposal any significance, or was it a mere aberration?

<sup>3</sup> R.E.M. Wheeler, 'Harappa 1946: The Defences and Cemetery R 37'. *Ancient India*, No. 3, Pl. XXXVIII A.

## *Introduction And A Summary of the Results*

Within the same area as occupied by the above-mentioned inhumation graves (Type I), there lay graves which contained no human body—either complete or even fractional (Type II). But these did contain the usual grave furniture, such as pottery, etc. Of this type, five examples were excavated. In one case, the pit measured 4x2x1m, the longer axis being north-south. At the bottom were placed a large number of pots spread almost all over the area. As if to complete the grave-furniture, there were three shell bangles too. Above this material were encountered a series of bands of sand and clay (Fig. 22.58) indicating that the pit remained open for some time, allowing this kind of deposit to accumulate. The pit was finally filled up with earth and clods thereof. In another example of this type, were found a shell bangle, a carnelian bead and a string of steatite beads, besides, of course the usual pottery. Overlying all this stuff were the inevitable bands of sand and clay. In a still more interesting case, the pit measured 5m north-south, 1.5m east-west and 1.5m in depth, and, because of its extraordinary depth, was provided with two steps. The pottery and the conspicuously overlying bands of sand and clay were, of course, there. What could indeed be the reason for such graves sans any skeletal remains? Is it that the dead body was first laid in these graves and, after certain rituals, was removed to the regular inhumation graves? Indeed, one guess is as good or bad as another.

Another kind of burial (Type III), encountered so far only at Kalibangan, is equally baffling. In this case, the grave-pits were circular or ovoid, but never rectangular. More importantly, these also did not contain the dead body. However, the siting of these pits not far away from the other two kinds of graves referred to

earlier leaves no doubt that these circular pits did have something to do with the 'disposal of the dead'. Over a dozen examples of this type were excavated but, as already mentioned, none contained a human skeleton, though in one case an unidentifiable bone-fragment was found. Nevertheless, the other appurtenances encountered in the other two kinds of graves were there. Thus, one found a large amount of pottery and other funerary objects. There was also something unusual about the pottery-assemblage. Amongst the large number of pots of various types and sizes there invariably was a large-sized jar, acting almost as a central piece. It was expected that this one might provide some kind of clue, such as ash, charred bones, etc. in case these were post-cremation burials, but there was no such evidence. If there ever was any ash inside these jars, it got so badly mixed up with the earth that it could not be made out as a separate entity. It perhaps needs to be added that these pits did not also show up the kinds of bands of sand and clay as were encountered in the graves of Type II. Thus, the functions of Types II and III were clearly different from each other. Could the Type III have been of a somewhat symbolic nature, perhaps associated with those who died elsewhere? Only further work would be able to throw some light on this issue.

The skeletal remains from the graves of Type I have thrown some interesting sidelight. The skull of a child was found to be rather unusually large, perhaps resulting from the accumulation of water in the brain cells – a hydrocephalic case? To treat the same, the Kalibangan 'surgeon' took recourse to trephination, piercing three holes on the right temporal region and branding it with some heated instrument. An example of trephination also comes from Lothal.<sup>4</sup>

<sup>4</sup> S.R. Rao, 1979, *Lothal 1955-62*. Vol. 1, pp. 145-46. New Delhi: Archaeological Survey of India.

In yet another case, a male skeleton bore cut marks near the left knee. The size of the cut incidentally corresponds to that of the blade of an average copper axe of the Harappan period. Perhaps in the course of a quarrel the person was hit by his adversary with an axe, as a result of which there may have been excessive bleeding and the person succumbed to the injury.

After a study of the skeletons, A.K. Sharma states that the average height of an adult male ranged between 1.55m and 1.75m and of the females between 1.45m and 1.55m. He is also of the view that life-expectancy may not have been more than 55-60 years (cf. Chapter 22).

Like any other Harappan site, Kalibangan too yielded a rich harvest of pottery and antiquities. As regards the pottery, it may be stated that since the site was re-occupied hardly within a century of its abandonment by the Early Harappans, the lower levels of KLB-2 contained a mix-up of Early Harappan and Mature Harappan pottery. The former, however, petered out as time passed and only the latter continued. This latter was very profuse and showed a rich variety of painted designs (Chapter 8). The antiquities included, as usual, seals, sealings, inscribed pottery, copper objects, a variety of beads, chert blades and other tools, terracotta figurines and the ubiquitous cakes, etc. All these have been described in the respective chapters. Here we may refer to just a few of them which merit special attention.

Amongst the seals there is one which is cylindrical in shape and is engraved with an interesting scene (Fig. 9.51). At least shape-wise, though not subject-wise, it reminds us that it is unusual in a Harappan assemblage and shows West Asian contacts. Also noteworthy is the occurrence of seven

terracotta 'tablets'. These are thin oblong strips, well-fired, bearing in all cases the same inscription and the horn of a unicorn (Figs. 9.77-9.79). These do not bear any impressions of reed or cord on the reverse, as the normal sealings do. Thus, their purpose seems to have been altogether different. In this context, it may be added that all these came from the Citadel, more importantly from an area lying between the ritualistic platforms on the one hand and the houses to the north which may have been occupied by the priests and other elites. Could these then have some kind of special (religious?) significance?

Of the inscribed pottery there are at least two examples which deserve special attention. On these the inscriptions were engraved after firing and the noteworthy point is that the signs partially overlap. It has been observed that in all the cases concerned the sign on the right is overridden by the next one on the left. This shows that in each case the sign on the right was inscribed first and then came the one on the left. Such a disposition of the signs conclusively proves that the direction of writing in the Harappan script was from the right to the left (Figs. 9.144 and 9.148).

Amongst the other objects, particularly noteworthy is a terracotta example of the *liṅga-cum-yoni* (Fig. 21.75). Although stone examples, separately of the *liṅga* and *yoni*, had been found at Mohenjodaro, this is an example wherein the two go together. Two bulls, one in terracotta (Fig. 21.16) and the other in bronze (Fig. 12.15) are very good examples of Harappan art. Special attention also needs to be drawn to a terracotta *kernos*, with seven lamps set on the hollow ring (Fig. 21.76) – a type which, like the cylinder seal referred to earlier, is extraneous to the usual Harappan repertoire and points towards West Asian contacts.

# SOME THOUGHTS ON THE NOW-DRY RIVER ON WHOSE BANK STANDS THE SITE OF KALIBANGAN

B.B. LAL

CHAPTER

# 2

## ITS IDENTIFICATION

The ancient site of Kalibangan stands on the left bank of a river which is now dry, though its bed is about 5 kilometres wide at this point and has been measured even up to 8 km in width elsewhere (cf. Fig. 2.1). Its present name in the Kalibangan region is the Ghaggar but downstream in Cholistan (Pakistan) it is known as the Hakra. Still further down, in Sindh, it goes by yet different names, such as the Raini, Wahinda and Nara. There is geomorphological evidence to show that the river fell into the Rann of Kachchha, an arm of the Arabian Sea (Fig. 2.2).<sup>1</sup> However, it is very difficult to find out why and when this same river was given these altogether different names in the various regions. And more important is the question: What was its name when it was flowing and was the life-line of the Early and Mature Harappan people whose settlements, dating back to at least the fourth millennium BCE, prospered all along its bank?

Perhaps we have to get back to ancient Indian literature in search of the answer. The earliest text, the *Rigveda*, has a very famous hymn known as the *Nadī-stuti*, i.e. 'Prayer to the Rivers'. Its verses, relevant to the present context, *viz.* RV 10.75.5-6, run as follows:

*Imam me Garige Yamune Sarasvati  
Śutudri stomam sachatā Paruṣnyā/*

*Asiknyā Marudvridhe Vitastyā Ārjikīye  
Śrinuhyā Suṣomayā //5//*

*Trīṣṭāmayā prathamam yātave sajūḥ Susartvā  
Rasayā Śvetyā tyā/*

*tvam Sindho Kubhayā Gomatīm Krumum  
Mehatnvā saratham yābhiriyyase //6//<sup>2</sup>*

O Gaṅgā, Yamunā, Sarasvatī, Śutudrī (Sutlej) and Paruṣṇī (Ravi), O Marudvridhā with Asiknī (Chenab), O Arjikīyā with Vitastā (Jhelum) and Suṣomā (Sohan), please listen to and accept this hymn of mine. [5]

O Sindhu (Indus), flowing, you first meet the Trīṣṭāmā (and then) the Susartu, the Rasā, and the Śvetā (Swat), and thereafter the Kubhā (Kabul), the Gomati (Gomal), the Krumu (Kurram) with the Mehatnu; and (finally) you move on in the same chariot with them (i.e. carry their waters with you). [6]

From the foregoing it would be seen that during the Rigvedic times there flowed a river called the Sarasvatī, between the Yamunā and the Sutlej. And even today there flows a river called the Sarasutī (=Sanskrit Sarasvati) between the aforesaid two rivers. It now originates at the foot of the Siwalik hills and flows in a southwesterly direction in Haryana, passing by Pipli, Kurukshetra and

<sup>1</sup> Louis Flam. 1999. 'The Prehistoric Indus River System and the Indus Civilization in Sindh', *Man and Environment*, Vol. XXIV, No. 2, pp. 35-69.

<sup>2</sup> It is well known that Griffith's translation is faulty at places. I, therefore, give my own.



Fig. 2.1 *The Sarasvati Basin in the 3rd Millennium BCE*

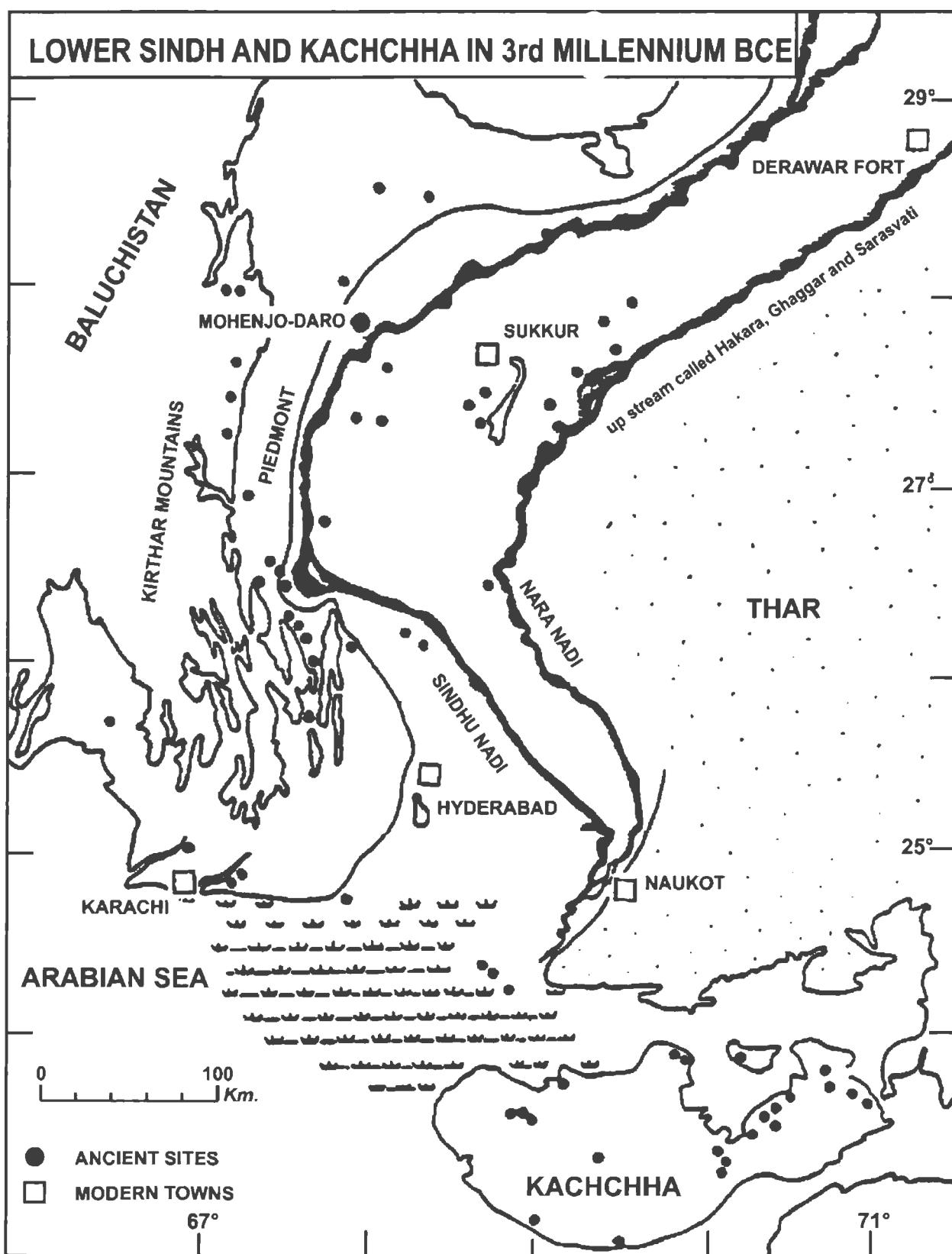


Fig. 2.2 Lower Sindh and Kachchha in the 3rd Millennium BCE  
(After Louis Flam 1999)

Pehowa. Thereafter it joins the Ghaggar and the combined Sarasvatī-Ghaggar stream dries up near Sirsa. Beyond that it is only the dry bed that is identifiable, through Rajasthan, Cholistan and Sindh down to the Rann of Kachchha, as already mentioned earlier.

A question may well be asked: Since as of now the Sarasvatī-Ghaggar combine does not carry plenty of water and dries up beyond a certain point, how come that the dry bed is so wide, sometimes, as already stated, up to 8 km? In search of the answer, we have once again to get back to the *Rigveda*. Verse *RV* 6.61.2 states:

iyam śuśmebhīr bisakhā iवārujat sānu  
girīṇām taviśebhīr ūrmibhīḥ/  
pārāvataghnīma vāse suvṛiktibhīḥ/  
Sarasvatīmā vivāsema dhūtibhīḥ//

**This (Sarasvatī river) has shattered the mountain peaks with her fast and powerful waves, just (as easily) as one uproots the lotus stems; let us invoke her, who strikes what is far and near, with holy hymns and prayers.**

Again, *RV* 6.61.8 endorses that: *yasyā ananto arhutastveśaśchariṣnurāṇavaḥ / amāścharati rorwat //*

Whose (i.e. of the Sarasvatī) boundless, impetuous and swift-moving flood gushes forth with tempestuous roar.

From the foregoing it would be abundantly clear that the Rigvedic Sarasvatī had plenty of water in it, so much so that its fast and powerful currents could sometimes even shatter the peaks of mountains.

That this river flowed all the way down to the sea is also duly vouchsafed by the

*Rigveda*. Verse 7.95.2 very clearly states –

*ekāchetat Sarasvatī nadīnām śuchir yati  
giribhya ā samudrāt /*

Purest amongst all the rivers and vibrant, the **Sarasvatī moves on from the mountains to the ocean** (cf. Figs. 2.3 and 2.2).

It may also be pointed out that the *Pañchavimśa Brāhmaṇa* (XXXV.10.16) refers to the drying up of the Sarasvatī. Thus, the literary data fully corroborate the presence of tremendous amount of water in the Sarasvatī river in ancient times as well as its subsequent drying up.

#### **From where did the Sarasvatī get its water?**

The next question obviously is: What was then the source of the immense water-supply to the Sarasvatī? In this connection many suggestions have been made, one of which is that the Yamunā as well as the Sutlej had anciently joined the Sarasvatī and hence the inordinate volume in the last-named river. However, not all scholars accept this proposition. In respect of the Yamunā it has been held that it flowed through the present-day dry channel of the Dṛiṣadvatī, a tributary of the Sarasvatī, thus feeding the latter. Against this proposition, Marie-Agnis Courty raises quite a few objections. The most significant of these is the fact that the Yamunā has well developed terraces in its upper reaches, which shows that its present course is very ancient, dating back to the Pleistocene times or at the latest to the Early Holocene. This would not support the view that the Yamunā flowed via the Dṛiṣadvatī in the fourth millennium BCE – time of the Early and Mature Harappan occupation of its

valley.<sup>3</sup> As regards the Sutlej having fed the Sarasvatī, a noteworthy objection comes from J. Wilson. He draws attention to the absence of any Sutlej-like sandy silt in the bed of the Hakra (by which name the ancient Sarasvatī is known in Cholistan) - a fact demonstrating that the Sutlej did not join the Sarasvatī.<sup>4</sup>

While it is not proposed to examine here in detail the veracity or otherwise of the Yamunā and Sutlej having fed the ancient Sarasvatī, some very elementary points in any case cannot be ignored. No doubt the Dṛiṣadvatī was a tributary of the Sarasvatī in ancient times, as per the Rigvedic text itself, but this former river joins the Ghaggar-Sarasvatī combine all the way down near Suratgarh. Thus, it could not have contributed its water to the Sarasvatī before that point. Now to the Sutlej. It is believed that in antiquity it flowed successively through what are now known as Eastern Naiwal, Naiwal and Western Naiwal. However, it is well known that even the Eastern Naiwal joined, if it really did, the Ghaggar-Sarasvatī combine around Hanumangarh. Thus, neither the Yamunā nor the Sutlej contributed even a drop of water to the Sarasvatī during its journey right from the Siwaliks up to Hanumangarh - a stretch of nearly 400 kilometres in which there lay a large number of Early and Mature Harappan sites, such as Kunal, Banawali, etc.

Then what was the real source of the perennial water-supply to the Sarasvatī? In this context one can do no better than to refer to a most recent study of the problem. It is by two eminent geologists, V.M.K. Puri and V.C. Verma.<sup>5</sup> In their paper, they present a very comprehensive survey of the area involved. However, we give here a brief summary of their findings. The mountainous terrain between the Yamunā and Markandā shows a series of four river-terraces. The authors have numbered these, from top downwards, as T<sub>0</sub>, T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub>. The oldest of these terraces, viz. T<sub>0</sub>, has been identified at a distance of about 2 kilometres south-southeast of a place called Sudanwala. It rises to an average height of 660 metres above the mean sea-level (MSL). An important feature of this terrace is that it contains quartzite pebbles and metamorphic rocks, besides, of course, other material. With similar lithological composition, high terraces, namely T<sub>0</sub> and T<sub>1</sub> have also been observed in the neighbouring area. But when it comes to the younger terraces, viz. T<sub>2</sub> and T<sub>3</sub>, it has been noted that the kind of exclusive material just referred to in the context of the older terraces does not occur in them. The implications of such a difference in the lithological composition in the respective sets of terraces are of far-reaching significance, and it would be best to quote what these geologists have to say (*ibid.*, p.16).

<sup>3</sup> M.A. Courty. 1985. Le milieu physique et utilisation du sol. In Henri-Paul Francfort (ed.), *Prospections Archéologiques au Nord-Ouest de l'Inde: Rapport préliminaire 1983-84*. Paris: Editions Recherche sur les Civilisations, Mémoire No. 62, Travaux de la Mission Archéologique Franciaise en Inde, No. 1: 11-31. Courty, M.A. 1989. Integration of sediment and soil information in the reconstruction of protohistoric and historic landscapes of the Ghaggar Plain, north-west India. In Karen Friselt and Per Sorensen (eds.), *South Asian Archaeology 1985* Scandinavian Institute of Asian Studies, Occasional Papers No. 4: 255-59.

<sup>4</sup> Wilson, as referred to in R.D. Oldham. 1887. On Probable Changes in the Geography of the Punjab and its Rivers: an Historico-Geographical Study, *Journal of Asiatic Society Bengal*, Vol. 55: 322-43.

<sup>5</sup> V.M.K. Puri, and V.C. Verma. 1998. Glaciological and Geological Source of the Vedic Sarasvatī in the Himalayas. *Itihās Darpan*, Vol. IV, No. 2: 7-36.

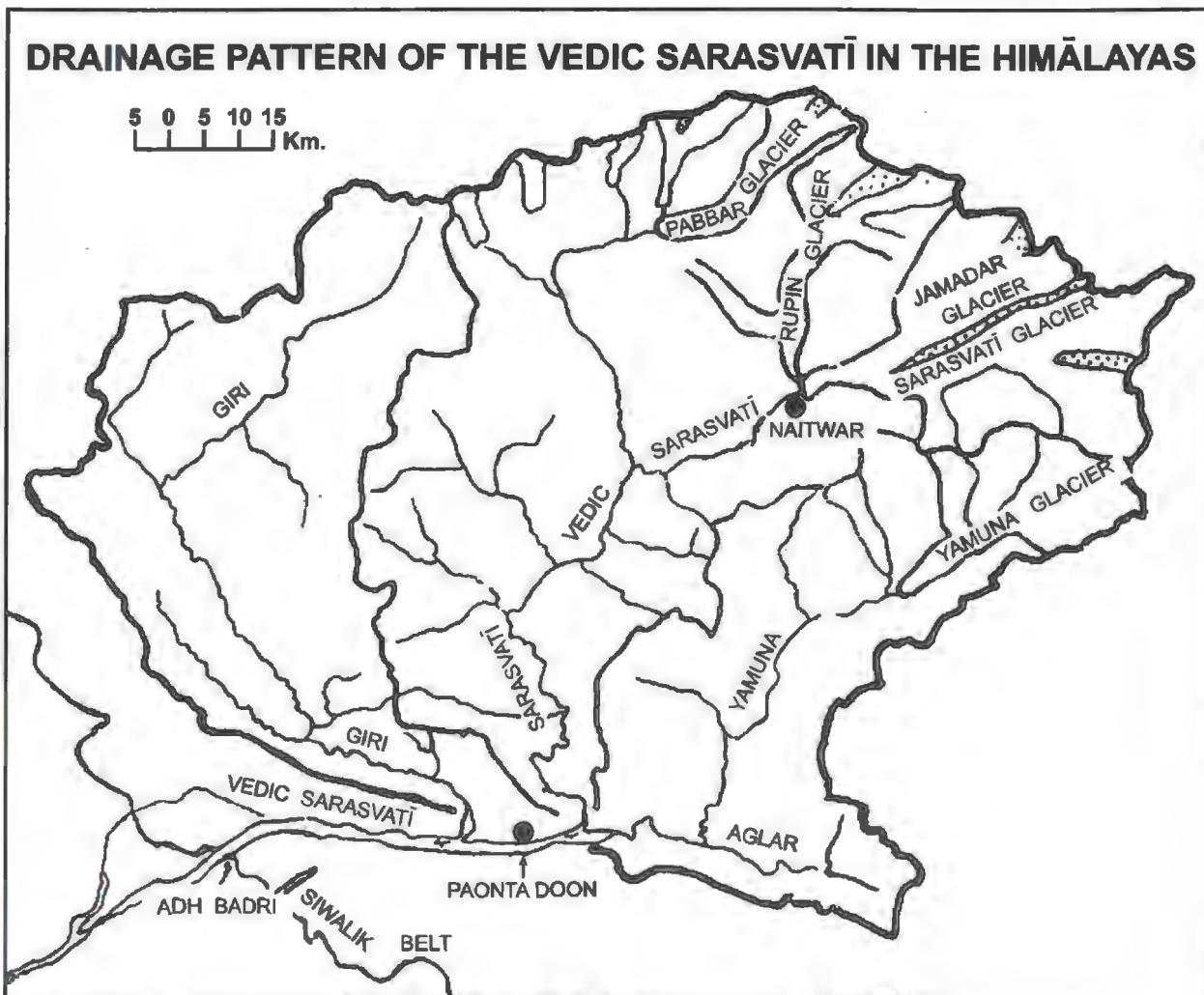


Fig. 2.3 Drainage Pattern of the Vedic Sarasvati in the Himalayas  
(After Puri and Verma, 1998)

Thus, the terraces studied in Sudanwala, Bata, Garibnath and Markanda provide an irrefutable geological evidence to suggest a course of a river that was flowing in almost west-northwesterly direction in the past. Its dimension was very large as it contained a very high discharge that traversed in its upper reaches a terrain of quartzite and metamorphic rocks. Such a region does exist in central and upper reaches of Yamunā fourth order basin where Central Crystallines and Jutogh group of rocks are located towards north, north-east and eastern side of above-mentioned four terraces. Moreover, in the Paonta valley, there is a clear evidence that prior to the present Yamunā river, there existed a major river channel at a much higher elevation that followed a westerly and southwesterly course through a route now almost completely obliterated on Siwalik platform due to erosion but its terraces are still observed along Adi Badri-Markanda link in the plains immediately to the south of Siwalik belt.

In search of the source of this once-mighty river, these geologists draw our attention to the Tons basin where quartzite and metamorphic rocks abound. They then aver: 'All the evidences point to only one conclusion that the present-day Tons was in fact Vedic Sarasvati in its upper reaches.' (*ibid.*, p.16).

After a further study of the region, these geologists produced a map which shows that the ultimate sources for this Vedic Sarasvatī were what are known today as the Sarasvatī, Jamadar, Supin and Manjee Glaciers, supplemented by Rupin and Nargani Glaciers. All these glaciers melted near Naitwar and the river thus formed moved first in a southwesterly direction and then in the westerly. Breaking through the Siwaliks near Adh Badri, it finally made its mighty descent on the plains (Fig. 2.3). This, in brief, is the story of perennial water supply to the once mighty Sarasvatī which is now represented by mere dry beds, though, as already stated, these are at places as wide as 6-8 kilometres.

#### **HOW AND WHEN DID THE SARASVATĪ DRY UP?**

A very relevant question that may now be asked: If the Sarasvatī was such a mighty river, how did it dry up? The answer, again, had to be sought through an investigation of the Himalayan Terrain, which the afore-mentioned geologists, Puri and Verma, verily did. According to them, there took place a major seismic upheaval in the Himalayas, as a result of which there arose the Bata-Markanda Divide, nearly 30 metres in height (Fig. 2.4). It blocked the passage of the Sarasvatī, which could no longer flow westwards. Since water must find its way out, it flowed backwards and, taking advantage of the Yamunā Tear opening,

joined the Yamunā river. Thus ended the glorious history of the river long-venerated by the Rigvedic Aryans.

In this context attention must be drawn to some very telling evidence from the Ghaggar-Sarasvatī bed itself at Kalibangan. When the excavations over here were in progress, we were naturally keen on verifying locally the facts about the drying up of the river, since it was obvious to us that the massive settlement at Kalibangan could not have flourished without the adjacent river having been alive and active. With this end in view, a project, combining the efforts of the Archaeological Survey of India, Geological Survey of India (represented by Shri R.K. Karanth) and an Italian firm named Raikes and Partners (headed by Mr. R.L. Raikes) was set in motion. Four bore-holes were dug, one of which lay in between KLB-1 and KLB-2, though close to the river-bank (Fig. 2.5), and three in the river-bed itself, located at a distance of 300 metres from one another towards the centre of the bed. All things apart, the most revealing fact was that the greyish sand encountered in these bore-holes, at a depth of about 11m below the present flood-plain, was 'very similar in mineral content to that found in the bed of the present-day Yamunā'.<sup>6</sup> This confirms the findings of Puri and Verma that the source of the Ghaggar (Sarasvatī) lay high up in the Himalayas from where the Yamunā also originated, thus making the sand similar in both the cases. Further, as Raikes has very aptly captioned his paper just referred to, viz. 'Kalibangan: Death from Natural causes', the Harappan settlement at Kalibangan came to a sudden end because of the drying up of the Ghaggar, even though it was still in a Mature stage and not decaying and ending up in a normal process.

<sup>6</sup> Robert Raikes. 1968. Kalibangan: Death from Natural Causes. *Antiquity*, XLII: 286-91.



Fig. 2.4 Appearance of Bata-Markanda Divide (After Puri and Verma 1998)



Fig. 2.5 General view of boring platform for hydrological investigations

The next question is: Is it possible to date the drying up of the Sarasvatī? While geologists have not yet come up with any precise dating, archaeologists do have some noteworthy facts and figures to advance, based upon the radiocarbon method of dating. From the data given in detail in Chapter 3, it would be seen that **the Mature Harappan settlement at Kalibangan came to a sudden end around 2000 BC. In other words, this was the time when the Sarasvatī dried up.**

### THE EMERGENT PICTURE

From what has been stated in the preceding pages the following facts emerge, namely that –

- (i) the now-dry Ghaggar on whose bank Kalibangan stands was none other than the Sarasvatī of the *Rigveda*;
- (ii) it originated in the Himalayas and flowed all the way down to the sea;
- (iii) it dried up because of a tectonic upheaval in the Himalayan region which threw up a barrier known as the Bata-Markanda Divide, with the result that the path of the Sarasvatī was blocked and its water got diverted to the Yamunā via the Yamunā Tear; and
- (iv) This drying up of the Sarasvatī led to the abandonment of the Mature Harappan settlement at Kalibangan – an event that took place around 2000 BCE, as testified to by the radiocarbon dates.

We may now pass on to the most significant and concluding part of our discussion.

- (i) **Since the Sarasvatī was a mighty river flowing during the Rigvedic times and it dried up around 2000 BCE, the Rigveda has got to be earlier than 2000 BCE.** How much earlier, it is anybody's guess.
- (ii) According to the famous *Nadī-stuti Sūkta* of the *Rigveda* (RV 10.75.5-6), the area occupied by the Rigvedic Aryans extended from the upper reaches of the Gaṅgā – Yamunā on the east to the Indus and its western tributaries on the west.
- (iii) **If a simple question is now posed, viz. which archaeological culture flourished in this very area during the pendency of the Rigvedic times, i.e. prior to 2000 BCE?, the inescapable answer will have to be: The Harappan Culture. In other words, the Harappan Culture and Vedic Culture are just two faces of the same coin** (Fig. 2.6).

From time to time certain objections have been raised against the equation set forth in (iii) above. I have dealt exhaustively with the same in my book, *The Sarasvatī Flows On: The Continuity of Indian Culture* (2002; New Delhi: Aryan Books International) and I do not propose to burden the reader by re-hashing the same here. Those interested in the details thereof are requested to go through the relevant parts of that book (pp. 67-77).

Some Thoughts on The Now-Dry River on whose Bank Stands the Site of Kalibangan

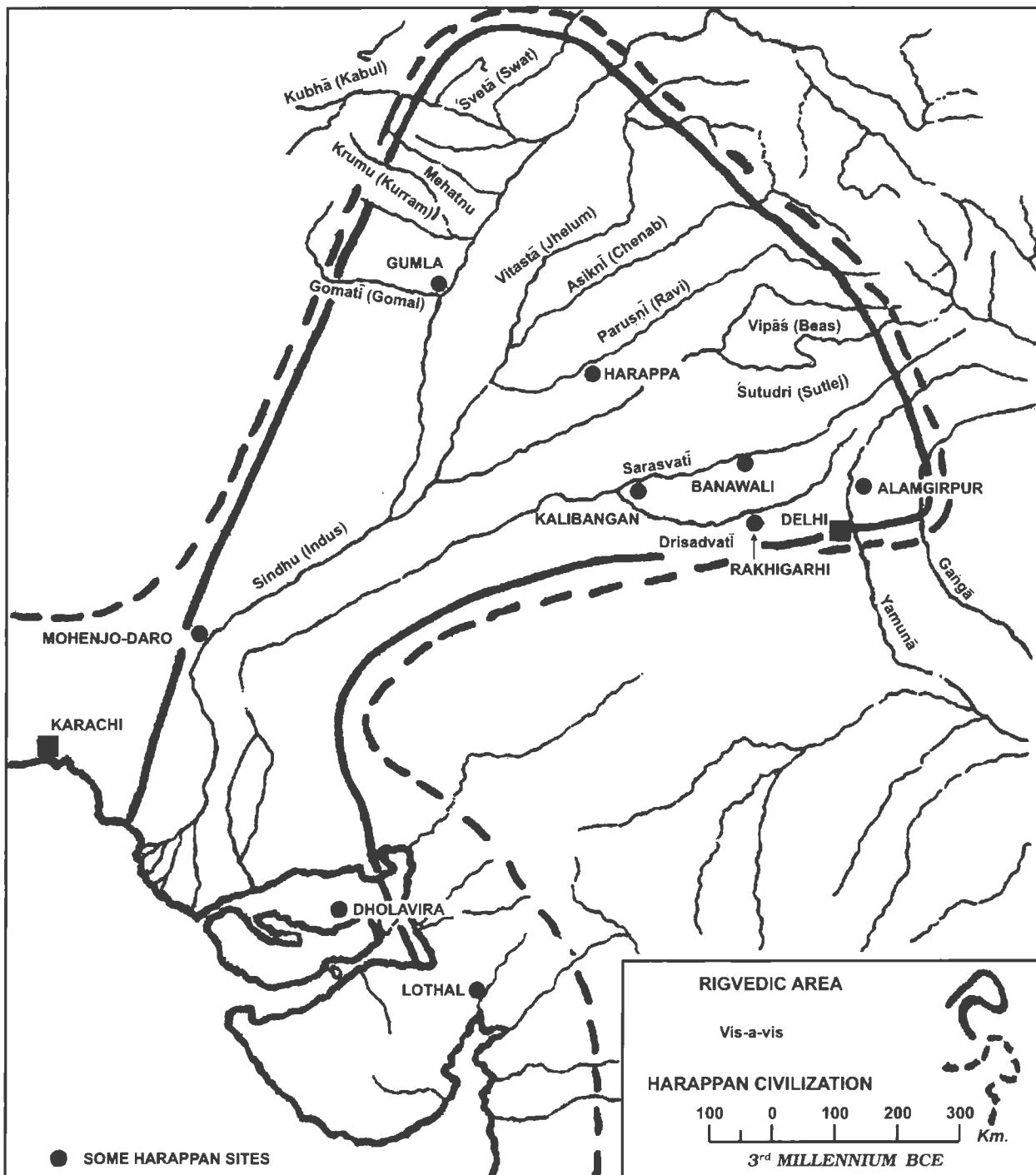
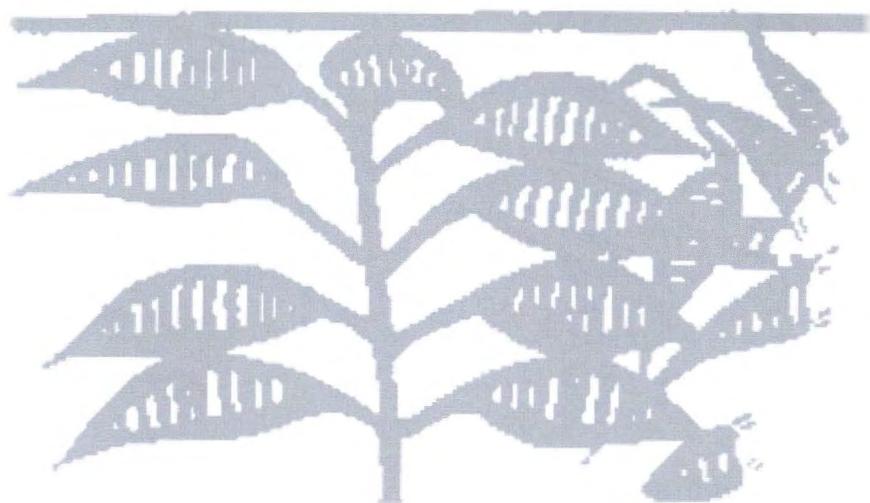


Fig. 2.6 Map showing a correlation between the Rigvedic area and the spread of the Harappan civilization, in the 3<sup>rd</sup> millennium BCE



9

# THE CHRONOLOGICAL HORIZON

B.B. LAL

CHAPTER

# 3

When in the 1920s the Harappan Civilization was discovered it was but natural to ascertain its chronological horizon. This was done mainly on the basis of the occurrence of certain specific objects of this civilization, such as seals, sealings, etched carnelian beads, etc. in strata of contemporary civilizations of West Asia, which had already been provisionally dated. On the basis of such a comparative study, Sir John Marshall dated the Harappan Civilization to circa 3250-2750 BCE. This dating, however, was tossed about later on by certain scholars, placing it within a wide range of circa 2500-1500 BCE on the one hand and a shorter range of 2300-2000 BCE on the other.

Now we have a method called the Radiocarbon Method, by which organic material, such as charcoal, wood, bone, etc., occurring in various strata is dated, giving what is generally regarded as a method of 'absolute dating'. In this context, however, it needs to be added that though relatively more reliable than the mere 'comparative method', even this method has its own pit-falls. For example, often charcoal samples, on the basis of which the dating rests, have been found contaminated either by roots of living trees which have gone all the way down intermixing with the samples concerned or by the seepage into and consequent absorption by these samples of water containing much later carbonaceous material. Such a mix-up will naturally give a much younger date, dependent on the degree of contamination. On the other hand, the radiocarbon dates can also be thrown back by centuries if the charcoal

comes from a piece of wood that itself was much older than the actual time when the wood was burnt, turning it into the charcoal picked up for dating.

Besides the foregoing, there have been changes in the half-life value of the carbon as also in the methods of calibration. Thus, at one point of time the half-life value stood at 5568, whereas later on it was upgraded to 5730. In so far as the calibrations are concerned, there have been three so far. As of now, the latest one (Calib-3) is considered to be the most reliable (perhaps awaiting the arrival of a fourth one!). Anyway, this is the one in use now, and is being adopted here in the case of Kalibangan as well.

We have altogether 28 dates for Period II (i.e. Mature Harappan) of Kalibangan. Based on their stratigraphic horizons, 5 of these samples belong to the Early Levels, while 10 and 13 respectively to Middle and Late. Initially, all these samples were examined by the Tata Institute of Fundamental Research, Bombay and are prefixed with TF in the Table below. However, there is one sample which bears 'P' as a prefix, which stands for the Laboratory of the University of Pennsylvania, where the dating of this particular sample was done. In order to cross-check the TF datings in general, parts of three charcoal samples, belonging one each respectively to Early, Middle and Late Levels, were sent to Birbal Sahni Institute of Palaeobotany, Lucknow. These are marked as TF (BS). It feels good to note that TF and BS datings are not far removed from each other.

In the Table that follows all the dates are given, mentioning the level to which they belong.

**Table: Mature Harappan Radiocarbon Dates from Kalibangan**

<b>Strati-graphic Level</b>	<b>Sample No.</b>	<b>Material</b>	<b>Based on 5568-Year Half-life</b>	<b>Based on 5730-Year Half-life</b>	<b>Calib-3 correction (1 Sigma and 2 Sigma)</b>
Late	TF-599	Inorganic fraction of animal bones	1930±100 BP AD 20± 100	1990±105 BP 40±105 BCE	1 Sig BCE 32 (AD80) AD223 2 Sig BCE 166 (AD80) AD336
Late	TF-138	Charcoal	3075±100 BP 1125±100 BCE	3165±105 BP 1215±105 BCE	1 Sig BCE 1427(1378,1345,1319) 1168 2 Sig BCE 1522 (1378,1345,1319) 1014
Late	TF-244	Charcoal	3250±90BP 1300±90 BCE	3340±95 BP 1390±95 BCE	1 Sig BCE 1620 (1516) 1419 2 Sig BCE 1737 (1516) 1316
Late	TF-143	Wood	3510±110 BP 1560±110 BCE	3615±110 BP 1665±110 BCE	1 Sig BCE 1959(1872,1840,1811, 1808, 1781) 1683 2 Sig. BCE 2135 (1872, 1840, 1811, 1808, 1781) 1524
Late	TF-946	Wood Charcoal	3605±100 BP 1655±100 BCE	3715±105 BP 1765±105 BCE	1 Sig BCE 2124(1940) 1778 2 Sig BCE 2271(1940) 1684
Late	TF-149	Charcoal	3675±140 BP 1725±140 BCE	3780±145 BP 1830±145 BCE	1 Sig BCE 2275(2033) 1828 2 Sig BCE 2463(2033) 1681
Late	TF(BS)-149	Charcoal	3585±120 BP 1635±120 BCE	3695±125 BP 1745±125 BCE	1 Sig BCE 2124(1919) 1747 2 Sig BCE 2279(1919) 1621
Late	TF-150	Charcoal	3740±100 BP 1790±100 BCE	3850±105 BP 1900±105 BCE	1 Sig BCE 2285(2137) 1976 2 Sig BCE 2460(2137) 1881
Late	TF-605	Charcoal	3810±105 BP 1860±105 BCE	3925±110 BP 1975±110 BCE	1 Sig BCE 2454(2272,2258,2204) 2043 2 Sig BCE 2558(2272,2258,2204) 1934
Late	P-481	Charcoal	3885±70 BP 1935±70 BCE	4000±75 BP 2050±75 BCE	1 Sig BCE 2462(2392,2387,2337) 2202 2 Sig BCE 2560(2392, 2387, 2337) 2069
Late	TF-153	Charcoal	3910±105 BP 1960±105 BCE	4025±110 BP 2075±110 BCE	1 Sig BCE 2558(2452,2423,2405) 2200 2 Sig BCE 2853(2452, 2423, 2405) 2038
Late	TF-25	Charcoal mixed with charred bone	3930±110 BP 1980±110 BCE	4040±115 BP 2090±115 BCE	1 Sig BCE 2568(2457) 2207 2 Sig BCE 2860 (2457) 2045
Late	TF-942	Charcoal	4055±110 BP 2105±110 BCE	4175±115 BP 2225±115 BCE	1 Sig BCE 2864 (2575, 2511, 2510) 2460 2 Sig BCE 2889 (2575, 2511, 2510) 2282
Middle	TF-152	Charcoal	3615±85 BP 1665±85 BCE	3720±90 BP 1770±90 BCE	1 Sig BCE 2121 (1948) 1789 2 Sig BCE 2195 (1948) 1741
Middle	TF(BS)-152	Charcoal	3570±125 BP 1620±125 BCE	3675±130 BP 1725±130 BCE	1 Sig BCE 2116 (1892) 1741 2 Sig BCE 2277 (1892) 1538
Middle	TF-142	Charcoal	3635±100 BP 1685±100 BCE	3740±105 BP 1790±105 BCE	1 Sig BCE 2136 (1975) 1828 2 Sig BCE 2283 (1975) 1705
Middle	TF-141	Charcoal	3705±110 BP 1755±110 BCE	3810±115 BP 1860±115 BCE	1 Sig BCE 2275 (2124,2082,2043) 1931 2 Sig BCE 2456 (2124,2082,2043) 1766

Middle	TF-139	Charcoal	3775±100 BP 1825±100 BCE	3880±105 BP 1930±105 BCE	1 Sig BCE 2391(2192,2157,2147) 2033 2 Sig BCE 2467(2192,2157,2147) 1898
Middle	TF-151	Charcoal	3800±100 BP 1850±100 BCE	3910±105 BP 1960±105 BCE	1 Sig. BCE 2450(2200) 2041 2 Sig BCE 2489(2200) 1934
Middle	TF-948	Wood Charcoal	3815±100 BP 1865±100 BCE	3930±105 BP 1980±105 BCE	1 Sig BCE 2454(2274,2243,2205) 2046 2 Sig BCE 2556(2274,2243,2205) 1946
Middle	TF-147	Charcoal	3865±100 BP 1915±100 BCE	3980±105 BP 2030±105 BCE	1 Sig BCE 2465(2321) 2144 2 Sig BCE 2580 (2321) 1987
Middle	TF-145	Charcoal	3895±100BP 1945±100 BCE	4010±105 BP 2060±105 BCE	1 Sig BCE 2481(2399,2376,2355) 2198 2 Sig BCE 2613(2399,2376,2355) 2039
Middle	TF-608	Charred Wheat	3910±110 BP 1960±110 BCE	4025±110 BP 2075±110 BCE	1 Sig BC 2558(2452,2423,2405) 2200 2 Sig BCE 2853(2452, 2423,2405) 2038
Early	TF-947	Wood Charcoal	3765±85 BP 1815±85 BCE	3875±90 BP 1925±90 BCE	1 Sig BCE 2289(2184,2163,2144) 2034 2 Sig BCE 2458(2184, 2163,2144) 1930
Early	TF-163	Charcoal	3910±100BP 1960±100 BCE	4030±105 BP 2080±105 BCE	1 Sig BCE 2553(2452,2423,2405) 2203 2 Sig BCE 2837(2452, 2423, 2405) 2044
Early	TF(BS)-163	Charcoal	3925±125BP 1975±125 BCE	4040±130 BP 2090±130 BCE	1 Sig BCE 2573(2456) 2200 2 Sig BCE 2867(2456) 2033
Early	TF-607	Charred Wheat	3930±120 BP 1980±120 BCE	4040±125 BP 2090±125 BCE	1 Sig BCE 2573(2457) 2203 2 Sig BCE 2866 (2457) 2038
Early	TF-160	Charcoal	4060±100BP 2110±100 BCE	4180±105 BP 2230±105 BCE	1 Sig BCE 2863(2577) 2464 2 Sig BCE 2886(2577) 2313

In spite of all the laurels that may be showered on the C-14 method of dating and its end-products, it is always necessary to take these dates with a pinch of salt. This becomes clear when we cast a closer glance at them. Thus, for example, a 25<sup>th</sup> Century BCE horizon is indicated for all the three levels, viz. Early (Sample Nos. TF-163, TF-(BS) 163 and TF-607). Middle (Sample No. TF-608) and Late (Sample Nos. TF-25, TF-153). However, we need not be so despondent, since if we go into the majority of the dates in a given level, we find that the picture is not so bleak. Thus, for the Early Levels, out of the five dates only one (TF-947) is in 22<sup>nd</sup> Century BCE, while three (TF-607 and TF-163, TF-(BS) 163 are in the 25<sup>th</sup> Century BCE, and one (TF-160) in the 26<sup>th</sup> Century BCE. This would imply that the Mature Harappan settlement at Kalibangan may have begun some time in the 26<sup>th</sup> Century BCE.

Now to the likely date of the end of the Mature Harappan settlement at Kalibangan. Here we may straightaway write off AD 80 (TF-599) since it requires no explanation to do so. One would have given some credence to the two late dates, viz. 1516 BCE (TF-244) and 1378/1345/1319 BCE (TF-138), but these are heavily out-voted by ten other dates, viz. TF-942, TF-25, TF-153, P-481, TF-605, TF-150, TF-149, TF(BS)-149, TF-946 and TF-143. Of these ten dates, the first nine fall between the 26<sup>th</sup> and 20<sup>th</sup> Century BCE and only one (TF-143) falls in the 19<sup>th</sup> Century BCE. The consensus of all these dates would, thus, indicate that the end of the Mature Harappan settlement at Kalibangan is not likely to be later than the 20<sup>th</sup> Century BCE.



# THE HARAPPAN SETTLEMENT AT KALIBANGAN— AN OVERVIEW

JAGAT PATI JOSHI

CHAPTER

# 4

The Harappan settlement at Kalibangan, (Lat. 29°29'N; Long. 74°08'E, Survey Sheet 44 K/SW). District Hanumangarh, Rajasthan is situated on the left bank of the Sarasvati and has been found spread in three mounds presently designated as KLB-1, KLB-2 and KLB-3 having an area of approximately 600 m x 450 m (Fig. 4.1). While in KLB-1 the Harappan settlement is on the top of Early Harappan occupation, KLB-2 has given the evidence of Early Harappans and Harappans living together upto middle levels and KLB-3 has seven fire altars of different types by the side of an enclosure wall and yielded overwhelming Harappan pottery with some Early Harappan pottery indicating use of ritualistic structures by both. It has no residential structures (Figs. 4.2 and 4.3).

When the settlement of Early Harappans had reached an average height of 1.60 m above the natural surface, the mound was temporarily abandoned as indicated by thin sandy layers following a seismic catastrophe as evidenced by the faulty strata and tilted one arm of the gateway. The mound was soon re-occupied by the Harappans and thereafter the structural character of this mound was changed. The settlement in KLB-1, comprised of a roughly parallelogram on plan, having two almost equal but separately patterned rhombs both of which were enclosed by a fortification wall ranging between 3 to 7 m in width and reinforced at intervals with regular salients and

towers. The fortification wall was built in two phases as revealed by the use of mud bricks. The earlier one has mud bricks of the size 40x20x10 cm and the later has bricks of the size of 30x15x7.5 cm. The southern rhomb had five to six platforms of mud and mud bricks, separated from one another and with approach steps from the passage between the platforms.

The northern half on the other rhomb, consisted of residential buildings, perhaps of the elite and had its own street plan with three to four entrances.

The fortification wall surrounded the entire citadel having three bastions in the northern side and two salients in the western side with a main stepped entrance on the southern side and a bipartite wall between the two rhombs having two salients and two bastions on the sides having a stepped brick on edge ramp for connecting the two parts. There are two corner bastions on the southern side and one salient and other having an entrance between the two projecting salients steps.

The settlement was well fortified by a fortification wall three to seven m. in width all around. Foundation of both the main fortification-walls and the salient cut through the strata or the structures of the preceding occupation. It is significant that unlike at other Harappan sites, at no place was the fortification wall integral with any of the platforms within the citadel, against the back of

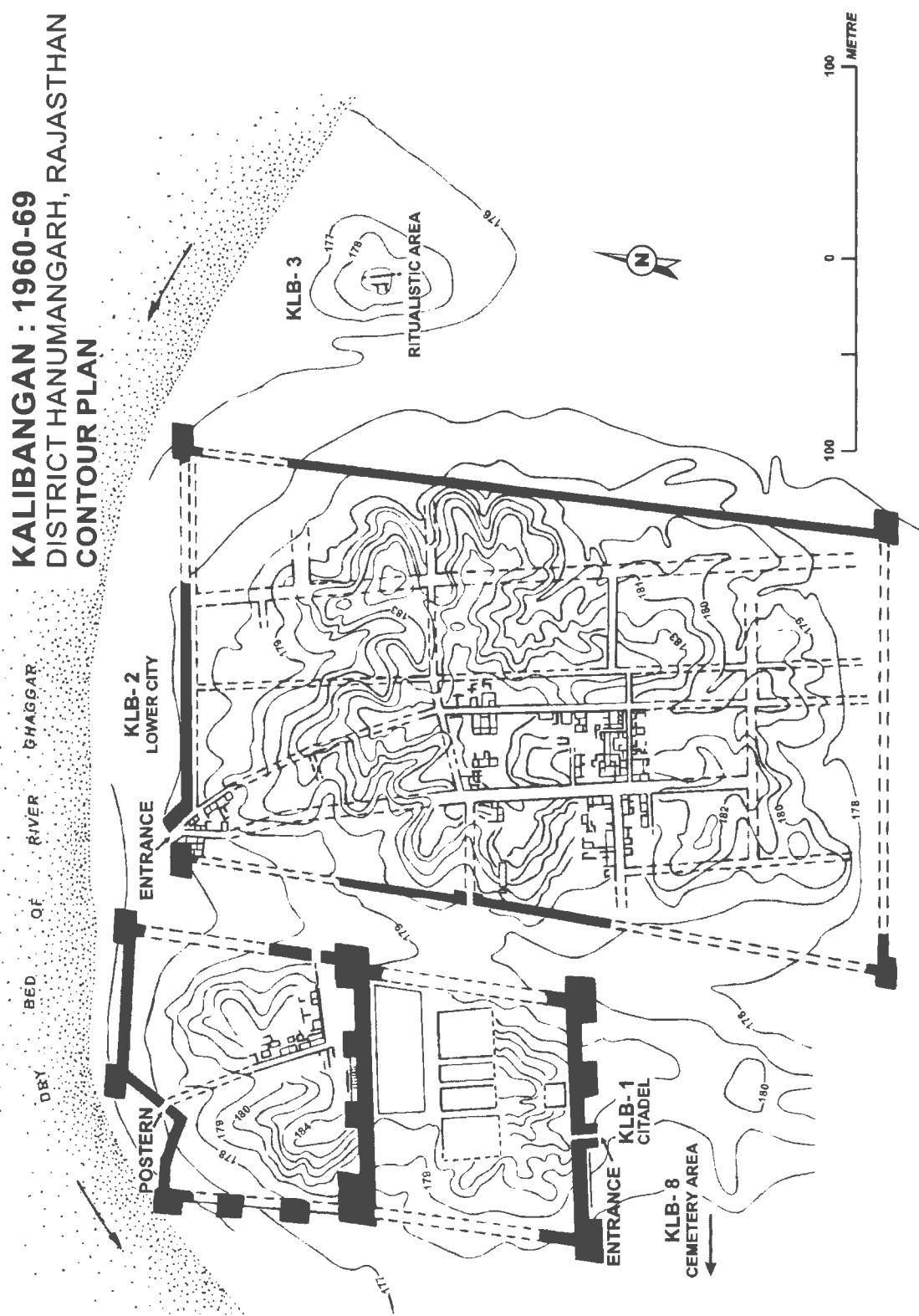


Fig. 4.1 Kalibagan: Contour plan showing archaeological areas

*The Harappan Settlement At Kalibangan – An Overview*



Fig. 4.2 Kalibangan: General view showing KLB-1 and KLB-2 mounds



Fig. 4.3 Kalibangan: General view showing KLB-1 and KLB-2 mounds

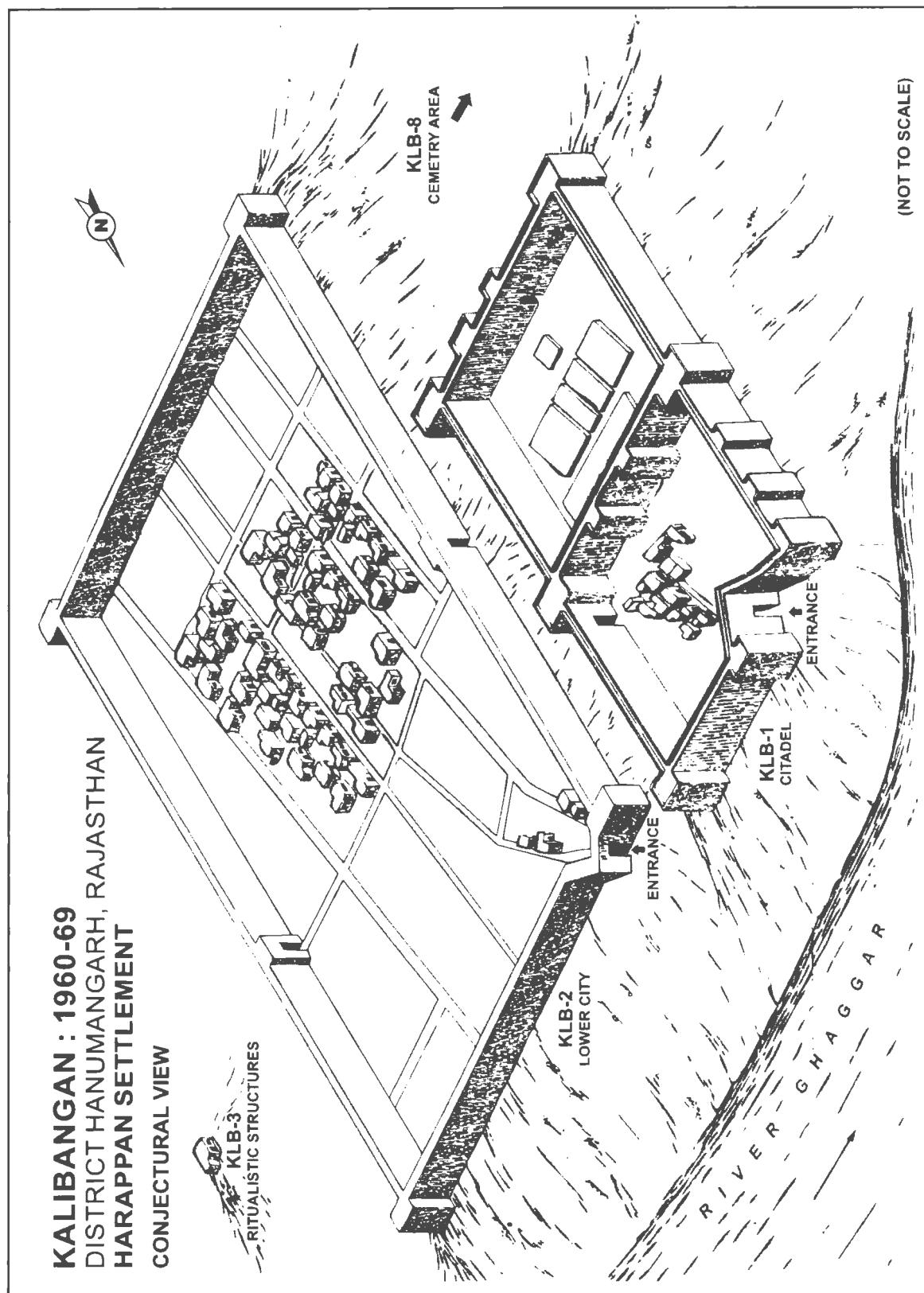
the fortification wall being normal occupation strata. That the fortification had become ineffective during the late phase of the citadel is amply demonstrated by the structures built against the eroded top of the central salient. A few cuttings across the alignment on the eastern and western side of the mound also proved the existence of the citadel fort wall on four sides. It may be inferred that the plan of the fortification fell roughly within the limits of a parallelogram (Fig. 4.4)

At KLB-1, the excavation had indicated the existence of a fortification-wall during the Harappan occupation, thus suggesting its function as a citadel.<sup>1</sup> On the southern side, where its vestiges were easily identified, the fortification wall was excavated to a continuous length of over 100 m exposing rectangular salients and a south-eastern corner-tower. Two sets of brick-sizes (40x20x10 and 30x15x7.5 cm with a margin of couple of cm), representing two principal structural phases, were observed in the masonry of this wall. In the earlier phase, showing the use of the larger-sized bricks, the width of the wall varied from 6.50 to 7 m, while in the latter, employing the smaller-sized bricks, the width was extended, at places on either side, to measure between 9 and 11 m. At some places, a further structural sub-division could also be differentiated in the latter phase. The salient projecting 9.35 m from the main face was 17 m and rose imposingly with a battered exterior. Of the south-western corner tower only the projection side was available, the remaining angles, being insufficiently

preserved to indicate dimensions, could hardly be reached. No remains of the south-western corner were traced. It was found that a large part of the structure had been completely eroded away. Between the latter and the central salient was exposed another projecting structure retaining four post-holes on the outer edge of the masonry. Its relationship with the fortification nearby and the precise function of the post-holes, have not yet been elucidated. Excavation also revealed that the foundations of both the main fortification-wall and the salient cut through the strata or the structures of the preceding occupation.

At KLB-2, the excavation uncovered an area of the township with its characteristic chess-board plan. Four arterial thoroughfares running north-south have so far been excavated, and it is surmised that within the unexcavated width of the mound two, if not three, more may be found. The width of the streets and thoroughfares ranged between 1.80 and 7.20 m and significantly enough approximated to the unit of about 1.80 m. While the north-south thoroughfares were found to run unimpeded, the east-west running lanes or streets did not cut across the former and were staggered in plan. Apart from rectangular platforms, no other encroachment was noticed in the thoroughfares and streets. In this typical grid layout of the township, each house faced at least two, if not three, streets, and with a rectangular plan, consisted of a courtyard often with a well and six or seven rooms aligned on the three sides. Within one of the rooms of almost each house was found the

<sup>1</sup> 'From the sites reported, only three excavated sites show the general layout of a "Citadel" and "Lower Town" (Fig. 1.2.3). Indeed, all western, smaller but higher mounds, have a north south axis with proportion of 1:2 (width to length). The "Citadel" at Mohenjo-daro and Harappa show the same size (200 by 400 m). That of Kalibangan is smaller (150 by 300 m). At Mohenjo-daro the "Citadel" covers 1/7 of the whole area, at Harappa 1/6 and at Kalibangan 1/3 of it'. M.Jansen, 'Settlement pattern in the Harappa Culture' in *South Asian Archaeology*, 1979 (Ed. M.Hartal) Dietrich Reimer Verloug, Berlin, p.253.



PURAN CHAND MUKHIYA

Fig. 4.4

curious 'fire-altar', sometimes also in successive levels, indicating their recurrent function. The houses were made of mud-bricks of the size of 30x15x7.50 cm, laid in regular courses of headers and stretchers simulating the characteristic English bond.

At KLB-3, situated to the east of KLB-2 is a low mound; excavation has revealed a number of fire altars against a wall. No other domestic structure has been found in this mound. Thus, it appears to be an area meant for rituals.

# KLB-1 STRATIGRAPHY AND STRUCTURES

JAGAT PATI JOSHI

## 1. STRATIGRAPHY

### TRENCH ZG-9 & ZH-9, SECTION LOOKING NORTH ACROSS THE FORTIFICATION, Fig. 5.1

This section gives a clear picture of the Early Harappan fortification wall and also shows how the succeeding Harappans built their fortification of the citadel.

In this section there are only two universal layers besides one local layer (IA). Layer (1) consisting of loose eroded material with potsherds and small mud-brick debris. This layer seals the fortification-wall running north-south. It has an average thickness of 20-45 cm. Layer (IA) occurs in the western side of the quadrant. It consists of ash and charcoal with mud-brickbats. It has an average thickness of 100-80 cm. This is a layer occurring below layer (1). It is a uniform compact burnt clay layer with chunks. Here, the width of the Early Harappan fortification is 4 m. The Harappans have added a revetment on the western side having a width of 1.75 m and on the east 1.55 m. The Harappan revetment is cut into the deposit against Early Harappan fortification.

### TRENCH XJ-1, XE-1, E-1, SECTION LOOKING NORTH, Fig. 5.2

This is a section which has been cut across the KLB-1 mound (southern side) showing the rampart, platforms and

drains in relation to stratigraphy. This is an important section, which reveals the construction of various structures and their phases. This section cuts the layout of trenches from east to west.

The eastern side of the section between pegs XJ-1 to XH-1 is eroded, but remains of Early Harappan fortification with five courses are available extending in an area of 4.50 m (east-west). However, the overlying Harappan fortification though damaged and eroded is available leaving a basal width of 6.50 m. The two phases of the fortification wall are very well seen in section looking in trenches – XD-2-3. Similarly how the Early Harappan wall further extended and in both sides could also be seen in section.

The section XE-1 to C-1 gives the two phases of the mud brick platforms and drains. The section between pegs XB-1 to XC-1 gives the following stratigraphy:- Layer (1) is humus and it has been cut by a pit having a deposit of 1.10 m.; layer (2) is composed of loose earth and ash and is 20 cm. thick; layer (3) is composed of ash, potsherds, brick bats and loose earth and is 40 cm. thick; layer (4) is 30 cm. thick composed of compact layer. Layer (5) is 30 cm. thick and is composed of loose earth. Layer (6) is 25 cm. thick and composed of loose earth. Layer (7) is slightly compact earth with loose patches and is 30 cm. thick. On the top of layer (8) a platform of phase II has been found with four courses of bricks. It has a width of 5.30 cm. On the top, in layer (6) a drain has been cut with

a foundation trench. The wall of the drain on the eastern side is 60 cm, and on the western side it is 60 cm. having a mouth of 55 cm. The drain has been cut into layer (8) and (8A). Layer no. (9) consists of loose earth; it has an average width of 35 cm. Layer (10) seals the earlier platform having 12 courses of bricks.

This earlier phase of platform is built on layer (16). Layers (10), (11), (12), (13) (14) and (15) are contemporary layers to the platform. Layer (10) is 30 cm. having brickbats and loose earth. Layer (11) is 35 cm. thick having loose earth. Layer (12) is 20 cm. thick and also consists of loose earth; layer (13) is compact earth and is 20 cm. thick. Layer (14) is made of hard compact earth and is 25 cm. in thickness. Layer (15) is a wide layer having very compact earth and is 40 cm. thick. Layer (15) is again a compact layer having a thickness of 10 cm. Layer (16), (17) and (18) are loose in character and have ash with a thickness of 30 cm. Layers (19) to (23) are of Early Harappan horizon with a structure having nine courses. Below peg XA layer (10) seals drain having a mouth of 55 cm. The floor of the drain is also covered by bricks. The drain is 60 cm. deep. This drain is sealed by layer (10) and cut into layers (11), (12), (13) and (14). From peg XB-1 to E-1 below layer (15) is natural. In this section the maximum excavated depth is 6.15 m. out of which 4.55 m. belongs to Harappan occupation which starts after the Early Harappan occupation of about 1.60 m.

Between XA-1 and A-1, just at the top of the section, above a huge pit, a wall of 1 m. width having seven courses and one course of burnt brick has been found just below the humus. The wall has a height of 60 cm. Just below layer

(8A) above the western edge of a platform 'C' which runs from XA-1 to A-1. Again the western side of the platform is available in a stepped fashion having 6 to 12 layers which are its contemporary deposits. The western most edge of the platform is available at 2.10 m. west of peg E-1.

#### **ZB-10, SECTION LOOKING SOUTH, Fig. 5.3**

This section is in the northern rhomb in the residential area of the citadel and gives the stratigraphy of the area which is as below:-

Layer (1) is humus which is cut by pits. It seals mud brick wall with a closed drain having a mouth of 10 cm. with five courses of bricks. This belongs to phase V; the width of the wall is 85 cm. It contains humus and loose earth and is having a thickness of 25 cm. Layer (2) which occurs below (1) is 20 cm thick and contains loose earth. Layer (3) has loose earth and hard chunks earth is 10 cm. thick, layer (4) is 20 cm. thick with loose earth and is made of hard chunks and brick bats. Layer (5) seals a drain belonging to Phase IV and which has a mouth of 25 cm. Along with it, STR-4 of 70 cm. width. Layer (6) is of hard material and is 40 cm. thickness. Layer (7) is 25 cm. thick which is a compact layer. Layer (11) is a compact layer having a thickness of 40 cm. Over layer (12) there are two successive structures (walls) one above another belonging to phases II and III. Layer (13) having loose earth and compact patches having a thickness of 30 cm. Layer (14) is a loose layer with compact patches having 20 cm thickness. Layer (14) has a wall of Phase I built over layer (15) which is a thick layer having a deposit 80 cm. over the natural soil.

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-1, TRENCH ZG-9 AND ZH-9  
**SECTION ACROSS FORTIFICATION-WALL**  
**SECTION, LOOKING NORTH**

1            0            1  
 METRE

WEST

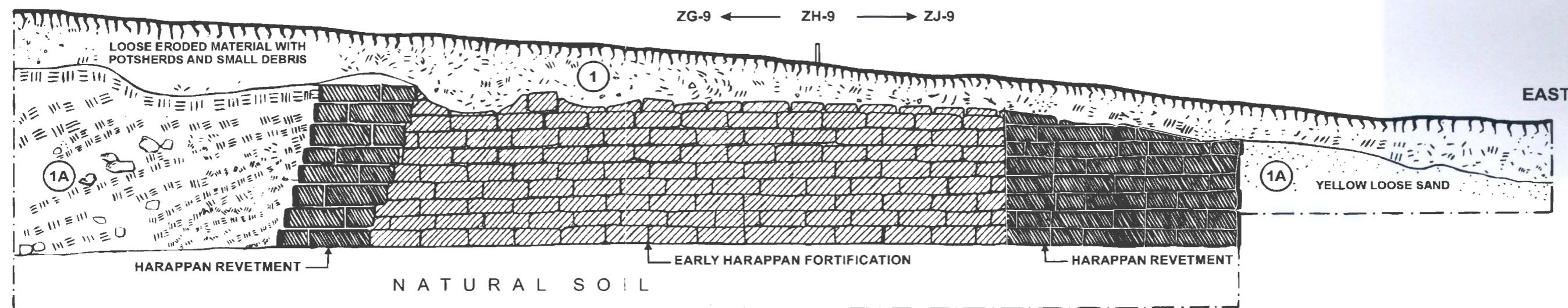


Fig. 5.1



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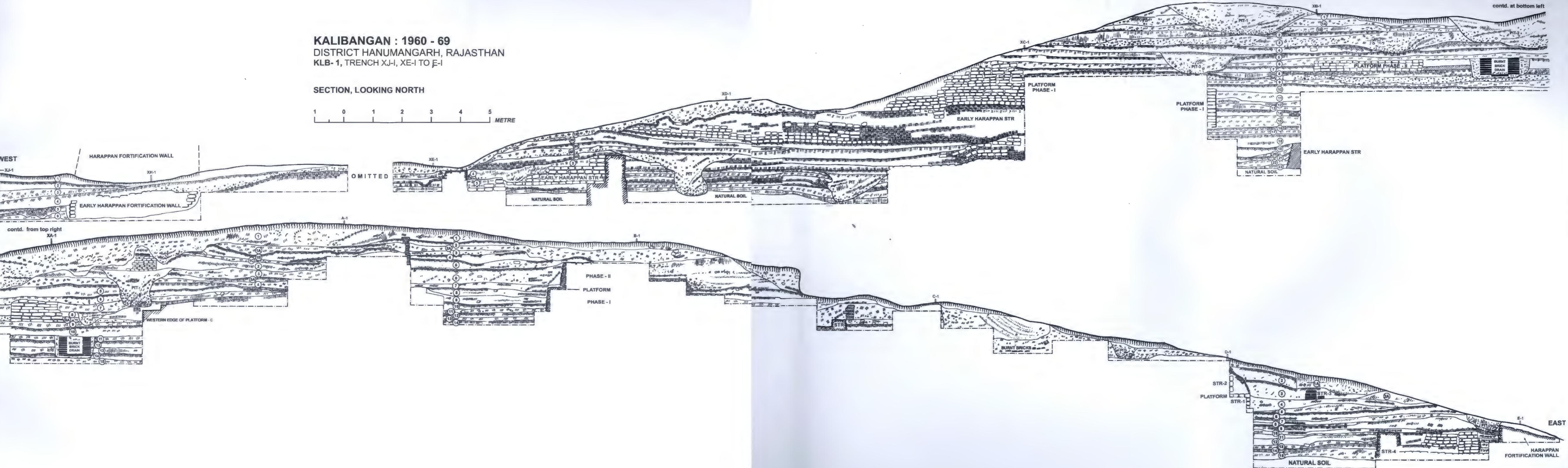


Fig. 5.2



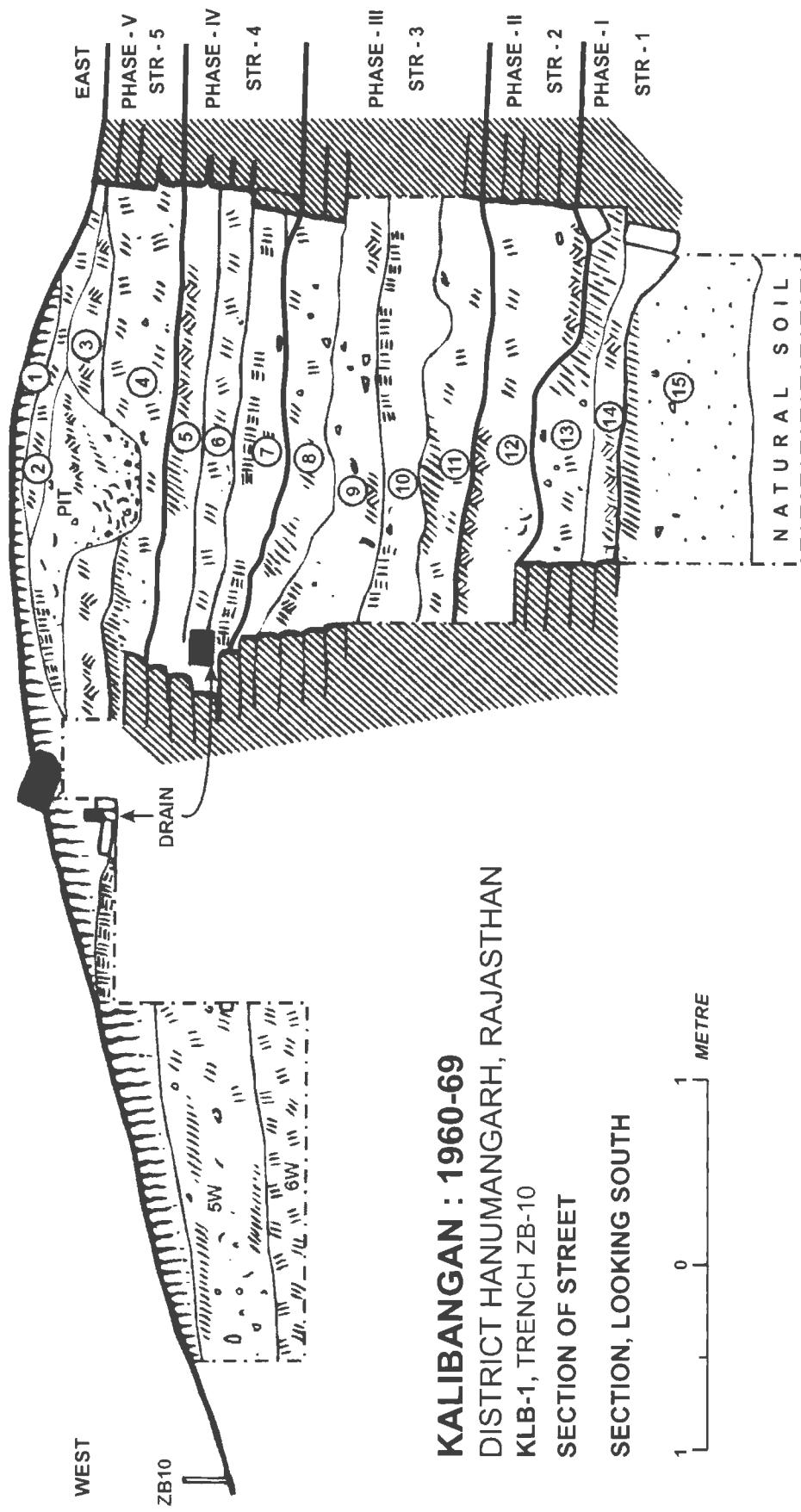


Fig. 5.3

### **TRENCH ZD-2 AND ZD-3 QD-2, SECTION LOOKING WEST, Fig. 5.4**

This is an important section looking west showing two phases of the Harappan fortification wall which were built on the top of layer (13) having 12 courses of bricks of size of 20x40x10cm. This is the first phase of the fortification. The second phase of the Harappan fortification begins from the top of layer (9).

In this section layer (1) is humus having a 30 cm. deposit. Layer (2) consists of 40 cm. loose earth, bone and charcoal pieces. Layer (3) is a loose deposit of 40 cm. with bone pieces and brick bats. Layer (5) is made of loose ashy patches, bone pieces, and brick bats. Layer (6) is loose clay having pot sherds with a thickness of 35 cm. having water deposition marks. Layer (7), having a deposit of 40 cm. with compact earth and bone pieces. Layer (8) consists of earth with ash and charcoal loose in nature having a deposit of 30 cm. The upper most layers strike against the burnt brick structure over the rampart while layers (4) to (8) are contemporary to Phase II of the fortification wall. Layer (9) is compact earth with water marks having 40 cm. thick deposit. Layer (10) is a compact layer with more water marks having a thickness of 40 cm. Layer (11) contains debris material and 25 cm. thick. Layer (12) has loose patches with charcoal. It is 40 cm. thick. Layer (13) consists of loose earth and has been exposed to a width of 24 cm.

### **TRENCH ZE-4 AND ZF-4 SECTION LOOKING NORTH, Fig. 5.5**

This is a section, which clearly shows the gap between the platform and the fortification wall. The gap is 2.50 m wide filled with compact earth, sand and potsherds. While layer (1) seals the Harappan platform and the fortification

wall having a batter in angle 80°. The Harappan wall is having thirteen courses in all. This wall stands over an Early Harappan wall. The height of the wall is 1.60 m while the platform has a height 1.50 m. Layer (1A) is a local layer. Layer (2) is a loose deposit having a thickness of 80 cm. followed by layer (3) which is 70 cm thick and is composed of compact clayey earth. The layer is just above the Natural Soil. There is an Early Harappan wall having two courses in the area between the gap.

(For Concordance of Layers see Fig. 5.6)

## **2. STRUCTURES, Fig. 5.7**

### **(A) The Fortification Wall (Eastern side, Northern side, Western Side, Southern Side), Bastions, Gateways and Entrances, Bipartite Wall**

- (a) The Bipartite wall
- (b) Bastions
- (c) Gateways
- (d) Entrances

Catalogue of Structures Trench wise : A-5, A-6, B-1, B-5, B-6, C-6, D-1, D-6, XA-1, XA-4, XA-5, XB-1, XB-6, XC-1, XC-6, XD-6, YA-1, YA-4, YC-2, YG-11, YG-12, YG-13, YG-14, YG-15, YG-16, ZA-8, ZA-9, ZB-9, ZC-1, ZC-11, ZF-8 and ZG-11.

### **(B) Northern Rhomb, Elite Residential Area**

- |         |   |
|---------|---|
| Group A | House complex, Drain                    |
| Group B | House complex                           |
| Group C | House complex                           |
| Group D | Stray walls and steps on Bipartite Wall |

Catalogue of structures Trench wise : ZA-7, ZA-8, ZB-8, ZB-9, ZC-7, ZC-9, ZD-7, ZD-9, ZE-7 and ZE-9

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-1, TRENCH ZD-2 AND ZD-3, Qd.-2  
 HARAPPAN FORTIFICATION WALL

SECTION, LOOKING WEST

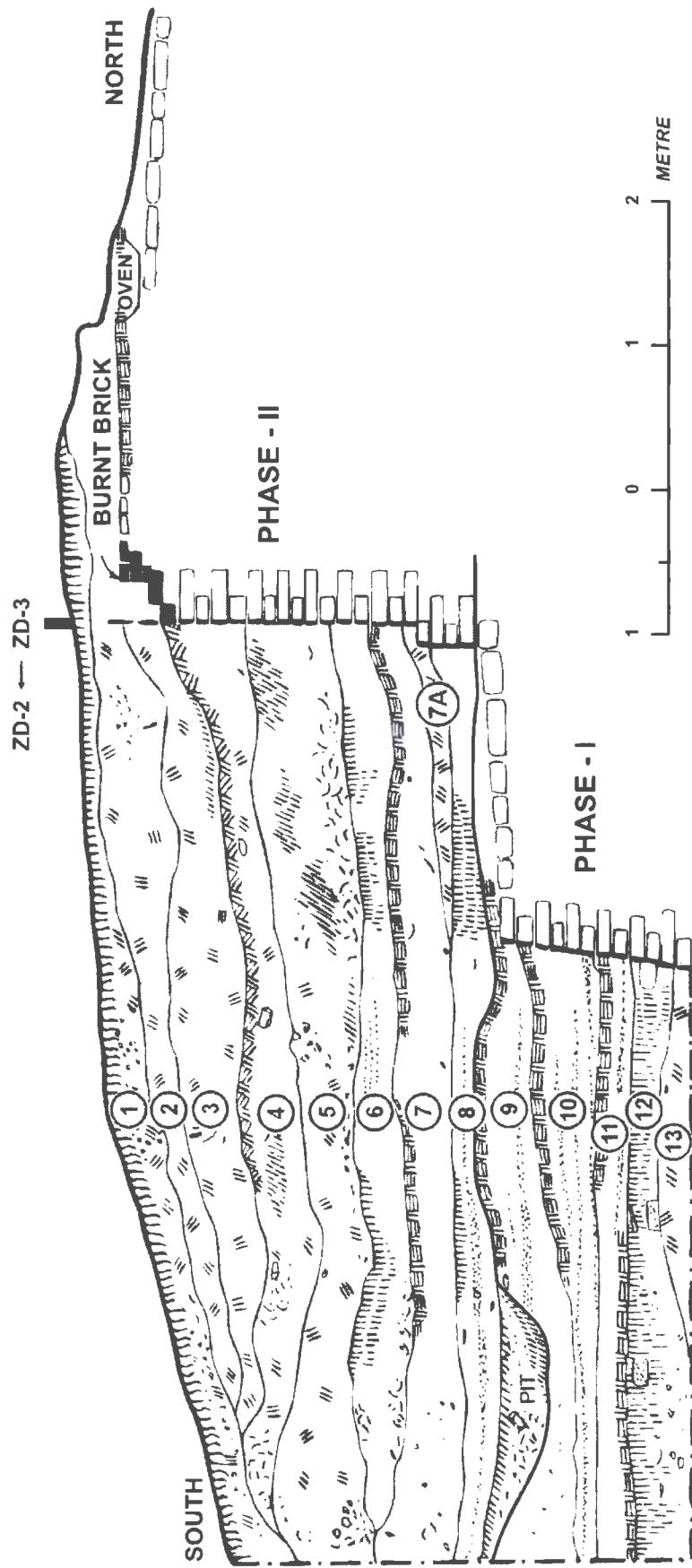


Fig. 5.4

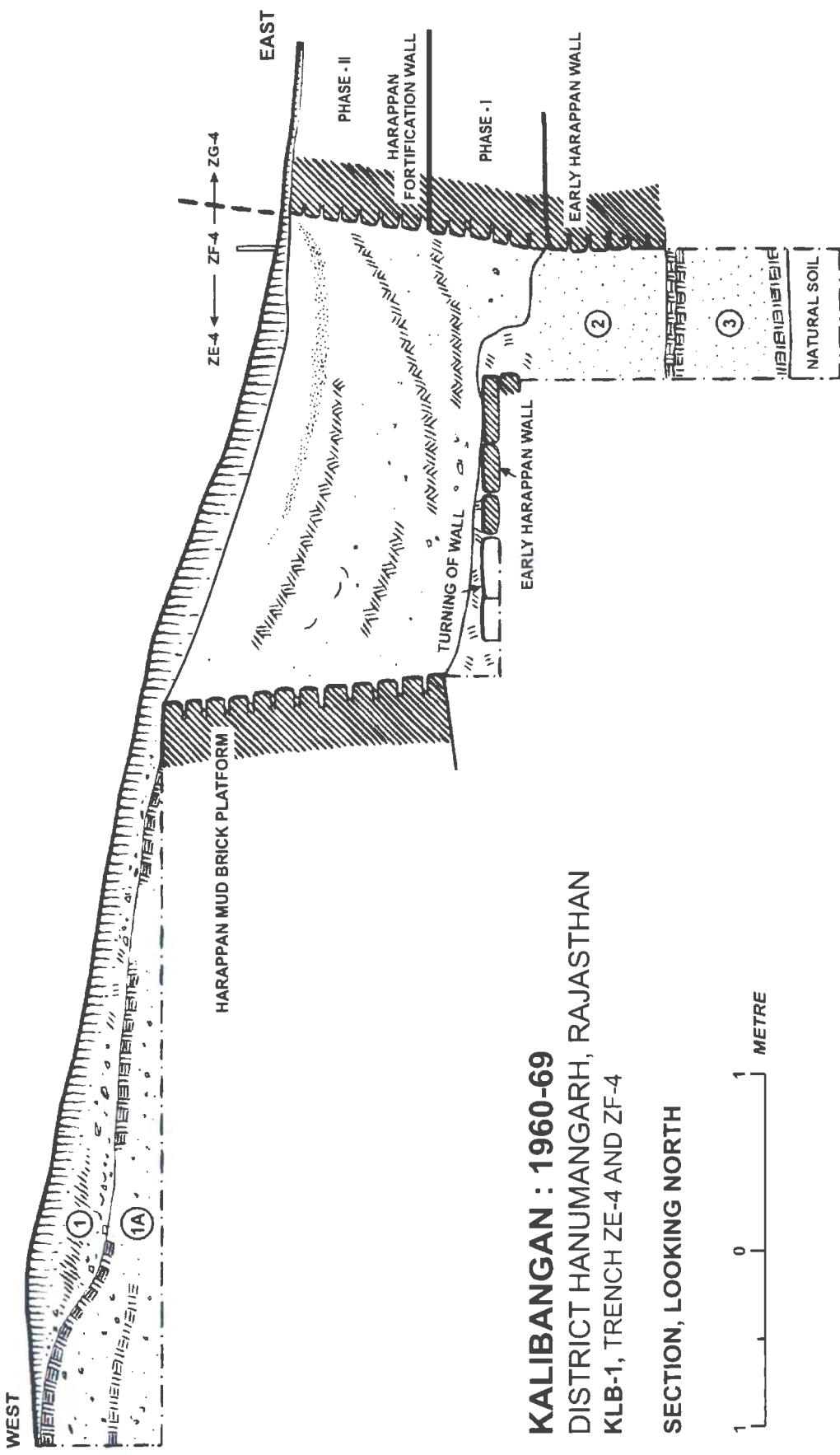


Fig. 5.5

**KLB-1**  
**CONCORDANCE OF HARAPPAN STRATA**

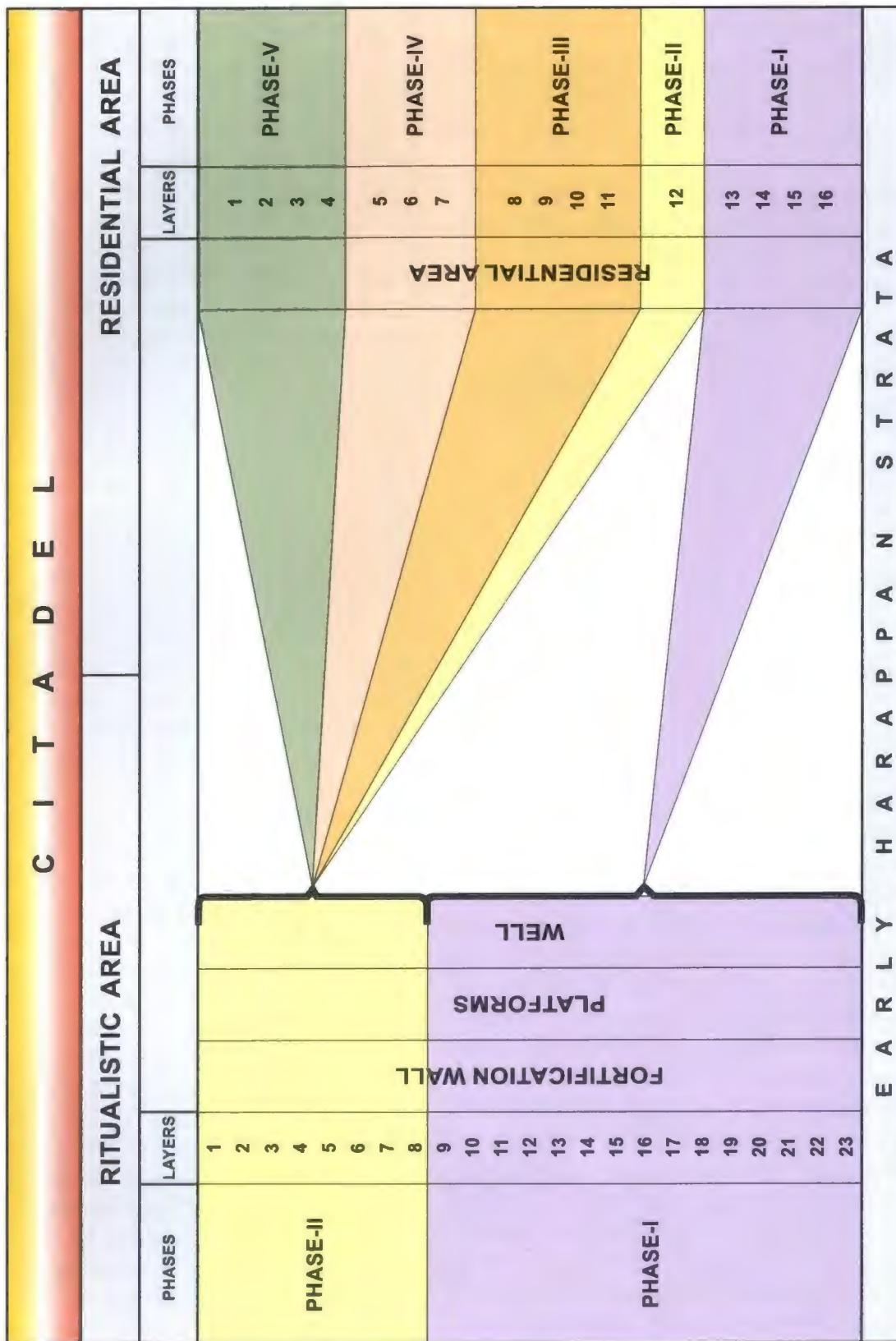


Fig. 5.6

## (C) Southern Rhomb, The Ritualistic Area

Group E	Ceremonial Well with radial walls on Platform A
Group F	Sacrificial altars on Platform B
Group G	Platform B and Platform C, series of drain and bath platforms
Group H	Drains, ritualistic altars and a later drain cutting it on Platform D
Group I	Bathrooms on Platform I
Group J	Drains and structures on Platform J
Group K	Long Drain, steps on Platform K

Catalogue of structures Trench wise : B-1, XA-4, YA-4, YC-2, ZA-4 and ZC-4

**(i) THE FORTIFICATION**

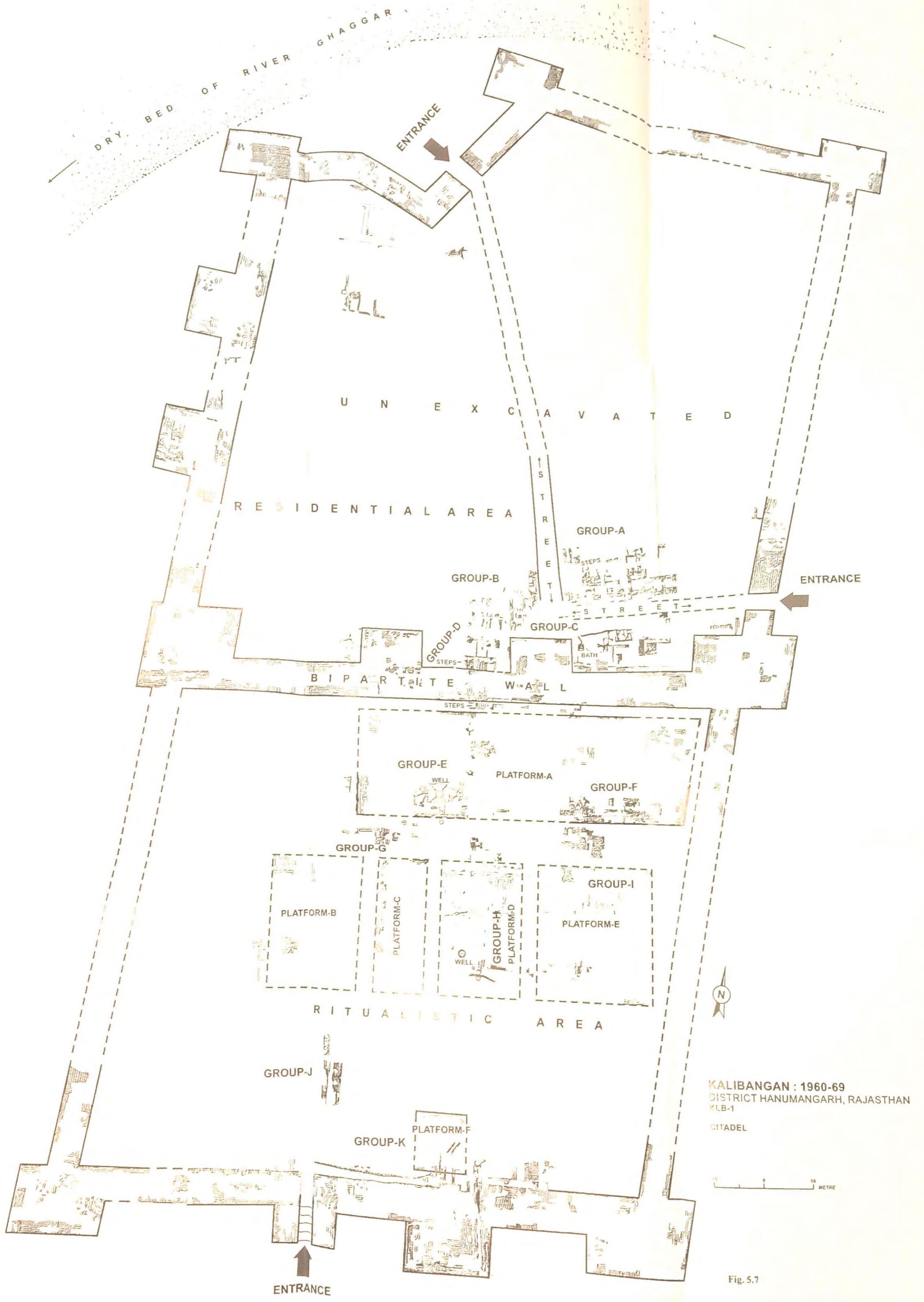
The citadel-mound (KLB-1) had already indicated the existence of the fortification-wall on the northern side of the northern half, which was thus shown to be similarly (Fig. 5.8) enclosed as the southern half. The entire length of the fortification-wall on the northern side, including the north-western corner bastions was exposed, the details of the north-eastern corner, being insufficiently preserved, remaining undetermined. The wall was found to run parallel to the partition-wall up to a length of about 85 m. from the eastern end; thereafter showed a re-entrant angle within which was located an unpretentious entrance. At the turning, this re-entrant was further marked by a salient in plan, projected nearly 6 m from the main wall. The north-western corner tower showed two projections on the northern side (Figs. 5.9, 5.10 and 5.11).

**EASTERN SIDE**

On the eastern side, sufficient stretches of the fortification-wall were traced at more than two places to establish its width and general alignment. At some places, the wall was found to be built on a fairly deep foundation, necessitated perhaps by the uneven and riven surface of the abandoned Early Harappan settlement. The width of the wall, which as elsewhere, showed two principal structural phases ranging between 4 and 5 m. The full length of the eastern side including the north-eastern turn was exposed. Since this side of the mound is very badly eroded, especially on the lower slopes, only the inner face of the fortification-wall was available, indicated at some places by the bottom course alone. Save at one place, the outer face was too eroded for determining the width of the wall or other features. At the north-eastern turn, the outer angles of the fortification-wall are insufficiently preserved to indicate its dimensions, much less any plan of the corner-tower.

**NORTHERN SIDE**

On the northern side, stretches of the wall were traced to its entire length, and it was found that the wall was built on the existing slope of the preceding occupation, which was often cut through or displaced for the foundations. The inner face of the fortification-wall bore mud-plaster, suggestive of its standing height above the inside ground level. On this side also it was seen that the mud-brick platform within the citadel-complex was not of one build structurally with the fortification-wall, at least in the earlier phase. A reasonably well-preserved angle of a massive mud-brick platform, separated from the fortification-wall by a 2.20 m. wide passage, was exposed to establish the above premises. The



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*Fig. 5.8 KLB1 Tunnel section below the Harappan (Period II) fortification wall on the north showing two successive phases of the early Harappan (Period I) fortification wall, looking north-west*



Fig. 5.9 KLB 1 *Bastion on the southern side*



Fig. 5.10 KLB 1 *Part view of the bastion on the southern side showing structures of different phases*



Fig. 5.11 KLB 1 *Close-up of batter of the wall northwestern corner tower*

fortification-wall at some places, notably in the central part of its length, showed a battered angle both on the exterior and the interior faces, the taper being obtained by thick coating of mud plaster. At the extant highest point, the wall was found to stand to a height of 3.40 m., with its outer face (in the earlier phase) battered back to an angle of 34°. The thickness of the wall was available at a couple of places, it still requires to be properly determined, keeping in view the projections and the salient (Figs. 5.12 and 5.12(a)). The western end of this wall is incompletely preserved, both its inner and outer angles being absent. Nevertheless, at the north-western turn, remains of an impressive structure, perhaps part of a corner-tower with a battered exterior were brought to light. This construction is in the nature of a reinforcement to an earlier damaged or eroded structure and both by the size of the bricks used and by the stratigraphic evidence, belonged to the second phase of the fortification-wall.

#### WESTERN SIDE

Despite patient search, no traces of the fortification-wall have been found on the western side beyond the turn of the corner tower. It may be recalled that no turning or re-entrant of the fortification was noticed at the south-western corner as well. The western side of the mound is badly riven by flood-water and modern depredations. It is likely, therefore, that all vestiges of the fortification-wall on this side have been completely lost due to erosion.

On the western side, however, further attempts to trace the outline of the Harappan fortification wall, further west of the already-trenched area, revealed the existence of an Early Harappan fortification-wall. While exposing its full width, typical

Harappan bricks (size: 40x20x10 cm.) were found well laid on the outer side indicating that the Harappans had used the existing Early Harappan fortification-wall on this side for raising their citadel-fortification. At some places, the eroded face of the existing Early Harappan fortification-wall, up to the height it was exposed, seems to have been reinforced by the Harappans by some sort of a mud-brick revetment. Whereas the alignment of the outer face of the Harappan fortification wall on this side, based at some places on the bottom course alone, could thus be recovered, its inner face and consequently its original width, being insufficiently preserved, remained unknown. However the remains of the fortification in its eroded and reinforced position is about 2 m in the basal stage.

#### SOUTHERN SIDE

On the southern side, the Early Harappan (Period I) fortification wall was exposed to a length of about 35 m. from the south-western end, beyond which distance it was found to be cut for the foundations of the Harappan fortification wall entrance complex and the salient. The outside face of this wall seems to have originally been plastered with mud, patches of which were still found at places.

Excavations at this citadel-mound had already indicated the existence of the fortification wall on the northern side of the northern half, which was thus shown to be similarly enclosed as the southern half. The entire length of the fortification wall on the northern side, including the north-western corner bastion, was exposed, the details of the north-eastern corner, being insufficiently preserved, remaining undetermined. The wall was found to run parallel to the partition-wall up to a length of about 85 m from the eastern



Fig. 5.12 KLB 1 Fortification wall and north-western corner bastion



Fig. 5.12 (a) KLB 1 Fortification wall and north-western corner bastion

end thereafter showed a re-entrant angle within which was located an unpretentious entrance. At the turning, this re-entrant was further marked by a salient which though incomplete in plan, projected nearly 6 m from the main wall. The north-western corner tower showed two projections on the northern side.

With the available data, the plan of the fortification would roughly conform to a rhomboid.

#### **(ii) THE BIPARTITE WALL, Figs. 5.13, 5.14, 5.15 and 5.16**

The bipartite wall of the fortification running east-west with three projections (one to the western side is to be imagined) called bastions divides the northern rhomb from the southern rhomb. The supposed length of the bipartite wall is 54 m. and it has a width of 8.30 m; stratigraphically speaking it is built over the early Harappan wall. The inner central bastion has a length of 15 m width 9 m and extant height is 5 m with 34 courses of mud bricks. The top of the central bastion is paved with bricks-on-edge. To the west of the central bastion there is a stair-case having 11 steps with a screen wall and the steps lead from east to west with a screen wall of bricks- on-edge. The steps have also been made on bricks-on-edge and has dimension of 15 cm x 19 cm with a platform of 2.40 m x 90 cm at the beginning.

Excavation in the south-eastern part of the northern half of the citadel revealed regular house-blocks on either side of a 2 m wide street which running obliquely from the eastern of the two centrally located salient, seems to extend to the entrance in the re-entrant angle of the fortification-wall.

#### **SALIENTS, Fig. 5.16**

The salient projecting 9.35 m from the main face was 17 m and rose imposingly with a battered exterior. Of the south-western corner-tower only the projection side was available, the remaining angles, being insufficiently preserved to indicate dimensions, could hardly be reached. No remnants of the south-western corner were traced. It was found that a large part of the structure had been completely eroded away. Between the latter and the central salient was exposed another projecting structure retaining four post-holes on the outer edge of the masonry. Its relationship with the fortification near by and the precise function of the post-holes, have not yet been elucidated. Excavation also revealed that the foundations of both the main fortification-wall and the salient cut through the strata or the structures of the preceding occupation.

#### **GATEWAYS, Figs. 5.17, 5.18 and 5.18(a)**

A corollary to the existence of fortification is a gateway. The site of an entrance belonging to the later phase of the fortifications was duly located on the southern side, between the central salient and the south-western end. This entrance by virtue of its being an unimpressive baked-brick structure had suffered very badly from modern spoliation. The passage-floor or steps along with its baked-brick flanking masonry, had been ransacked for bricks with the result that now only the superstructure of it remains. The passage was 2.65 m in width and in the absence of well-preserved structures could be inferred to be stepped fronting the main fortification wall and, across it, terraced or a sloping ramp to reach the high platforms within the citadel.



Fig. 5.13 KLB 1 View showing the early Harappan (Period I) structures running below the salient of the Harappan (Period II) bipartite fortification-wall looking south-east. The white band at the bottom represents the natural soil.



Fig. 5.14 KLB 1 Entrance stairway leading across the bipartite fortification-wall to the southern half of the citadel (Period II), looking west. The scale is placed against the northern face of the bipartite fortification-wall

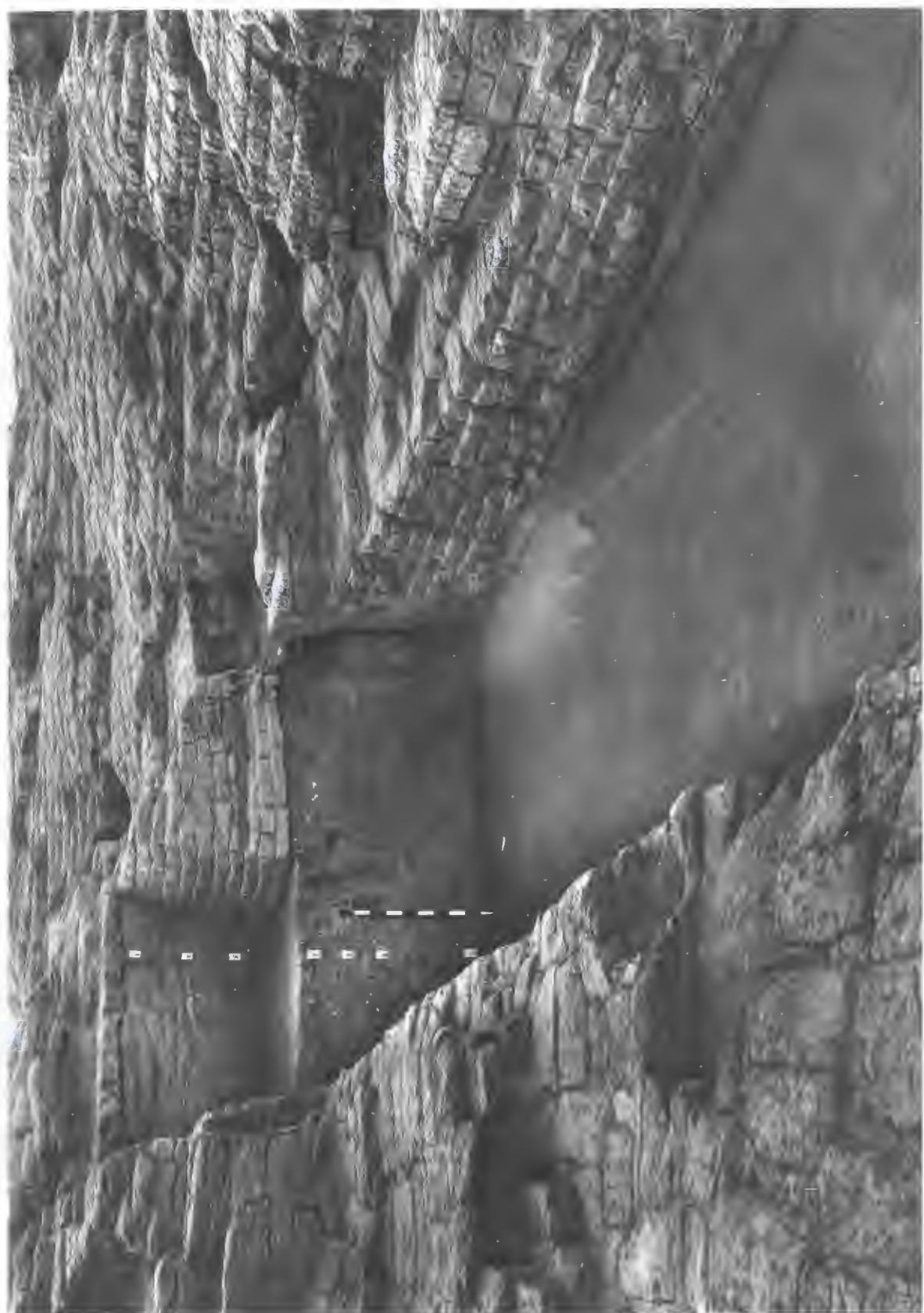


Fig. 5.15 KLB 1 Passage between inner face of bipartite fortification wall and platform (in the left margin). The buttress added in the later phase of the fortification-wall can be seen in the middle distance above the scale, looking north-west.



Fig. 5.16 KLB 1 A salient on bipartite fortification-wall of citadel (Period II), looking south-east

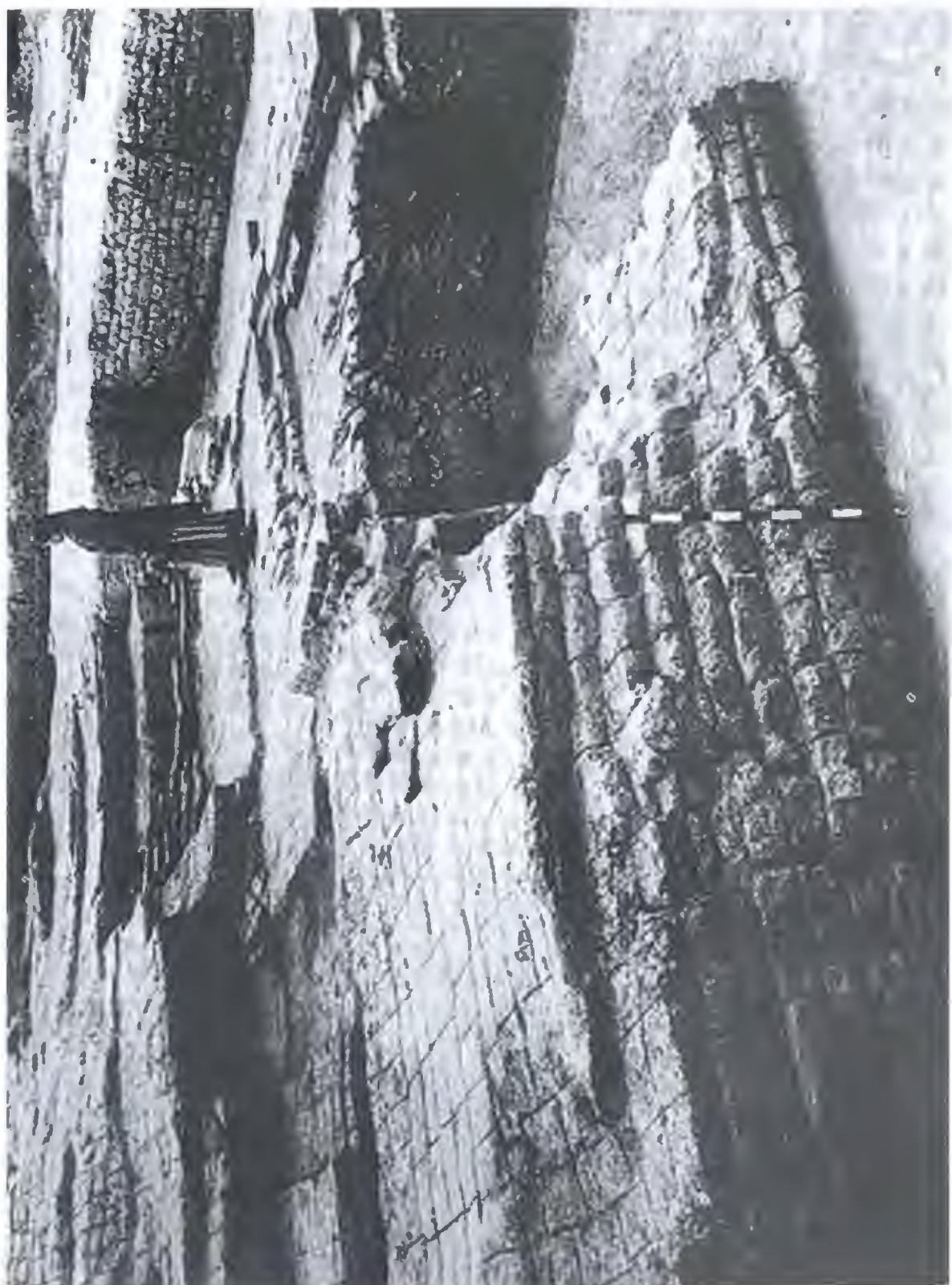


Fig. 5.17 KLB 1 Early-Harappan fortification-wall damaged by the Harappan (Period II) gateway-complex (looking north-east). The figure is standing in the entrance passage



Fig. 5.18 KLB 1 Gateway on the southern side



Fig. 5.18 (a) KLB 1 Post-holes on the side walls of the gateway

### (iii) ENTRANCES

Entrance to this part of the citadel from the north was through a stairway which, running along the outer face of the fortification-wall between the two centrally located salients, led up to the required height, at which passage across the fortification-wall was provided. In this entrance-complex again, two structural phases were recognized, of which the earlier consisted of steps of brick (size: 40x20x10 cm; riser, 10 cm and tread 40 cm), and the latter, perhaps of a ramp, screened by a 1.50 m wide wall (brick size: 30x15x7.5 cm). The site of an entrance belonging to the later phase of the fortifications was duly located on the southern side, between the central salient and the south-western end. This entrance by virtue of its being an impressive baked brick structure seems to have suffered very badly from modern despoliations. The passage-floor or steps along with its flanking masonry, which were of burnt bricks.

In this connection a few more points may be noted. Entry to the southern rhomb was through two gates, one each on the south and the north. Both the gates were flanked by salient, but the relevant point here is that in both cases there were steps leading up to the actual point of entry through the fortification-wall. Such provision clearly precluded the entry of any vehicular traffic into the southern rhomb. And perhaps this was as it should have been, for no one would appreciate people riding about in vehicles through what may perhaps more appropriately be termed a 'Temple-complex'.

The two entrances while having the common feature of being flanked by salient and provided with steps, showed some noteworthy difference in details. Thus,

while the staircase leading to the northern entrance was made of mud-brick alone and was not very wide, that on the southern side had mud-brick soiling with burnt-brick veneer, was much wider and had provision for a few landings too. This difference is understandable in the context of the relative use of the two entrances; viz. while the one on the northern side was used by only a limited number of people residing in the northern rhomb, that on the southern side was the real public entry, for all those coming from the 'Lower Town', as well as from the area immediately to the south of the southern rhomb itself. The burnt-brick veneer was evidently provided to meet the much greater wear and tear at this entrance.

In the context of the southern entrance, it may also be noted that on a footing to the east of the two salients flanking it, there were a few regularly spaced circular holes. While more of these holes could not be identified owing to large-scale spoliation of this as well as the western salient, it would appear that these were deliberately planned: a probable use might have been to insert poles, carrying banners at the top. Such a conjecture would seem to fit in with the public religious festivities which are likely to have taken place in the southern rhomb from time to time.

On the northern side of the southern rhomb, almost alongside the exterior face of its fortification-wall, there was a sufficiently wide mud-brick-on-edge pavement. It commenced near the eastern end and, on the basis of the few rows of brick-on-edge found along the exterior of the eastern of the two central salient, may be assumed to have run up to the flight of steps which led to the entrance into the southern rhomb from this side. One is tempted to surmise that on specified

occasions, there marched, on this paved pathway, a procession of priests, perhaps led by the high priest, and walking up along the flight of steps it entered the 'temple complex' of the southern rhomb, where the priests ascended one or separate platforms to perform or preside over the rituals. The laity by then had perhaps already gathered within the complex, entering it through the southern gate.

It has already been mentioned above that though the northern rhomb was also fortified, the fortification-wall in its case was, as it were, a supplement or extension of that surrounding the southern rhomb. (It may be recalled that the two central salients of the bipartite wall projected outwards into the northern rhomb, which gave the southern rhomb its primary status.) Within the northern rhomb there were no platforms, no congregational 'fire-altars', no sacrificial pits, but only residential houses planned on either side of a street which, starting off from near the eastern of the two central salients of the bipartite wall led to a river-side exit on the north-west. In these houses there evidently dwelt the priests and others connected with the administering of the rituals in the southern rhomb. There are a number of bath platforms, drains and an imposing double storeyed home perhaps belonging to an important person. One may also reasonably infer that in a priest-dominated society, such as the Indus one seems to have been, the civic administration also may have been handled, partly, largely or even wholly by these very priests. However, how priesthood was handed down and how the head priest, if any, was appointed will remain matters for guess work, at least until the seals begin to speak; or may be these too remain silent on this particular point.

In view of the foregoing, would it not be desirable to re-think about calling the western wing of the settlement the 'Citadel'— a term which usually implies a fortified seat of the king or chieftain in a purely political sense? To continue to regard it as the 'Citadel' would be to continue absorbing to the Indus Civilization, a polity, which the evidence does not seem to warrant. And it is this concept of the 'Citadel', which has been magnified into regarding it a 'well protected government headquarters either central or provincial'.

A large number of structures have been found at the citadel mound KLB-1 at Kalibangan during the Harappan Period. These have been designated in a two fold method. (i) The prominent structures, fortification wall, entrances, bipartite wall, bastions are marked as such and described; (ii) The other structures are marked and described groupwise. The various platforms in the ritualistic area are alphabetically marked and described in the catalogue. Thus the structures are divided into four groups i.e. A, B, C and D and in the Southern Rhomb, in the ritualistic area are seven groups i.e. E, F, G, H, I, J and K.

## CATALOGUE OF STRUCTURES

### FORTIFICATION WALL AND BASTIONS

#### 1. TRENCH NO. A-5

1. Location KLB-1 Square No. A-5 Quadrant 2
2. Type of structure: Fortification Wall (mud brick)
3. Stratigraphic position : Layer (2) to (6)
4. Period and Structural phase: Harappan
5. Measurement of structure : (a) length (b) width (c) height As below

- 6. Number of courses : 9 to 14
- 7. Masonry and bond: English bond
- 8. Composition of mortar: Grey hard clay
- 9. Composition of plaster: No plaster
- 10. Orientation of longer axis: As below
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm. As below
- 13. State of preservation: In good state of preservation
- 14. Shape and other distinguishing features:

**STR 1 Fortification Wall (mud brick)** It is sealed by layer (1), its contemporary layer is (2). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 7.50 m (b) width 0.66 m (c) height 0.66 m. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

## 2. TRENCH NO. A-6

- 1. Location KLB-1 Square No. A-6 Quadrants 1 & 4
- 2. Type of structure: Fortification Wall (mud brick)
- 3. Stratigraphic position : Sealed by layer (1), (2) (3) (4) Contemporary layers
- 4. Period and Structural phase: Harappan, Phase I
- 5. Measurement of structure : (a) length (b) width (c) height As below
- 6. Number of courses : 7 to 10
- 7. Masonry and bond: Headers and stretchers, English Bond
- 8. Composition of mortar: Grey hard clay

- 9. Composition of plaster: No plaster
- 10. Orientation of longer axis: As below
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm. As below
- 13. State of preservation: In good state of preservation
- 14. Shape and other distinguishing features:

**STR 1 Fortification Wall** It is sealed by surface humus. Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 4.25 m (b) width 2.60 m. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 10 cm.

**STR 2 Fortification (Battered) Wall** It is sealed by layer (3), contemporary layer is (4). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 4.40 m (b) width 3.20 m (c) height 1.05 m. Number of courses is ten. Orientation of longer axis is north-south. Dimension of bricks: (a) length 43 & 40 cm (b) width 21 & 20 cm (c) thickness 10 cm.

**STR 3 Fortification (Battered) Wall** It is sealed by layer (2), layer (3) strikes against the wall contains mud-bricks and mud chunks. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 4.10 m (b) width 2.60 m (c) height 0.78 m. Number of courses is seven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.50 cm.

### 3. TRENCH NO. B-5

1. Location KLB-1 Square No. B-5 Quadrants 1 & 3
  2. Type of structure: Mass of mud bricks, mud brick Floor
  3. Stratigraphic position : Layer is (1) to (3)
  4. Period and Structural phase: Harappan, Phase I
  5. Measurement of structure : (a) length (b) width (c) height As below
  6. Number of courses : Two
  7. Masonry and bond: north-south in a row
  8. Composition of mortar: Thick clay
  9. Composition of plaster: Thick mud plaster mixed with about 4 to 5 cm crushed husk.
  10. Orientation of longer axis: As below
  11. Nature of bricks used: Mud-bricks
  12. Dimension of bricks: (a) length \_\_\_\_ (b) width \_\_\_\_ (c) thickness \_\_\_\_\_. As below
  13. State of preservation: Very well preserved
  14. Shape and other distinguishing features:
2. Type of structure: Fortification wall, Mass of mud bricks
  3. Stratigraphic position : Sealed by Layer (1)
  4. Period and Structural phase: Harappan, Phase II
  5. Measurement of structure : (a) length (b) width (c) height As below
  6. Number of courses : Not discovered
  7. Masonry and bond: Not discovered
  8. Composition of mortar: Brownish clay mortar
  9. Composition of plaster: Thick mud plaster about 4 to 5 cm mixed with crushed husk.
  10. Orientation of longer axis: As below
  11. Nature of bricks used: Mud-bricks
  12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm. As below
  13. State of preservation: Very well preserved
  14. Shape and other distinguishing features:

**STR 1 Mud-brick floor** It is sealed by layer (3) and is associated with STR 1 Qdt. of A-5 square. Its period and structural phase is Harappan. The floor is spread all over. Number of courses are two. Orientation of longer axis is north-south covering the western quadrant. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 10 cm.

### 4. TRENCH NO. B-6

1. Location KLB-1 Square No. B-6 Quadrants 1 & 2

**STR 1 Fortification Wall (Mass of mud bricks)** It is sealed by surface humus. Its period and structural phase is Harappan, Phase I. Number of courses is not discernable. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm, depth below surface 0.28 m.

**STR 2 Fortification Wall (Mass of mud bricks)** It is sealed by humus. Its period and structural phase is Harappan, Phase I. Measurement of structure is not determined. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness not determined (d) depth below surface 46 cm.

## 5. TRENCH NO. C-6

1. Location KLB-1 Square No. C-6 Quadrants 1, 3 & 4
2. Type of structure: Fortification wall (mud bricks)
3. Stratigraphic position : Sealed by humus
4. Period and Structural phase: Harappan
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Not determined
7. Masonry and bond: Not determined
8. Composition of mortar: Brownish Mud
9. Composition of plaster: No Plaster
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks/brunt-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm. As below
13. State of preservation:
14. Shape and other distinguishing features:

**STR 1 Fortification Wall (Mass of mud bricks)** It is sealed by humus. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 4.25 m (b) width 3.50 m (c) height not determined. Number of courses is not determined. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

## STR 2 Fortification (Mass of mud bricks)

It is sealed by humus. Its period and structural phase is Harappan, Phase II. Measurement of structure is 4.25 x 4.25 m. Number of courses is not clear. Orientation of longer axis is north to south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

## 6. TRENCH NO. XA-5

1. Location KLB-1 Square No. XA-5 Quadrant 2
2. Type of structure: Wall
3. Stratigraphic position : Layer (1) to (14)
4. Period and Structural phase: Harappan, Phase I
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : 2 to 24
7. Masonry and bond: Headers and stretchers
8. Composition of mortar: Mud
9. Composition of plaster: Nil
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm. As below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Fortification Wall** It is just below surface and contemporary layers are (1x) (2x) (3x) (4x) (5x) (6x) (7x) (8x) (9x) (10x) (11x) (12x) (13x) (14x) (14ax) (14bx) (14cx). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length spread all over 4.25 m (b) width spread in 4.25 (c) height 2.60 m. Number of courses is twenty four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 2 Fortification Wall** It is sealed by (8cx) to (8x) contemporary STR 1. Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 1.40 m (b) width 70 cm. (c) height 90 cm. Number of courses is eight.

Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

### 7. TRENCH NO. XB-1

1. Location KLB-1 Square No. XB-1 Quadrant 2
2. Type of structure: Indeterminate
3. Stratigraphic position : Sealed by (1)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length .92 m (b) width .42 m (c) height 20 cm
6. Number of courses: Three
7. Masonry and bond: Irregular
8. Composition of mortar: Compact clay
9. Composition of plaster: Plaster not found
10. Orientation of longer axis: North to south
11. Nature of bricks used: Kiln burnt-bricks
12. Dimension of bricks: (a) length 25 cm (b) width 12.50 cm (c) thickness 7 cm
13. State of preservation: Very well preserved bricks with thick mortar lines.
14. Shape and other distinguishing features: The structure coming out of the section looking north ends abruptly.
6. Number of courses : Not discovered
7. Masonry and bond: Not discovered
8. Composition of mortar: Brown mortar
9. Composition of plaster: No plaster
10. Orientation of longer axis: North-south
11. Nature of bricks used: Brownish red mud-brick
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm, depth below surface 40 cm (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm, depth below surface 53 cm
13. State of preservation: Very bad

### 9. TRENCH NO. XC-6

1. Location KLB-1 Square No. XC-6 Quadrant 2
2. Type of structure: Fortification Wall on plan
3. Stratigraphic position : sealed by surface humus
4. Period and Structural phase: Harappan
5. Measurement of structure : (a) length 4 m (b) width 2.50 m (c) height not discernable
6. Dimension of bricks: (A) (a) length 38 cm (b) width 19 cm; (B) (a) length 34 cm (b) width 17 cm; (C)(a) length 34 cm (b) width 17 cm
7. State of preservation: (A) + (B) type of bricks are of light yellow colour with brown mortar. (C) type of bricks are of brown colour with same brown mortar
8. Shape and other distinguishing features : It is available on plan only

### 8. TRENCH NO. XB-6

1. Location KLB-1 Square No. XB-6 Quadrants 3 and 4
2. Type of structure: Fortification Wall (Mass of mud bricks)
3. Stratigraphic position : Sealed by surface
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : Not determined

### 10. TRENCH NO. YC-2

1. Location KLB-1 Square No. YC-2 Quadrants 3 & 4
2. Type of structure: Platform

3. Stratigraphic position : Sealed by (8)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 4.00 m (b) width 1.30 m (c) height .20 m
6. Number of courses : Single/two
7. Masonry and bond: Stretchers
8. Composition of mortar: Fine clay
9. Composition of plaster: Not available
10. Orientation of longer axis: East to west
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 30 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Well preserved bricks, but mortar lines are not clear. The platform runs along the section looking south.
14. Shape and other distinguishing features : Platform

#### **11. TRENCH NOS. YG-11, YG-12, YG-15**

1. Location KLB-1 Square Nos. YG-11, YG-12, YG-15 Quadrants 1 & 3
2. Type of structure: Fortification wall (mud brick)
3. Stratigraphic position : Layer (1) seals it
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length (b) width (c) height as below
6. Number of courses : 4
7. Masonry and bond: Header and stretchers, English Bond
8. Composition of mortar: Greenish clay with grits
9. Composition of plaster: Clayey
10. Orientation of longer axis: as below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length (b) width (c) thickness as below
13. State of preservation: Good

14. Shape and other distinguishing features:

**STR 1 Fortification Wall** It is built on (1E). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 3.65 m (b) width 3.48 m (c) height 0.42 m. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 20 cm (c) thickness 10 cm.

**STR 2 Fortification Wall** It is found on the very surface. Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 2.65 m & 1.90 m (on two sides) (b) width 3 m (c) height 50 cm. Number of courses is five. Orientation of longer axis is north to south. Dimension of bricks: (a) length 30 cm (b) width 20 cm (c) thickness 10 cm.

#### **12. TRENCH NO. ZF-8**

1. Location KLB-1 Square No. ZF-8 Quadrant 2
2. Type of structure: Fortification wall
3. Stratigraphic position : Layers (1) to (4)
4. Period and Structural phase: Harappan
5. Measurement of structure : (a) length (b) width (c) height as below
6. Number of courses : 6 to 13 courses
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Mud
9. Composition of plaster: No plaster
10. Orientation of longer axis: as below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length (b) width (c) thickness as below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Fortification Wall (mud brick)** It is sealed by layer (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 2.55 m (b) width 1.95 m (c) height 1.38 m. Number of courses is thirteen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 38 cm (b) width 19 cm (c) thickness 10 to 12 cm and (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 2 Fortification Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 1.12 m (b) width 2.10 m (c) height 58 cm (so far). Number of courses : six courses (so far). Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

### 13. TRENCH NO. ZG-11

1. Location KLB-1 Square No. ZG-11 Quadrant 3
2. Type of structure: Fortification wall
3. Stratigraphic position : Below surface humus
4. Period and Structural phase: Harappan
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : 1 to 2 courses
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster:
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm As below
13. State of preservation: Good

14. Shape and other distinguishing features: Extremely fragile bricks.

**STR 1 Fortification Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 2.20 m (b) width 1.35 m (c) height 20 m. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 2 Fortification Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 4.25 m (b) width 0.85 m (c) height 0.26 m. Number of courses is 1½. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 3 Fortification Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 2.00 m (b) width 0.70 m (c) height 0.33 m. Number of courses is 2½. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 4 Fortification Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 2.00 m (b) width 0.70 m (c) height 10 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks:

(a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

## Salients

### 14. TRENCH NO. D-6

1. Location KLB-1 Square No. D-6 Quadrant 4
2. Type of structure: Salient of the fortification wall
3. Stratigraphic position : Sealed by layer (1)
4. Period and Structural phase: Harappan, Phase I
5. Measurement of structure : (a) length 3.77 m (b) width 3.25 m(c) height 10 cm.
6. Number of courses : One
7. Masonry and Bond: Header and stretcher, English Bond
8. Composition of mortar: Fine clay
9. Composition of plaster: Not available
10. Orientation of longer axis: East-west
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 44 cm (b) width 22 cm (c) thickness 10-11 cm
13. State of preservation: Good
14. Shape and other distinguishing features : The bricks are greyish in colour.

## Entrances

### 15. TRENCH NO. XD-6

1. Location KLB-1 Square No. XD-6 Quadrants 1 to 4
2. Type of structure: Entrance and Fortification Wall
3. Stratigraphic position : Surface sealed by humus, (1)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length (b) width (c) height As below

6. Number of courses : Not fully exposed, two
7. Masonry and bond: Stretcher, brick-bats-on-edge
8. Composition of mortar: Mud
9. Composition of plaster: Nil
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length \_\_\_\_ (b) width \_\_\_\_ (c) thickness \_\_\_\_\_. As below
13. State of preservation: Very bad
14. Shape and other distinguishing features: It is a gateway on southern side having two arms of the salients on both sides the width is 2.65 m having five steps on the ramp

**STR 1 Bastion of Fortification** It is sealed by humus. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 8 m (b) width 6.30 m. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Bastion of Fortification** It is sealed by humus. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 8 m (b) width 6 m. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2.1 Steps** Its stratigraphic position is not clear due to extensive brick robbing. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 3 m (b) width not found (c) height 40 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks:

(a) length 33 cm (b) width 17 cm (c) thickness 6 cm.

**STR 2.2** Its stratigraphic position is not clear due to extensive robbing. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 98 cm (b) width not clear (c) height 30 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 26 cm (b) width 12 cm (c) thickness 6 cm.

**STR 2.3** Its stratigraphic position is not clearly determined. However sealed by surface humus. Its period and structural phase is Harappan, Phase II. Number of courses is five. Orientation of longer axis is east to west as well as north-south. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 8 cm.

**STR 2.4** It is sealed by surface humus. Its period and structural phase is Harappan, Phase II. Orientation of longer axis is east to west. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 8 cm.

**STR 2.5** Its stratigraphic position is not clear due to extensive robbing. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 1.55 m (b) width not found (c) height 18 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 32 cm (b) width 14 cm (c) thickness 9 cm.

**STR 3 Semi-circular structure** It is sealed by humus. Its period and structural phase is Harappan, Phase I. Measurement of structure

is (a) length 2.45 m. Number of courses is two.

**STR 4 Fortification Wall** It is sealed by humus (1). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 4.20 m (b) width 0.75 m (c) height 2 m. Number of courses is eight. Orientation of longer axis is east-west. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

#### (a) NORTHERN RHOMB

#### The Elite Residential Area, Figs. 5.19 and 5.20

Excavation in the south-eastern part of the northern half of the citadel revealed regular house-blocks on either side of a 2-m wide street which, running obliquely from the eastern of the two centrally located salient, seems to extend to the entrance in the re-entrant angle of the fortification-wall on the river (northern) side. Due to the restricted extent of the dig complete plan of the houses, much less of each structural phase, could not be recovered. In one of the houses was found a storage jar, bearing an inscription in Harappan characters. The contents of the pot, however, do not indicate any special function of the pot. Sufficient open space was left between these houses and the fortification-wall, making them appear more insular than those of the lower city. The former were built of mud-bricks of the standard size (7.5 x 15 x 30 cm) used everywhere both in the citadel and lower city.

Excavation in the northern part of the citadel, outside the bipartite fortification-wall, notably in the area opposite the centrally-located salient revealed, in the

upper levels, remains of Harappan (Period II) houses along with such features as storage-jars in situ, hearths, terracotta drain-pipes inscribed, usual channel drains of baked bricks attached to bathing platforms, etc.

It was noticed that the houses were built well away from the outside face of the bipartite fortification-wall. The houses have been built in five phases as revealed by a section of the street. The structural activity as revealed by the excavations has been classified in four areas A, B, C and D.

## CATALOGUE OF STRUCTURES

### (i) Group A, Figs. 5.21, 5.22 and 5.23

However, on the eastern side of the street an impressive big house complex in ZC-9, ZD-9 and ZE-9 with an earlier phase having a staircase for going to the first floor could be identified. The details of the house plan is as below:- The house has a 2 m. wide entrance on the street side with an 'L' shaped passage opening into a courtyard 4.20 x 4.60 m with three rooms (4) 2.10 x 1.30 m; (5) 2.10 x 2.20 m; (6) 2.10 x 2.20 m in a row along with (7) rectangular room 3 m x 7.00 with a bathroom and a huge room or a courtyard (?) dimensions not determined. The rectangular room with bathroom was opened on one side to the courtyard and on the other it was connected with a room or inner courtyard. On the other side of the courtyard there were three rooms admeasuring (1) 2.60 x 2.00 m (2) 2.80 x 2.00 m (3) 2.90 x 2.50 m; the staircase for going to the first floor is also available to be approached from the court-yard side. Keeping in view the location of the rooms and elaborate space provided it could possibly be the house of a chief-priest (?) The entire complex is provided with huge drain 12

m long with side walls .80 - .90 m and having a passage of .90 m.

### 16. TRENCH NOS. ZC-9, ZD-9, ZE-9, ZC-8, ZD-8 AND ZE-8 GROUP A (RESIDENTIAL COMPLEX)

1. Location : KLB-1 Square Nos. ZC-9, ZD-9, ZE-9, ZC-8, ZD-8 and ZE-8 All Quadrants
2. Type of structure: House complex
3. Stratigraphic position: Built over layer (3) sealed by (1)
4. Period and Structural phase: Harappan, Phase V
5. Measurement of structure: (a) length 20 m (b) width 11 (c) height 1.20
6. Number of courses: 6 to 7
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: east-west
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a house complex having two sets of rooms (1) (2) (3) and (4) (5) (6) with a passage and courtyard. First floor is reached by a flight of steps from the courtyard.

### 17. TRENCH NOS. ZC-9, ZD-9, ZE-9 GROUP A (RESIDENTIAL COMPLEX)

1. Location : KLB-1 Square Nos. ZC-9, ZD-9, ZE-9 All Quadrants
2. Type of structure: Drain
3. Stratigraphic position: Cut into (3) and sealed by (2)
4. Period and Structural phase: Harappan, Phase V
5. Measurement of structure: (a)



*Fig. 5.19 KLB 1 Street N.S and house blocks on either side of the street*



*Fig. 5.20 KLB 1 House blocks in northern half of the citadel*

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN  
KLB-1, TRENCH ZC-9, ZD-9, ZE-9, ZC-8, ZD-8 AND ZE-8

IMPORTANT HOUSE-COMPLEX  
GROUP-A



1 0 1 5 10 METRE

PHASE.. IV

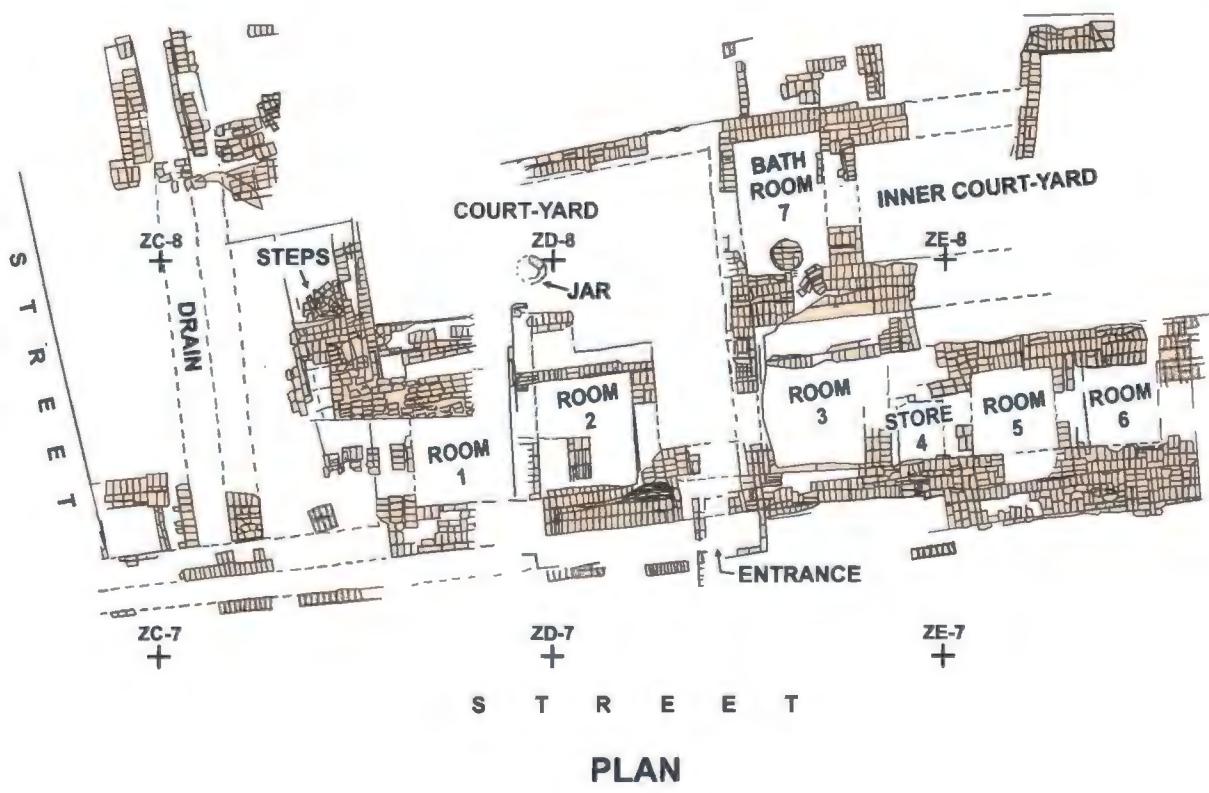


Fig. 5.21

KALIBANGAN : 1960-69  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-1, GROUP-A

ISOMETRIC PROJECTION  
OF AN IMPORTANT HOUSE

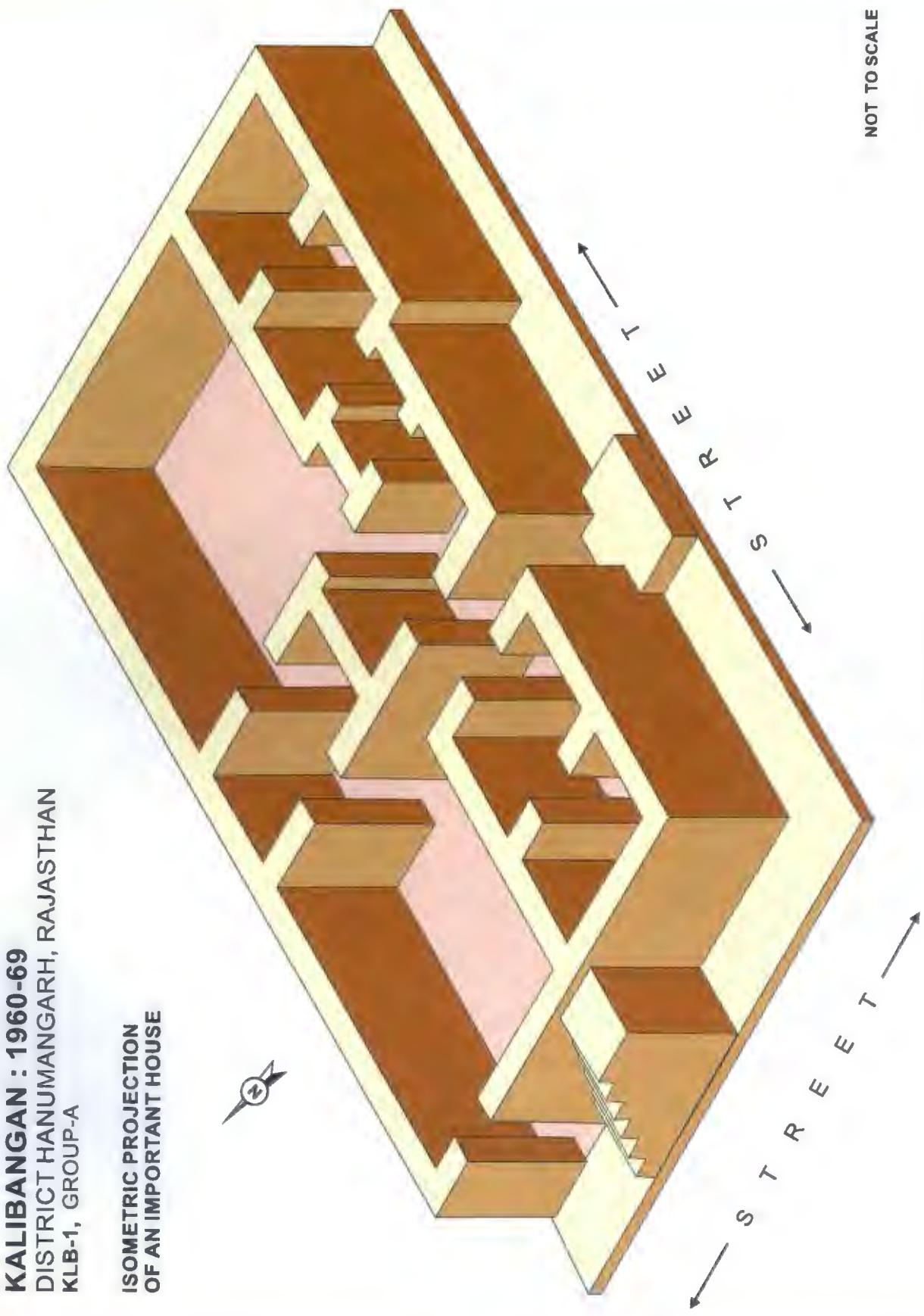


Fig. 5.22

- length 12 m (b) width .60 - .90 m  
(c) height .40 m
- 6. Number of courses: 5 courses
- 7. Masonry and bond: Header and stretchers
- 8. Composition of mortar: Earth and grit
- 9. Composition of plaster: Not applicable
- 10. Orientation of longer axis: North-south
- 11. Nature of bricks used: Burnt-bricks
- 12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
- 13. State of preservation: Good
- 14. Shape and other distinguishing features: The structures appears to have been damaged by brick-robbers.

#### **18. TRENCH NO. ZA-8, ZB-8, ZB-9**

##### **(ii) GROUP B**

- 1. Location : KLB-1 Square No. ZA-8, ZB-8, ZB-9 All Quadrants
- 2. Type of structure: House complex
- 3. Stratigraphic position: Belong to phase IV and V
- 4. Period and Structural phase: Harappan, Phase IV & V
- 5. Measurement of structure: (a) length (b) width (c) height
- 6. Number of courses: 5 to 6 courses
- 7. Masonry and bond: Header and stretchers
- 8. Composition of mortar: Earth and grit
- 9. Composition of plaster: Not applicable
- 10. Orientation of longer axis: East-west
- 11. Nature of bricks used: Mud-brick/ Burnt bricks
- 12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
- 13. State of preservation: Fragile
- 14. Shape and other distinguishing features: On the western side of the

street with a width of 2 m and exposed length of 10 m with side walls having an average width of .60 m - .80 m. There is a house complex having three rooms admeasuring 3 x 2.20 m with a round platform in the centre and a drain in the western side and another room 2.20x 3 m (?) and third room admeasuring 3 x 3.70 m. Each of these rooms have a small platform and these rooms belong to a house and go well with the big house described above. There is another phase which is earlier to this which has only room walls and paved floors and do not make a plan. The latest phase has two huge rooms (one partially exposed) having 3 x 2.90 and another 3 x 5 m. Thus the area has remained in three successive phases. On the eastern side of the lane there are remains of houses of three successive periods. The stray walls do not make any sensible plan. This area has yielded two terracotta drain pipes which are inscribed. These are not in situ and belong to phase V (Fig. 5.24).

#### **19. TRENCH NO. ZA-8**

- 1. Location KLB-1 Square No. ZA-8 Quadrant 1
- 2. Type of structure: Drain & bath platform
- 3. Stratigraphic position : Layer (1) seals both bath and drains, Layer (2) to (5)
- 4. Period and Structural phase: Harappan, Phase V
- 5. Measurement of structure : (a) length (b) width (c) height As below
- 6. Number of courses : Two
- 7. Masonry and bond: Header and stretcher
- 8. Composition of mortar: Mud
- 9. Composition of plaster: Not found
- 10. Orientation of longer axis : As below

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-1, TRENCH ZC-8, Qd.-3

BURNT-BRICK BATHING PLATFORM  
WITH COVERED DRAIN AND SOAK PIT



1            0            1  
METRE

PHASE.. IV

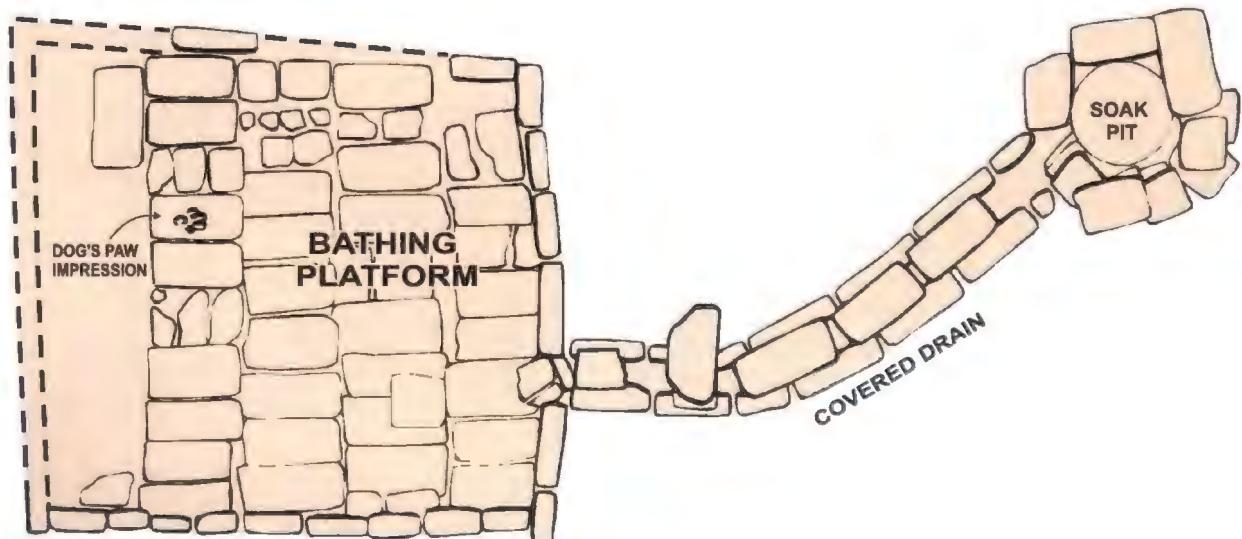


Fig. 5.23

11. Nature of bricks used: Kiln-burnt bricks
12. Dimension of bricks : (a) length 26 cm (b) width 13 cm (c) thickness 6 cm
13. State of preservation: Not good
14. Shape and other distinguishing features: Extremely fragile bricks.

A hearth is found just above the drain which shows that the drain was not used in this phase. Later on due to its non-use the hearth might have been constructed on it. The drain is covered with broken pieces of pots.

The bathroom seems to have been used by the people. A broken brick only gives the evidence of its being a covered drain. Other bricks are not found. The bricks of the platform are kept on one direction and all around the platform the bricks are raised and gives almost a square shape.

**STR 1 Drain** It is sealed by layer (4). Its contemporary layer is (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.81 m (b) width 0.20 cm (c) height 1.11 m. Number of courses are two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 6 cm.

**STR 2 (a) Bath-platform attached with a covered drain** It is sealed by layer (2) and its contemporary layer is (3). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length .98 cm (b) width .92 cm (c) height .39 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 25 cm (b) width 13 cm (c) thickness 6 cm.

**STR 2 (b) Bath-platform attached with a covered drain** Its stratigraphic position is (3) is contemporary layer of the platform and the sealing

layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length .63 m (b) width .16 m (c) height .30 m. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 25 cm (b) width 13 cm (c) thickness 6 cm.

## 20. TRENCH NO. ZA-9

1. Location KLB-1 Square No. ZA-9 Quadrant 4
2. Type of structure: Hearth
3. Stratigraphic position : Layer (3) is sealing it, Layer (4) is contemporary
4. Period and Structural phase: Harappan, Phase V
5. Measurement of structure : Not discernable
6. State of preservation: The shape of the hearth is rectangular. Burning effect is seen all around the hearth.
7. Shape and other distinguishing features: Nothing particular

## 21. TRENCH NO. ZB-9

1. Location KLB-1 Square No. ZB-9 Quadrant 2
2. Type of structure: House wall
3. Stratigraphic position : Layer (1) to (18)
4. Period and Structural phase: Harappan, Phase V
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : 1 to 8
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not available
10. Orientation of longer axis : As below

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-1, TRENCH ZA-8, ZB-8, ZA-7 AND ZB-7  
**PARTIALLY EXPOSED STRUCTURES**  
**GROUP-B**

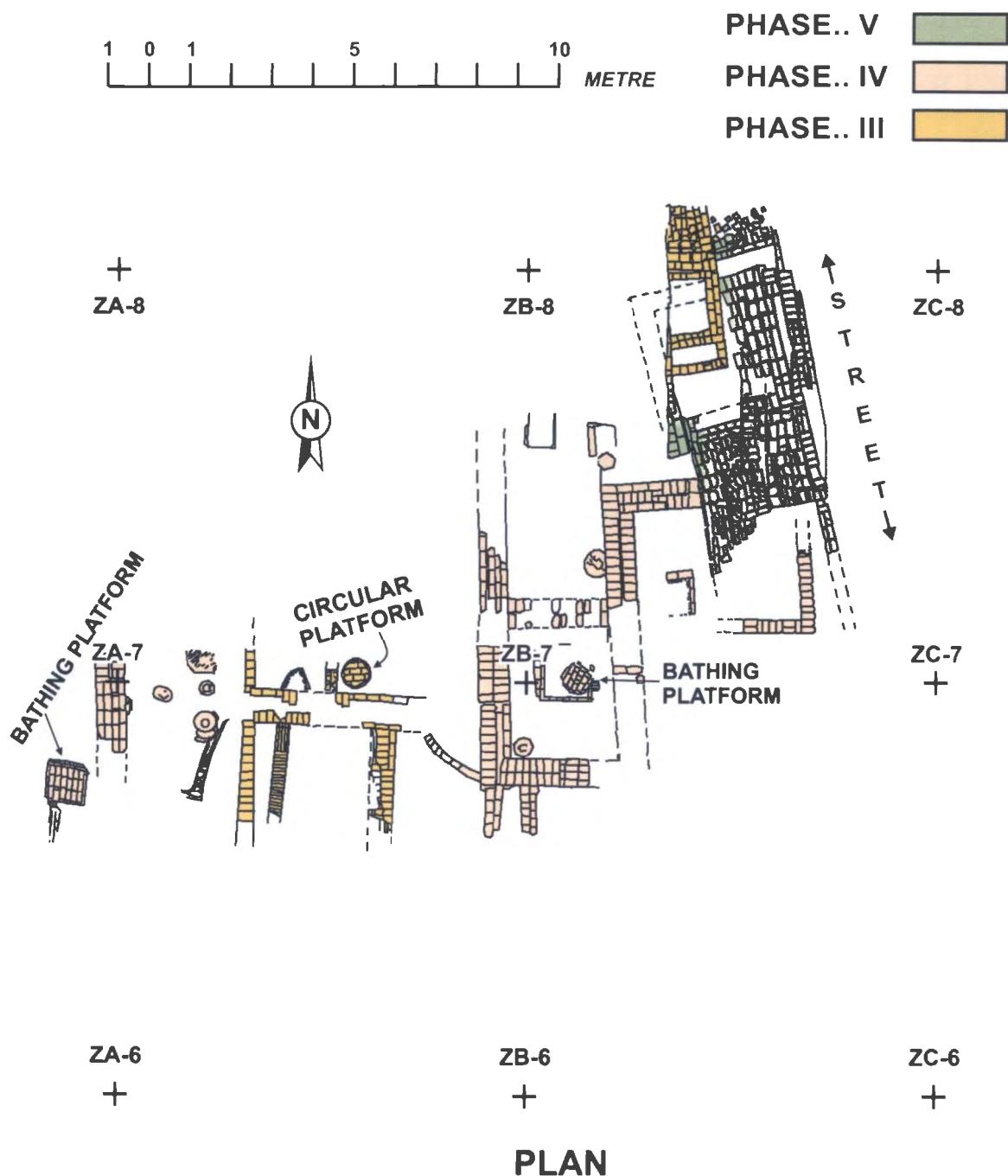


Fig. 5.24

11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm As below
13. State of preservation: Good
14. Shape and other distinguishing features: Extremely fragile bricks. The walls do not give a firm plan of house.

**STR 1 Wall** It is below layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length .60 m (b) width 0.30 m (c) height .20 m. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 3.60 m (b) width 0.15 m (c) height .10 m. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Wall** It is sealed by (4) contemporary layer (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1 m (b) width 30 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 4 Wall** It is sealed by (6) contemporary layer is (7). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2 m (b) width 40 cm. (c) height 20 cm. Number of courses is three.

Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5 Wall** It is sealed by (2) contemporary layer (3). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.5 m (b) width 30 (c) height 50 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Wall** It is sealed by (4) contemporary layers are (5) (6) (7) & (8). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.50 m (b) width 0.40 m (c) height 0.80 m. Number of courses is eight. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 7 Wall** It is sealed by (6). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 3 m (b) width 0.40 m (c) height 0.30 m. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 8 Wall** It is sealed by (6). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 3.67 m (b) width 0.90 m (c) height 0.60 m. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 9 Wall** It is sealed by (9) & contemporary layers are (10) (11) (12) & (13). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 2.70 m (b) width 1.27 m (c) height 0.30 m. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 10 Platform** It is sealed by (17). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 8.54 m (b) width 1.60 m (c) height 0.47 m. Number of courses are four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 11 Wall** It is sealed by (18). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 1.19 m (b) width 0.40 m (c) height 0.24 m. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

## 22. TRENCH NO. ZB-10 (Fig. 5.25)

1. Location KLB-1 Square No. ZB-10 Quadrant 3
2. Type of structure: Partially exposed walls of house with a platform
3. Stratigraphic position: Sealed by (1)
4. Period and Structural phase: Harappan, Phase IV and V
5. Measurement of structure : (a) length      (b) width      (c) height  
As below
6. Number of courses : 3 to 7 courses

7. Masonry and bond: English Bond
8. Composition of mortar: Mud mortar
9. Composition of plaster: No plaster
10. Orientation of longer axis : north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a partially exposed house having walls.

**STR 1 Wall** It is a wall sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 4.40 m (b) width .70 m (c) height 1.05 m. It has seven courses of bricks. It is north-south oriented wall.

**STR 2 Wall** It is a partition wall sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.70 m (b) width 0.70 m (c) height 0.76 m. It has five courses of bricks. It is east-west oriented.

**STR 3 Wall** It is a partition wall, partially exposed and run east-west. Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 80 cm (b) width 42 cm (c) height 80 cm. It has six courses of bricks.

**STR 4 Floor** It is a floor 90x77 cm, sealed by layer (6). Its period and structural phase is Harappan, Phase IV.

**STR 5 Wall** It is sealed by layer (1). It is 1.40x1 m. Its period and structural phase is Harappan, Phase V.

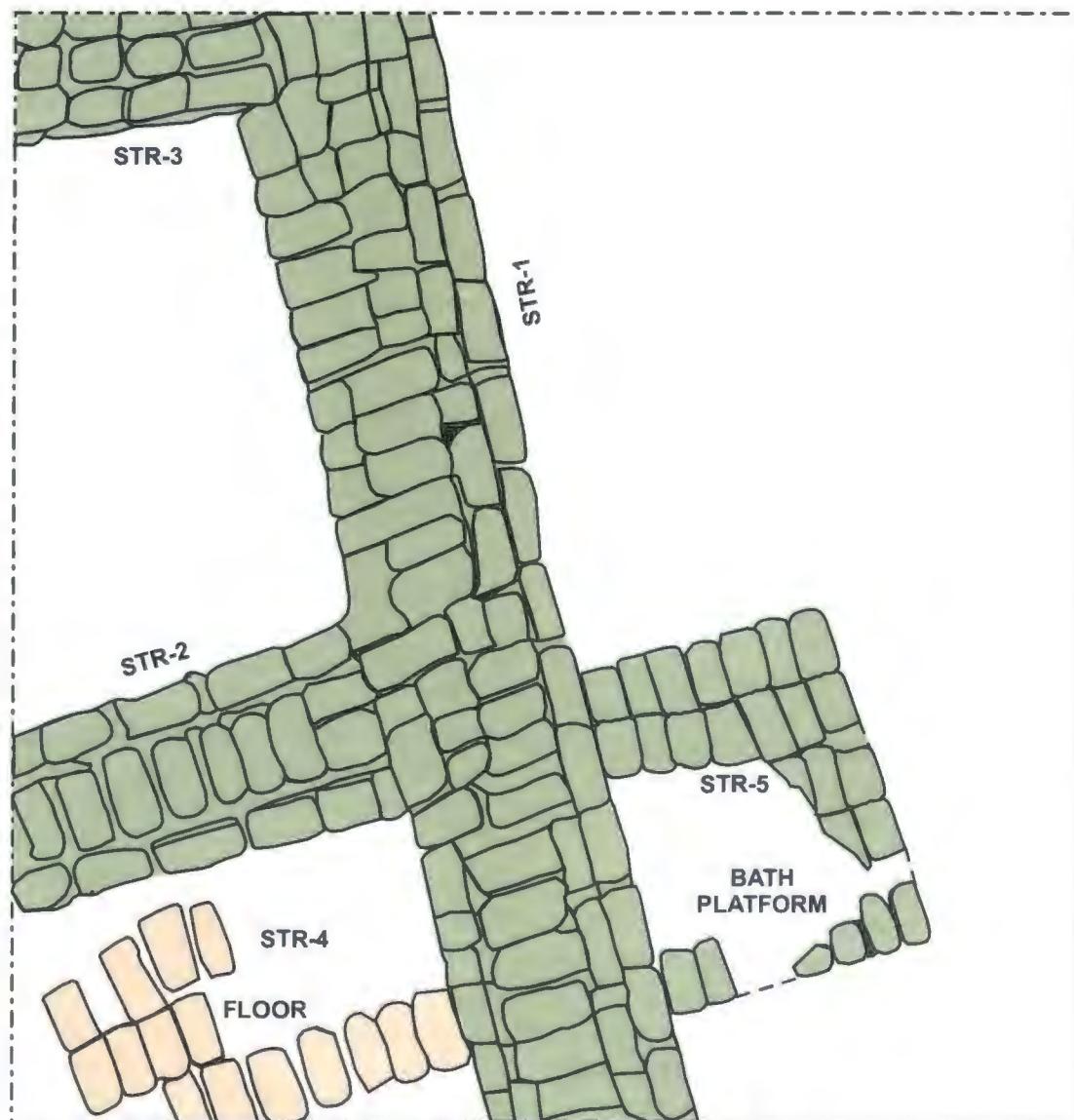
**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-1, TRENCH ZB-10, Qd.-3



PARTIALLY EXPOSED HOUSE WALLS

1            0            1  
METRE

PHASE.. V        
PHASE.. IV     



**PLAN**

Fig. 5.25

**23. TRENCH NOS. ZC-7, ZD-7, ZE-7**

**(iii) GROUP C**

1. Location : KLB-1 Square Nos. ZC-7, ZD-7, ZE-7 All Quadrants
2. Type of structure: House Complex
3. Stratigraphic position: Sealed by (1)
4. Period and Structural phase: Harappan, Phase IV & V
5. Measurement of structure: (a) length (b) width (c) height
6. Number of courses: 5 to 6 courses
7. Masonry and bond: Header and stretchers
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not applicable
10. Orientation of longer axis: East-west
11. Nature of bricks used: Mud-brick/ Burnt-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: O.K.
14. Shape and other distinguishing feature: On the eastern side of the central bastion on the bipartite fortification wall, remains of wall not making any definite house plan as such. remains of a damaged covered drain having a length of 16.70m m. with a width of 2.70 m. have been located. Adjoining the eastern side of the bastion a bath platform admeasuring 1.30 x 1.30 m emptying into the pot by a small drain 1.50 m. has been located. To these of the central bastion remains of four bathrooms and an open platform has been found. The walls of the bathrooms are much damaged. The open bathing platform having a size of 1.20 x 1.30 m. with a small drain having a length of 1.60 m. has been

found. These belong to Phase V. In the north-western corner there are few walls of phase IV and which are exposed. In this phase there are two rooms admeasuring 5.10m x 2.20 m. and 3.x 2.50 m. respectively. There is a third room which is not exposed fully. In both the rooms there are small drains and platforms belonging to earlier phase. Outside (north-west) there is a bathing platform measuring .90 x .90 m. Phase II with a drain is available.

**24. TRENCH NO. ZA-7 (XF-7 – ZA-7 – ZJ-7). (iv) GROUP D**

1. Location : KLB-1 Square No. ZA-7 (XF-7 – ZA-7 – ZJ-7) All Quadrants
2. Type of structure: Bipartite, fortification wall, steps, stray walls and brick-on-edge pathways of successive phases marked (Fig. 5.26)
3. Stratigraphic position: Harappan, Phases I and II
4. Period and Structural phase: Harappan
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses: As below
7. Masonry and bond: Header and stretchers, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not available
10. Orientation of longer axis: East-west
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm. Top of the bipartite wall is having brick-on-edge, particularly the central portion.
13. State of preservation: Good
14. Shape and other distinguishing features: **(1) The bipartite fortification wall :** The bipartite wall



Fig. 5.26 KLB 1 View showing successive brick-on-edge pavements on the north of the bipartite fortification-wall of the citadel, looking south-west

of the fortification running east-west with three projections (one to the western side is to be imagined) called bastions divides the northern rhomb from the southern rhomb. The length of the bipartite wall is 54 m and it has a width of 8.30 m; stratigraphically speaking it is built over the earlier Harappan wall. The inner central bastion has a length of 15 m, width 9 m and extant height is 5 m with 34 courses of mud bricks.

**(2) The staircase on bipartite wall :** To the west of the central bastion there is a staircase having 11 steps with a screen wall and the steps lead from east to west with a screen wall of bricks-on-edge. The steps have also been made on brick-on-edge and has dimension of 15 cm x 19 cm with a platform of 2.40 m x 90 cm at the beginning.

**(3) Deep digging :** Deep digging in the open area in front of the easterly salient showed pre-Harappan (Period I) structures running below the fortification complex including the entrance stairway. Due to the restricted extent of the dig complete plan of the houses, much less of each structural phase, could be recovered.

#### 25. TRENCH NO. ZC-10 (Figs. 5.27 and 5.28)

1. Location KLB-1 Square No. ZC-10 Quadrant 4
2. Type of structure: Drains and platform
3. Stratigraphic position: Sealed by (6)
4. Period and Structural phase: Harappan, Phase II

5. Measurement of structure : A (a) length 4 m (b) width 1 m (c) height 12 cm; B (a) length 3 m (b) width 90 cm (c) height 12 cm; C (a) length 2.15 m (b) width 90 cm (c) height 12 cm
6. Number of courses : 3 to 6 courses
7. Masonry and bond: English Bond
8. Composition of mortar: Mud mortar
9. Composition of plaster: No plaster
10. Orientation of longer axis : north-south
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: There are three drains belonging to successive Phase II flanked by platforms.

#### (b) SOUTHERN RHOMB

#### THE RITUALISTIC AREA<sup>1</sup>

The northern rhomb of the citadel had quite a few structures of importance which have on the top of seven platforms which have been denuded or not excavated built of mud bricks having two phases of construction. Broadly speaking, these structures could be grouped location-wise in five groups.

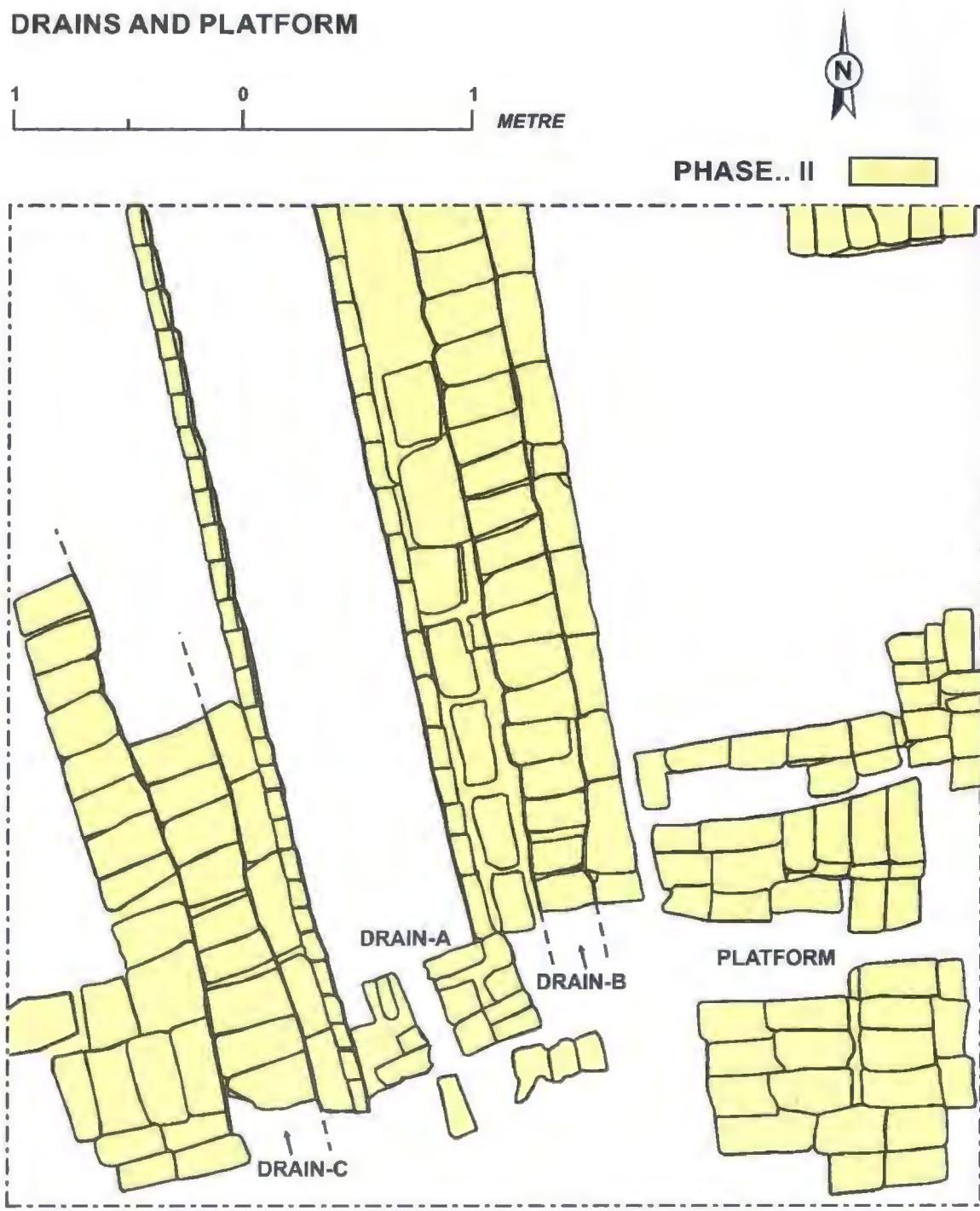
Group E: Ceremonial well with radial walls, big drain and bathing platform

Group F: Sacrificial altar made of burnt bricks with animal bones, bathing platforms, drains and a congregational area built on brick-on-edge

<sup>1</sup> Also see Marshall 1931, p.22; Lal 1997, p. 106; Joshi 1999, 177; at Mundigak Casal 1961; Damb Sadaat, Fairervis 1960, p. 20, Banawali; Joshi 2007 in press, at Edith Sahr Complex, Fairervis.

**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, PAJASTHAN  
KLB-1, TRENCH ZC-10, Qd.-4

**DRAINS AND PLATFORM**



**PLAN**

**Fig. 5.27**



Fig. 5.28 KLB 1 Baked-brick drains of successive phases along with mud-brick platforms

Group G: Platform B and Platform C Wall, series of drains and bathing platforms

Group H: Drains, well, ritualistic altars and a later drain cutting it

Group I: Bathrooms and Platforms

Group J: Drains & structures

Group K: Drain (long) steps?

Group E : Platforms (Figs. 5.29, 5.30 and 5.31)

These platforms were built in two phases. One first phase was built on layer 18, Layers 17, 16, 15, 14, 13, 12 and 10 are contemporary and layer 9 seals it. The latter platforms are built on layer 8. Layers 7, 6, 5 and 4 are contemporary and layer 3 seals it (see section looking north)

The mud brick platform in the north eastern part of the southern half of the citadel was determined, on further excavation found to be 75.70 m. x 24 m (earlier reported 60 m. in *Indian Archaeology* - when not exposed fully), The longer axis being along east-west. Its three angles along could be recovered, the 4<sup>th</sup> viz. north-western, having been eroded away. The platform has two structural phases. The width of the passage running between this platform and other lying to the south, was found to be 10 m. In its earlier phase part of the passage was seen to be paved with mud bricks. On the extent the platform obviously belonging to the upper levels of occupation was found.

There were no residential buildings in this area. The platforms are marked as A, B, C, D, E, and F in the plan. The

available sizes along with the passage are as below belonging to both phases (as available):-

No. of Platform	Size	Height
A	75.70 m x 24 m Passage 10 m (earlier)	1.90 – 2.67 m
B	30 x 20 m Passage 3.40 m (later)	1.20 – 2.50
C	30 m x 11 m Passage 5.30 m (later)	1.30 – 2.40
D	30 m x 10.60 m Passage 3.40 m (later)	1.20 – 2.30
E	30 x 25 m Passage not clearly discerned	1.15 – 2.20
F	12 x 11 m Passage not clearly discerned	1.20 – 2.30

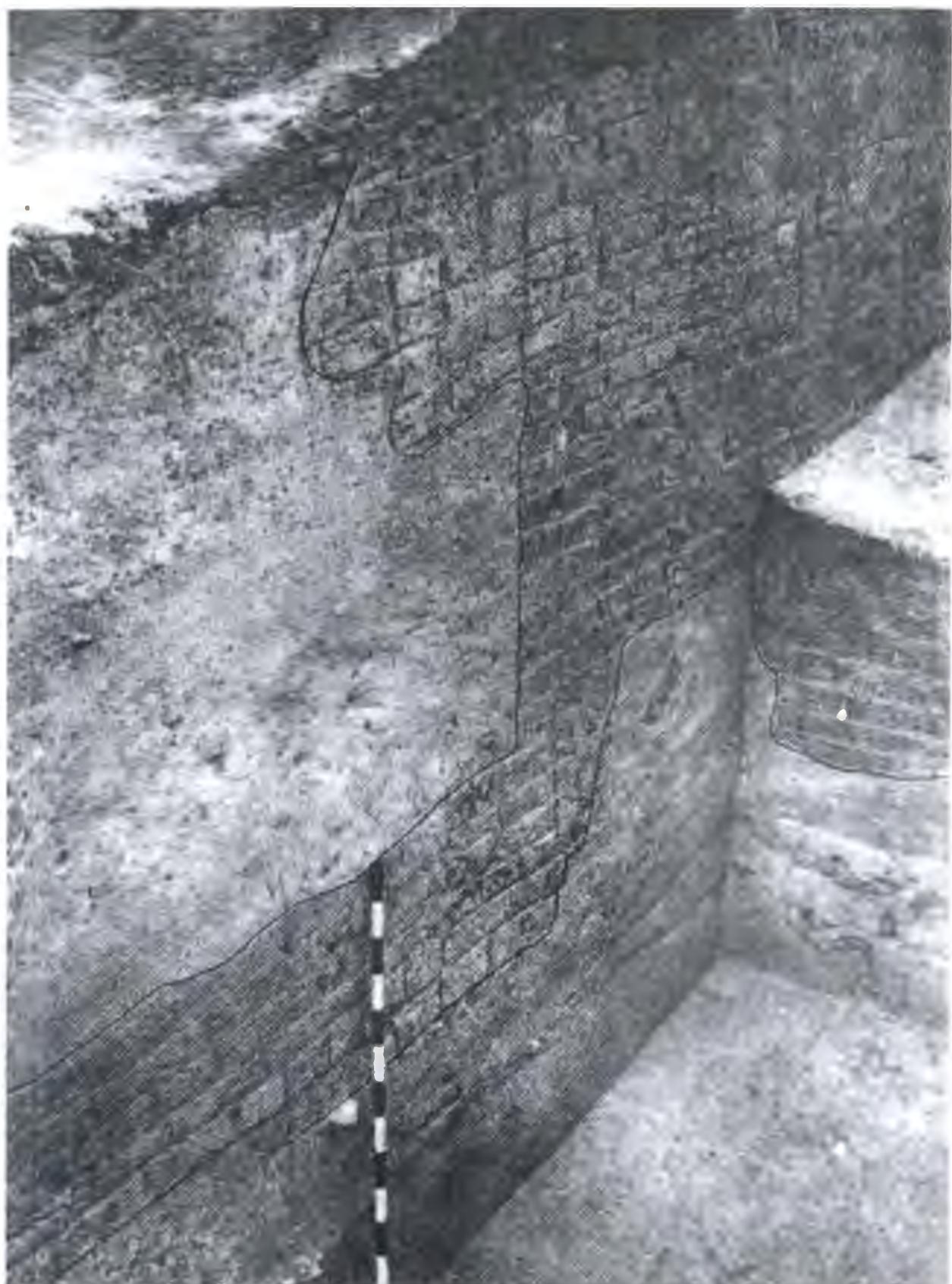
**(i) Group E: Well** The platform which is situated in trench YA-4 has a well of baked wedge-shaped bricks laid horizontally. It is sealed by layer 5. The width of the ring of the well is 30 cm. and supported by four radial walls having a width of 27 cm. The inner diameter of the well is 1.25 m and outer diameter is 1.85 m. It appears that at the outset of the buildings the well a huge foundation was dug and these supporting radial walls were constructed to give further strength to the wall. The well had 86 available exposed courses and so the radial walls but the bricks have been robbed. This has been an unusual construction. It appears that after the construction of the radial walls the in between space was filled up gradually with the gaining of additional height during the



Fig. 5.29 KLB 1 Section against the excavated mud-brick platform with two principal structural phases, looking north-west



Fig. 5.30 KLB 1 Structural phases of platforms and pavements



*Fig. 5.31 KLB 1 Section across the mud-brick platform*

construction. The bottom of the well has not been exposed. Digging has been carried up to depth 7.60 m below surface (Figs. 5.32, 5.33 and 5.34).

**Drain:** A covered drain having a length of 11.80 m with an east-west orientation has been found. This drain is built on the top of Layer 6. The layer 4 seals drain has a foundation in layer 6. Layer 5 is its working level. It has a mouth of 80 cm. It appears that east and west of the well there were bathing platforms. While on the eastern side five bathing platforms having an average size of 1 x 1 m along with small drains on the western side there were platforms which have been robbed by the brick robbers. Between the drain and the bathing platforms there was a platform made on brick-on-edge perhaps for free standing of the bathers. There is a round brick structure 65 cm in diameter to the south of the drains. Connecting drain or drains to the main drain are not clearly available (Figs. 5.35, 5.36 and 5.37).

**Group F:** The pit is flanked by two small platforms. The size of the platform is 0.65 m x 0.65 m. There is a covered drain to carry water and perhaps blood of the sacrificed animal. There is platform measuring 12 x 10 cm out side the sacrificial pit. There is a drain bisecting the platform which is 5.60 m x 0.60 m wide. Towards east there is a platform and wall. There are two drains on the platform covered with bricks-on-edge. The area covered by the platform having brick-on-edge is 5 x 5 x 3.50 m.

**Group G:** This group consists of drains of various phases, bathing platforms, a well, 7 fire altars (two disturbed by the drain) in an area of about 4 m. There are many bathing platforms but these are damaged. The orientation of drains is north-south and east-west in different phases. The bigger drains are oriented in east-west direction.

**Drain A:** This is a drain which is built over layer 8 and sealed by layer 6. It has a length of 14 m its orientation is north-south. It is a covered drain. It has a mouth of 15 cm. It is floored by bricks. This drain sill built on layer 7 and sealed by layer 6.

**Platform:** This is a part of the platform running north-south having a brick platform in the centre also. This is a robbed part of the platform of phase II.

**Drain B:** It is a drain running north-south having a length of 4 m with mouth of .90 – 1.10 m

**Drain C:** On the top of the eastern wall of the drain there is another drain of phase II. This drain is built on layer 11 and sealed by 10. It belongs to phase 1. However, drain C belongs to phase II.

**Drain D:** This is a covered drain running east-west It is sealed by layer (6). It has a length of 3.25 m. It has brick flooring and has a mouth of 35 cm. a jar is placed at its mouth. This is built over layer (8) and belongs to phase 1.

**Drain E:** This is a drain running east-west in a staggered fashion belonging to the last phase IV. It has a length of 6 m. It is an open drain with brick floor having a mouth of 20 cm. It cuts the 7 fire altars.

**Fire altars:** These fire altars are atop the platform. Five of these have been identified during the excavation and there could be more also.

**Well:** To the west of fire altars, at the back of the worshipper, there was a well having an inner diameter of 1.60 m and outer diameter of 2.40 m. having, wedge-shaped bricks in its construction. This well appears to be for the worshippers, use. The ceremonial well used to be for bathing. There is a small

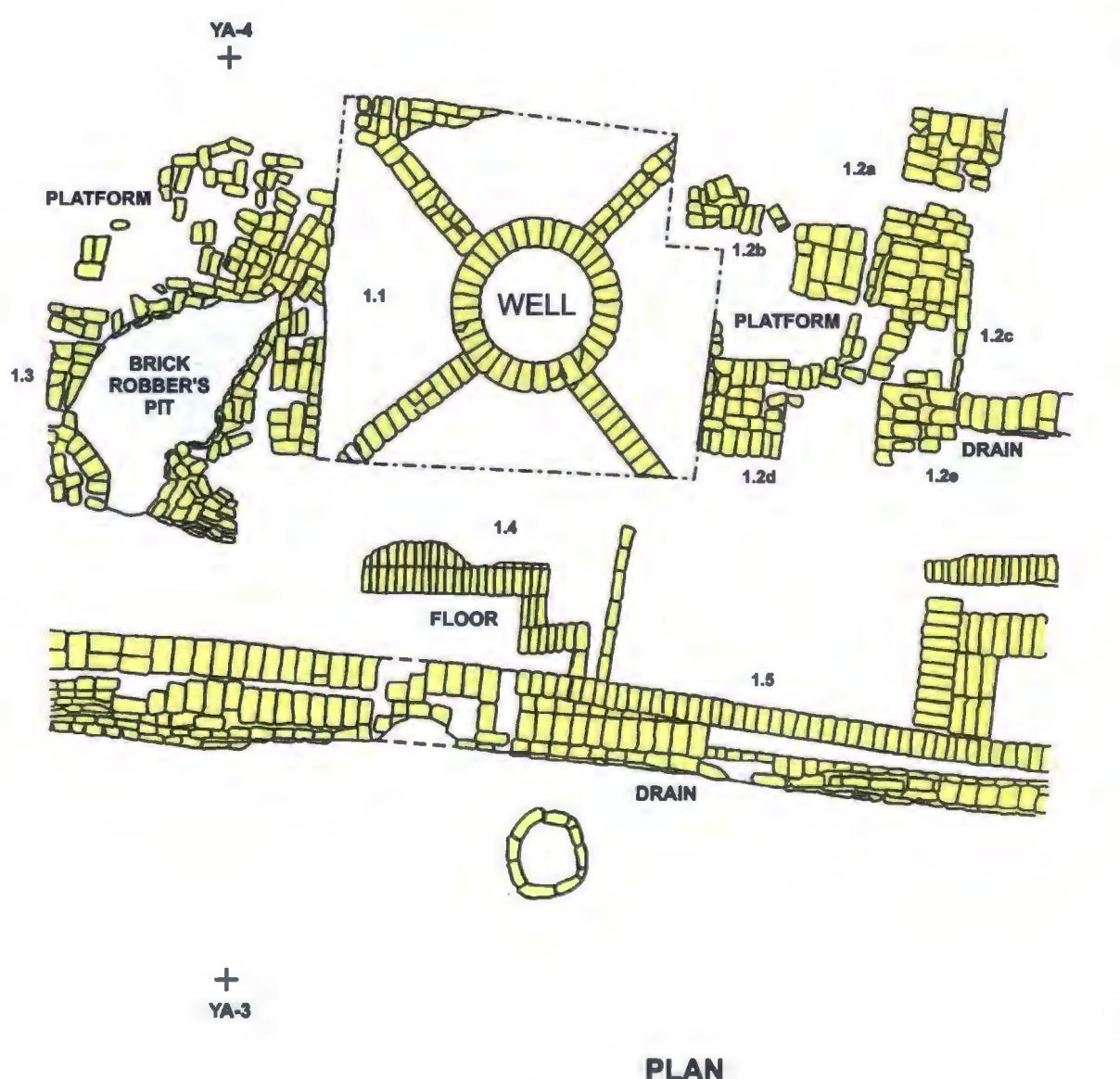
**KALIBANGAN : 1960-69**  
**DISTRICT HANUMANGARH, RAJASTHAN**  
**KLB-1, TRENCH YA-4**  
**WELL, BATHING PLATFORMS AND DRAINS**  
**GROUP-E**



1 0 1 2 3 METRE

PHASE.. II

ZA-4  
+



**Fig. 5.32**



Fig. 5.33 KLB 1 Well with radial walls

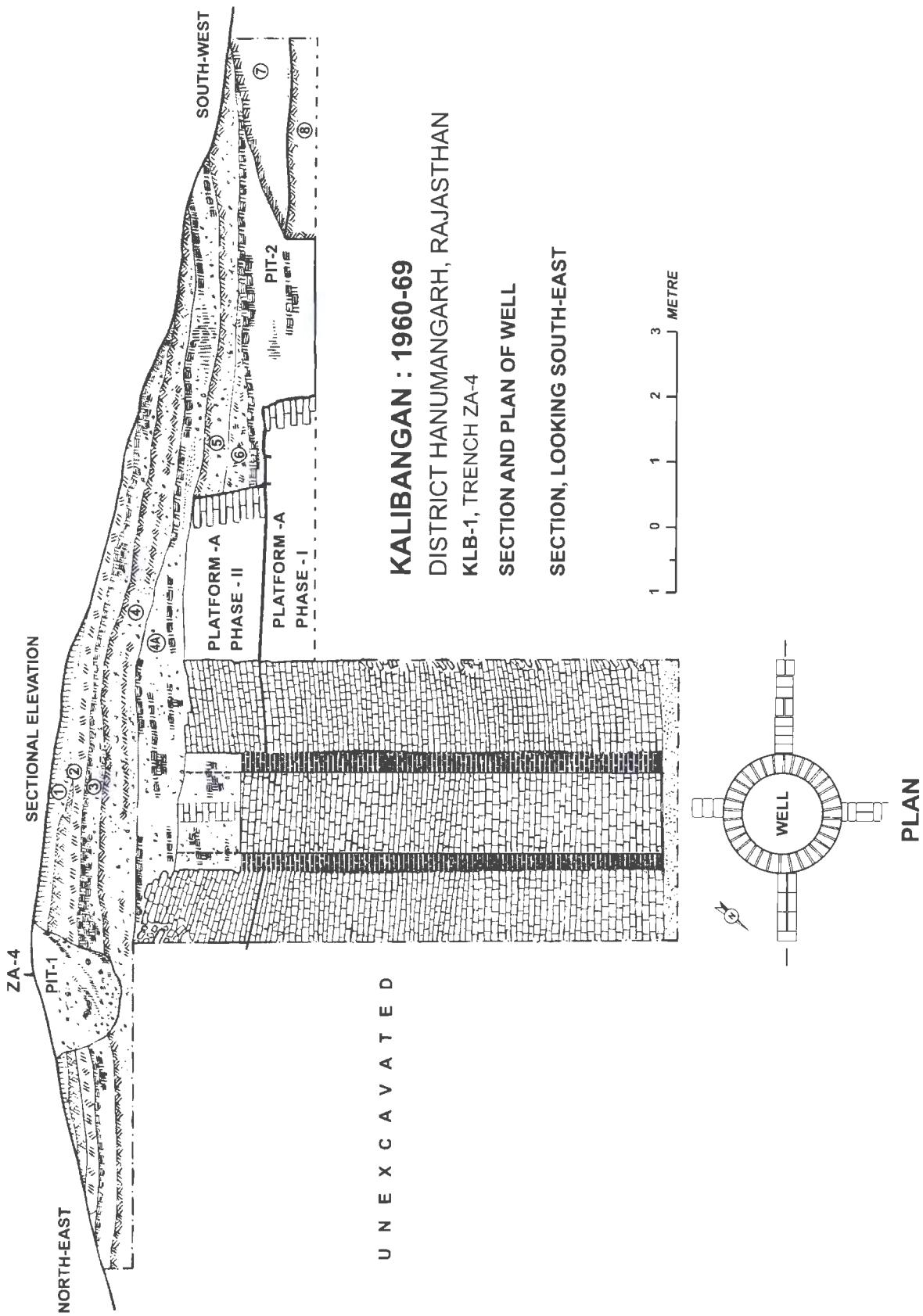


Fig. 5.34



Fig. 5.35 KLB 1 Baked-brick drain



Fig. 5.36 KLB 1 Baked-brick drains of successive phases along with mud-brick platforms



Fig. 5.37 KLB 1 *Covered-burnt brick drain*

oven near the well. At least five bathing platforms measuring 1x1 m to 1x1.60 m are available. There may be more such bathing platforms which remains now robbed by the brick robbers. Lal mentions :

"To take up the nature of the remains on the top of another such platform within the southern rhomb. On it were noted only a well and a 'fire-altar', but something more: it was a rectangular pit, measuring 1.25 x 1m and lined with kiln-burnt bricks. Within it lay bovine bones and antlers, evidently representing some kind of a sacrifice. That the offering of animals in sacrifice was a Harappan practice is also suggested by certain seals, for example the one from Mohenjo-daro. It depicts a deity in front of whom kneels a devotee. Behind the latter is an animal, in all likelihood brought as an offering. (Incidentally, in the register below stand seven worshippers in a row—a significant number to which reference has already been made above)".

#### CATALOGUE OF STRUCTURES

##### **26. TRENCH NO. YA-4 H 1.1 KLB-1, GROUP E (RITUALISTIC AREA)**

1. Location KLB-1 Square No. YA-4 Quadrants 1,2,3 and 4
2. Type of structure: Well with four radial walls, Platform A
3. Stratigraphic position: Cut into platform E and layer (6) (7) & (8) sealed by layer (4)
4. Period and Structural phase: Period I, Harappan, Phase I and II
5. Measurement of structure : (a) Inner dia 1.25 m (b) Outer dia 0.30 m (c) depth 7.60 m
6. Number of courses : 86 exposed courses
7. Masonry and bond: Header and stretcher/English Bond

8. Composition of mortar: Clay mixed with grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : Not applicable
11. Nature of bricks used: Burnt-bricks, wedge-shaped
12. Dimension of bricks : (a) length 30cm (b) width 20cm. 10cm (c) thickness 10cm
13. State of preservation: Good
14. Shape and other distinguishing features: Well with radial walls. These radial walls have been raised simultaneously with the raising of the well to give strength to the structure and avoid any chances of collapse.

##### **27. TRENCH NO. YA-4 H 1.2A 1.2 B, 1.2C, 1.2D, 1.2E KLB-1, GROUP E (RITUALISTIC AREA)**

1. Location KLB-1 Square No.YA-4 Quadrants 1 and 4
2. Type of structure: Platform A with small drains
3. Stratigraphic position: Built on layer (3) and sealed by (2)
4. Period and Structural phase: Harappan Phase II
5. Measurement of structure : (a) length (b) width (c) height
6. Number of courses : 2 to 3 courses
7. Masonry and bond: Header and stretchers
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster
10. Orientation of longer axis : Spread over an area of 4 x 4 m
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: These five platforms

having an average measurement of 1 x 1m with small drains. The bath platforms have been found damaged by brick-robbers.

#### **28. TRENCH NO. YA-4 E 1.6**

1. Location: KLB-1 Square No. YA-4 Quadrant 4
  2. Type of structure: Round, Platform A
  3. Stratigraphic position: On the top of layer (3)
  4. Period and Structural phase: Harappan, Phase II
  5. Measurement of structure : Dia. 75 cm
  6. Number of courses : One
  7. Masonry and bond: English Bond
  8. Composition of mortar: Earth and grit
  9. Composition of plaster: No plaster
  10. Orientation of longer axis : To the south of drain
  11. Nature of bricks used: Burnt-bricks
  12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
  13. State of preservation: Good
  14. Shape and other distinguishing features: Indeterminate structure.
7. Masonry and bond: Header and stretchers
  8. Composition of mortar: Earth and grit
  9. Composition of plaster: No plaster
  10. Orientation of longer axis : The pit is squarish
  11. Nature of bricks used: Burnt-bricks
  12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
  13. State of preservation: Very good
  14. Shape and other distinguishing features: it mainly consists of a sacrificial pit of burnt bricks measuring (inside length 1.30 m x width .90 m.) The bricks are wedge-shaped and plain. Originally the width on all sides was .40 m. Later on the width was increased eastern side by 35.40 cm. On the northern and western side two small platforms are attached to the pit. The size of the small platform is .65 x .65 m. These platforms were perhaps used by the persons doing the sacrifice. On the southwestern corner there is a covered drain attached to the pit running west perhaps for the drainage of water and blood of the animals. Presently the pit has a depth of 60 cm. The upper courses have been robbed. The working level of the pit is the bottom of the drain. The pit was found containing bones of bovines and antler. No ash or charcoal was found inside the pit. The bones have cut marks. To the south of the altar there was a platform on brick-on-edge roughly measuring 12 x 10 m. There was an ash pit outside the sacrificial pit. This has some ritualistic purpose. In the east there is a drain running east-west bisecting the platform of brick-on-edge. It is 20 m. long and .60 m. wide and covered. Towards east there was

#### **29. TRENCH NO. ZC-4 H 1.2 KLB-1, (ii) GROUP F (RITUALISTIC AREA)**

1. Location KLB-1 Square No. ZC-4 Quadrants 1, 2, 3 and 4
2. Type of structure: Sacrificial pit with bones having cut marks, Platform A
3. Stratigraphic position: Built over layer (3)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 1.30 m (b) width 90 cm (c) depth 60 cm
6. Number of courses : 5 to 6 courses upper courses robbed

a platform and a dilapidated wall of 8 to 9 courses. There are two to three dilapidated drains and a rectangular structure (bath platform?). To the west of the pit containing bones there is a wall of two bricks running north-south and joined by another wall on the south. The length of the north and south wall is 13 m. and the wall running east-west is 1 m (Figs. 5.38, 5.39 and 5.40).

### **30. TRENCH NO. YC-2 H 1 KLB-1, (iii) GROUP G**

1. Location KLB-1 Square No. YC-2 Quadrant
2. Type of structure: Platform B
3. Stratigraphic position: Built on top of (8) sealed by (2)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure: (a) length 30m (b) width 20m (c) height 1.10-1-1.30m
6. Number of courses : 11 to 13 courses
7. Masonry and bond: Header and stretchers top brick-on-edge
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : North-south
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Very good
14. Shape and other distinguishing features: This platform is devoid of any structure may be due to brick robbing. There is gap of 3.40 m between Platform B and C.

### **31. TRENCH NO. XA-1 GROUP G**

1. Location KLB-1 Square No. XA-1 Quadrant

2. Type of structure: Platform C
3. Stratigraphic position: Built over top of (8) sealed by (2)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 30 (b) width 11 (c) height 1.10-1.30 m
6. Number of courses : 11 to 13 courses
7. Masonry and bond: Header and stretchers having top of brick-on-edge
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : North-south
11. Nature of bricks used: Mud-bricks/ burnt bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Very good
14. Shape and other distinguishing features: There is a passage 3.40 m wide between platforms C and D. Bricks are available on the top of this platform. The top is having brick-on-edge. The floor of the passage appears to have been also paved with brick-on-edge as patches are available.

### **32. TRENCH NO. XA-1 GROUP G**

1. Location KLB-1 Square No. XA-1 Quadrant 1
2. Type of structure: Wall, Drain & Circular Structure, Platform C
3. Stratigraphic position : Layer (1) to (7)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : 1 to 7
7. Masonry and bond: Header and stretchers, brick-on-edge

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN  
KLB-1, TRENCH ZC-4

### BRICK-LINED PIT WITH ANIMAL BONES

GROUP - F



1 0 1 2 3 METRE

PHASE.. II



ZC-4  
+

ZD-4  
+

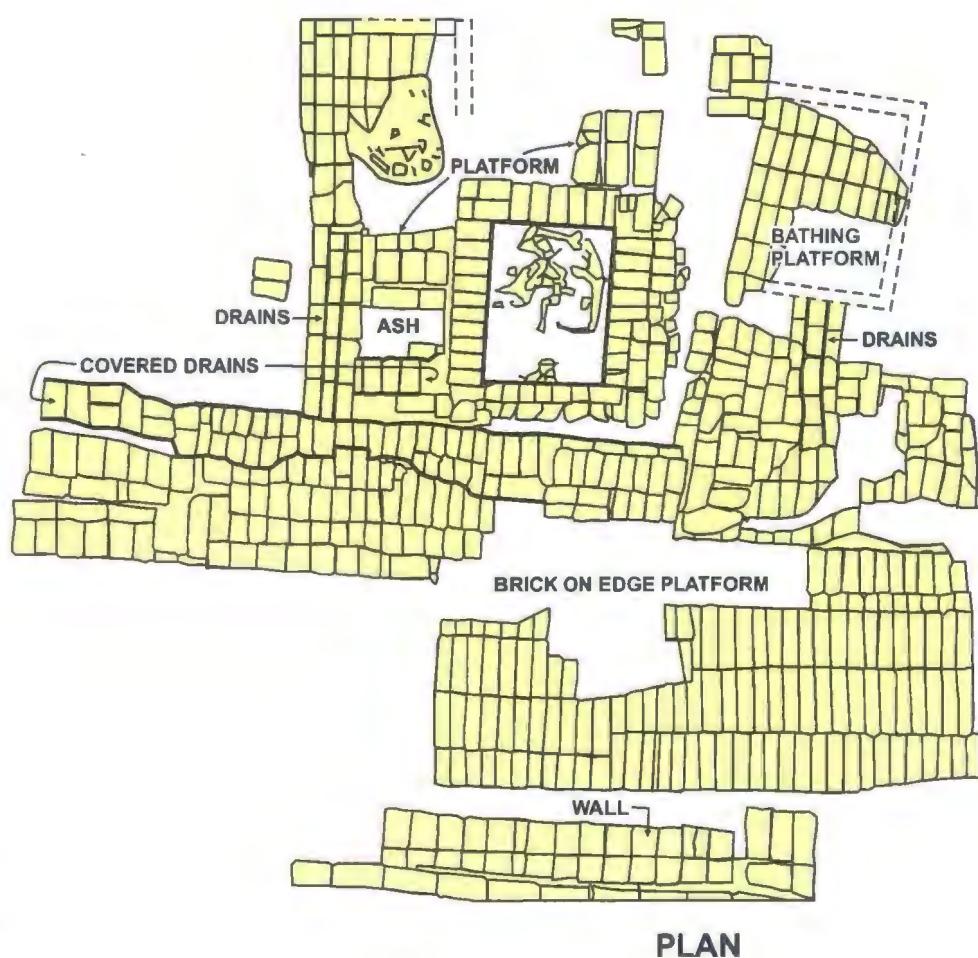


Fig. 5.38



Fig. 5.39 KLB 1 Brick-lined pit having animal bones with platform and drain



Fig. 5.40 KLB 1 A close-up of brick-lined pit with animal bones

8. Composition of mortar: Thin mud plaster/mortar/clay
9. Composition of plaster: No plaster
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks/Kiln-burnt bricks
12. Dimension of bricks: (a) length \_\_\_\_ (b) width \_\_\_\_ (c) thickness \_\_\_\_\_. As below
13. State of preservation:
14. Shape and other distinguishing features:

**STR 1 Wall** Its contemporary layer is (1) and sealed by Dump-1. Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 0.50 m (b) width 0.50 m (c) height 0.08 m. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** Layer (1) is contemporary and sealed by Dump-1. Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 1.90 m (b) width 0.90 m (c) height 0.50 cm. Number of courses is seven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 Drain** Its contemporary layer is (2) and sealed by layer (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 3.79 m (b) width 0.44 m (c) height 0.10 m. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 27 cm (b) width 13.5 cm (c) thickness 5 cm.

**STR 4 Circular structure** Its contemporary layer is (2) and it is sealed by layer (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 0.60 m (b) width 0.50 m (c) height 0.05 m. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks (a) length could not be given as no stretcher is found. (b) width 15 cm (c) thickness 5.5 cm.

**STR 5 Drain** Its contemporary layer is (7) and sealed by layer (6). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 1.35 m (b) width 0.27 m (c) height not fully excavated 0.03 m. Number of courses: one course is exposed and the rest has not been excavated. Orientation of longer axis is north-east to south-west. Dimension of bricks: (a) length 30 cm (b) width Bricks were put on edge, breadth could not be seen (c) thickness 6.5 cm .

**STR 6 Drain** Its contemporary layer is (7) and sealed by layer (6). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 1.18 m (b) width 0.22 m (c) height 0.07 m. Number of courses one is partly exposed and rest has not been exposed. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

### 33. TRENCH NOS. YA-2, ZA-2, YA-1, A-1 (iv) GROUP H

1. Location Square Nos. YA-2, ZA-2, YA-1, A-1
2. Type of structure: Platform D

3. Stratigraphic position: Built over Layer (8) sealed by (3)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 30 (b) width 10.60 (c) height 1.10 to 1.30m
6. Number of courses : 11 to 13 courses
7. Masonry and bond: Header and stretchers
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : North-south
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Very Good
14. Shape and other distinguishing features: It is a platform having atop a well, a jar and fire altars having an earlier drain length 3.50 m width 1.00 m and mouth 0.50 cm, a wall and curved wall of a later phase. This appears to be an important ritualistic platform. The passage between platform D and E is 3.40 m. Also see Sl. 35.
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster
10. Orientation of longer axis : North-south
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: A single fragmentary part of a wall.

#### **34. TRENCH NO. YA-2 KLB-1, GROUP H RITUALISTIC AREA (Fig. 5.41)**

1. Location KLB-1 Square No. YA-2
2. Type of structure: Wall, Platform D
3. Stratigraphic position: Built over layer (3) sealed by (2)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 1 m (b) width 10 cm (c) height 10 cm
6. Number of courses : One
7. Masonry and bond: Headers

#### **35. TRENCH NO. YA-2 GROUP H**

1. Location Square No. YA-2
2. Type of structure: Wall, Platform D
3. Stratigraphic position: Sealed by layer (4) built on (7)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 1m (b) width 20 (c) height 40 cms
6. Number of courses : 4-5 courses
7. Masonry and bond: Header and stretchers
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is found
10. Orientation of longer axis : North-south
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: Nothing special to mention.

#### **36. TRENCH NO. A-1 GROUP H**

1. Location Square No. A-1
2. Type of structure: Fire altars (five), Platform D
3. Stratigraphic position: Sealed by (5) and cut by a burnt brick drain
4. Period and Structural phase: Harappan, Phase II

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-1, TRENCH YA-2  
**CITADEL (RITUALISTIC AREA)**  
 GROUP-H



Fig. 5.41

5. Measurement of structure : (a) length 75 cm (b) width 55 cm (c) height 10-15 cm
6. Number of courses : Made of clay
7. Masonry and bond: Not available
8. Composition of mortar: Not available
9. Composition of plaster: Clay lined plaster
10. Orientation of longer axis : East-west
11. Nature of bricks used: Not available
12. Dimension of bricks : Not available
13. State of preservation: Damaged
14. Shape and other distinguishing features: There are seven fire altars in number, out of which two have been damaged due to the construction of the later drain running east-west and bisecting it. These pits are clay-lined measuring 75 x 55 cm with ash and terracotta cakes around a stella in the centre. The stella stood vertically. It is either cylindrical or faceted and measured 30-40 cm in height and 10-15 cm in diameter. The row of the fire altars is located north-south with burnt brick wall. There is a broken pot embedded in the ground full of ash and charcoal. Slightly away is a well and few bath platforms though dilapidated which are connected to a series of drains. Bathing perhaps appears to be ritual connected with the worship at the fire altars. Views have been expressed by certain scholars that these fire-altars were cooking ovens. This view is untenable because the central stella, which is slender and tall, cannot hold any utensil/pot over it, which would always be in danger of falling.

### **37. TRENCH NO. YA-1 GROUP H KLB-1 (RITUALISTIC AREA)**

1. Location KLB-1 Square No. YA-1 Quadrant
2. Type of structure: Well, Platform D
3. Stratigraphic position: Sealed by (2)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) inner dia. 1.60 m (b) outer dia. 2.40 m
6. Number of courses : Five courses
7. Masonry and bond: Headers, wedge-shaped bricks
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster
10. Orientation of longer axis : Not available
11. Nature of bricks used: Mud-bricks/ burnt bricks.
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: There is a small oven near the well. At least four to five bathing platforms each 1.25 x 1 m lined with kiln-burnt bricks are found in dilapidated condition.

### **38. TRENCH NO. A-1 GROUP H**

1. Location KLB-1 Square No. A-1
2. Type of structure: Drain, Platform D
3. Stratigraphic position: Sealed by (2) built over (5)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 6m (b) width 20 cm (c) height 20 cm
6. Number of courses : 2 to 3 courses
7. Masonry and bond: Header and stretchers
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster

10. Orientation of longer axis : East-west in a curved fashion
11. Nature of bricks used: Burnt-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a covered drain belonging to the Phase V and bisects the seven fire altars. It is 30 cm deep, 10-12 cm wide (Figs. 5.42, 5.43 and 5.44)

### **39. TRENCH NO. D-1**

#### **(v) GROUP I**

1. Location KLB-1 Square No. D-1 Quadrants 1 & 4
2. Type of structure: Wall, Platform E
3. Stratigraphic position : Layer (1) to (7)
4. Period and Structural phase: Harappan, Phase I
5. Measurement of structure : (a) length  
(b) width (c) height As below
6. Number of courses : Three to five
7. Masonry and bond: Header and stretcher not regular
8. Composition of mortar: Fine grained earth of grayish colour/compact clay
9. Composition of plaster: No plaster
10. Orientation of longer axis: North-south
11. Nature of bricks used: Mud-bricks/  
Kiln-burnt bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a platform.

### **40. TRENCH NO. E-1 GROUP I**

1. Location KLB-1 Square No. E-1 Quadrant 4
2. Type of structure: Fortification Wall Western
3. Stratigraphic position : Sealed by Layer (1)
4. Period and Structural phase: Harappan, Phase I

5. Measurement of structure : (a) length not discernable (b) width 2 m (c) height 60 cm
6. Number of courses : Five courses
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: Not discernable
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm.
13. State of preservation: Very dilapidated
14. Shape and other distinguishing features: The fortification wall is too eroded. It appears that on this side the Harappans reinforced the early Harappan wall. Since the portion is very much eroded, brick sizes could only tell the story.

### **41. TRENCH NO. XB-5**

#### **(vi) GROUP J**

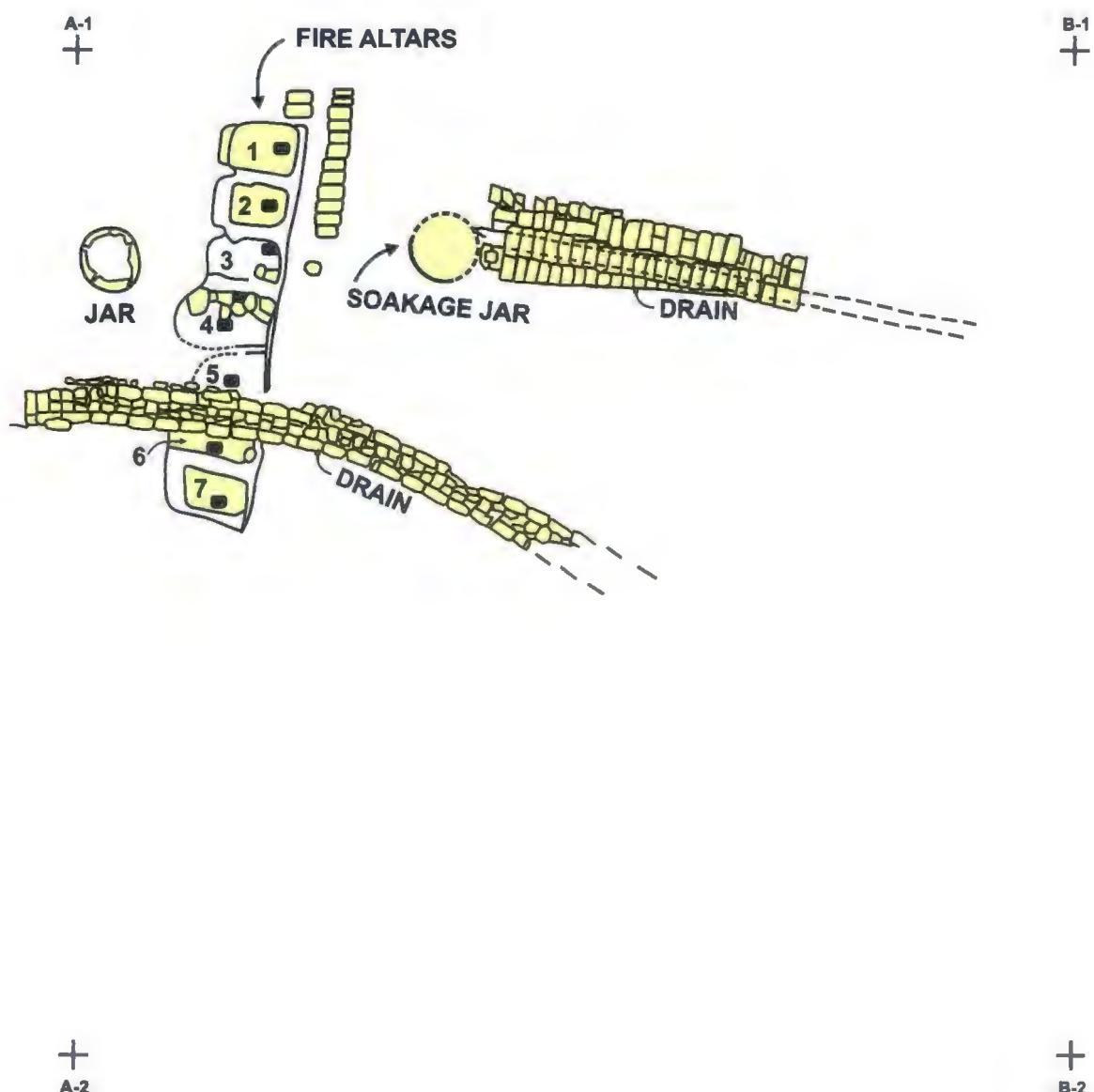
1. Location KLB-1 Square No. XB-5 Quadrant 4
2. Type of structure: Drains
3. Stratigraphic position : Sealed by (1)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length  
— (b) width — (c) height — As below
6. Number of courses : Only one
7. Masonry and bond: Header
8. Composition of mortar: Thin clay
9. Composition of plaster: Nil
10. Orientation of longer axis: South to north
11. Nature of bricks used: Kiln-burnt bricks
12. Dimension of bricks: (a) length (b)  
width (c) thickness As below
13. State of preservation:
14. Shape and other distinguishing features: The bricks are greyish in colour.

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-1, TRENCH A-1  
**FIRE ALTARS**  
 GROUP-H



1 0 1 2 3 4 METRE

PHASE.. II



**PLAN**

**Fig. 5.42**



Fig. 5.43 KLB 1 Fire altars and earlier and later drains



Fig. 5.44 KLB 1 Close-up view of fire altars

**STR 1 (A) Drain** Its stratigraphic position is sealed by (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 8 m (b) width 0.38 m (c) height 0.6 m. Number of courses is seven. Orientation of longer axis is south to north. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 7 cm (Fig. 5.45).

**STR 1 (B) Drain** Its stratigraphic position is sealed by (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 14 m (b) width 0.38 m (c) height 0.6 m. Number of course is only one. Orientation of longer axis is south to north. Dimension of bricks: (a) length 28 cm (b) width 14 cm. (c) thickness 7 cm.

#### 42. TRENCH NO. XA-4

##### (vii) GROUP K

1. Location KLB-1 Square No. XA-4 Quadrant 1
2. Type of structure : Walls, Drains, Bath Platforms, Platform F
3. Stratigraphic position : Layer (1) to (6)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : 1 to 9
7. Masonry and bond : Header and stretchers
8. Composition of mortar: Mud
9. Composition of plaster: Nil
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length \_\_\_\_ (b) width \_\_\_\_ (c) thickness \_\_\_\_\_. As below
13. State of preservation:
14. Shape and other distinguishing features:

**STR 1 Wall** Its stratigraphic position is sealed by layer (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 1.55 m (b) width 0.85 m (c) height 0.90 m. Number of courses is nine. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** Its stratigraphic position is sealed by layer (2). Its period and structural phase is Harappan, Phase II. Number of courses is one. Orientation of longer axis is north-east to south-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 Wall** Its stratigraphic position is sealed by layer (1). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 2.30 m (b) width 0.55 m (c) height 0.15 m. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks are (a) length 30 cm (b) width 15 cm (c) thickness 7-8 cm.

**STR 4 Drain** It is drain sealed by (1) and cut into (3) and (4). Its period and structural phase is Harappan, Phase II. Its orientation is east-west and has an available length of 26 m. It is an open drain with 8-9 courses of bricks. Its width 0.50 m and has a depth of 1.30 cm.

#### 43. TRENCH NO. XA-4 H 1.3 KLB-1, (viii) GROUP K (RITUALISTIC AREA)

1. Location KLB-1 Square No. XA-4 Quadrants 2 and 4



Fig. 5.45 KLB 1 Brick built drain

2. Type of structure: Bath Platforms. Platform F
3. Stratigraphic position: Built over layer (3) sealed by (2)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length (b) width (c) height
6. Number of courses : 2 and 3
7. Masonry and Bond: Header and stretchers, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster
10. Orientation of longer axis: Spread over in an approximate m. area of 4 x 4m with a robbers trench
11. Nature of bricks used: Burnt bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: The area appears to have a few bath platforms but highly disturbed by brick-robbing activity.

#### **44. TRENCH NOS. XA-4, YA-4 H 1.4 KLB-1, GROUP K (RITUALISTIC AREA)**

1. Location KLB-1 Square Nos. XA-4, YA-4 Quadrants 3 and 4
2. Type of structure: Portion of a platform of brick-on-edge and wall of single-brick, Platform F
3. Stratigraphic position:
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 2 m (b) width 0.10 m (c) height 0 (wall):  
(a) length 2 m (b) width .75 m (c) height (platform)
6. Number of courses : One
7. Masonry and Bond: Header and stretchers, English Bond
8. Composition of mortar: Earth and grit

9. Composition of plaster: No plaster
10. Orientation of longer axis : Longer axis of wall 2.60
11. Nature bricks of bricks used: Mud-bricks/burnt bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: Portion of a platform made of brick-on-edge.

#### **45. TRENCH NOS. XA-4 & ZA-4 H 1.5 KLB-1, GROUP K**

1. Location KLB-1 Square Nos. XA-4 & ZA-4 Quadrants 3 and 4
2. Type of structure: Drain, Platform F
3. Stratigraphic position: Cut into (5) and (6) sealed by (4)
4. Period and Structural phase: Harappan, Phase II
5. Measurement of structure : (a) length 11.60 m (b) width 50 cm (c) height 45 cm
6. Number of courses : 4 to 5 courses
7. Masonry and Bond: Header and stretchers, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is not available
10. Orientation of longer axis : East-west
11. Nature bricks of bricks used: Burnt bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a covered drain with a mouth of 50 cm. In the southern side it has possibly a connecting covered drain having a length of 1.50 m turning to east (Fig. 5.46).



Fig 5.46 KLB I Covered burnt-brick drain

**KLB-2**  
**STRATIGRAPHY AND**  
**STRUCTURES**

JAGAT PATI JOSHI

CHAPTER

6

### **1. STRATIGRAPHY**

**F**or understanding the stratigraphy of KLB-2 mound in trenches C-5, C-6, C-7, C-8 and XA-6 the section looking east gives a very good sequence and shows the succession of layers and structures very clear in the mound

#### **TRENCHES D-5 QD.3 & D-6 QD.2 (Fig. 6.1)**

#### **SECTION, LOOKING EAST**

This is a section which is 7.68 m in height at the highest contour of the mound and slowly tapers down on both sides.

Layer (1), having 12 cm thickness is composed of loose earth and sand. This layer seals STR-2 made of five courses of mud-bricks having alternate courses of headers and stretchers. The height of the structures is 42 cm. Layer (5) having a thickness of 8 cm consisting of loose earth mixed with sand. Layer (6) having a thickness of 9 cm with loose earth and sand. Layer (7) having a thickness of 10 cm consisting of thick compact clay. Layer (8) consists of 15 cm thick loose ashy material. Layer (9) consists of 16 cm of compact clay. Layer (10) is compact clayey in nature. It is 15 cm thick (floor). Layer (11) is 10 cm thick layer of loose ashy material by the side of STR-4. Layer (12) consists of loose, ashy earth having potsherds with a thickness of 18 cm. Layer (11) and (12) are contemporary deposits of STR-

4. Layer (13) consists of loose earth and is 18 cm thick. Layer (14) in between STR-8 and 7 consists of loose earth and ash. STR-8 is built on (16). STR-7 is built on the top of (15). Layers (16) and (17) are 29 cm and 30 cm thick respectively. They contain loose ashy earth and potsherds. Layer (18) is composed of loose earth and potsherds. It is 12 cm thick. Layer (19) is 10 cm thick and is composed of compact earth. Layer (20) is compact and it is 13 cm thick. Layer (21) is 25 cm thick and consists of accumulation of loose earth, ash and potsherds. Layer (22) is compact clayey earth. It is 26 cm thick. Layer (23) has a thick deposit of loose earth, ash and potsherds. It is 30 cm thick. Layer (24) is generally loose with ash but it has compact clayey earth and potsherds. Layer (25) is again a layer of loose earth with ash having a thickness of 14 cm. Layer (26) is a compact clayey layer having a thickness of 12 cm. Layer (27) is a very loose layer with earth and ash having a thickness of 27 cm. Layer (28) is having loose earth and ash and having a thickness of 19 cm. Layer (29) is made of compact clay with brickbats and potsherds. It is 30 cm thick. Layer (30) is made of loose earth and is having a thickness of 13 cm. Layer (30A) occurs below (30) and consists of very loose earth, ash and potsherds. It is 19 cm thick. Layer (31) has loose earth, ash and pottery and is 18cm thick. Layer (32) and (33) are compact layers of earth and clay having ash, potsherds and are 24 and 23 cm respectively cut by a pit

and are contemporary deposits of STR 14. Layer (34) is having loose earth, ash and potsherds. It is 20 cm thick. Layer (35) consists of compact earth, ash and potsherds. It is 31 cm thick. Layer (36) is a loose layer having earth, ash and pottery. It is 23 cm thick. Layer (37) is a compact layer and has a brick structure of three courses, STR-17 having compact clay. It is built over the contemporary deposit of STR-18. Layer (38) is 24 cm thick consisting of compact clayey earth. As a matter of fact STR-18 is built over STR-20 which is built on layer (40). Layer (39) is 46 cm loose deposit of earth and ashy deposit with potsherds having a thickness of 20 cm. Layer (40) is a loose earth and ashy deposit with potsherds having a thickness of 20 cm. Layer (41) is 17 cm thick layer having compact clay and sand. Layer (42) is loose earth and potsherds having a thin deposit of 11 cm. Below it is layer (44) which is fine silt and sand having a thickness of 11 cm. Below layer (45), a sandy layer occurs having a thickness of 10 cm. Layer (46) is 21 cm thick and has loose earth, potsherd and ash. This is a layer over the natural soil made of compact clay. Below it is loose sand.

This section clearly shows the various phases of the structural activity which is as below:-

Layers	STR Nos.	Phases
(1) – (12)	1-5	Phase IX
(13) – (17)	6-9	Phase VIII
(18) – (21)	10	Phase VII
(22) – (28)	11-12	Phase VI
(29) – (33)	13-14	Phase V
(34) – (36)	15	Phase IV
(37) – (38)	Floor 16, 17 18, 19,	Phase III
(39) – (40)	21-20	Phase II
(41) - (46)	22	Phase I

### TRENCH XA-6, FIGS. 6.2 AND 6.3

#### SECTION, LOOKING NORTH

#### ACROSS STREET, NORTH-SOUTH NO. 1

Layer (1) consists of humus, loose earth and sand having 28 cm thickness. Pit 1 is cut from surface and it cuts Road 1. This section reveals four successive road levels built in layers (1), (2), (2A) and (3). The general feature of these road levels is that these are made of burnt terracotta nodules after breaking (mostly the round terracotta cakes) and loose earth. While Road, 1, 2 and 3 are 22-23 cm thick road 4 is having a thickness of 40 cm. In case of these there is a soling of hard clayey earth over the terracotta nodules. Layer (4) is 22 cm thick having thick clay patches and loose earth. This layer seals Pit-3, which is a huge pit cut into layers (4A), (5), (6), (7), and (8). The pit contains loose earth, patches of hard clayey chunks, brick-bats, ash and pottery. Layer (4A) is a local layer below (4) and is 32 cm thick with loose earth and ash. Layer (5) is 33 cm thick and hard earth and clay patches and loose earth also. Layer (6) is composed of compact earth, clayey patches, animal bones, pottery and brick-bats. It is 50 cm thick. Layer (7) has compact earth and is 30 cm thick. Layer (8) is 42 cm thick has loose earth and clayey patches. In this side the face of STR-2 is plastered by clayey mud. Layer (9) is a compact layer and eastern side of the street has Pit 4 sealed by Layer (8) cut into layers (9) and (10). The pit has mud-brick-bats pottery and loose earth and ash. Layer (9) has a thickness of 24 cm. Layer (10) having top portion of compact earth and lower has loose earth having a thickness of 32 cm. Layer (11) is a loose layer having some chunks of hard compact earth with pottery and ash. It has a thickness of 22 cm. Layer (12) is a generally compact layer with patches

**KALIBANGAN : 1960-69**

DISTRICT HANUMANGARH, RAJASTHAN

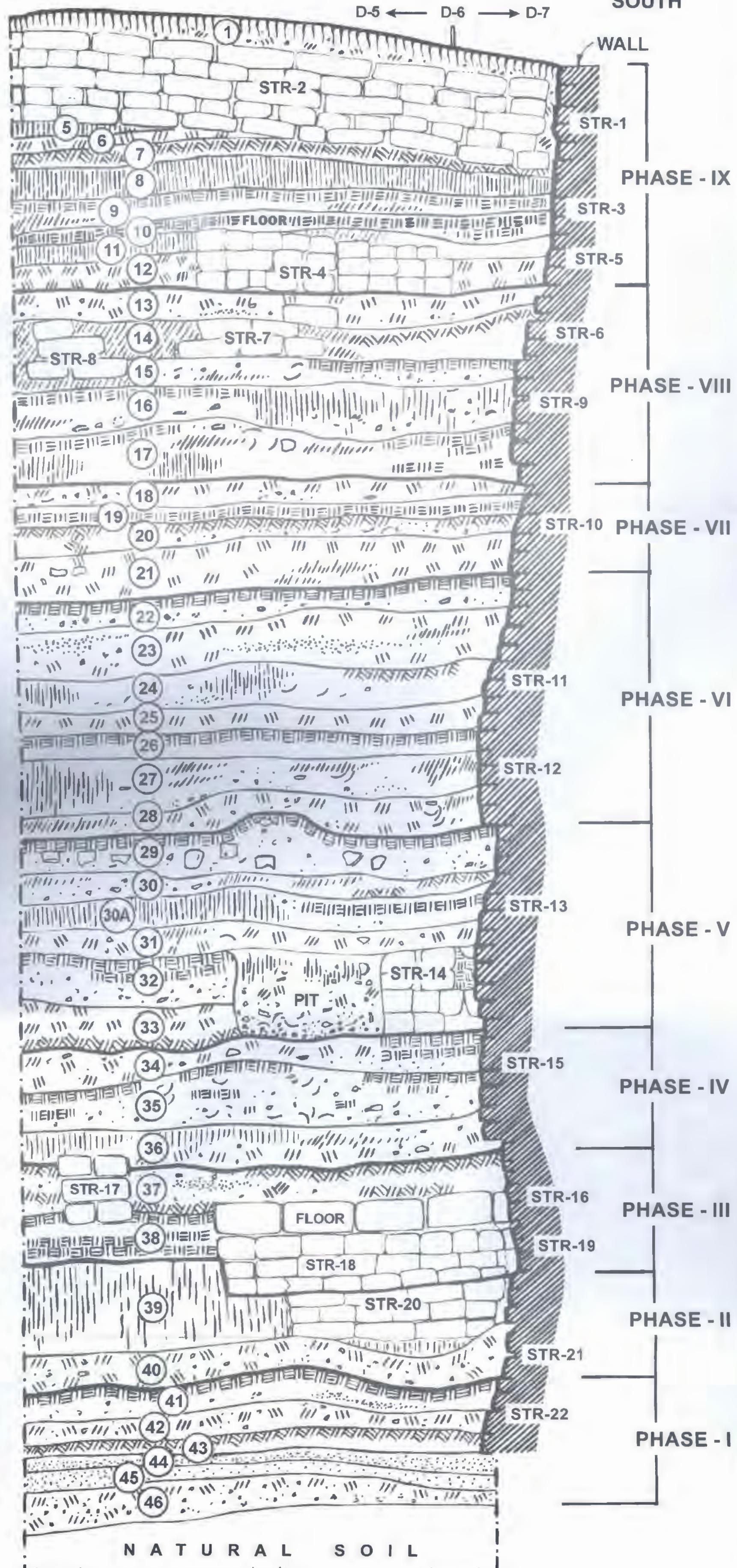
KLB-2, TRENCH D-5, Qd.-3 AND D-6, Qd.-2

SECTION, LOOKING EAST

1 0 1 METRE

NORTH

SOUTH



**Fig. 6.1**



**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-2, TRENCH XA-6

**STRUCTURES STREET AND ROADS  
 SECTION, LOOKING NORTH**

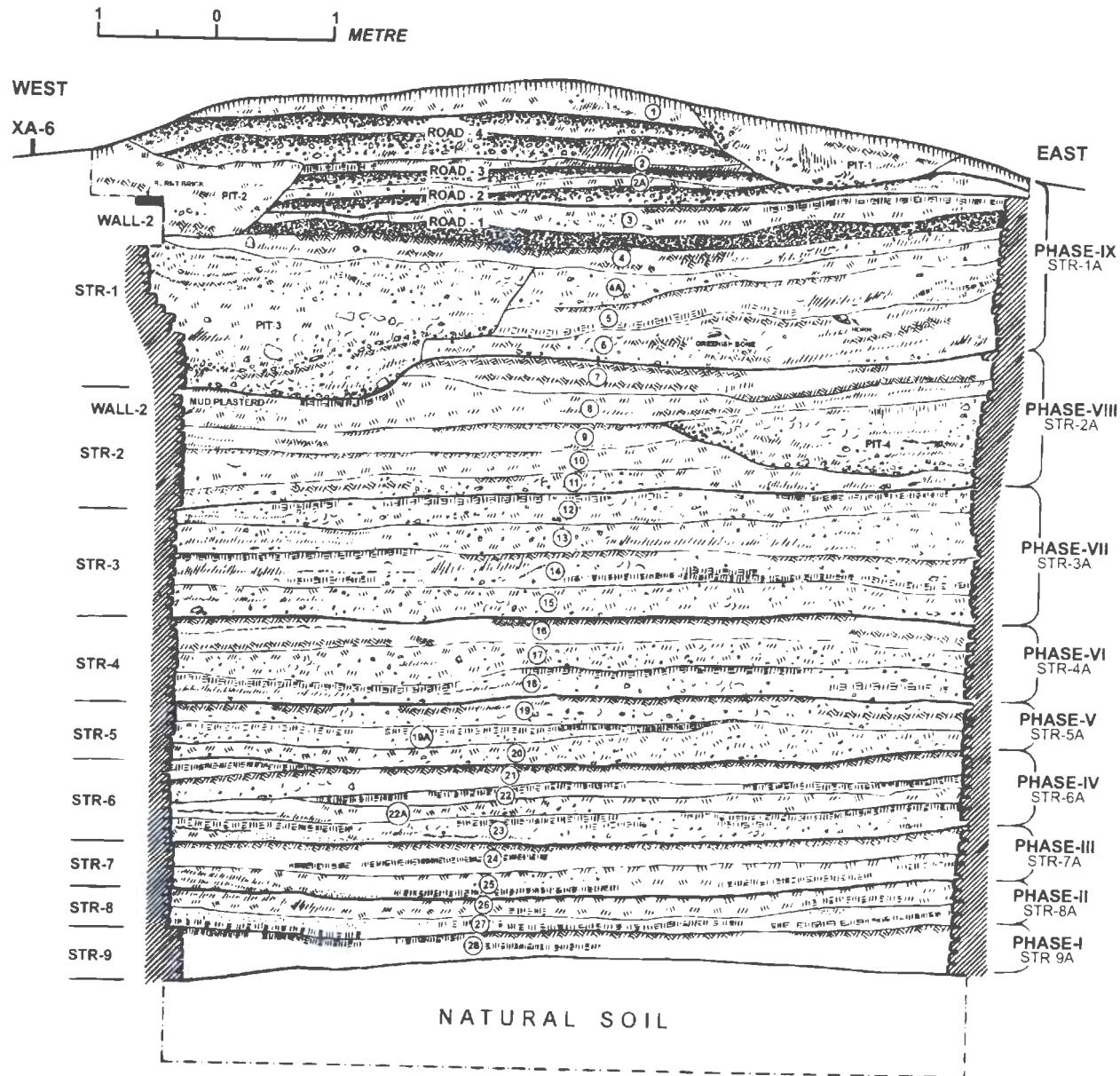


Fig. 6.2

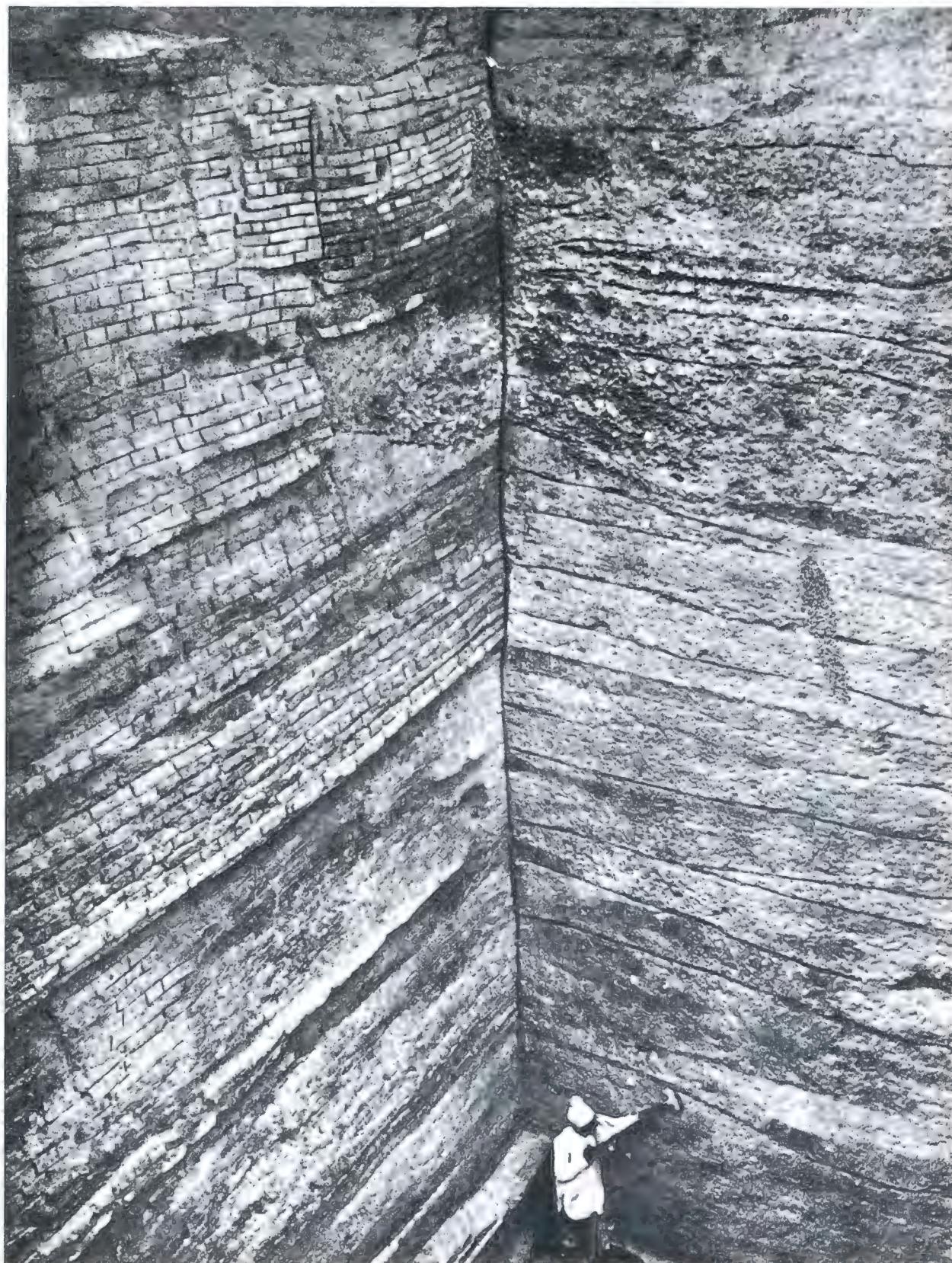


Fig 6.3 KLB 2 Section showing successive structural phases and road-levels in one of the north-south running thoroughfares

of loose earth, pottery and ash. It is 30 cm thick. Layer (13) is a generally a loose layer with earth and ash. It is 43 cm thick. Layer (14) is a compact layer of earth with clayey patches and is having a thickness of 34 cm. It has ash and pottery. Layer (15) is a very loose layer of earth, ash and pottery. It is 30 cm thick. Layer (16) is a very compact layer of clayey earth. It is 30 cm thick. Layer (17) consists of loose earth, ash, pottery and mud-brick-bats. It is 33 cm. thick. Layer (18) is having compact earth with pottery and loose ashy patches. Layer (19) is a compact earth layer with patches of ash and pottery. It is 26 cm thick. Layer (19A) is a local layer having a thickness 20 cm is a compact clayey layer. Layer (20) is a loose ashy layer with earth and is having a thickness of 34 cm. Layer (21) is a composed earth layer having a thickness of 23 cm. Layer (22) is a compact earth and clayey patches. It is 12 cm thick. Layer (22A) is 18 cm thick and consists of loose earth and ash. It has an average width of 18 cm. Layer (23) is a 30 cm thick having compact earth, ash and pottery. Layer (24) is a compact earth layer with clayey patches. It is 30 cm thick. Layer (25) is having loose earth with compact patches of earth and ash. It is 27 cm thick. Layer (26) is having loose earth and few compact earth patches. It is 19 cm thick. Layer (28) is 44 cm thick and consists of compact earth with clayey patches.

<b>Layers</b>	<b>STR Nos.</b>	<b>Phases</b>
<b>Four Road levels</b>		
(7) – (1)	1	Phase IX
(11) – (7)	2	Phase VIII
(15) – (12)	3	Phase VII
(18) – (16)	4	Phase VI
(20) – (19)	5	Phase V
(23) – (21)	6	Phase IV
(25) – (24)	7	Phase III
(27) – (26)	8	Phase II
(28)	9	Phase I

### Trench S-2-XG-2 Fig. 6.4

#### SECTION LOOKING SOUTH

This is cross section of the KLB-2 mound, which shows fortification on eastern and western side with walls of house complexes and two north-south streets.

The section in trenches S1-R1 reveals that the fortification of KLB-2 (city area) was built over natural soil with fourteen courses of mud-bricks having 2 phases, the earlier one having bricks of 30 x 15 x 7.5 cm and later one 40 x 20 x 10 cm. Layer (1) seals Phase I and its contemporary layers are (2) (3) (4) and (4A). Layer (1) is humus and is 40 cm. Layer (2) is loose earth and is 42 cm thick. Layer (3) is compact earth and is 43 cm thick. Layer (4A) is a local Layer is having loose earth and ash is 30 cm thick. Layer (4) is a compact layer of earth and is 30 cm thick. Layers (5) (6) (7) and (8) are compact earth layers belonging to Phase I. Layer (5) is 48 cm thick. Layer (6) is compact and having loose patches and is 40 cm. Layer (7) is 50 cm thick is a compact layer. Layer (8) is loose earth and is 30 cm thick. The fortification in this side is built over the natural soil.

H-1 and J-1 to Q-1 trenches were not excavated.

#### G-2-F-2

In this trench after removal of humus a depth of 70 cm has been excavated for exposing humus. Walls named STR-1 having a height 45 cm with 4 to 5 courses of bricks. The wall is partially exposed. Contemporary layers are (2) and (3). STR-2 is a wall having a thickness of 40 cm and a layout of 20 cm. It is partially exposed. STR-3 is also 70 cm thick and having a height of 30 cm. STR-4 is inside the baulk. These house walls belong to Phase IX.

## F-2 to E-2.

This is a section which shows a house wall STR-1A belonging to Phase VI and regular habitational layers from humus (1) to (9). Layer (2) is a broad layer of loose earth having a thickness 98 cm. Layer (3) which is 50 cm thick and is of compact earth. Layer (4) is loose earth with patches of hard compact earth and is 35 cm thick. Layer (5) is hard compact clayey earth having a thickness of 35 cm. Layer (7) consists of loose earth with a thickness of 22 cm. Layers (8) and (9) are compact clayey earth and contemporary layers to STR-1A and are 30 and 18 cm thick respectively. On either side of the trench there is a street having a width of 3.30 m. This street has back walls of houses of nine phases on both sides. The layers and structural phases are as below.

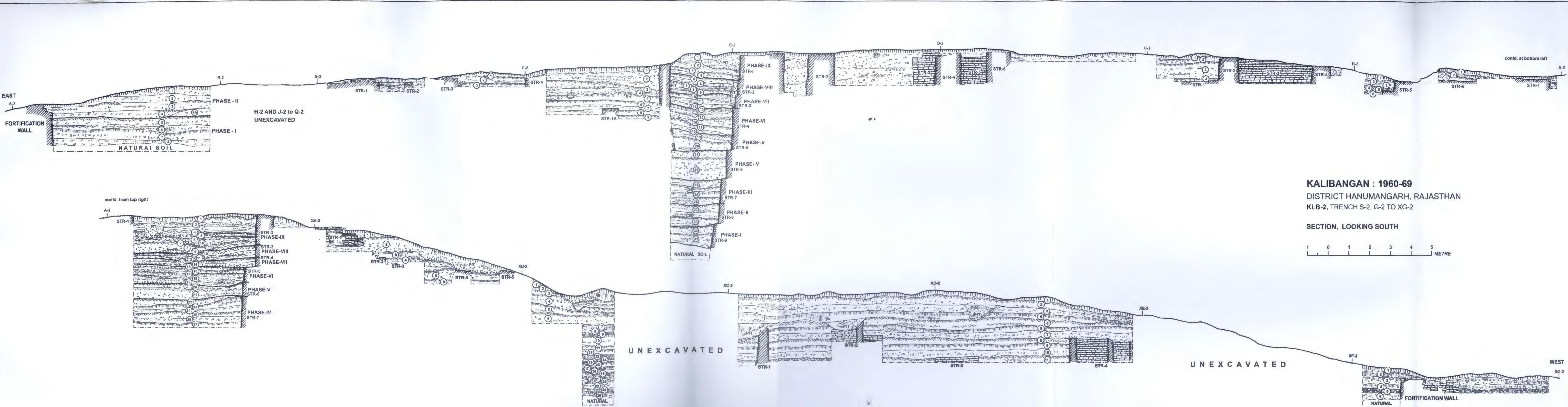
Layers	Phases	STR No.
(1) - (4)	-	Phase IX
(5) - (9)	-	Phase VIII
(10) - (11)	-	Phase VII
(12) - (17)	-	Phase VI
(18) - (19)	-	Phase V
(20) - (22)	-	Phase IV
(23) - (26)	-	Phase III
(27) - (29)	-	Phase II
(30) - (31)	-	Phase I

The stratigraphy is as below :-

Pit-1 has been cut from top and (1) to (3) are probably removed by pit diggers. Below the level of Pit 1, a dark line of charcoal band is running having a thickness of 2 cm.

Layer (4) is a layer of brown compact earth and patches of this can be seen on both corners. In the middle it is disturbed partially by the pit having a thickness of 15 cm. Layer (5) is compact dark brown earth with potsherds etc. having a thickness of 20 cm. Layer (6) is a hard

filling of ash, cakes, charcoal, etc. having a thickness of 20 cm. Layer (7) is compact brown earth having a thickness of 15 cm. Layer (7A) is loose earth of 10 cm. Layer (8) is greenish in colour consists of ash, charcoal, potsherds, terracotta cakes, etc. having a thickness of 10 cm. Layer (9) is thin light brown hard earth, with particles of charcoal and terracotta pieces having a thickness of 20 cm. Layer (10) is ashy loose deposit of terracotta cakes with charcoal, etc. having a thickness of 15 cm. Layer (11) is thick earth of dark colour with huge pottery pieces and cakes having a thickness of 30 cm. Layer (12) is light brown earth with potsherds, cakes and bands of charcoal having a thickness of 20 cm. Layer (13) is hard brown earth with potsherds and a few greenish patches having a thickness of 20 cm. Layer (14) runs in the entire trench and consists of loose dark ashy and charcoal deposits with pieces of potsherds, etc. (10 to 15 cm thick) having average thickness of 10 cm. Layer (15) is a compact brown earth, with few typical pottery pieces having a thickness of 20 cm. Layer (16) is light, brown, loose earth, with ash bands and potsherds and bangle pieces having a thickness of 25 cm. Layer (17) is a whitish-brown hard earth with charcoal pieces and potsherds and a few green patches. All the three layers i.e. (15) to (17) are below the wall no. 8. having a thickness of 35 cm. Layer (17 A) is loose earth with thickness 20 cm. Layer (18) is light brown earth, with potsherds and bangle pieces having a thickness of 30 cm. Layer (19) has a variety of green patches, with ashy bands and pottery in abundance having a thickness of 18 cm. Layer (20) is ashy, gray deposit with thin bands of ash mixed with brown earth, with huge potsherds and bangle pieces having a thickness of 30 cm. Layer (21) is a thick, gray deposit (40 cm thick) with thin pieces of potsherds and terracotta bangle pieces having a thickness of 65





cm. Layer (22) is a loose deposit with green patches, ashy gray bands and light brown earth having a thickness of 35 cm. Layer (23) is a huge washed debris, with 1.10 m thickness consists of innumerable ashy patches, charcoal bands, terracotta cakes, broken and full pottery. A lot of antiquities in shape of terracotta cart frames, beads, steatite were found in this layer. A seal was a unique find of this layer. Large amount of terracotta bangle pieces were strewn in the layer. Layer (24) is a brown earth with few terracotta cakes, potsherds and terracotta bangle pieces having a thickness of 28 cm. Layer (25) is hard brown earth with potsherds having a thickness of 30 cm. Layer (26) is hard brown earth with pottery, separated from above by ashy bands having a thickness of 22 cm. Layer (27) is a hard whitish brown earth with pottery divided from (26) by gray bands of ash having a thickness of 35 cm. Layer (28) is a compact brown earth with pieces of potsherds having a thickness of 40 cm. Layer (29) is a light compact brown earth with huge pottery and terracotta bangle pieces having a thickness of 20 cm. Layer (30) is hard brown earth with pieces of terracotta cakes and pottery having a thickness of 40 cm. Layer (31) is divided from (30) by a thin ashy band and hard brown earth and in general having a thickness of 30 cm and it is over the natural soil.

## E 2 – C-2

This is a cross section of the Big House belonging to Phases VIII and IX sealed by layer (1). STR 2, 4 and 6 are 1.60 m wide walls having a height of 1.90 m. These are walls of the house. STR 3 and 5 also belong to the said house having walls 2.20 m in height with 22 brick courses. On the eastern side only humus and layer (2) have been exposed.

## C-2 - B-2 - A-2

This is a cross section of a house having walls viz. STR 1 is a floor sealed by layer (4). STR 2 and 4 are house walls having a height of 1.15 m with thirteen brick courses. The wall has a width of 1 m. STR 3 is 3.30 m in length and it has thirteen brick courses. STR 5 is 1.50 m wide wall having two phases. Its height is 70 cm. STR-6 and 7 are house walls belonging to Phase IX. Only 2-3 courses are visible in the present dig.

## A-2 – XA-2

This is a cross section of the street running north-south having a width of 5.80 m. These layers belong to the street levels. Layer (1) is 50 cm consisting of humus. Layer (2) is 30 cm thick made of hard clayey earth. On the eastern side there is a pit sealed by (1) and cut into (2) (3) (4) and (5) layers. Layer (3) is 25 cm composed of hard earth. Layer (5) is 23 cm thick and (6) is 20 cm and (6A) 28 cm. All these three layers are composed of hard earth except (6A) which has considerable loose earth in it. Layer (7) is 18 cm with a clayey hard layer. Layer (8) 50 cm wide has loose earth and potsherds in it. Layer (9) is made of hard earth having 28 cm thickness. Layer (10) is again a deposit of hard clayey earth and loose patches having a thickness of 30 cm. Layer (11) is loose earth, ash and potsherds having a thickness of 20 cm. Layer (12) is having loose earth and clayey patches and it is 22 cm thick. Layer (13) is loose earth having clayey compact patches in a thickness of 27 cm. The following layer (14) has same characteristic but has loose earth and is 25 cm thick. Layer (15) is compact clayey layer having a width of 25 cm. Layer (16) and (17) having a thickness of 20 and 30 cm respectively are compact layers of clayey earth. Layer (19) is a loose layer

having charcoal, ash, pottery and loose earth having a thickness of 32 cm. Layer (20) consists of clayey compact earth patches, loose earth and potsherds. It has a thickness of 28 cm. Layer (21) is a thick (60 cm) deposit of loose earth and potsherds. Layers (22) (23) and (24) having a thickness 35 cm, 70 cm and 20 cm respectively generally have clayey compact patches. Layer (25) is a loose deposit of 35 cm with potsherds and ash and clayey deposit. Layer (26) is 25 cm thick and it is a loose earth deposit. Layer (27) is 28 cm thick deposit of very compact clay.

**Stratigraphically the structures are located as below:-**

<b>Layers</b>	<b>STR Nos.</b>	<b>Phases</b>
(1)	STR 1	Phase IX
(2) – (8)	STR 2	Phase VIII
(9) – (10)	STR 3	Phase VII
(11) – (14)	STR 4	Phase VI
(15) – (18)	STR 5	Phase V
(19) – (27)	STR 6	Phase IV

**XA-2 - XC-2**

In these trenches there are cross-sections of house walls and deep digging showing the stratigraphy of the area. In XA-2 there are house walls. STR-1 is built on the top of layer (3). This wall is 2.25 m wide and has 13 courses of mud bricks. STR-2 is a wall having a width of 20 cm. STR-3 is one brick floor is 1.4 m. Both these structures are sealed by layer (3). STR-4 is wall It has width of 60 cm. STR-5 is 70 cm wide house wall. All these house walls belong to Phase VIII. The section between XB-2 and XC-2 is a deep trench touching the natural soil within the area. Layer (1) is humus and it covers a pit. Moreover layer (2) seals an oven, which is disturbed by the pit. Layer (4) is loose layer having a width of 60 cm and consists of loose earth and hard clayey

patches. Layer (5) is 35 cm and consists of compact earth. Layer (6) is loose earth and compact chunks of earth and is 40 cm wide. Layers (7), (8) and (9) are 20, 20 and 18 cm wide respectively. Layers (11) and (12) are 18 and 20 cm wide and consist of hard clayey patches. Layer (13) is loose clay is 19 cm wide. Layer (14) is compact earth is 12 cm thick. Layer (15) is loose earth and is 9 cm thick. Layer (16) is compact and is 19 cm thick. Layer (17) is loose clay and compact chunk and is 18 cm thick. Layer (18) is loose earth and clay and is 12 cm thick. Layer (19) is compact earth and is 20 cm wide. Layer (20) consists of compact clay and ash and is 18 cm thick. Layer (21) is thin layer of 12 cm thick cut by a pit on the left side. Layer (22) is compact clay and it is 15 cm. Layer (23) is a loose earth layer having a thickness of 25 cm. Layer (24) is a thin layer of 8 cm having loose clay. Layer (25) is a layer having compact clay and is 14 cm thick. Layer (26) is loose earth having a deposit 12 cm thick. Below thin layer lies the natural soil.

**XC-2, XD-2 AND XE-2**

This is a section which has eleven exposed layers. Layer (1) is 22 cm wide having humus. Layer (2) consists of loose earth and is 35 cm thick. Layer (3) is loose earth with ash and it is 32 cm wide. Layer (4) is compact clay, loose earth and ash having a thickness of 45 cm. Layer (5) is compact earth and ash and is 43 cm wide. It seals STR-1, STR-2 and layers (6) and (7) are contemporary layers. These two structures are built on layer (8) and belong to VIII and IX phases respectively. Layer (6) is compact clay, earth and ash and it is 30 cm wide. Layer (7) consists of loose earth with gravel. It is 25 cm thick. Layer (7) seals STR-4 having 13 brick courses. Layers (9), (10) and (11) are contemporary to it.

It is built on layer (11). Layer (8) is compact earth and is having a thickness of 35 cm. Layer (9) is compact clay and is 25 cm thick. Layer (10) is loose earth with gravel. It is 40 cm thick. Layer (10) seals STR-3 having three courses and has a thickness of 20 cm. Layer (11) is compact earth and has a thickness of 25 cm.

#### **XE-2 - XF-2**

Not excavated hence omitted.

#### **XF-2-XG-2**

This part gives a cross-section of the western fortification wall built over the Natural soil. It has a width of 3 m having 10 courses of mud bricks with two building phases. It has extant height of 1.80 m. Layer (1) seals the structure. Layer (2) is compact clay and with loose patches. It is 22 cm thick. Layer (3) is compact clay with gravel and is 30 cm. Layer (4) is compact clay and gravel is 21 cm. Layer (5) is compact clay. It is 20 cm thick. Layer (6) is loose earth and gravel and it is 30 cm thick. Below layer (6) is the Natural soil.

#### **TRENCH C-8, Fig. 6.5**

#### **SECTION, LOOKING EAST**

This is a section looking east across a lane running east-west in Trench C-8. Layer (1) is having a thickness of 70 cm with potsherds, loose earth and ash. It is a contemporary deposit of STR-8. Layer (2) is slightly compact deposit having a thickness of 50 cm. It is a contemporary deposit of STR-2 and belongs to Phase VI. Layer (3) which occurs below Layer (2) is 42 cm thick

and composed of compact earth. It is a contemporary deposit of STR-3 and it belongs to phase V. Layer (4) which is contemporary deposit of STR-3 is composed of slightly compact clayey earth and is 30 cm thick. Layers (5) (6) and (7) are contemporary deposits of STR-4 and consists of clayey compact earth with ashy streaks which are 28, 20 and 22 cm thick respectively. Layer (8) is a broad layer having 40 cm thickness having loose earth. It is a contemporary deposit of STR-5 and belongs to Phase III. Layer (9) is a broad layer having a thickness of 35 cm containing compact earth with loose patches. It is a contemporary deposit of STR-6. Layer (1) is again a very compact clayey deposit over the natural having a thickness of 40 cm. It is a contemporary deposit of STR-7.

On the left side of the section there is a huge wall running east-west having eight courses laid in headers and stretchers. This wall is built over layer (2). STR-5A is built on layer (8) and STR-6A is built on layer (9). These are having three courses of bricks running north south.

(See concordance of Layers (Fig. 6.6))

#### **2. STRUCTURES**

#### **Fig. 6.7**

In the 'Lower City', the excavation uncovered the characteristic Indus chess-board plan of a bustling city which was also enclosed by a mud-brick fortification-wall. The fortified area measures approximately 230 m. from east to west, the north-south distance is not duly determinable since southern part is badly eroded but may have been around 360 m.

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH C-8

SECTION, LOOKING EAST

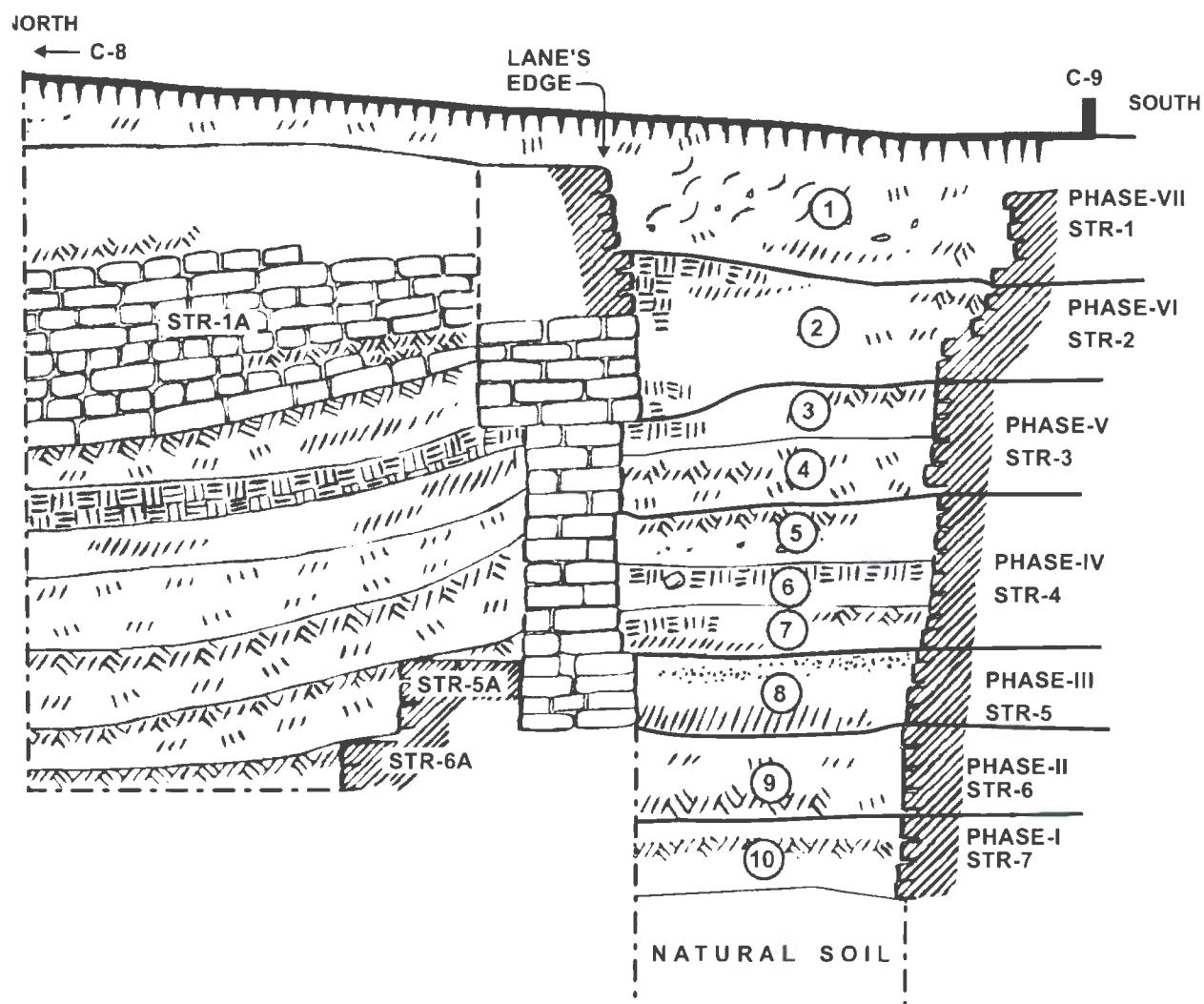


Fig. 6.5

CONCORDANCE OF LAYERS												N A T U R A L						
T R E N C H E S																		
X A 1	X A 6	X A 7	X A 8	X A 9	X A 17	X F 1	X F 2	X G 1	B 6	B 7	B 8	C 5 - 6	E 1 - 2	Y A 15 - 16	PHASES			
1	2	3							1	2	3	4	5	6	7	PHASE-IX		
L	A	A	4	1	1				1	2	3	4	5	6	7	PHASE-VIII		
			5	2	2				2	3	4	5	6	7	8			
			6	3	3				3	5								
			7	4														
			8	6	5													
			9	7	6													
			10	8	7	2	1	1										
			E	11	9	3	2	2	4	6	6	7	7	16	17	PHASE-VII		
				12	10	4	3	3	5	5	5	6	8	19	20			
				13	11	5	4	4	6	6	6	9	1	23	24	PHASE-VI		
				14	12	6	5	5	6	6	6	9	2	27	28			
				R	14	13	7	7	6	6	6	9	1	28	29	PHASE-V		
				15	14	9	8	7	1	7	7	10	3	29	30			
				16	15	10	9	8	2	7	11	4	30	31	32	PHASE-IV		
				17	16	11	10	9	3	8	12	5	31	32	33			
				S	17	13	12	11	10	4	8	13	6	33	34	PHASE-III		
				18	18	14	14	12	1	11	5	1	9	14	15			
				19	19	15	15	13	2	12	6	2	10	15	16	PHASE-II		
				20	20	16	17	15	4	14	9	4	11	16	17			
				21	21	17	18	16	5	14	9	5	11	9	37	38	PHASE-I	
				22	22	18	19	17	6	15	10	6	7	12	18	19		
					23	19	20	18	7	16	11	7	17	11	39	40	PHASE-IV	
					24	24	19	21	19	8	17	11	1	19	12	41	42	
					25	25	20	23	20	9	18	12	3	10	13	43	44	PHASE-III
					26	26	21	24	21	10	18	13	4	11	14	45	46	
					27	27	25	22	19	11	19	14	5	12	15	47	48	PHASE-II
					28	28	22	26	23	13	20	15	6	13	16	49	50	

Fig. 6.6

**GENERAL FEATURES OF STRUCTURES:-**

1. Occupants of Kalibangan had mostly mud walled structures built of mud bricks.
2. Fortification gateways has guard-rooms.
3. The mud-brick structures were usually plastered with clay.
4. Mud-brick and terracotta cakes were utilized as road metal in the roads.
5. The usual size of the bricks is 30x15x7.5 cm; 40x20x10 cm.
6. The quality of the bricks shows uniformity in size and finish. The art of brick laying was well developed.
7. Apart from the mud-bricks, at the drains burnt bricks have been used. This restricted use probably was due to the high cost of burnt bricks and hence the specific usage only.
8. Excepting in the case of drains one course of headers alternating with one course of stretchers is found.
9. The bonding material used is clay, which is grayish or greenish in color. Where water logging had occurred bonding medium turns greenish.
10. In order to make good the damages to walls of houses as well as street wall faces, occasionally the repair work was done by filling the gaps with clay supported with potsherds, charcoal and gravel and then filled up.

11. On the road side the street wall itself formed the main house wall. In some areas there were clearly double walls, i.e. a separate house wall was built.
12. From the street itself different phases of construction and reconstruction could be seen. During successive periods of occupation of the site, successive levels were built-up.
13. Longish streets, parallel to each other cutting at right angles with lanes belonging to different levels are found.
14. The floors in the houses are at times made of decorated incised tiles.
15. The people utilized doorways built in street wall faces itself for entry into house courtyards. In D-3 Qd.3 Trench one such doorway, with its threshold, sill etc. was noticed, and it was about 90 cm wide.
16. Small square rooms were seen more in number. Average size of the rooms from the excavated trenches shows ones with 5sq. m or even less.
17. At successive road levels, the roads were made of gravel, potsherds, charcoal, etc. to give strength and support for road usage.
18. The houses were single or double storeyed. Steps show that these were meant for going to the 1<sup>st</sup> floor. The houses were probably having flat roof made of timber wattle and daub.
19. Besides brick drains, scooped timber drains are also found and terracotta pipes were also used.





20. Four road levels are available on streets of phase IX.
21. Roads of the streets in the earlier phases were not paved.
22. Fender posts of successive phases on the street to protect the house walls from vehicular traffic (Fig-6.46)
23. Fire worship was done by the community in fire altars at KLB-3 mound, in private houses in KLB-2 and by the priests of the elite class on platforms in KLB-1.
24. While bathing was a 'must' for ritual on platforms at KLB-1 due to the presence of so many bath platforms and drains in Harappan levels no such practice was associated with the fire altars of KLB-3.
25. An extraordinary big house appears to belong to a rich merchant or important person in KLB-2.
26. Guard rooms on the gate is an important aspect of architecture.
27. The streets do not have an elaborate drainage system which shows less rain in the area.

Kalibangan does not seem to have an industrial area. It used to get finished products from outside. Such products could be brought from Bahawalpur region where Harappan sites consists of industrial areas also.

#### **A. FORTIFICATIONS, BASTIONS AND ENTRANCES**

**Catalogue of Structures Trenchwise :**  
S-2-R-2, XF-2-XG-2, YD-18 to ZA-18, YD-

17 to ZA-17, YC-16, YB-16 and YB-15, YG-2, YG-1, XG-1, YF-2, YF-1 and XF-1

#### **STREETS AND CROSSINGS**

**Catalogue of Structures Trenchwise :**  
D-2-E-2, D-4 and E-4, D-9, XA-5, XA-6, XA-8, XA-9, XB-10-XB-11, XB-7, XB-8, XB-9, XC-7, XD-8, XD-9, YA-5, ZD-10, ZF-3, ZF-3-ZG-3

#### **HOUSES**

**Catalogue of Structures Trenchwise:** A-1, A-7, A-7, A-8, A-9, B-1, B-7, B-8, B-8, B-9, B-9, C-5 and C-6, C-7, C-8, C-9, D-5, E-6, XA-1, XA-1, XA-15, XA-2, XA-7 and A-7, XA-8, XA-8, XB-6, XC-6, XC-6, XC-8, XC-9, XD-6, XD-7, XE-6, XE-7, XE-8, XF-1, XF-7, XG-6, YA-15 and YA-16, ZA-1, ZB-1, ZB-9, ZC-1, C-1, ZD-1, D-1, ZE-1, ZC-19, ZE-1, ZE-2, ZL-15, ZM-14 to ZM-9

#### **FIRE ALTARS**

**Catalogue of Structures Trench wise :**  
D-7, D-7, D-7, D-7, E-8, E-8, XD-8,

#### **FORTIFICATIONS, BASTIONS AND ENTRANCES, (Figs. 6.8, 6.9, 6.9(a), 6.10 and 6.11)**

The fortification and entrances have been revealed after excavating the following trenches:-

N-21, N-23, P-16, P-17, P-18, P-21, P-23, Q-12, Q-13, Q-14, Q-23, R-1, XA-17 to ZL-17, XG-1, XG-2, XG-3, XG-4, XG-5, XH-5, XH-6, XH-7, XJ-21, XK-21, XM-21, XM-22, YE-10, YE-3, YE-6, YE-7, YE-8, YE-9, YF-4, YF-5, YF-6, YF-7, ZS-1, ZS-2, ZS-5, ZT-10, ZI-1, ZI-5, ZU-17, ZV-17, ZW-17, YD-18 to ZA-18, YD-17 to ZA-17, YF-2 to YE-2, YG-1 to YF-1.

Excavations removed all doubts and fully confirmed the presence of the Harappan fortification wall in all sides of the periphery of the Lower City (KLB-2). In the western side the fortification wall was exposed to a length of over 150 m. with a width varying between 3 m. and 3.9 m. The maximum available mud-brick courses were fifteen. Two sizes of bricks, viz., 40x20x10 cm. and 30x15x7.5 cm. were found to have been used. It was discovered that the northern part the city wall had been built in a box-pattern, with mud filling inside. A gateway about the middle of the fortification wall on this side led to an east-west street. The width of the gateway is 3.7 m. A room, measuring 2.5 x 2.5 m was situated on the interior of the southern flank of the gateway, which seems to have been a guard-room.

At KLB-2, the fortification-wall was exposed to a length of over 110 m on the northern periphery. Built in a box-chamber pattern, it had a width varying from 4 to 9.10 m., involving three to four structural phases. On the western side, the fortification-wall was traced. In the course of exposing the western wall in this part of the mound, a heap of baked-bricks seemingly representing a brick-robbert's dump, was brought to light. On the eastern side, the remains of the fortification-wall could be traced. Persistent search, however, revealed a cutting-line, running in alignment with the outer toe of the existing fortification-wall on this side, and available to a length of over 30 m beyond the extant remains of the fortification-wall. From its behaviour, it may be surmised that this line represents the builder's layout-mark for the fortification-wall. On the southern side, except for washed mud-brick material, no remains of the fortification-wall could be encountered. It is likely, therefore, that the wall on this side may have been completely eroded away. Its

probable position, based on the pattern of street-planning within the city, has however, been shown on the accompanying plan.

In the city-mound (KLB-2), two sets of trenches were laid to find out the relationship of the 'Fortification-Wall' with the houses and streets, one starting from the inner face of the segment of the western 'Fortification-wall', exposed and leading up to the first north-south street on the western side, and another starting from the inner face of the eastern 'city-wall' and leading up to the first north-south street on the eastern side. Though in the western part of the former cutting the lowest level revealed the presence of a few Early Harappan structures and pottery attesting to the extension of the Early Harappan habitation under the limits of the Harappan city, the adjoining square on the east had no sign of any Early Harappan habitation and the settlement began with the Harappan structures and repertoire. In this street, nine successive structural phases of the Harappans were encountered, each associated with a corresponding road-level. A drain lined with baked-bricks and discharging into a soakage-jar placed below the working level of the road, was found in association with a house having baked-brick revetment. In the area excavated on the eastern side also, nine successive building phases were discovered. In both the areas, it was revealed that the 'city-wall' began with the earliest Harappan settlement. While the reasons for the apparent inconsistency between the alignments of the defences and the streets still remain to be fully ascertained – perhaps there was a change in the alignment of the streets in the course of time – it was at the same time observed that the house-walls nearer the 'city-walls' on the eastern and western sides faithfully

followed the alignments of the latter and the house-walls nearer the streets those of the streets themselves. Thus, local adjustments also seem to have played a part in the general layout.

At the city-mound, excavation at selected places, along the eastern and western margins, indicated the existence of over 3 m wide mud-brick wall apparently enclosing the settlement. On the western side, the fortification-wall was less clearly defined in the excavated trench. A spread of mud-brick (size 40x20x10 cm) in a regular alignment did, however, indicate the presence of fortification-wall. On the eastern side, where the level of the surrounding plain seems to have been lower, an additional ledge was seen at the foot of the fortification-wall. It is as yet not certain whether this feature continued throughout the length of the eastern side or was confined only to certain areas. On this side, the fortification-walls were exposed to a length of over 30 m in the middle portion. It was also found that the fortification-wall on this side ran parallel to that on the western side on the one hand and the north-south running citadel-walls on the other, thus indicating a single conception of the city layout. Bastions on all the four corners measuring 15x10 and 18x10 m have been found.

### CATALOGUE<sup>1</sup>

Details of the fortification and entrances in some of the trenches are catalogued as below :-

#### 1. TRENCH NO. XF-2 – XG-2

1. Location KLB-2 Square No. XF-2-

	XG-2 All Quadrants
2.	Type of structure: Fortification wall (Western side)
3.	Stratigraphic position: Sealed by (1), contemporary layers (2) (3) & (4)
4.	Period and structural phase: Harappan, Phases I & II
5.	Measurement of structure: (a) length (b) width (c) height as below
6.	Number of courses: 10-12
7.	Masonry and bond: Header and stretcher, English Bond
8.	Composition of mortar: Earth and grit
9.	Composition of plaster: Not available
10.	Orientation of longer axis: north south
11.	Nature of bricks used: Mud-bricks
12.	Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm; (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm
13.	State of preservation: Good
14.	Shape and other distinguishing features: On the western side the exposed fortification wall is about 150 m available in this area having a height of about 1.25 m and a width of 3 to 3.9 m.

#### 2. TRENCH NO. S-2 – R-2

1.	Location KLB-2 Square No. S2 – R2 All Quadrants
2.	Type of structure: Fortification
3.	Stratigraphic position: Sealed by (1), contemporary layer (2) to (7)
4.	Period and Structural phase: Harappan, Phases I - II
5.	Measurement of structure: (a) length (b) width (c) height as below
6.	Number of courses: 15 - 17
7.	Masonry and bond: Header and stretcher, English Bond
8.	Composition of mortar: Earth and grit
9.	Composition of plaster: Not available

<sup>1</sup> Catalogue of important structures have been prepared trenchwise keeping in view fortification, entrances, streets, houses and fire altars.



Fig. 6.8 KLB 2 Fortification wall on the western periphery of the Lower City.

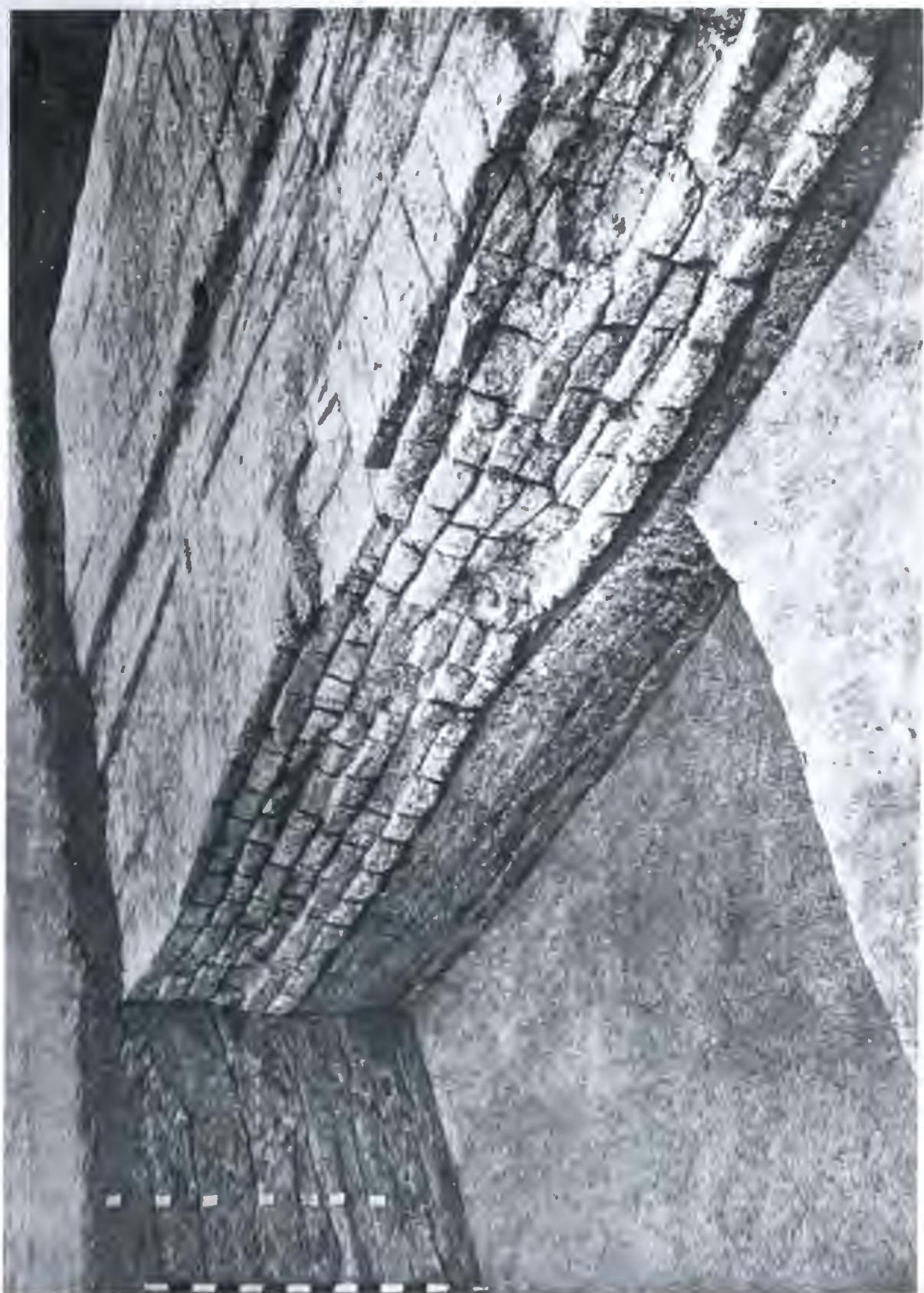


Fig. 6.9 KLB 2 Fortification wall on the northern periphery of the mound



Fig. 6.9(a) KLB 2 Fortification-wall and a part of the northern gateway



Fig. 6.10 KLB 2 Fortification-wall on the eastern periphery of the mound

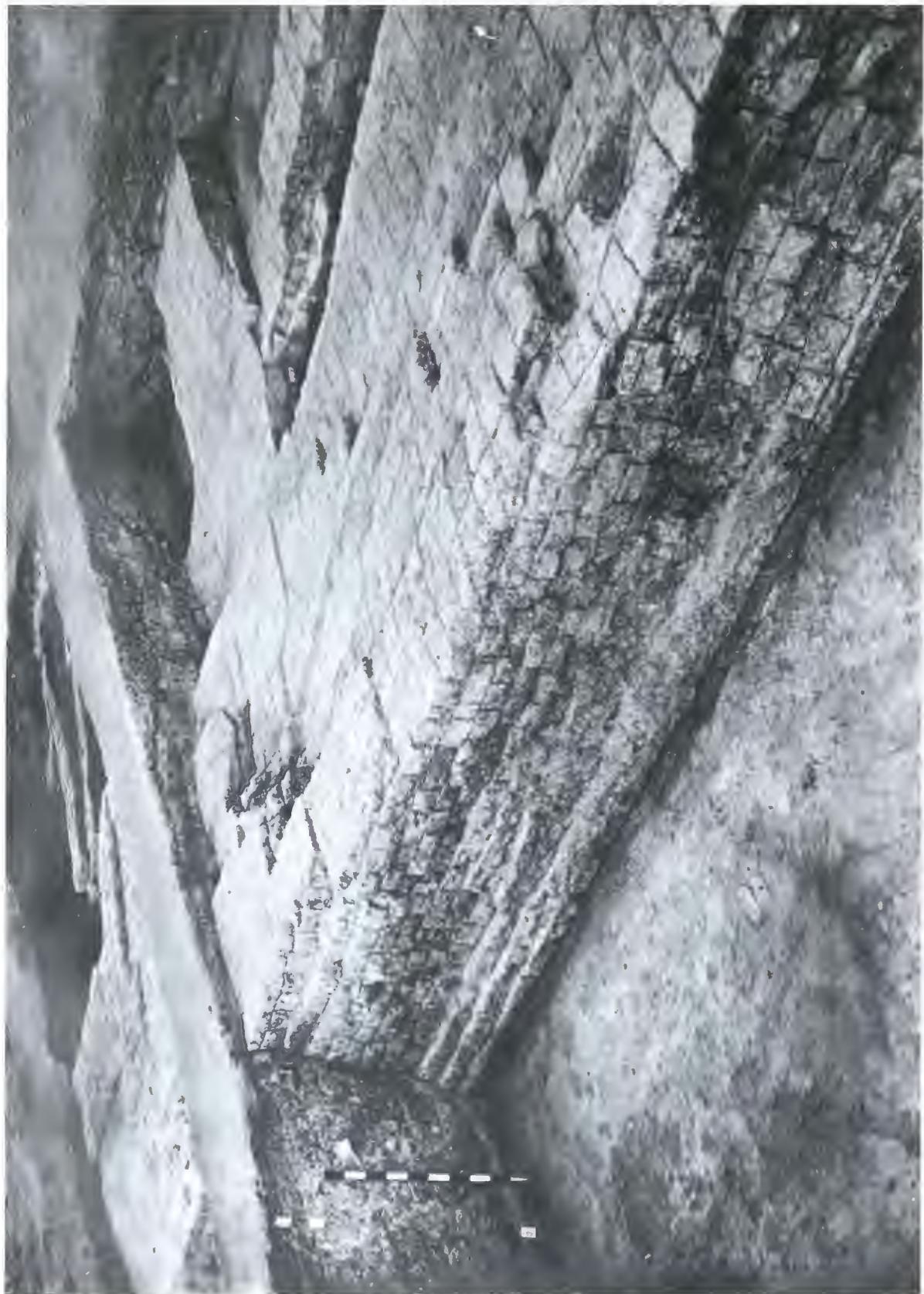


Fig. 6.11 KLB 2 Fortification wall on the southern periphery of the mound

- 10. Orientation of longer axis: north-south
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm; (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm
- 13. State of preservation: Good
- 14. Shape and other distinguishing features: In this trench the eastern fortification wall is exposed up to a height 1.90 m and has 15-18 courses. It has two phases of construction and has a 3.9 m width. An additional ledge at the bottom of the fortification is another interesting feature.
- 3. Stratigraphic position : Sealed by (1) contemporary layers (2) and (3)
- 4. Period and Structural phase: Harappan, Phases I & II
- 5. Measurement of structure : (a) length (b) width (c) height As below
- 6. Number of courses : 10
- 7. Masonry and bond: Header and stretcher, English Bond
- 8. Composition of mortar: Earth and grit
- 9. Composition of plaster: Not available
- 10. Orientation of longer axis : east-west
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
- 13. State of preservation: Eroded
- 14. Shape and other distinguishing features: In trenches YG-2, YG-1, XG-1, YF-2, YF-1 and XF-1 an entrance for inter-communicating with KLB-1 was found cut into the fortification- wall flanked by two bastions (Northern 10x5 m and Southern 10x5 m) having two guard rooms (Size 2.5 x 2.5 m) built out in the inner side of the bastions flanking a 3 m wide entrance. The entrance has two phases of construction.

#### B. ENTRANCES, Figs. 6.12, 6.12(a), and 6.13

The fortification wall of the KLB-2 mound has two entrances i.e. one on the northern river side and another for inter-communicating with KLB-1 on the western side. Both the entrances have flanking bastions. The inter-communicating entrance has guardrooms on both sides in the bastions. The river side entrance in the first phase connected with the north-south street and the staggered street. However in phases II and III houses were built which blocked vehicular traffic in the street due to the fact the opening was blocked by houses. Only the staggered street was in use with houses at the beginning and on both sides.

#### 3. TRENCHES YG-2, YG-1, XG-1, YF-2, YF-1 AND XF-1

- 1. Location KLB-2 Square Nos. YG-2, YG-1, XG-1, YF-2, YF-1 and XF-1, All Quadrants
- 2. Type of structure: Inter-communicating gate and guard rooms

#### 4. TRENCHES YD-18 TO ZA-18, YD-17 TO ZA-17, YC-16, YB-16 AND YB-15, Fig. 6.14

- 1. Location KLB-2 Square Nos. YD-18 to ZA-18, YD-17 to ZA-17, YC-16, YB-16 and YB-15, All Quadrants
- 2. Type of structure: Entrance on the river side rampart and houses
- 3. Stratigraphic position : Sealed by (1) contemporary layers (2) and (3)
- 4. Period and Structural phase: Harappan, Phases I & II
- 5. Measurement of structure : (a) length (b) width (c) height As below



Fig. 6.12 KLB 2 A northern flank of the gateway on the western side of the 'Lower-City', looking north-west



Fig. 6.12(a) KLB 2 Gateway showing the entrance-passage and the guard-room, looking south-east

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-2, TRENCH YG-1, XG-1, YF-2, YF-1 AND XF-1

**PLAN OF WESTERN ENTRANCE**



1 0 1 2 3 4 5 METRE

PHASE ...II  
PHASE ...I



**PLAN**

**Fig. 6.13**

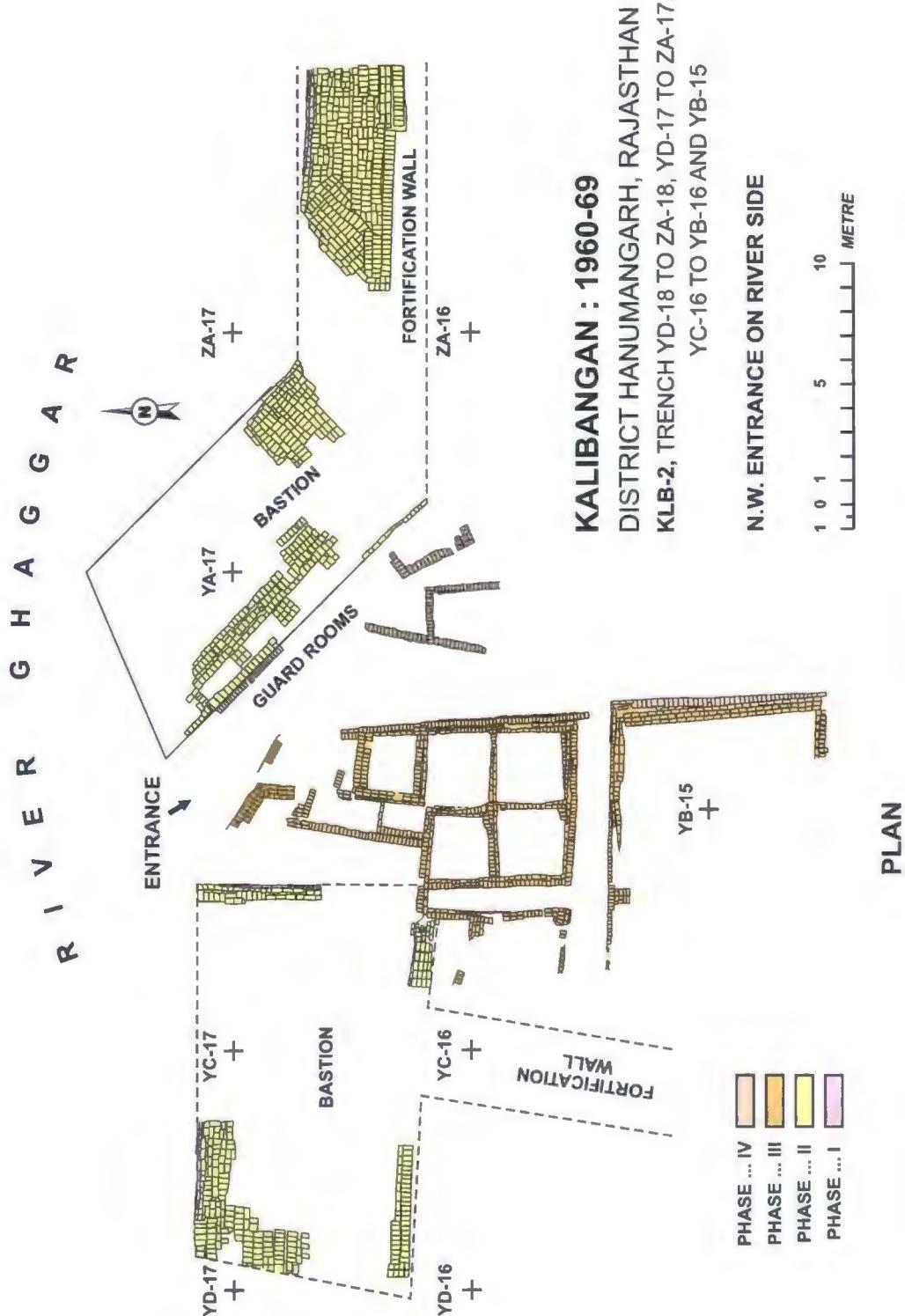


Fig. 6.14

6. Number of courses : As below
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster available
10. Orientation of longer axis : north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Eroded
14. Shape and other distinguishing features: As below :-

### **North-West Entrance on River side**

Trenches YD-18 to ZA-18 (east-west) YD-18 to YD-15 and ZA-18 to ZA-15, YD-15 to ZA-15 (north-south) have brought to light a grand complex on the northern corner towards the river side consisting of a gateway flanked by western (15 x 10m) and eastern (15 x 9m) rectangular bastions of mud-bricks with an entrance 6 m wide. It has two steps for going up the bastion. The entrance's arms are connected with fortification-wall on both sides. This fortification though eroded belongs to Phases I and II. This entrance was earlier open to two streets but later on blocked by houses in II and III phases and there was no vehicular traffic in two streets running north-south and quite a few houses were built having 5 to 7 rooms belonging to later phases. These could be a check post. The size of rooms was 2.50 to 3 m which are mostly square. The main north-south thoroughfare revealed houses on both sides. These are partially exposed. The size of fortification-wall on both sides is having a width of 3 m.

### **C. STREETS AND STREET CROSSINGS**

**Figs. 6.15, 6.16, 6.17, 6.17(a), 6.18, 6.19, 6.20, 6.20(a), 6.21 and 6.22**

Five arterial thoroughfares running north-south (NS) and three running east-west (EW) have so far been excavated, and it is surmised that within the unexcavated length of the mound more, east-west thoroughfares may be found<sup>2</sup>. Besides, there were quite a number of east-west lanes, which were staggered on plan and served perhaps as delivery or entrance-lanes for the concerned house-blocks. The width of the thoroughfares and the streets was rigorously maintained, and fell within multiples of approximately 1.80 m., pointing to a strict control under a central civic authority. To avoid damages from a busy vehicular traffic, at some of the street-corners wooden fender-posts were provided. The only structures in the street were the rectangular platforms immediately outside some of the houses. The streets except in the late phase were un-metalled. No evidence of regular street-drains has so far been encountered; house-drains, which were either of wood or of baked-bricks, discharged into soakage-jars buried in the street. The use of timber, scooped so as to give a U-shaped section, for house-drains is noteworthy.

Area digging in the central part of the mound KLB-2 revealed house-plans. In this area also nine successive building levels were encountered. As already stated earlier, the house-block had a street each on the eastern and western sides and a lane on the southern side connecting the two streets.

The excavation uncovered the characteristic Indus chess-board plan with oblong blocks of houses, subdivided by lanes

<sup>2</sup> M. Jansen, 'Settlement pattern in Harappan Culture', *South Asian Archaeology 1979* (Ed. H. Hartel). Dietrich Reimer Verlag, Berlin, p. 257.



*Fig. 6.15 KLB 2 Main thoroughfare*



Fig. 6.16 KLB 2 North-south street and east-west lane



Fig. 6.17 KLB 2 Mud-brick wall



Fig. 6.17 (a) Floors with terracotta nodules and charcoal



Fig.6.18 KLB 2 Entrance of a house showing the corridor and flanking rooms



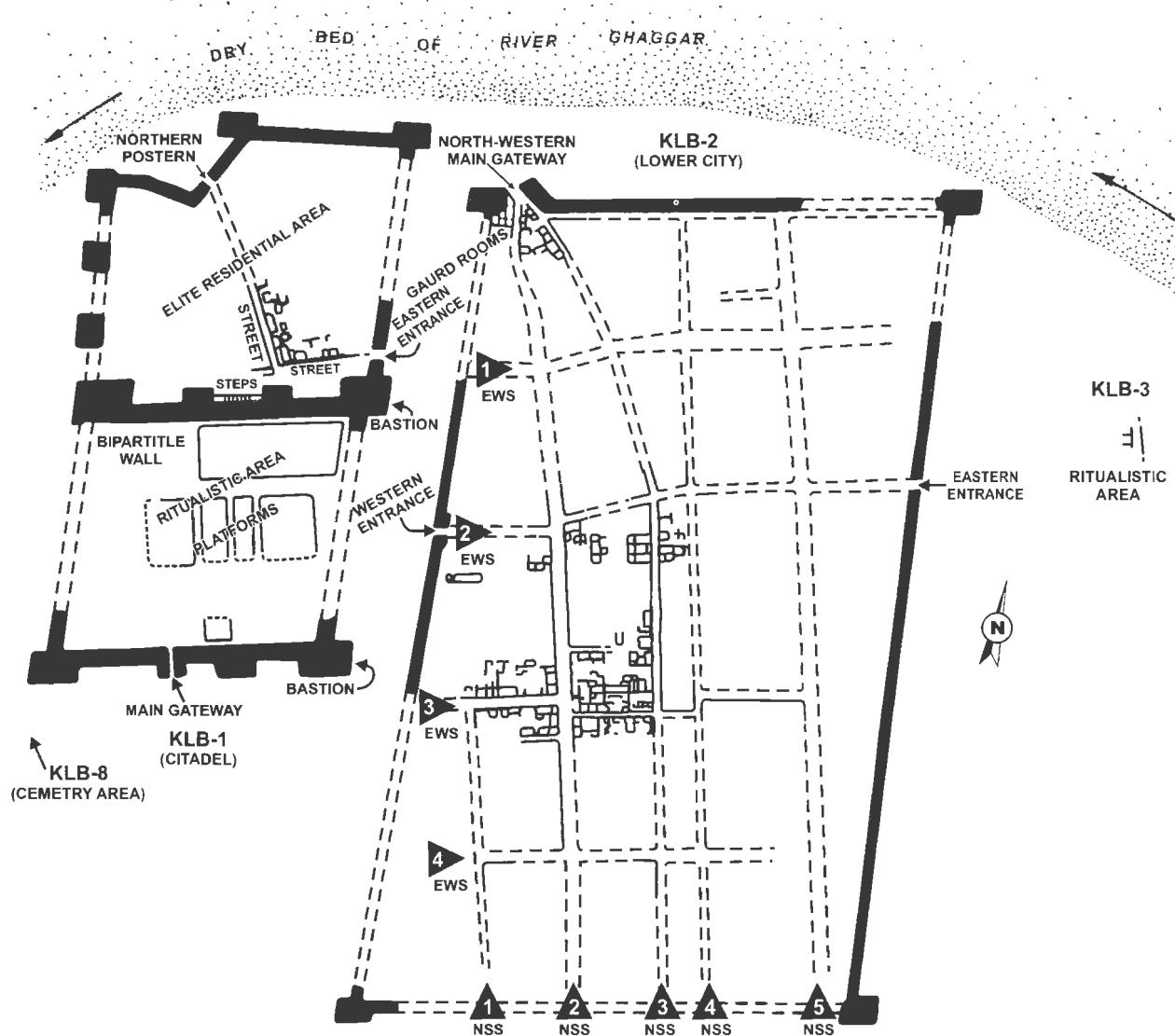
Fig.6.19 KLB 2 Soakagṛ-jar



Fig.6.20 KLB 2 A house-drain discharging into soakage pit



Fig.6.20(a) KLB 2 Street-drain discharging into soakage jar



**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
STREET PLAN

100                    0                    100  
METRE

Fig. 6.21

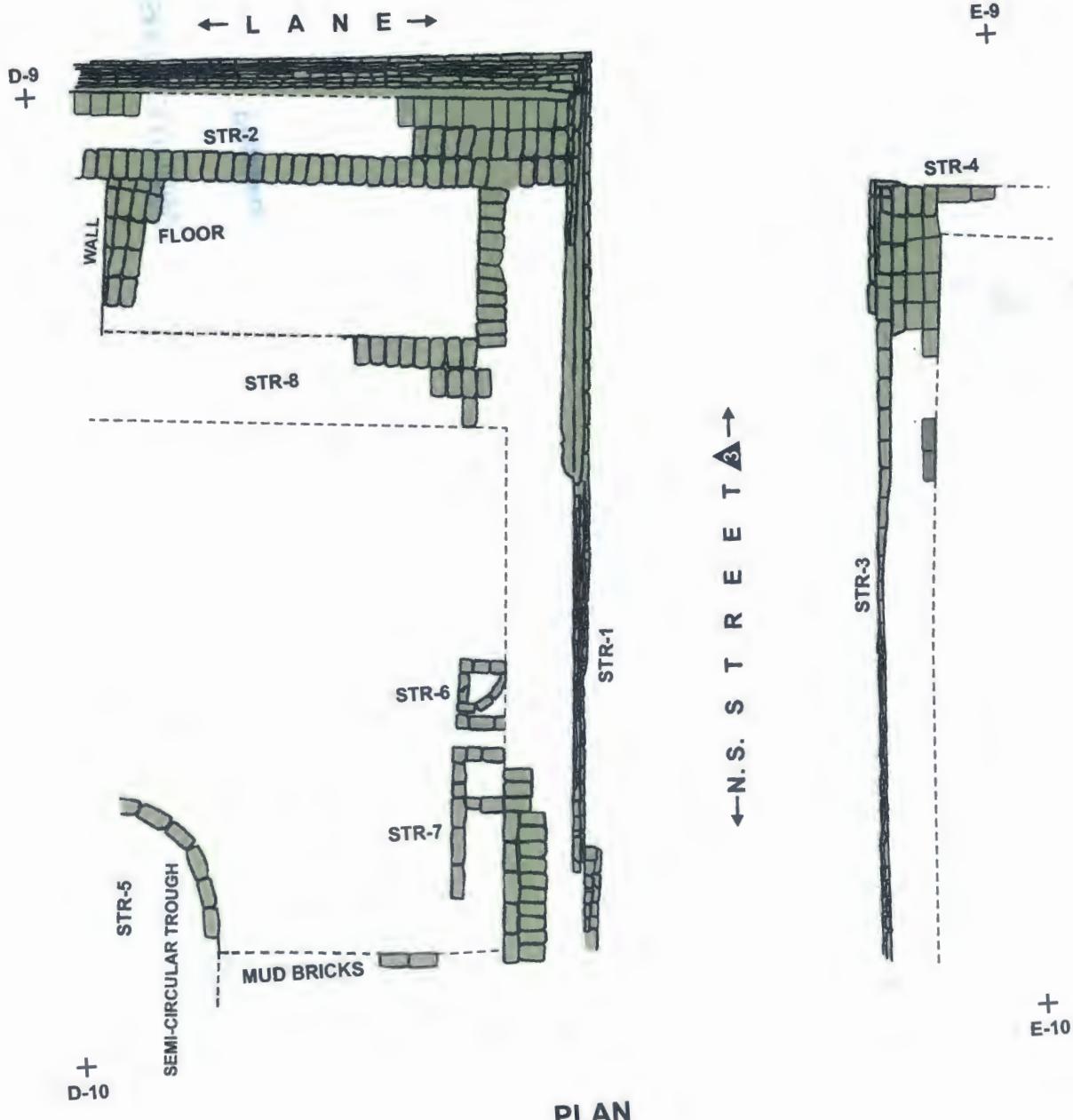
**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-2, TRENCH D-9



LANE AND STREET

1 0 1 2 METRE

PHASE-V.....



PLAN

Fig. 6.22

and thoroughfares. The main arterial thoroughfare, part of which was excavated to the natural surface, measured over 7 m in width and, throughout the occupation was rigorously maintained without any serious alteration. The only encroachment on the street consisted of the curious rectangular troughs or bazaar platforms outside some of the houses. No street-drains were found; at one place, however, successive drains from a house-block were seen to discharge into the street. The street except for the late phase was un-mettalled. On the other hand in front of some of the houses could be seen patches of mud-brick flooring, sometimes with brick-on-edge.

Four north-south thoroughfares were exposed in stretches in the southern margin of the city to show its crossings with the earlier-known four north-south thoroughfares. It appears that there were five north-south thoroughfares and four east-west ones along with three or more east-west lanes. Reckoning from the south, this would be the first east-west thoroughfare. At its crossing with the main north-south thoroughfares, remains of wooden fender-posts were found at successive levels of the street corner. Upwards of 70 m. further north, another east-west street was located and consequently exposed to a length of about 50 m., extending up to the eastern margin of the city. Unlike the former east-west thoroughfare, this street did not extend from one end of the city to the other but taking off from a centrally-placed north-south thoroughfare, ran only in the eastern part, and was planned in alignment with a similarly-situated east-west street running in the western part.

## 5. TRENCH D-9

- Location KLB-2 Square No. D-9 Quadrants 1, 2 and 4

- Type of structure: Street and lane crossing and house walls
- Stratigraphic position : Level (1) to (3)
- Period and structural phase : Harappan, Phase V
- Measurement of structure: (a) length (b) width (c) height  
As below
- Number of courses : 1 to 6
- Masonry and bond: Header and stretchers, English Bond
- Composition of mortar: Mud
- Composition of plaster: No plaster is available
- Orientation of longer axis : As below
- Nature of bricks used: Mud-bricks
- Dimension of bricks : (a) length 30 cm (b) width 10.5 cm (c) thickness 7.5 cm
- State of preservation: Fragile
- Shape and other distinguishing features:  
Between the lane (width not clear) and street corner there is a room of the house. A wall running east-west has length of 5.30 m width of 90 cm having a top of 1 m with header and stretcher bricks and 3-5 courses. The room appears to be brick-floored.

**STR 1 Wall (outer face of street) Western arm of street no. 3** It is sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 9 m (b) width 1.20 m (c) height 80 cm. Number of courses is three-four. Orientation of longer axis is north-south. Dimension of bricks : (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm. This is one arm of the street no. 3 NS having a width of 3 m (Fig. 6.23).

**STR 2 Wall** It is sealed by layer (1) built over (3). Its period and structural phase is Harappan, Phase V.



Fig.6.23 KLB 2 Street drains at the corner of the junction of the north-south, street and lane

Measurement of structure is (a) length 5.30 m (b) width 90 cm (c) height 44 cm. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Wall** It is built over (3) and sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 8 m (b) width 1 m (c) height 69 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 21 cm (b) width 10 cm (c) thickness 10 cm.

**STR 4 Wall** It is built over (3). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.35 m (b) width not clear.

**STR 5 Semi-circular** It is built over (3). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2 m (b) width 30 cm (c) height 18 cm. Only one course. Orientation of longer axis is not clear. Dimension of brick: (a) length 15 cm (b) width 7 cm (c) thickness 11 cm.

**STR 6 Wall** It is built over (3). Its period and structural phase is Harappan, Phase V. These are small non-descript one brick structure having one square and another bisected area covered by the structure is 70x50 cm. Dimensions of bricks: 40 x 20 x 10 cm.

**STR 7 Street wall** It is sealed by layer (1). Its period and structural phase is

Harappan, Phase V. Measurement of structure is (a) length 1.50 m (b) width 50 cm (c) height 40 cm so far exposed. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks are (a) length 32 cm (b) width 15 cm (c) thickness 7 cm. This is the other arm of the street no. 3 north-south.

**STR 8 Room wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is 1.60 m x 90 cm. Number of courses is three. Orientation of longer axis is east-west. Dimensions of bricks: 40 x 20 x 10 cm.

#### 6. TRENCH D-2 – E-2, Fig. 6.24

1. Location KLB-2 Square No. D-2- E-2 All Quadrants
2. Type of structure: Street and house wall
3. Stratigraphic position : Sealed by (1) and contemporary layers are (3) & (4)
4. Period and structural phase : Harappan, Phase VIII & IX
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : 22 courses
7. Masonry and bond: Header and stretcher. English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: This is a part of the street

D-3  
+

D-2  
+

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH D-2, Qd.- 2 AND 3

STREET

1      0      1      2      3 METRE



PHASE- IX .....   
PHASE- VIII ..... 

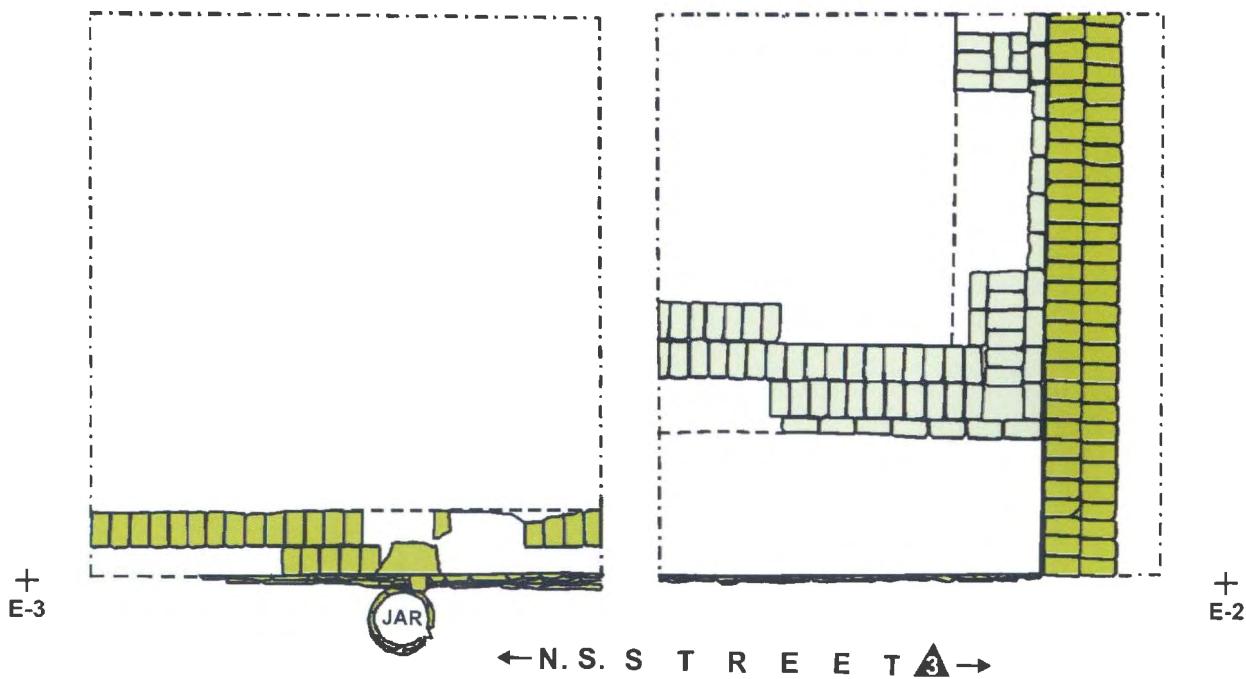


Fig. 6.24

wall north-south having a length of 4.5 m and a width of 60 cm. A house has also been partially exposed at the back of the street measuring length 2.50 m x 2.50 m. On the street side there is a soakage jar put just adjacent to the street wall.

#### **7. TRENCH ZE-3, Fig. 6.25**

1. Location KLB-2 Square No. ZE-3 All Quadrants
2. Type of structure: Street crossing, corners
3. Stratigraphic position : Sealed by (2)
4. Period and structural phase : Harappan, Phase IX
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : 4 to 5 courses
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : Crossing
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a street crossing having four corners, one not very clear. Measurement of the four corners is as below :-
  - (1) 80 x 20 cm (2) 4 x 1.40 m (3) 2.80 x 2.40 m (4) 3.50 x 3.40 m (Room)
 Two of the corners have a small ledge outside.

#### **9. TRENCH XB-10 – XB-11, Fig. 6.27**

1. Location KLB-2 Square No. XB-10 – XB-11 All Quadrants
2. Type of structure: Street and lane crossing
3. Stratigraphic position : Sealed by (3) contemporary layers (4) & (5)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : 5 courses
7. Masonry and bond: Header and stretcher, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : Street and lane, north-south

#### **8. TRENCH ZF-3 – ZG-3, Fig. 6.26**

1. Location KLB-2 Square No. ZF-3-ZG-3 All Quadrants
2. Type of structure: Crossing

**KALIBANGAN : 1960-69**

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH ZE-3

STREET CROSSING

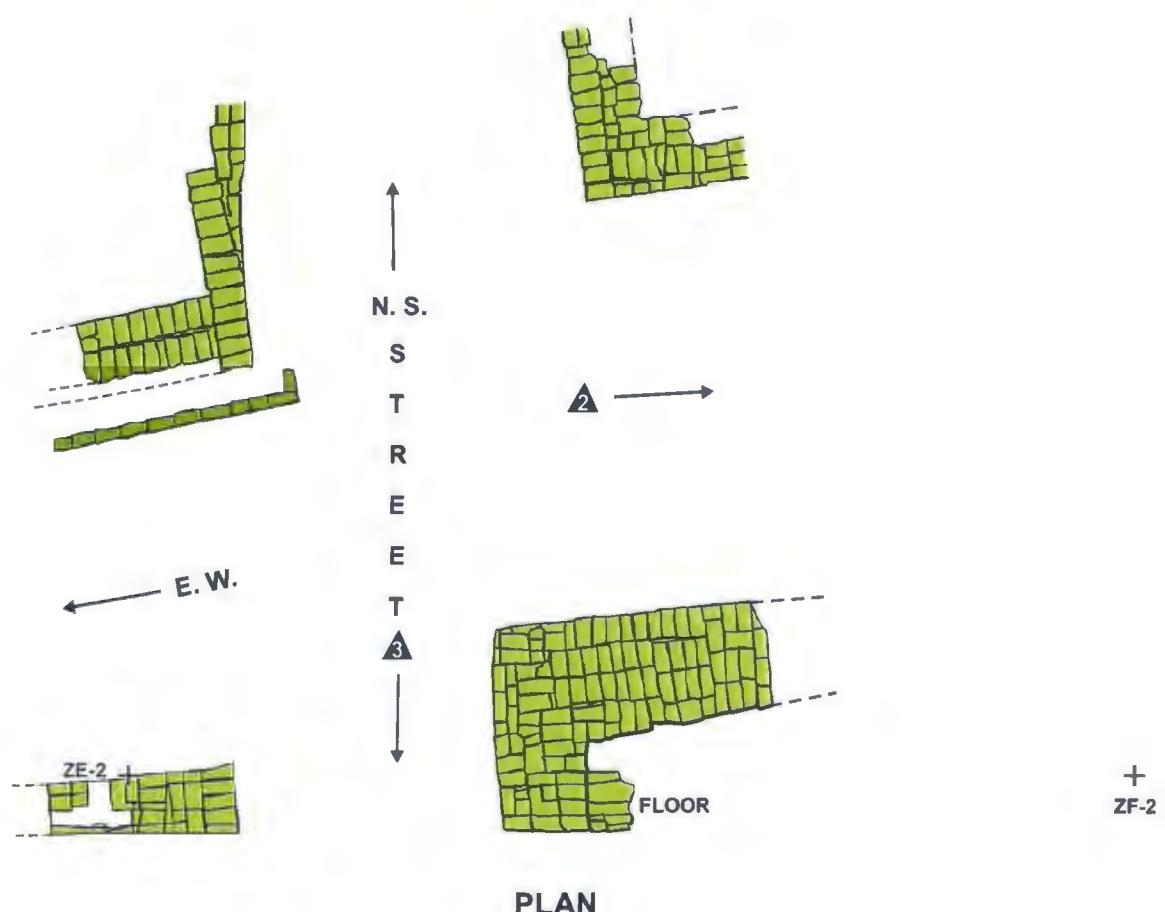


1 0 1 2 3 4 METRE

PHASE- IX .....

ZE-3  
+

ZF-3  
+



PLAN

Fig. 6.25

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH ZF-3 AND ZG-3

STREET CROSSING



1 0 1 2 3 4 METRE

PHASE- VIII .....

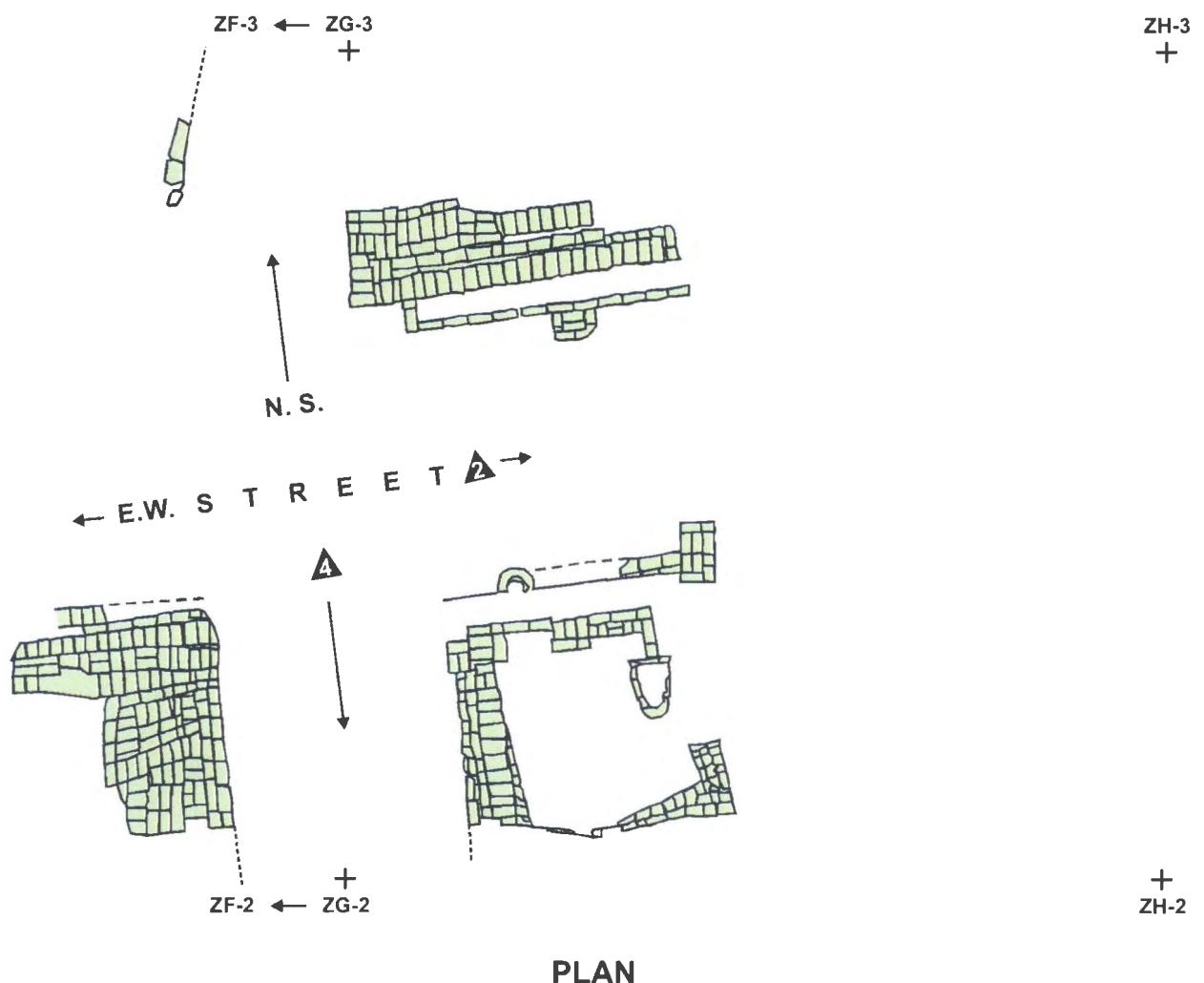


Fig. 6.26

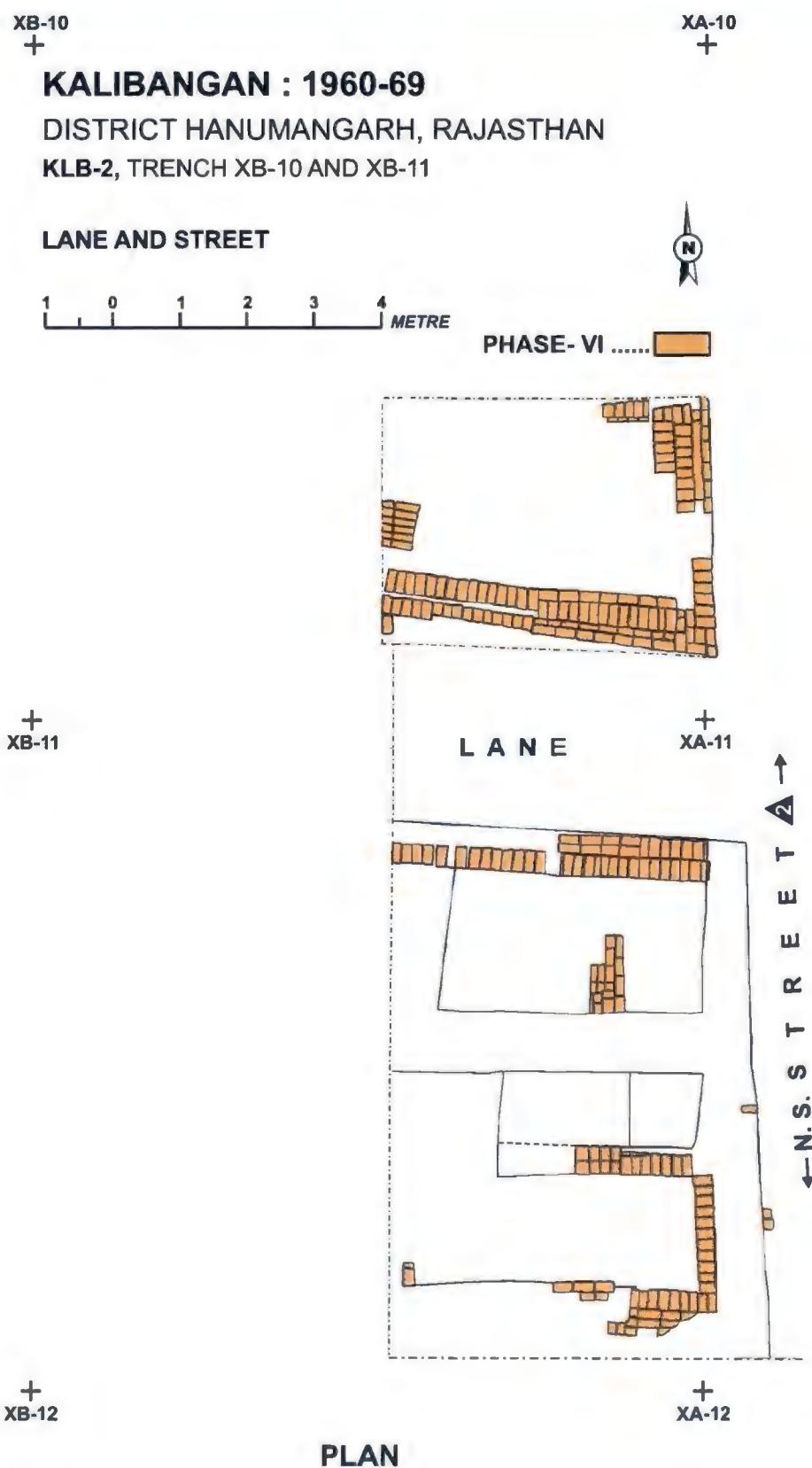


Fig. 6.27

11. Nature of bricks used: Mud-brick
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a crossing of north-south street and a lane running east-west. Length of street is  $8 + 4 = 12$  m, width of the lane 3 m. By the side of the street there is a house with partially exposed wall. One wall running east-west measures 5.20 m.

#### **10. TRENCH YA-5, Fig. 6.28**

1. Location KLB-2 Square No. YA-5 Quadrants 1 and 2
2. Type of structure: Street crossing
3. Stratigraphic position : Sealed by (1) contemporary layers (2) & (3)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : 3 to 4 courses
7. Masonry and bond: Header and stretcher, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a street crossing belonging to Phase VI. The western arm is 4.80 m long having a width of 1.90 m. The eastern arm is 3 m long 2.15 m wide. The width of the street is 7 m.

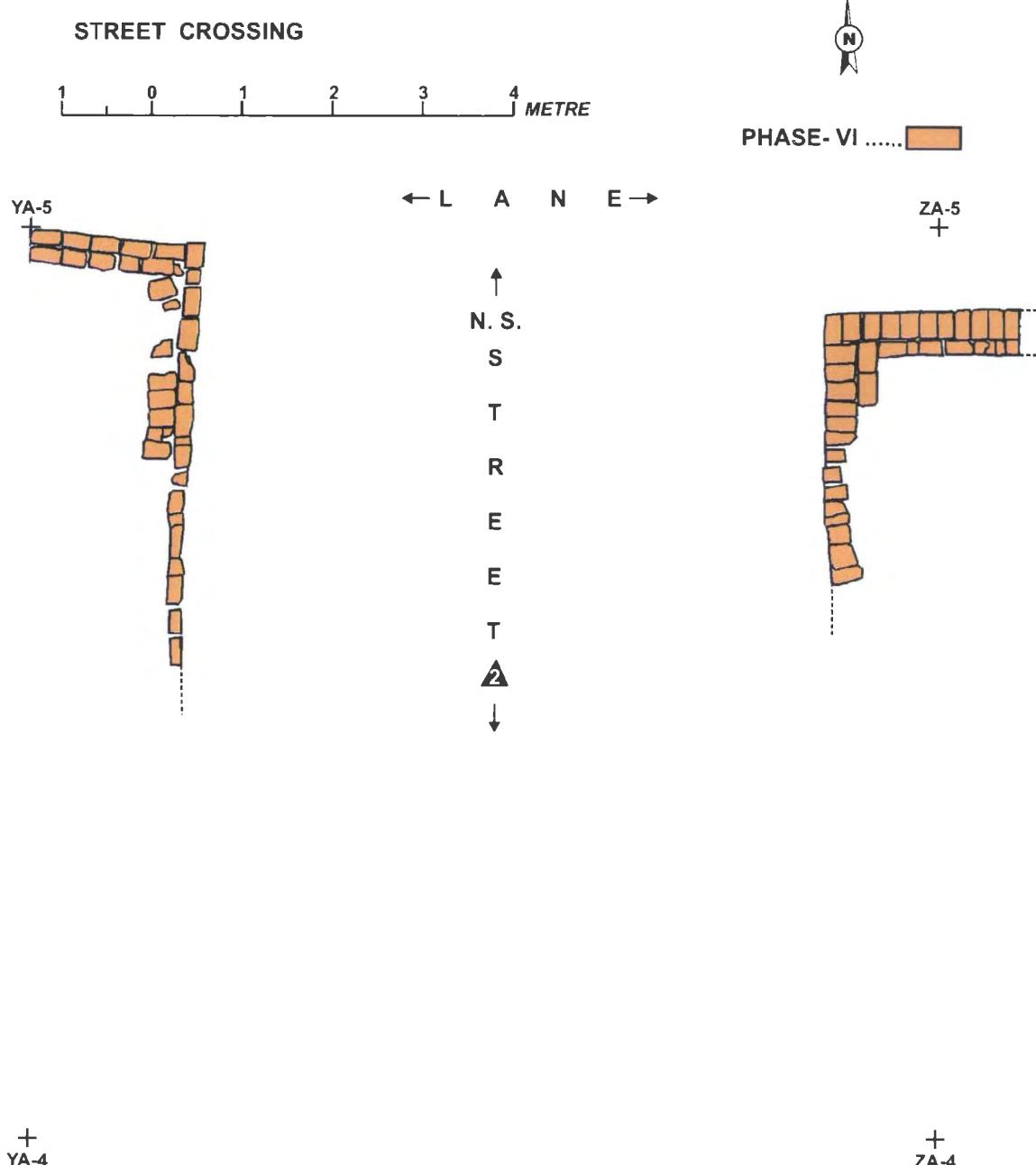
#### **11. TRENCH ZD-10**

1. Location KLB-2 Square No. ZD-10 All Quadrants
2. Type of structure: Street and house walls and fire altars
3. Stratigraphic position : Sealed by (4)
4. Period and structural phase : Harappan, Phase VII
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : 3 to 4 courses
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : east-west
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Fairly good
14. Shape and other distinguishing features: These are partially exposed house walls by the side of the street. Length of the wall 2.25 m, width 60 cm and height 60 cm. There is a fire altar of two phases by the side of the wall having a diameter 50 cm with ash, a stump, pottery and bone piece. It is sealed by layer (4).

#### **12. TRENCH NO. XA-8 AND XA-9, Fig. 6.29**

1. Location KLB-2 Square No. XA-8 and XA-9 All Quadrants
2. Type of structure: House wall, street
3. Stratigraphic position: (1) to (22)
4. Period and Structural phase: Harappan, Phases I - IX
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: 40-45

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-2, TRENCH YA-5



**PLAN**

Fig. 6.28

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH XA- 8 AND XA-9 Qd.-2 AND 3

### STREET AND LANE

1 0 1 2 3 METRE



XA-8  
+

A-8  
+

- PHASE ... VIII
- PHASE ... VII
- PHASE ... VI
- PHASE ... V
- PHASE ... IV
- PHASE ... III
- PHASE ... II
- PHASE ... I

XA-9  
+



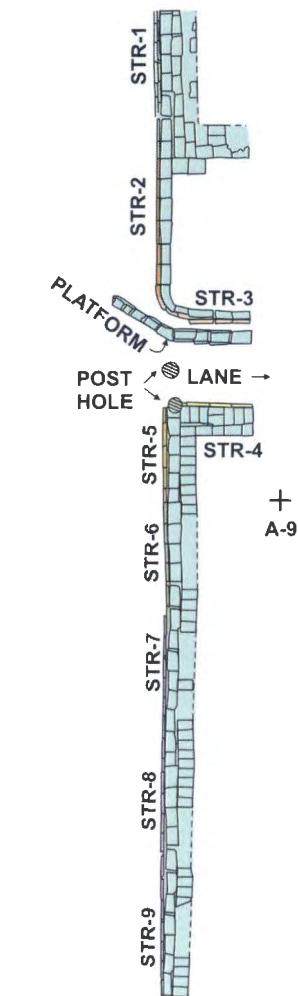
N.

S.  
T  
R  
E  
T



XA-10  
+

A-10  
+



### PLAN

Fig. 6.29

7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Clay
10. Orientation of longer axis: north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: Details regarding streets and various house walls are given below :-

**TRENCH XA-9** The excavation in this trench revealed that the street runs in north-south direction. The determination of street has been done by the availability of two walls in both the sides. Natural soil has been touched in all the four quadrants. For determining the phases section looking south has been taken into consideration.

**STR 1 Wall** It runs in north-south direction in quadrants 2 and 3. It was available on the top just after the removal of the humus. Its maximum available width at the top is 1.41 m. Its maximum height is 3.95 m. The length of the wall is 9.10 m (south-north). On the top the wall has total 5 rows of headers and stretchers.

The earliest phase of the wall 1 hereafter named as Phase I, is available at a depth of 3.95 m. Here the wall has been built after cutting into layer (20). The top of layer (20) is the working level of this phase of wall no. 1. The wall is built of rows of headers and stretchers. Layers (17), (18) and (19) are contemporary layers while layer (16) seals this phase. In all 8-9 courses of bricks are available.

In phase II, the wall no. 1 has again been rebuilt. The foundation trench is available for the phase in question is cut into layers (14), (15) and (16). The top of (14) is the working level of Phase II. Layers (13), (12) and (11) are contemporary layers of this phase while layer (10) seals this phase of wall. Eleven courses of bricks are available. The wall is plastered. However headers and stretchers are available at few places.

In phase III, the wall no. 1 has again been rebuilt. The foundation trench of this wall is cut into layer (10). Top of layer (10) is the working level of this phase; 8 to 9 courses are available. In this phase 6 courses (top) are slightly out of plumb. No definite sub phase of structural activity could be recognized. In quadrant 2, wall no. 1 in Phase III has a special feature of a course of bricks put vertically.

**STR 2 Wall** In quadrant 2, wall is available on the top itself. It runs in east-west direction. It has a length of 90 cm and width 60 cm. It joins with wall no. 1. It has 9 courses of bricks laid in headers and stretchers. Keeping in view square no. A-9, this wall is a part of a room 4.15 x 2.15 m (inner measurement). This wall is built on the top of (8) but the position is not very clear.

**STR 3 Wall** It runs in east-west direction and joins with wall no. 1. It is a one course brick wall. It has a length of 80 cm. This wall belongs

to Phase III. Since it is just available on top and not traceable further nothing can be commented regarding its exact working level.

**STR 4 Wall** This wall belongs to Phase III and just available on plan on the top and runs in east-west direction and joins with wall 1. It has a length of 80 cm and width of 55 cm.

**STR 5 Wall** It is also available only on plan and runs east-west and joins with wall no. 1. It has length of 85 cm, width 45 cm. This wall also belongs to Phase III of the structural activity in this area.

**STR 6 Wall** This is a wall which runs in north-south direction in quadrants 1 and 4. It is also extended in XA-8. It seems to be the other main arm of the street in the eastern side. In this square its maximum length is 6.85 m. Maximum available width is 48 cm. At present 10 courses of bricks is available. Keeping in view the section looking south, there seem to be two structural phases involved in this wall which are as below :-

This is built on layer (14). 3 courses of brick are available. Besides, a projection is available in quadrant 1 having 80 x 49 cm. 2 courses of bricks are available. (Not fully exposed). Phase II.

This is built on the top of layer (11), having (10), (9) and (8) as contemporary layers. 5 courses is available. Phase III.

**STR 7 Wall** This is a one brick wall running in north-south direction parallel to wall no. 6 and forming with it in southern side. Its length is 6.75 m. It is built on the top of layer (12) which is equivalent to (11) of the section looking south. It has two courses.

**STR 8 Wall** It joins wall 6 and 7 and contemporary to both. It belongs to Phase III. It has two courses.

Wall nos. 6, 7 and 8 make a verandah sort of complex with brick flooring having width of 85 cm.

**STR 9 Wall** This is built on layer (14). No foundation trench is available. It runs east-west and joins wall 6 with 7. It has three courses. It belongs to Phase III.

**STR 10 Wall** It lies in quadrant 4. It is built on the top of (14) and belongs to Phase II of the structural activity. Layers (13), (12) and (11) are contemporary layers. It has 11 courses of bricks laid in headers and stretchers.

**STR 11 Wall** This wall is built on the layer (16). Layer (15) seems to be its contemporary deposit. It belongs to Phase I.

## PHASES OF STRUCTURES

Phase I	Wall 1
	Wall 11

Phase II	Wall 1
	Wall 6
	Wall 9
	Wall 10

Phase III	Wall 1
	Wall 2
	Wall 3
	Wall 4
	Wall 5
	Wall 7
	Wall 8
	Wall 11

### 13. TRENCH NO. XA-6

1. Location KLB-2 Square No. XA-6 All Quadrants
2. Type of structure: Street walls, road levels
3. Stratigraphic position: (See section looking north)
4. Period and Structural phase: Harappan. Phases I-IX of the street wall nos. 1 and 2, 4 successive phases of road levels, brick-built drain on the top of (6)
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: See section
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Mud plaster
10. Orientation of longer axis: north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Generally good
14. Shape and other distinguishing features: Details regarding streets and various house walls are given as below :-

All the four quadrants of this trench have been exposed but only in quadrant 1-2 deep digging has been done up to a depth of 8 m and natural soil has been touched. Excavations have revealed successive street levels and road levels in between two walls (nos. 1 and 2). In

the lower levels, the street did not have any metalled road, however, in the upper levels metalled roads are available. (See Section, looking north).

**Street Wall 1** it runs in the north-south direction having an exposed length of 8.90 m and a width of 1.20 m. The other arm of street wall no. 2 is 8.90 m and having a width of 90 cm (rest of the portion is not exposed). The street has nine phases from top of layer (8) to (4) about 20 courses of bricks have mud plaster. There appears to be platform on brick-on-edge 95 x 95 cm contemporary to road 4. The width of the street is 5.90 cm.

### ROAD LEVELS, IN THE STREET

**ROAD LEVEL NO. 1:** This road level is available at a depth of 28 cm. It has an average width of 3.50 m and the average thickness of metal road is 19 cm. It has been made of terracotta cakes (round variety with finger impression). These have been broken and put in the ground. This road lies over layer (2).

**ROAD LEVEL NO. 2:** is built on road 3. It has an average width of 5.20 m. It has a thickness of 20 cm. It has also terracotta round cakes which used in it.

**ROAD LEVEL NO. 3:** is built on top of road no. 4 and has a width of 4.55 m. It has a thickness of 15 to 23 cm. It is also made of terracotta cakes which remained in it.

**ROAD LEVEL NO. 4:** lies over layer (4) and has an average width of 5.90 m. The thickness of the metal road is 25 cm. It has terracotta cakes (broken) as the road material.

In all these roads, it has been found that these had been repaired again and again. Besides this, where there have been

depression, water has stagnated and left greenish patches.

**BRICK DRAIN I** A brick-built drain has been found and it runs east-west and is built on the top of (6). The working level of the drain is layer (5). It belongs to Harappan, Phase IX.

#### 14. TRENCH XD-8

1. Location KLB-2 Square No. XD-8 Quadrants 1 to 4
2. Type of structure: House wall and street
3. Stratigraphic position : Layer (1) to (4)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Eight
7. Masonry and bond: Header and stretcher alternatively
8. Composition of mortar: Greyish clay
9. Composition of plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features: As described below

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.37 m (b) width 45 cm (c) height 37 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 7 cm.

**STR 2 Wall** It is sealed by layer (2) and contemporary layer is (3). Its

period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.56 m (b) width 26 cm (c) height 27 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks are (a) length 26 cm (b) width 13 cm (c) thickness 8 cm.

**STR 3 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.62 m (b) width 25 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is south-north. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8.5 cm.

**STR 4 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.39 m (b) width 49 cm (c) height 24 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8 cm.

**STR 5 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.65 m (b) width 45 cm (c) height 6 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks: not available.

**STR 6 Wall** It is sealed by layer (2) and contemporary layers are (3) &

(4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.07 m (b) width 45 cm (c) height 84 cm. Number of courses is eight. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 7 Cistern** It is sealed by layer (2) and contemporary layers are (2) & (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.83 m (b) width 23 cm (c) height 29 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 22.5 cm (b) width 11 cm (c) thickness 6.5 cm.

**STR 8 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.40 m (b) width 47 cm (c) height 41 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8 cm.

**STR 9 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.46 m outer diameter: 1.03 m inner diameter (b) width 22 cm (c) height 53 cm. Number of courses is eight. Orientation of longer axis is north-south.

Dimension of bricks: (a) length 22 cm (b) width 11 cm (c) thickness 6.5 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.7 m (b) width 19 cm and 44 cm in the eastern corner (c) height 28 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8.5 cm.

**STR 11 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.83 m (b) width 1.22 m (c) height 9 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 12 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.10 m (b) width 48 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8.5 cm.

**STR 13 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.15 m (b) width 30 cm

(c) height 17 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

**STR 14 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3.03 m (b) width 42 cm (c) height 7 cm. Number of courses is one. Orientation of longer axis is south-north. Dimension of bricks is not available,

**STR 15 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.2 m (b) width 28 cm (c) height 8.5 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8.5 cm.

**STR 16 Semi circular structure** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.84 m (b) width 36 cm (c) height 8 cm. Number of courses is one. Orientation of longer axis is south-north. Dimension of bricks: (a) length 16 cm (b) width 15 cm (c) thickness 8 cm.

**STR 17 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 80 cm (b) width 75 cm (c) height 8.5 cm.

Number of courses is one. Orientation of longer axis is south-north. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

### 15. TRENCH XD-9

1. Location KLB-2 Square No. XD-9 Quadrants 1 to 4
2. Type of structure: House walls and streets
3. Stratigraphic position : Layers (1) to (3)
4. Period and structural phase : Harappan, Phase IV
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Eleven
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Greyish clay
9. Composition of plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 3.35 m (b) width 49 cm (c) height 19 cm. Number of courses is two. Orientation of longer axis is south-north. Dimension of bricks: (a) length 26.5 cm (b) width 13 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 2.41 m (b) width 45 cm

(c) height 23 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 26.5 cm (b) width 13 cm (c) thickness 9 cm.

**STR 3 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 2.73 m (b) width 64 cm (c) height 22 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

**STR 4 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 4.8 m (b) width 49 cm (c) height 21 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8 cm.

**STR 5 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 4.7 m (b) width 55 cm (c) height 19 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

**STR 6 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.74 m (b) width 38 cm (c) height 18 cm.

Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8 cm.

**STR 7 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 85 cm (b) width 52 cm (c) height 8 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 9 cm.

**STR 8 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 4.9 m (b) width 45 cm (c) height 80 cm. Number of courses is eight. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 13 cm (c) thickness 9 cm.

**STR 9 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 2.4 m (b) width 24 cm (c) height 23 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks is not available.

**STR 10 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.48 m (b) width 1.17 m (c) height 80 cm. Number of courses is one. Orientation of longer

axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 11 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.20 m (b) width 36 cm (c) height 13 cm. Number of courses is two. Orientation of longer axis is south-north. Dimension of bricks is not available.

**STR 12 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 4.18 m (b) width 45 cm (c) height 91 cm. Number of courses is eleven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 13 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.83 m (b) width 45 cm (c) height 43 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 14 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.43 m (b) width 30 cm (c) height 14 cm. Number of courses is two. Orientation of longer axis is south-

north. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

**STR 15 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.74 m (b) width 65 cm (c) height 58 cm. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

**STR 16 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 85 cm (b) width 18 cm (c) height 31 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

**STR 17 Trough** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.10 m (b) width 88 cm (c) height 9 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

**STR 18 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 1.63 m (b) width 25 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is south-north. Dimension of bricks: (a)

length 30 cm (b) width 15 cm (c)  
thickness 8.5 cm.

**STR 19 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 2.19 m (b) width 39 cm (c) height 99 cm. Number of courses is eleven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

#### 16. TRENCH XA-5

1. Location KLB-2 Square No. XA-5 Quadrants 1 and 4
2. Type of structure: Walls, street
3. Stratigraphic position : Layers (1) to (5)
4. Period and structural phase : Harappan, Phase VIII
5. Measurement of structure is (a) length (b) width (c) height As below
6. Number of courses : Three to Eight
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Thin clay
9. Composition of plaster: Soft mud plaster with husk
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm
13. State of preservation: Top courses of bricks disintegrated
14. Shape and other distinguishing features:

**STR 1 Wall** Its contemporary layer is (3) and sealed by layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 8 m (b)

width 58 cm (c) height 28 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** Its contemporary layers are (4) (5) and (6) and is continuing to deep and sealed by layer (3). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 8 m (b) width 58 cm (c) height 82 cm. Number of courses is eight. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 Drain** Its contemporary layer is (4) and sealed by layer (3). Its period and structural phase is Harappan Phase-VII. Measurement of structure is (a) length 45 cm (b) height 50 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 6 cm.

#### 17. TRENCH XA-8

1. Location KLB-2 Square No. XA-8 Quadrants 1 to 4
2. Type of structure: Wall, street
3. Stratigraphic position : Sealed by layer (1). The contemporary layers are (2), (3), (4), (5), (6), (7), (8) and further the layer goes down.
4. Period and structural phase : Harappan, Phases I, II and III
5. Measurement of structure : (a) length 2.75 m further extends towards south (b) width 65 cm. On top surface and below that three

- offsets were observed with measurement of 22, 15 and 10 cm respectively (c) height 1.47 m
6. Number of courses : One to Fifteen
  7. Masonry and bond: Stretchers and Headers
  8. Composition of mortar: Fine Clay
  9. Composition of plaster: Plaster was observed on top surface
  10. Orientation of longer axis : As below
  11. Nature of bricks used: Mud-bricks
  12. Dimension of bricks : (a) length 32 cm (b) width 16 cm (c) thickness 9 cm.
  13. State of preservation: On the turning of the wall damage has been repaired by keeping clods of mud in order to strengthen the corner. It is a corner of a street
  14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1). The contemporary layers are (2), (3), (4), (5), (6), (7), (8) and further the layer goes down. (8) presented inside the structure. Its period and structural phase is Harappan, Phase-VI. Measurement of structure is (a) length 2.75 further extends towards south (b) width 65 cm. On top surface and below that three offsets were observed with measurement of 22, 15 and 10 cm respectively (c) height 1.47 m. Number of courses is fifteen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 9 cm

**STR 2 Wall** It is sealed by layer (6). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2 m (b) width 55 cm (c) height 1.08 m. Number of courses is nine.

Orientation of longer axis is north to south. Dimension of bricks: (a) length 32 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Wall** It is sealed by layer (15). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.50 m (b) width 50 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 10 cm.

**STR 4 Wall** It is sealed by layer (20). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 1.50 m (b) width 50 cm (c) height 4 m. Orientation of longer axis is east-west. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 5 Wall** It is sealed by layer (18). Its period and structural phase is Harappan, Phase III. Measurement of structure is (a) length 1.15 m (b) width 50 cm (c) height 60 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 10 cm.

**STR 6 Wall** It is sealed by layer (11). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.30 m (b) width in the section (c) height 33 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 14 cm (c) thickness 9 cm.

**STR 7 Wall** It is sealed by layer (23). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 1.15 m as traced in Qd. 3 (b) width 50 cm (c) height 4 m. This is the height of all the superimposed phases of the structure. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 8 Wall** It is sealed by layer (25). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 11.60 m Max. Number of courses is eleven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 9 Wall** It is sealed by layer (27). Its period and structural phase is Harappan, Phase I. Measurement of structure is (a) length 11.27 m Max. Number of courses is ten. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 cm (b) width 15 cm (c) thickness 9 cm.

#### 18. TRENCH XB-7 (Fig. 6.30)

1. Location KLB-2 Square No. XB-7 Quadrants 1 to 4
2. Type of structure: Wall, street
3. Stratigraphic position : Layers (1) to (26)
4. Period and structural phase : Harappan, Phase V
5. Measurement of structure : (a) length 2.40 m (b) width 30 cm (c) height 35 cm

6. Number of courses : One to Ten
7. Masonry and bond: Header and stretchers courses kept alternatively making English Bond
8. Composition of mortar: Fine clay
9. Composition of plaster: Not available
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 28 cm (b) width 15 cm (c) thickness 8 cm
13. State of preservation: Bricks are badly disintegrated because this site is just on the surface below humus
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and built on (3). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 9.50 m (b) width 30 cm (c) height 35 cm. Number of courses is four at the highest available point but has been washed away towards western part of this qdt. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 6.40 m (b) width 57 cm (c) height 80 cm. Number of courses is ten. Orientation of longer axis is north-south. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 9 cm.

**STR 3 (a) Wall** It is sealed by layer (1), contemporary layer is (2) and raised on (3). Its period and structural phase

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH XB-7

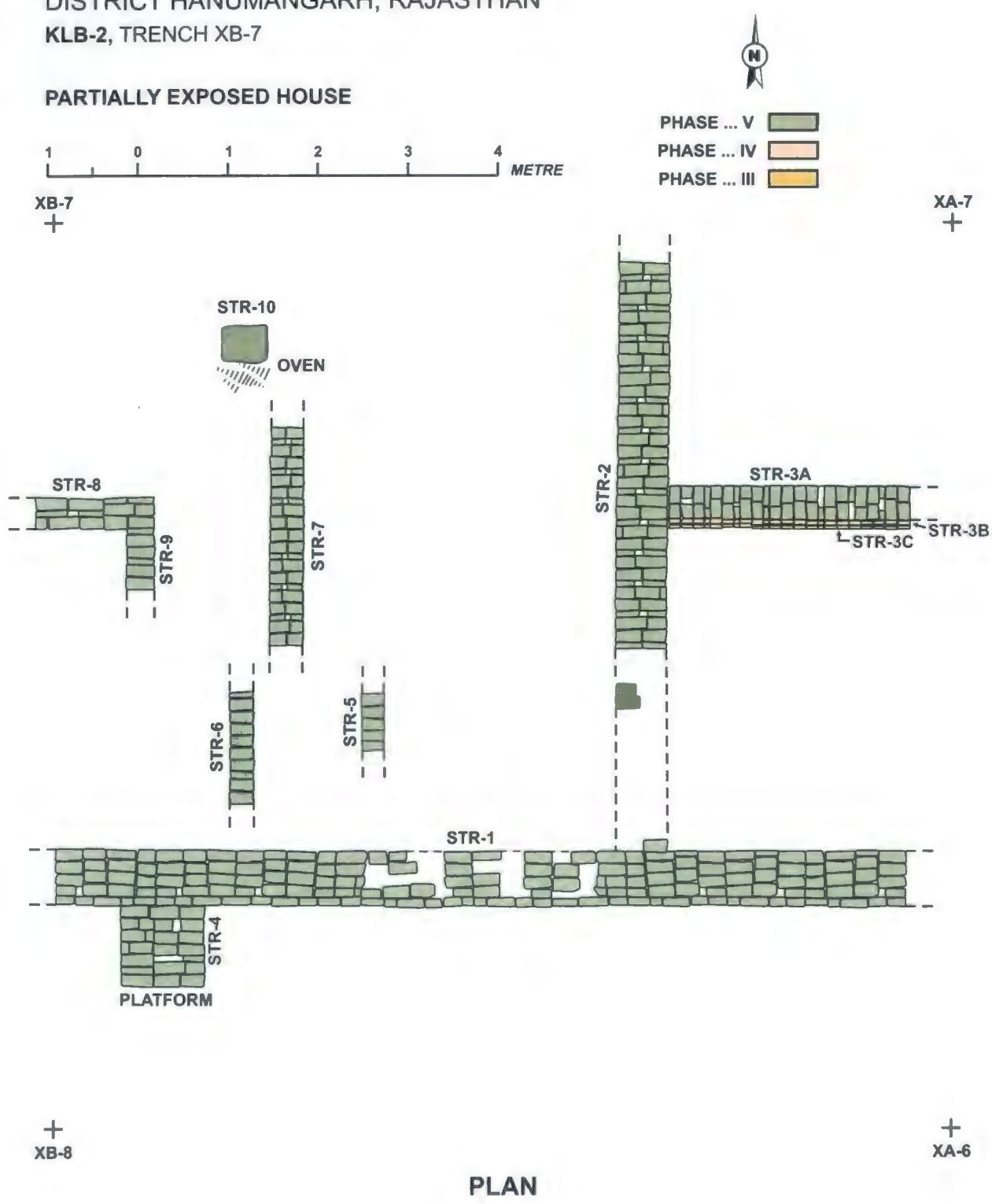


Fig. 6.30

is Harappan, Phase-V. Measurement of structure is (a) length 2.50 m (b) width 60 cm (c) height 40 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 (b) Wall** It is sealed by layer (4), contemporary layers are (5) and (6) and raised on (7). Its period and structural phase is Harappan, Phase-IV. Measurement of structure is (a) length 2.50 m (b) height 40 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 (c) Wall** It is sealed by layer (7) and contemporary layer is (8). Its period and structural phase is Harappan, Phase-III. Measurement of structure is (a) length 2.50 m (b) width 66 cm. Number of courses is six to seven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 4 Platform** It is raised on (5) and sealed of (4). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 1 m (b) width 90 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 5 Wall** It is raised on top of (6) and sealed by (5). Its period and structural phase is Harappan,

Phase-V. Measurement of structure is (a) length 72 cm (b) width 25 cm (c) height 25 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 6 Wall** It is raised on top of (6N) and sealed by (5N). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 1.25 (b) width 25 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 7 Wall** It is sealed by layer (1) and contemporary layers are (2) to (5). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 2.40 m (b) width not known being under Baulk (c) height 1 m as far exposed. Number of courses is ten. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 8 Wall** It is sealed by layer (1) and its bottom has not exposed. Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 1 m (b) width 50 cm (c) height 85 cm. Number of courses is six to eight. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 14 cm (c) thickness 9 cm. The upper courses of this wall is badly damaged due to erosion. Towards the east this wall is washed off. But originally it possibly joined with wall 1 to form a continuous wall

**STR 9 Wall** It is built on layer (7) and contemporary layer is (6) sealed by (5A). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.10 m (b) width 30 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 10 Oven** It is built on layer (7) and contemporary layer is (6) sealed by (5A). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 55 cm (b) width 40 cm (c) height 16 cm. Number of courses is two. Orientation of longer axis is east-west.

#### 19. TRENCH XB-8

1. Location KLB-2 Square No. XB-8 Quadrants 1 to 4
2. Type of structure: main outer wall of a house-complex, Street
3. Stratigraphic position : Layer (1) to (6)
4. Period and structural phase : Harappan, Phase IX
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : One to Sixteen
7. Masonry and bond: Header and stretcher courses alternatively: earliest courses are headers. English bond
8. Composition of mortar: Prepared out of fine clay
9. Composition of plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Outer face of the wall is damaged; being a road side face. But inner facing is well preserved.

14. Shape and other distinguishing features: Moulded bricks

**STR 1 Main outer wall of a house-complex** It has no foundation trench. Built on layer (4), layers (1), (2) and (3) are contemporary. Sealed by pit-1 which is just the surface. Its period and structural phase is Harappan, Phase IV on the slope of the mound. Measurement of structure is (a) length 21 m traced in XA8, XB8 and XC8 (b) width 1.27 max. .67 in qdt.1 (c) height 1.20 m. Number of courses is twelve at the highest available point but sloping towards west. Orientation of longer axis is east-west. Dimension of bricks: (a) length 32 and 30 cm (b) width 16 and 14 cm (c) thickness 10 and 9 cm.

**STR 2 Wall** Its contemporary layers are (1E), (2E) and (3E). Sealed by surface and built on (4E). Its period and structural phase is Harappan, Phase IV in this area. Measurement of structure is (a) length 2.60 m (b) width 60 cm (c) height 92 cm. Number of courses is nine. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 and 31 cm (b) width 16 and 14 cm (c) thickness 10 and 9 cm.

**STR 3 Wall** Layers (2),(3) and (4) are contemporary and sealed by layer (1). Layer (4) Seems to be a filling of 1 m and below which is a floor No. 4. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2.12 m (b) width 40 cm and goes further in section towards

north (c) height 1.45 m so far fill floor No. 4. Number of courses is sixteen. Orientation of longer axis is east-west. Dimension of bricks: (a) length 32 cm (b) width 15 cm (c) thickness 10 cm.

**STR 4 Wall** Its stratigraphic position is sealed by layer (2) and layers (3) and (4) are contemporary to the structure. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2.75 m and abuts STR 3 (b) width 40 cm (c) height 1.12 m and below is the floor 4. Number of courses is twelve and below is the floor 4. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 5 Wall** Its stratigraphic position is sealed by layer (2) and layers (3) and (4) are contemporary to the structure. No section has been kept separately for the wall. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2.80 m (b) width 83 cm is the max width (c) height 15 cm to 40 cm so far excavated. Number of courses is six so far exposed. Orientation of longer axis is north to south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Floor with a hearth and stump on North** Layer (3) is contemporary and layer (2) seals the floor and stump on surface. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.05 m (E-

W) (b) width 85 cm (N-S) (c) height 17 cm below is floor 2. The stump is oval in section with measurement 14x10 cm and 17 cm ht so far remains. The stump stands vertically on the floor.

**STR 7 Floor with a hearth** Layer (2) is the sealing layer as well also the floor 1 seals layer (3) is contemporary to it below which one more floor 3 is seen. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.85 m (N-S) (b) width 1.05 m (c) height 20 cm so far exposed. This measurement constitutes the outer edge so far kept of the hearth. The real hearth has measurements of 95 cm (N-S) and 83 cm (E-W) and depth 28 cm. Only one course of bricks is available. Orientation of longer axis is north to south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm. This hearth is nearly square in shape. Firing marks is seen around. A few terracotta cakes in situ were seen. Bone pieces are collected. The section shows fire activity.

**STR 8 Floor** It is sealed by layer (3). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 95 cm (b) width 70 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 14 cm (c) thickness 8 cm.

**STR 9 Floor** It is next to layer (4) which is a filling the floor is with plaster. Its period and structural phase is Harappan, Phase IV. The floor

is located at a depth of 27 cm. Measurement of structure is (a) length 3.40 m and further extends (b) width 1.46 m and on west stops at STR 4. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 and 32 cm (b) width 15 and 16 cm (c) thickness 10 cm.

**STR 10 Wall** Its contemporary layers:- (2SW), (3SW), (4SW), (5SW) and (6SW), sealed by (1SW); (6SW) is the first contemporary layer. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 4.25 m but continues in Qdt. 1 of Sq. XB-9 (b) width 65 cm (c) height 1.48 m. Number of courses is thirteen. Orientation of longer axis is north to south. Dimension of brick: (a) length 32 & 32 (b) width 15 & 15 (c) thickness 10 & 8.

## 20. TRENCH XB-9

1. Location KLB-2 Square No. XB-9 Quadrants 3 & 4
2. Type of structure: Walls, lane, street
3. Stratigraphic position : Available from surface itself
4. Period and Structural phase: Harappan, Phase IV.
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Four to Ten
7. Masonry and bond: Headers and stretchers
8. Composition of mortar: Thin mortar used
9. Composition of plaster: Clay plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 30 cm (b) width 14 cm (c) thickness 9 cm.

13. State of preservation: Slightly disturbed
14. Shape and other distinguishing features:

**STR 1 Wall** It is available from surface itself. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2.10 m (b) width 41 cm (c) height 55 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 14 cm (c) thickness 9 cm.

**STR 2 Wall** It starts from the surface. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.10 m (b) width 45 cm (c) height 53 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 9 cm.

**STR 3 Wall** It starts from the surface. Period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.10 m (b) width 44 cm (c) height 50 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 10.20 m (b) width 1.05 m extends further in the baulk (c) height 90 cm so far exposed. Number of courses is nine. Orientation of longer axis is east-west. Dimension of bricks: (a)

length 34 cm (b) width 16 cm (c)  
thickness 10 cm.

**STR 5 Wall** It is underlying layer (1). Period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 10.25 m (b) width 65 cm (c) height 1.15 m. Number of courses is ten. Orientation of longer axis is east-west. Dimension of bricks: (a) length 34 cm (b) width 16 cm (c) thickness 9 cm.

## 21. TRENCH XC-7

1. Location KLB-2 Square No. XC-7 Quadrant 1
2. Type of structure: Walls, street
3. Stratigraphic position : Layer (1) to (2)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure is (a) length (b) width (c) height As below
6. Number of courses : One to Five
7. Masonry and bond: Headers and stretchers
8. Composition of mortar: Thin mud mortar
9. Composition of plaster: No plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 30 cm (b) width 15 cm (c) thickness 8 cm
13. State of preservation: Slightly disintegrated on top of the wall
14. Shape and other distinguishing features:

**STR 1 Wall** The layer (2) is contemporary layer and wall found on surface. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.22 m (b)

width 70 cm (c) height 41 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** The layers (1) and (2) are contemporary and wall found on surface. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 82 cm (b) width 30 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 Wall** The period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 4.07 m (b) width 70 cm (c) height 45 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 4 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.30 m (b) width 65 cm (c) height 28 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 5 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.40 m (b) width 32 cm (c) height 9 cm. Number of courses is one. Orientation of longer axis is east-

west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 6 Floor** Layer (2) is contemporary and sealed by layer (1). Its period and structural phase is Harappan. Phase IX. Measurement of structure is (a) length 1.60 m (b) width 50 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

## 22. TRENCHES D-4 AND E-4

1. Location KLB-2 Square Nos. D-4 and E-4 Quadrants 1 to 4
2. Type of structure: House complex and street
3. Stratigraphic position : Layer (1) to (4)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure : (a) length (b) width (c) height
6. Number of courses : One to Eighteen
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster:
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks/ burnt-bricks
12. Dimension of bricks : (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.05 m

(b) width 85 cm (c) height 42 cm. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 7.22 m (b) width 52 cm (c) height 1.50 m. Number of courses is eighteen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Brick Platform** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.76 m (b) width 54 cm (c) height 55 cm. Number of courses is nine. Orientation of longer axis is north-south. Dimension of bricks: (a) length 25 cm (b) width 11 and 8 cm (c) thickness 5 cm.

**STR 4 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.20 m (b) width 1.17 m (c) height 40 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 25 cm (b) width 12 cm (c) thickness 7.5 cm.

**STR 5 Drain** It is sealed by layer (3) and contemporary layer is (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 90 cm (b)

width 54 cm (c) height 25 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 25 cm (b) width 12 cm (c) thickness 7.5 cm.

**STR 6 Platform** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.80 m (b) width 82 cm (c) height 70 cm. Number of courses is not clear. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 7 Platform** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.75 m (b) width 1.10 m (c) height 25 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 8 Wall Street** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.20 m (b) width 74 cm (c) height 65 cm. Number of courses is eight. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 9 Wall Street** It is sealed by layer (2) and contemporary layers are (3) (4) and (5). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 4.50 m (b) width 84 cm (c) height 1.35 m. Number of courses is fourteen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

#### D. HOUSES

At KLB-2, the excavation uncovered an area of the township with its characteristic chess-board plan. Four arterial thoroughfares running north-south have so far been excavated, and it is surmised that within the unexcavated width of the mound two, if not three, more may be found. The width of the streets and thoroughfares range between 1.80 and 7.20 m and significantly enough approximated to the unit 1.80 m or so. While the north-south thoroughfares were found to run unimpeded, the east-west running lanes or streets did not cut across the former and were staggered in plan. Apart from the rectangular troughs or bazaar-platforms, no other encroachment was noticed in the thoroughfares and streets. In this typical grid layout of the township, each house faced at least two if not three streets, and, with a rectangular plan, consisted of a courtyard often with a well and six or seven rooms aligned on the three sides<sup>3</sup>. Within one of the rooms of almost each house was found the curious 'fire-altar', some time also in successive levels, indicating their recurrent function. The houses were made of mud-bricks of

<sup>3</sup> The house for living, in general, was oriented towards the inner central space, which was entered by turning round the corner. The layout of Mohenjodaro (Fig. 2) and that of Kalibangan II (Fig. 4A) indicate that there must have existed a kind of "neighborhood privacy" which is still known to-day in the "pots" for example of Ahmedabad which might indicate that special social groups lived in well defused areas". M. Jansen, *op.cit.*, p. 258.

the size of 30x15x7.55 cm, laid in regular courses of headers and stretchers simulating the characteristic English bond.

Both on the eastern as also on the western side, the house walls almost reached up to the fortification-wall which was built of mud-bricks of the size of 40x20x10 cm in the lower courses and 30x15x7.5 cm in the upper.

The excavation revealed that the block had more houses than one. Entrance to one of the houses was found from the lane. The entrance opened into a corridor, which in turn led to the courtyard. There was no evidence from the corridor into the side rooms. The rooms varied in dimensions, the biggest and a smallest being 3x2 m and 2x1 m respectively. The rooms were inter connected through doorways. The width of the door varied from 70 cm to 75 cm. A single socket on the sill of the entrance to a room suggests that probably single-leaf doors were used. In one of the rooms, copper celts, spear-heads, arrow-head, and a steatite seal were recovered from various floor-levels. In a few rooms were also met with circular or oblong mud-lined enclosures within which stood terracotta cylindrical objects associated with ash and charcoal pieces. The area of the courtyard was increased or reduced at different levels. In all the phases, a greenish deposit was found in the courtyard. The green tinge may be due to the use of dung-plaster on the successive floors of the courtyard.

Within the excavated area a side street and two lanes, running east-west, and respectively 3.70 m and 1.60 m wide, were found to open into the main thoroughfare, which, running south-north led from outside to the heart of

the city. Four blocks of houses, two on each side of the main street, were thus demarcated. Each block consisted of a series of rooms with a courtyard. The houses were built of mud-bricks of the size of 30 x 15 x 7.5 cm, the use of baked-bricks being confined to drains, wells etc. In one of the blocks were found: a well-preserved stairway with four extra treads leading to the flat roof or the upper storey and a well. The same block showed a doorway opening into the main street. A noteworthy feature of the houses, however, was the occurrence of oval or rectangular 'fire-places' in different levels. Whereas the exact function of these structures still remains unresolved, some of the recurrent features were a shallow pit, oval or rectangular in plan.

Deep digging in two house-blocks indicated as many as nine structural phases within the Harappan occupation. Although plans of the houses of each phase are still incomplete, it is clear that a courtyard was an essential feature. As regards horizontal digging, the main thoroughfare, exposed earlier (1963), was excavated to a further length of 70m. On the south, thus bringing it almost to the southern margin of the mound, where it was met by a cross-lane. Noteworthy features encountered in the thoroughfare include: pavements of bricks-on-edge; platforms or troughs; soakage-jars with outlets of house-drains and possible entrances. At one of the street-corners, a post-hole for a fender-post was also found, indicative of a busy vehicular traffic necessitating such precautions(Fig. 6.46).

Deep digging in the selected area inside a house brought to light plans of different structural phases within the Harappan (Period II) occupation. In one of the rooms of a house was found a tile-

flooring showing the typically Indus design of intersecting circles (Figs. 6.45 and 6.46 a).

As a result of the area digging some more house-plans were exposed, the general features like the rows of rooms around a courtyard remaining the same.

In KLB-2, excavations have been carried out in the southern side of the mound in the following trenches :-

<b>East to west</b>	XG-1 to XA-1	A-1 to E-1
	XF-8 to XA-8	A-5 to E-5
	XF-7 to XA-7	A-6 to E-6
	XE-9 to XA-9	XA-7 to E-7
		A-8 to E-9

Natural has been located in the following trenches :-

XA-9, XA-7, XA-6, XA-1, XG-1, XF-1, XE-1, XA-9, A-1, B-1, B-3, B-7, E-1, E-2 consequently I-IX Phases of structures have been determined in the vertical digs. The structures consist of streets, lanes, house-walls, house complexes (Phases I, II, III, IV and maximum belongs to phase IX). It appears that streets and houses and lanes had generally followed the same plan through the different phases with little deviations as per needs of the occupants. Generally the entire area was divided into grids divided by big streets cutting at right angles and the area was further divided by lanes running east-west. Between the lanes three to six houses opening into streets or lanes are found. An average house consisted of five to six rooms around a central courtyard which was having a bread oven. Some of the houses have a big room to accommodate huge earthen jar for keeping grains.

### 23. TRENCH ZB-9

1. Location KLB-2      Square No. ZB-9  
Quadrants All

2. Type of structure: House walls
3. Stratigraphic position : Sealed by (2)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure: (a) length (b) width (c) height  
As below
6. Number of courses : Four courses
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : north-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm
13. State of preservation: Good
14. Shape and other distinguishing features: Partially exposed house walls sharing two rooms and a room with brick floor. Size of rooms is .80 x .60 m (partial).

### KLB-2, GROUP A

#### 24. TRENCH NOS. ZC-1, C-1, ZD-1, D-1, ZE-1, Figs. 6.31, 6.32, 6.33 and 6.33(a)

1. Location KLB-2
2. Type of structure: Big house complex
3. Stratigraphic position: Built over layer (5)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure: (a) length 13.54 (b) width 13 (c) height 2.90 m
6. Number of courses: Fifteen to Twenty-nine
7. Masonry and bond: English Bond
8. Composition of mortar: Earth grit and ashy material
9. Composition of plaster: Mud-plaster

10. Orientation of longer axis: north-south
  11. Nature of bricks used: Mud-bricks
  12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm
  13. State of preservation: Good
  14. Shape and other distinguishing features: This big mud-brick house complex stands on the top of the mound (Contour 188 m) and has a commanding position from where one gets a view of the citadel, elite residential area. It is situated on the northern corner of NS2 street just near the crossing of NS2 and EW3 streets. Incidentally this street connects it with KLB-1 elite area and possibly the ritualistic area of KLB-3 also.
- The different walls of the complex designated as STRs, details are as below :-

**STR 1 Wall** It is running in north-south direction. It has a maximum available length 13.54 m. Available maximum width is 1.45 m. There are 24-29 courses of bricks laid in the usual manner of headers and stretchers.

**STR 2, Wall** It runs north-south and badly damaged by Pit 1. Its length is 6.95 m, width is 1.25 m. 19 courses of bricks are available. This wall joins STR 7 with 3.

STR nos. 3, 8, 9 and 2 comprise the walls of the court yard having 4.85x4.10 m dimensions. These walls are built over layer 5 and layers (6) and (7) are contemporary layers.

**STR 3, Wall** It runs east-west having a length of 5 m and width 1.40 m. 20 courses of bricks are available. The section looking south runs over it. As a matter of fact ¾ of

this wall in northern face, is covered by this section.

**STR 4, Wall** It runs north-south and connects walls 3 with 5. It is 2.30 m in length, width is 1.24 m. Headers and stretchers are used. It has 18 courses of bricks.

**STR 5, Wall** It runs east-west and has length of 10.10 m (outer) and width of 1.20 m. 18 courses of bricks are available in the inner face.

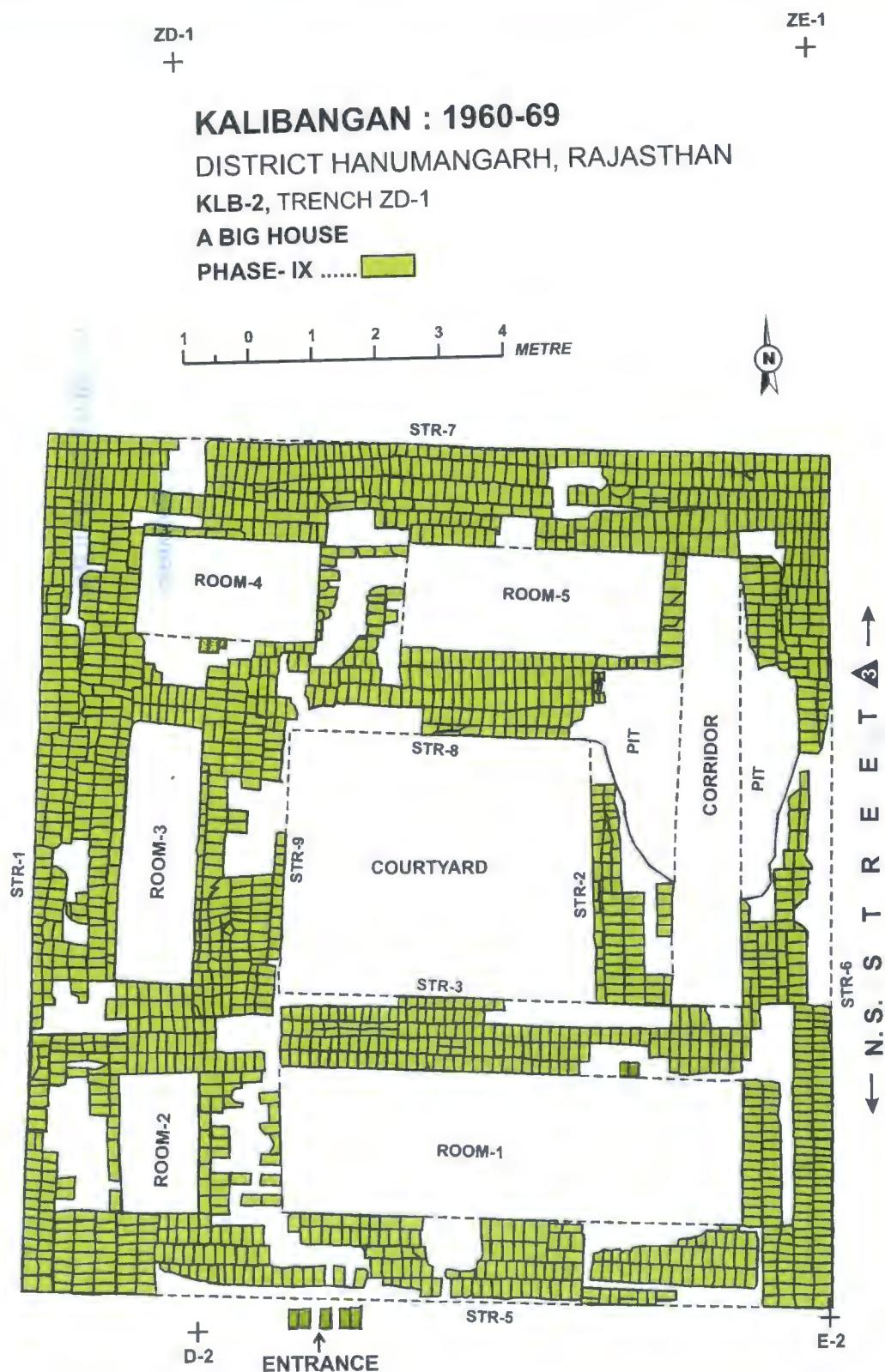
**STR 6, Wall** It runs north-south. It has a length of 13.47 m and width of 1.50 m. Headers and stretchers are laid. 17 courses of bricks are available.

**STR 7 Wall** It runs east-west and joins with walls 1 and 6. It has a length of 12.36 m and width of 1.54 m. Headers and stretchers are laid. In all the inner face shows 13 courses.

Wall nos. 1, 5, 6 and 7 join together and make the outer wall of this big structural complex. Section looking south shows that all these walls are built on the top of (5) which contemporary to layer (5) in section looking south in E1. Contemporary layers are (2), (3) and (4).

**STR 8, Wall** It runs east-west and joins with wall 2 in east and wall 9 in west. It has a length of 4.20 m and width of 1.33 m. It has been badly damaged by Pit No. 1 north-western side. An entrance has been suspected here but could not be confirmed.

**STR 9, Wall** It runs north-south. It has a length of 4.11 m and a width of



PLAN

Fig. 6.31



Fig. 6.32 KLB 2 A view of a big house

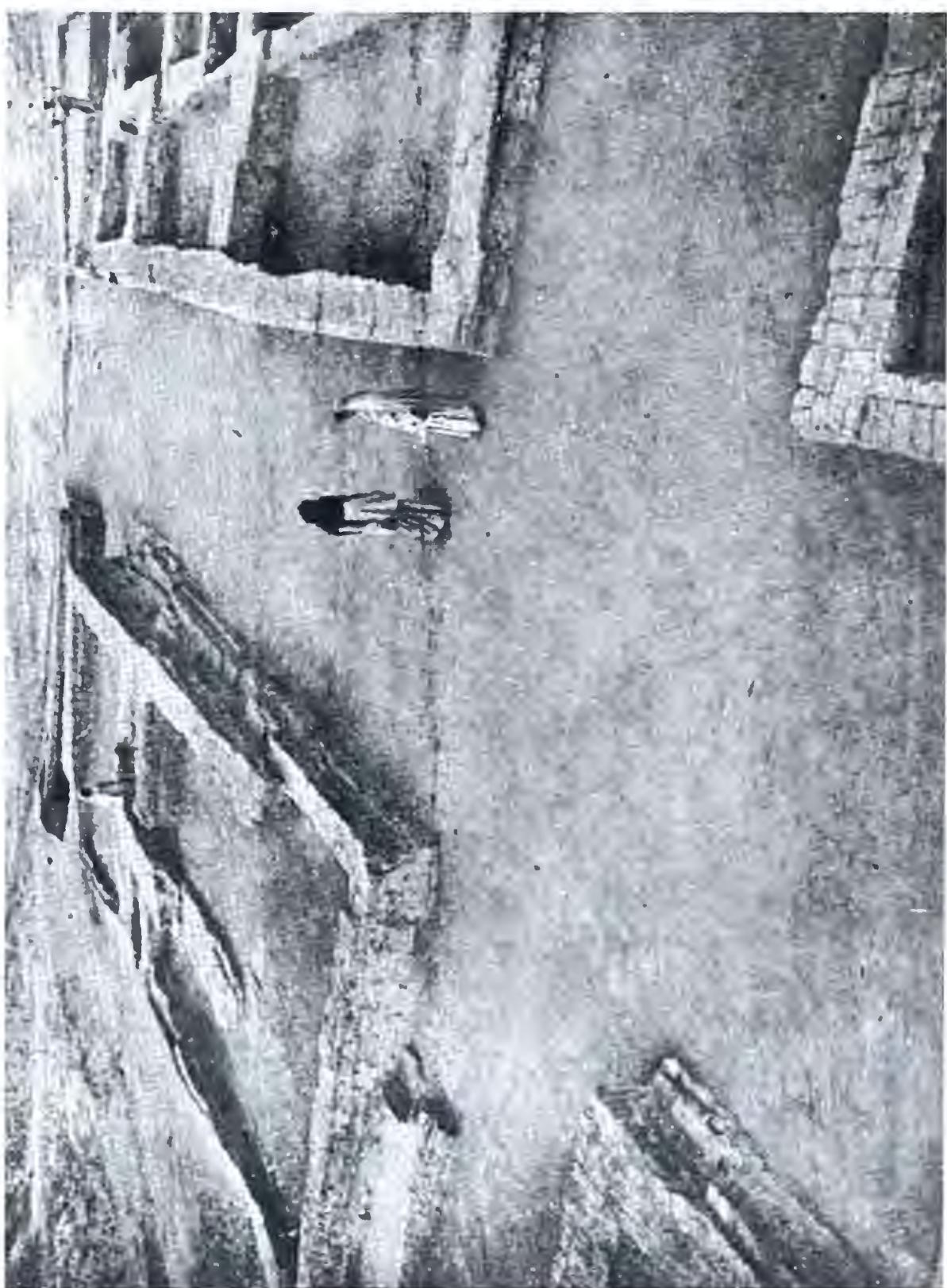


Fig. 6.33 KLB 2 Part of a east-west thoroughfare showing crossing with the north-south ones



Fig. 6.33(a) KLB2 An excavated house showing plans of different structural phases, looking south-east. The figure on the top left is shown walking in the north-south thoroughfare

1.30 m. In this also bricks are laid in the header and stretcher fashion. 17 courses of bricks are available. This wall is built on layer (5). It joins with wall 3 in the south-western corner.

**STR 10, Wall** It runs east-west and connects wall 6 with wall 9. It is 1.12 m in length, width 1.38 m. Headers and stretchers have been used. 15 courses of bricks is available.

Keeping the plan in view this structural complex has the following features:-

1. STR Wall nos. 1, 5, 6, and 7 mark the outer area of the complex.
2. STR Wall nos. 3, 9, 8, and 2 comprise the court yard.
3. In the north and south two corridors; and in north and east 3 rectangular rooms are available.
  - (1) Dimensions of 485x410 m the central courtyard
  - (2) (a) Corridor 1 3 x 1.65 m  
(b) 2 Room 8.05x2.30 m
  - (3) (a) Room 1 2.82(2.87)x1.55(1.60) m  
(There is some difference in two)  
(b) Room 2 4.04x1.23 m  
(c) Room 3 2.21x1.73 m

It has an entrance from eastern side streets no. NS3

During the course of excavation it has been found that layer (4) consisting earth and terracotta nodules and cakes were available on top of the floor of this structural complex (in the rooms and corridors).

**STR 11, Wall** This is a structure of bricks-on-edge (one row) running east-west in the floor of the central room. It is also on the top of layer (5).

#### **25. TRENCHES XB-1 AND XA-1, Fig. 6.34**

1. Location KLB-1 Square Nos. XB-1 and XA-1 Quadrant 1
2. Type of structure: Street, House, Walls, Drain and soakage jars
3. Stratigraphic position : Layer (1) to (7)
4. Period and Structural phase: Harappan, Phases IX
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Seven
7. Masonry and bond: Header and stretchers, brick-on-edge
8. Composition of mortar: Thin mud-plaster/mortar/clay
9. Composition of plaster: No plaster
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks/ Kiln-burnt bricks
12. Dimension of bricks: (a) length \_\_\_\_ (b) width \_\_\_\_ (c) thickness \_\_\_\_ . As below
13. State of preservation:
14. Shape and other distinguishing features: The floor is partially paved with brick-on-edge.

By the side of the street there are house walls of rooms, drains and soakage-jars on the street and a wooden drain. These belong to Phase IX and there is a drain of the earlier period also with a soakage-pit in the street. The length of the street in the trench is 9 m width 6 cm. There are two partially exposed rooms (size of Room 1 is 4.5x2 m; Room 2 is 3.5x2 m.) of a house belonging to phases V and VI. The house has a platform also (size 3x2.5 m) with two protecting walls partially exposed. The house has remains of an animal on the eastern side.

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH XB-1 AND XA-1



### STREET, WOODEN DRAIN WITH SOAKAGE JARS

PHASE ...IX  
PHASE ...VIII

1 0 1 2 3 4 5 METRE



PLAN

Fig. 6.34

**STR 1 Room** Its contemporary layer is (1) and sealed by Dump-1. Its period and structural phase is Harappan, Phase IX. Measurement of room 1 is (a) length 2.5 m (b) width 90 cm (c) height 8 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Room** Layer (1) is contemporary and sealed by Dump-1. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.60 m (b) width of the wall 90 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 3 Wall** Its contemporary layer is (2) and sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 7 m (b) width 44 cm (c) height 10 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 27 cm (b) width 13.5 cm (c) thickness 5 cm.

**STR 4 Circular soakage pit** Its contemporary layer is (2) and sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is dia. 60 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length could not be given as no stretcher is found. (b) width 15 cm (c) thickness 5.5 cm.

**STR 5 Wall** It runs north-south on the eastern side of the trench. 21

courses of this wall have been exposed. At present it has 2 phases. In the earlier phase, the wall has been made of mud-bricks. There is a reconstruction phase of burnt-bricks in the southern side of the trench. Bricks have been laid in headers and stretchers. It belongs to Harappan, Phase IX. Maximum length of the wall is 10 m. The width of the wall is 1.06 m. Layer nos. (2), (3), (4) and (5) run against it.

**STR-6 DRAIN A** This drain is attached with wall no. 1 and is constructed of burnt-bricks. Its working level is top (5b) (section looking south). The drain falls in soakage-jar, surrounded by 2 rows of wedge shaped bricks. Layer (5A) seals it. Phase IX. (Fig. 6.36)

**STR-7 DRAIN B (Wooden)** This is a drain, which is available in YA-1 and XA-1. The drain runs north-south. Excavations revealed that it is connected with wall no. 1. It comes out of wall no. 1. At the beginning burnt-bricks have been placed. (1-2 courses) to make the drain. These bricks continue westward and take a curve. Wedge-shaped bricks have been also been used to join with the wooden drain which runs north-south (*vide plan*). In the south end, the drain falls in a jar. On both the sides of wooden drain (single log scooped out in a U-shape) packing of terracotta-cakes has been given. For putting the wooden drain Pit no. 5 was dug. Layer nos. (3), (4) and (5) have been cut by this drain. Layer no. (2) seals this drain. Top of layer (3) seems to be the working



Fig. 6.35 KLB 2 A view of wooden drain

level of this drain. It seems that this drain was sometime closed as is evidenced at one place where it has a small piece of wood covering it on the top. (Size of the wooden piece 20x30 cm). Length of the wooden-drain 2.66 m, angle width 20 cm. This drain may belong to Phase IX (Fig. 6.35).

**STR 8** It is sealed by layer (2). It belongs to Harappan, Phase IX. The orientation of longer axis is north-south. Length 2.70 m; width 80 cm.

**STR 9 Wall** It is built on layer (24) and no foundation trench is available. It runs north-south and overlies wall no. 10. 11 courses of bricks are available. Maximum length in the section facing east is 4.25 m. Available width is 45 cm. Bricks are laid in the header and stretcher fashion. Contemporary layers are (17), (18), (19), (20) (21), (22) and (23). Layer no. (16) seals this structure. This belongs to Phase II.

**STR 10Wall** It is built on layer (26) and runs north-south contemporary layer is (25) and layer no. (24) seals it. It is only available in section facing east. 5 courses of bricks are available. Headers and stretchers have been laid in the construction of the wall. This belongs to Phase I.

**STR 11 Wall** It is a mud-brick platform built on the top of layer (28). Layer (27) seals it. Bricks-on-edge have been put. However, stretchers have also been put; available dimensions 1.90 x 1.35 m. Phase I.

**STR 12 Wall** It lies on top of layer (26) and sealed by (25). It consists of a few brick, which surround a jar. Exact nature of the structure is not available. Phase I.

**ROAD LEVELS** Layer Nos. (12), (13), (14), (17) and (20) represent road levels made of terracotta nodules and cakes.

## 26. TRENCH NO. ZM-14 TO ZM-9

**Fig. 6.37**

1. Location KLB-2 Square No. ZM-14 to ZM-9
2. Type of structure: Street
3. Stratigraphic position: Sealed by layer (1)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure: (a) length 52 m (b) width 6 m. (c) Depth 1 m
6. Number of courses: Six to Eight
7. Masonry and bond: Header and stretcher, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not available
10. Orientation of longer axis: north- south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: This is north-south street 5 with house wall on both sides having an average width of 7 m. The street has a length of 52 m, width 6 m. This street is joined by two east- west streets and a lane. A special feature of this street is having three platforms on the eastern side and three on the

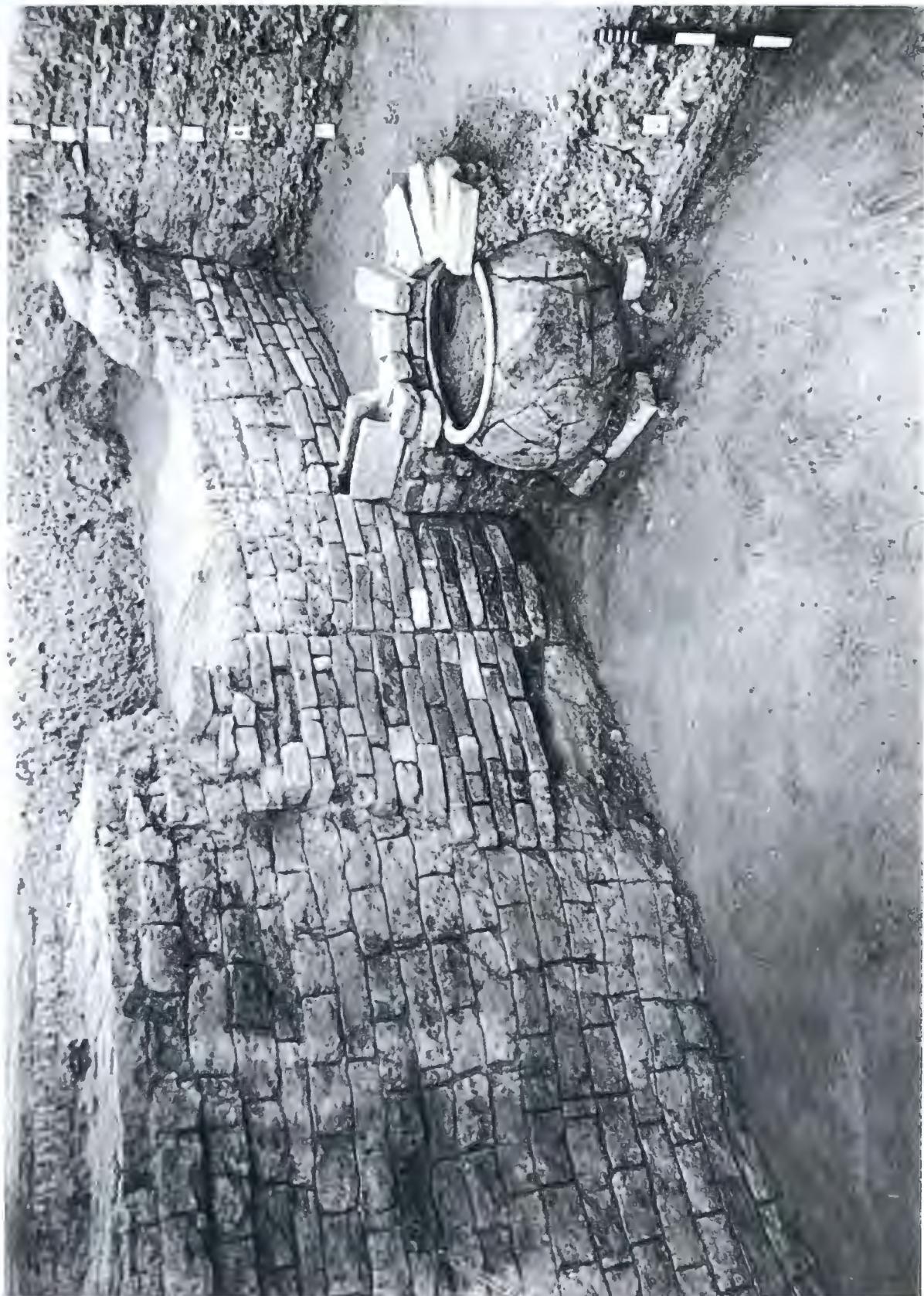


Fig. 6.36 KLB 2 Drain and soakage jar

western side. The western platforms have hearths also. The dimensions of the platforms are as below :-

- (1) 1.50 mx1.50 m (2) 2.50 mx1 m
- (3) 3 m x1 m (4) 3 m x 1.50 m (5) 2 mx1 m (6) 2.30x1.70 m.

These platforms might have been used for keeping merchandise and were shops. The hearths might suggest eating places in the bazar.

#### **27. TRENCH NO. ZE-1**

1. Location KLB-2 Square No. ZE-1 Quadrants 1, 2, and 4
2. Type of structure: House-walls
3. Stratigraphic position: Layer (1) to (6) exposed
4. Period and Structural phase: Harappan, Phases IV
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: Nine-Ten
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Generally good
14. Shape and other distinguishing features: The different house walls are described as below :-

**TRENCH NO. ZE-1** In ZE-1 only 1, 2 and 4 quadrants have been opened. Very little digging has been done.

**STR 1 Wall** It is wall running north-south, measuring 4.30 m in

length and 1.04 m in width. Its lowest course is not yet exposed. Headers and stretchers have been used. 9-10 courses are available. Keeping in view the section looking south in E1. This wall belongs to Phase IV. Layers (2), (3) and (4) are the contemporary layers.

**STR 2 Wall** It joins with structure no. 1 and goes towards east and has a length of 1.66 m and width of 50 cm. It has seven courses. It seems to be contemporary to structure 1. Its bottom has yet to be traced. Layer nos. (3), (4) and (5) are the contemporary layers.

**STR 3 Wall** This is east-west alignment. Only one course of bricks is visible. It is sealed with layer (5). Nothing more can be said about its dimensions as only the face is available. Its present available length is 1.55 m. It belongs to Phase IX.

**STR 4 Wall** It is a wall running east-west having 1 m length. Available width is only 16 cm. Two courses of bricks are available. It is just below the surface.

**STR 5 Wall** There are just a few bricks running north-south 97 x 34 cm is the dimension of the structure. It is built over layer (2).

**STR 6 Wall** It is a wall running north-south, just available in the trench. Available length is 2 m. The wall has not been exposed fully. Brick measurements 26x10, 15x10, and 32x10 cm.

**KALIBANGAN : 1960-69**  
 DISTRICT HANUMANGARH, RAJASTHAN  
 KLB-2, ZM-14 TO ZM-9

**STREETS**

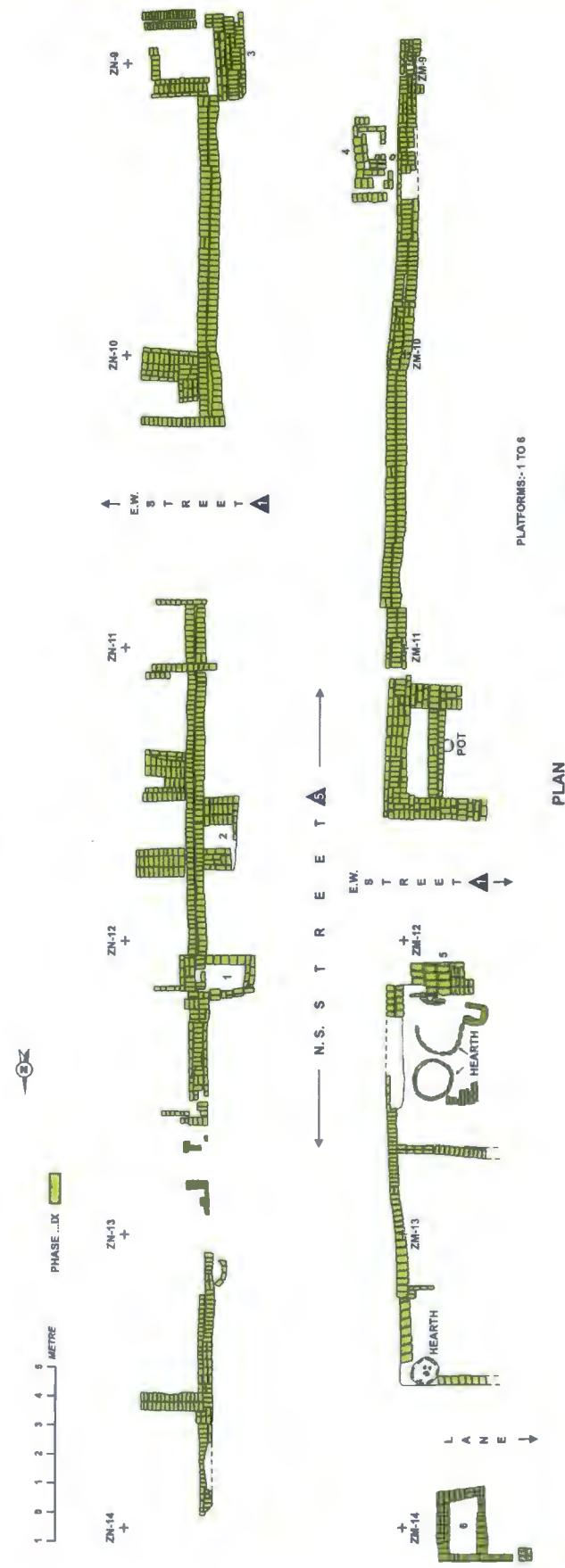


Fig. 6.37

**STR 7** It is by the side of wall no. 1 and goes parallel to structure no. 1. It has a length of 2.40 m. It seems to be a part of structure 1.

**STR 8 Wall** It is eastward projection of bricks. Its nature not very clear.

Structure no. 1 runs from E1 to ZE2. It belongs to Phase IX in trench ZE1 and ZE2. In ZE2, it is joined with another wall running in the same alignment. This wall may be of a different house as a vertical line (gap) exists between the two.

## 28. TRENCH NO. ZE-2

1. Location KLB-2 Square No. ZE-2 All Quadrants
2. Type of structure: House-walls
3. Stratigraphic position: (1) to (6)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: Five to Six
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: The house walls are described as below:-

All the four quadrants have been opened. The maximum depth of the dig in this trench is 1.67 m and up to layer no. (6), strata has been exposed.

**STR 1 Wall** It is running north-south and joins with structure 1 of ZE1 and E1. Its length is 9.10 m. Its width is 1.35 m. Headers and stretchers have been used. It has 10-11 courses. In the eastern side of structure no. 1, there is projection measuring 68 cm x 1.22 m. Three courses of bricks are available at present.

**STR 2 Wall** It runs north-south and joins with structure no.1. Its alignment is east-west. Its maximum width is 1 m. It has 5-6 courses. Last course of bricks has not been exposed.

**STR 3 Wall** It runs north-south just projecting out of the eastern side. Its length is 4.25 m. There is projection in the eastern side of structure no. 3 having 82x85 cm. 4 courses of bricks are available.

**STR 4 Wall** It runs north-south and joins with structure no. 2. It has a length of 1.50 m and width of 50 cm. Only 3 courses of bricks is available.

**DRAIN** On the top of structure no. 1 in the north-eastern side (Quadrant 1), three courses of burnt-bricks are lying 70x30 cm. These may belong to the earlier Phase IX. May be of a drain headers and stretchers have been used.

Remains of a big oven are available along with two broken jars in the north-eastern side. May be a furnace.

## 29. TRENCH NO. A-1

1. Location KLB-2 Square No. A-1 All Quadrants

2. Type of structure: House-walls, platforms, burnt-brick walls
3. Stratigraphic position: (1) to (6)
4. Period and Structural phase: Harappan, Phases IX
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: Ten-Fourteen
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Mud-plaster
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks/ burnt-bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: House walls are described as below:-

**STR 1 Wall** It is found running north-south in quadrant 2 and is built on layer (4). It has an average width of 70 cm, length 2.25 m. It belongs to Phase IX. Headers and stretchers are laid.

**STR 2 Wall** It runs north-south and joins with wall 3 on northern side. Length 7.40 m, width 1.5 m. At present only 9 courses is exposed and bottom has not come out. Phase IX.

**STR 3 Wall** It runs north-south and joins with wall no. 4. It is 2.65 m in length and 1 m in width. At present 3 to 7 courses of bricks have been exposed. The bricks are laid in header and stretcher fashion. This wall is built over layer (4) and layers (3) and (2) are its contemporary layers. This structure is also placed in Phase IX.

**STR 4 Wall** This wall runs east-west and joins with wall no. 3. It has a length of 7.5 m and width of 1.25 m. Only 2 courses is exposed, since its last course is not available. Phase IX.

**STR 5 PLATFORM** It is a platform sort of a thing attached to wall 2 towards east. It has 1.73x.73 m dimensions. The bricks are laid stretcher-wise. This seems to be built on layer no. (6). Only 1 course of brick is at present available. Phase IX.

**STR 6 Wall** It runs east-west. It has length 1.75 m and width is 1 m. The bricks are laid in header and stretcher-wise. At present only three course is available. It is built over layer (6) and sealed by layer (4). It belongs to Phase IX.

**STR 7** It is a one brick wide wall joined with wall no. 1 on the eastern side.

**BURNT-BRICK STR 1** It runs east-west and consists of headers and stretchers and 6 courses of bricks. It has a length of 1.95 m and its width is 60 cm. Just below this structure a mud-wall (which has not been numbered by the excavator) runs. Only 3 courses are available now.

**BURNT-BRICK STR 2** It also runs east-west. It has a length of 1.95 m. It has a width of 42 cm.

**BURNT-BRICK STR 3** It runs north-south. It has 3-4 courses. It joins with Brick Structure Nos. 1 and 2.

All these burnt-brick structures are built over layer (4).

It appears to be a room and belongs to Phase IX.

### 30. TRENCH NO. ZA-1

1. Location KLB-2      Square No. ZA-1  
All Quadrants
2. Type of structure: House-walls
3. Stratigraphic position: Built over layer (5) except STR-7 which is built on (7)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure: (a) length (b) width (c) height as given below
6. Number of courses: Seven to Ten courses
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster available
10. Orientation of longer axis: As given below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: Except STR-5 which is built on layer (7) rest of the structures are built on (5) but generally these belong to Phase IX. The various structures belonging to house complex as found in the trench are as below:-

**STR 1 Wall** It runs in north-south direction having a length 1.95 m, width is 95 cm. Headers and stretchers have been used. It is built on layer (5), contemporary layers are (3) and (4). It is plastered.

**STR 2 Wall** It runs east-west. It has a length of 8.30 m and width 1.15 m. It is built on layer (5).

**STR 3 Wall** It is a projection in wall 2 running towards south. Length 1.85 m. 9 course of bricks is available. This wall is built on layer (5), layer (4) is contemporary to it.

**STR 4 Wall** It runs north-south. It has a length of 5.70m. Its width is 1.05 m. It has 10 courses. Bricks are kept in headers and stretchers. This wall is built over layer (5). Layers (4) and (3) are contemporary to the structure.

**STR 4 A** It is a platform sealed by layer (3) and resting over layer (5). Layer (4) is contemporary to it. Its dimensions are 1.12 m x .73 m. It has four courses of bricks. Generally stretchers but headers are also used.

**STR 5 Wall** It runs north-south. It has a length of 6.30 m in A-1 Square. Its width is 95 cm. There is western projection (The wall has joining walls) in this wall which is available in the western side of the section facing south. There are seven to eight courses in it. In wall no. 5, there seem to be 17 courses. The wall is well-plastered. Wall no. 5 is built over (7) which is not exposed. Layer (6) is contemporary to it. Headers and stretchers are laid in the wall.

### 31. TRENCH NO. ZB-1

1. Location KLB-2      Square No. ZB-1  
Quadrants All

2. Type of structure: House walls
3. Stratigraphic position: Built on layer (4)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: Five to Six
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Structures are very badly damaged by a rain gully
14. Shape and other distinguishing features: Remains of house-wall which are described as below :-

**STR 5 Wall** It runs north-south. It is 4.50 m in length and 90 cm in width. The contemporary layers are (2) and (3). 5 courses of bricks have been found. These are laid headers and stretchers.

**STR 4 Wall** It runs north-south, parallel to structure 5. It is 4.05 m in length and 1.50 m in width. Contemporary layers are (2) and (3).

**STR 2 Wall** It runs east-west. It has length of 3.50 m and width is 96 cm. Layers (2) and (3) are contemporary to it. Phase IX.

**STR 6 Wall** It runs in east-west direction and is 1.5 m in width and length is 2.90 m. It is at right

angle to wall no. 5. The top is very much eroded. 5 to 6 courses of bricks are available. Headers and stretchers have been used. Layers (2) and (3) are contemporary to it. Phase IX.

**STR 7 Wall** It is a projection in wall 6 towards north and runs to a distance of 1.50 m. It is very much eroded and nothing more can be inferred regarding its stratigraphical position.

**STR 2A Wall** It runs north-south and has a length of 4.90 m. 8 courses of brick facing west are available. Its exact width is not available. Layer (2) is contemporary to the structure. Phase IX.

**STR 3 Wall** It is a very much eroded wall. However, at one place it is found that it runs north-south and joins with wall 2. It has 6-7 courses of bricks laid in headers and stretchers fashion. Phase IX.

**Furnace** Just below the surface in quadrant 4 a furnace with baked earth is available. Its dimensions are 1.27 m width and 1.90 m length. Thickness of the wall is 30 cm. Lot of area has been found burnt inside this rectangular enclosure of the furnace.

### 32. TRENCH NO. B-1, fig.6.38

1. Location KLB-2 Square No. B-1 All Quadrants
2. Type of structure: House-walls
3. Stratigraphic position: (1) to (5)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure: (a) length (b) width (c) height as below

6. Number of courses: Eight to Twelve
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Not available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: House walls are described as below:-

**TRENCH B-1** All the four quadrants have been opened. Since generally the bottoms of the structures have not been reached, it is not possible to determine their respective phases (Fig. 6.38).

**STR 1 Wall** It runs east-west and joins with wall no. 2. Its length 3.70 m. It has 15 courses. Headers and stretchers are laid. Width 90 cm. It is still going deeper. Layers (3) and (4) are contemporary deposits.

**STR 2 & 8 Walls** Wall nos. 2 & 8 run north-south. (Walls 2 and 8 are one and the same). It is 9.50 m in length and 90 cm in width. It has 14 courses of bricks laid in headers and stretchers.

**STR 3 & 6 Walls** Wall nos. 3 and 6 are one and the same and run north-south. It has a length of 9 m and width of 90 cm. The working level of wall is not available. It has 11 courses of bricks laid in headers and stretchers.

**STR 4 Wall** It is an addition to STR wall 3. It is towards the western side. It is 65 cm wide, 1.90 m in length. Bricks are put headers and stretchers.

**STR 5 Wall** It is an additional wall to STR wall no. 6. It has a width of 65 cm and length of 1.20 m. The structure has not been exposed completely.

**STR 7 Floor** It is an additional wall to STR wall no. 8. It runs east-west. Its dimensions are 1.20 x 1.10 m. 6-7 courses are exposed. Its bottom has not been reached.

**STR 9 Wall** It is at right angles to 1 and 8. It is 1.20 m in length x 1.05 m in width. Headers and stretchers are laid. 9 courses of bricks are exposed and further courses are still running. Layers (3), (4) and (5) are contemporary to the wall.

**STR 10 Wall** It runs east-west and joins with wall 8. Its length is 3.65 m and it is 90 cm in width. It has 14 courses of bricks laid in stretchers and headers.

**STR 11** It lies in the north-western corner and joins with wall 3 and making a right angle. It has 10 courses. It is sealed by layer (2). The structure continues.

**STR 12 (Mud and Mud-brick oval platform)** It is built on layer (4) and layer (3) is a contemporary deposit of the structure.

**STR 13 Wall** It is built on layer (4) and sealed by layer (3) and it has a length 60 cm and width of 48 cm. Its height is 32 cm. It has 3 courses of bricks. It is running north-south.

**STR 14 Wall** It runs east-west. Its length is 1.68 m and width is 45 cm. It is built on layer (3).

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 KLB-2, TRENCH B-1



Fig. 6.38

**STR 15 Wall** This structure runs east-west. Its length is 1.90 m and width is 60-80 cm. It is built on layer (6). Layers (4) and (5) are contemporary layers.

**STR 16 Wall** It is sealed by (2). It has a length of 3.50 m and width of 55 cm. It runs east-west.

**STR 17 Mud-Brick Floor** It is sealed with (3) E. It lies to the east wall 2 with 2.50 x 1.60 m dimensions. Bricks are laid stretcherwise. It has eight postholes and one hearth.

A mud-brick floor sealed by (2A) has been found at a depth of 48 cm. It is very much disturbed and its exact nature is not available.

### 33. TRENCH NO. A-9

1. Location KLB-2 Square No. A-9 All Quadrants
2. Type of structure: House-walls
3. Stratigraphic position: Layers (1) to (16)
4. Period and Structural phase: Harappan, Phases II - VII
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses: One to Six
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: The house walls are (as per original field STRs numbers) described as below:-

In this all the four quadrants have been exposed. Natural soil has been reached only in Quadrant 4 in south-western side. For purposes of stratigraphy in relation to structure, the section looking south has been taken into consideration. No structure of Phase I is available. Structures of Phase II and III have been found. The study of structural activity has been done from the southern side since the section is available here up to the natural soil.

**STR 22 Wall** It is running north-south and lies on the top of layer (11). Its contemporary layer is (10) and layer (9) seals it. It is made of 3 courses on the plan; only stretchers are available. Length of the structure is 1 m. Its width is 23 cm. Phase II.

**STR 19 Wall** This structure is built on layer (9). No foundation trench for this is available. Its contemporary layer is (8) and layer (7) seals it. This structure connects 3 courses of bricks. It runs east-west (1.32 m length), while the side arm (western) has a length of 37 cm, the eastern arm is 32 cm. In the eastern side it further goes to a length of 70 cm to north. Bricks have been put in the stretchers (2 courses) and headers (1 course). The entire complex seems to be a part of a room. Maximum thickness of the wall is 50 cm Phase II.

**STR 16 Wall** This structure (wall) running in north-south direction and is built on layer (8) and layer (7) is its contemporary deposit. It is made of 2 courses of bricks put in headers and stretchers.

Present available width is 67 cm and length is 1.45 m. Phase II

**STR 14 Wall** This structure has been found running north-south in quadrant 4 (S.W.) to a length of 4.15 m. It has width of 2 m. It has 6 courses of bricks laid in headers and stretchers.

**STRs 11, 12, 13 & 17 Walls** All these structures are built on the top of layer (8A). Layers (5) and (6) are contemporary deposits of these structures while layer (4) seals it. These belong to Phase VIII of the structural activity in the area.

**STR 11 Wall** This has been found running east-west having a length of 7.30 m, width 58 cm. It is made of headers and stretchers. It has 6 courses of bricks.

**STR 12 Wall** It is a wall which connects structure 11 and structure 13. It runs north-south having a length of 1.38 m, width 60 cm. It has 3 courses of bricks.

**STR 13 Wall** It runs east-west to a length 1.65 m, width of 65 cm. It has 2 courses of bricks.

**STR 17 Wall** It is connected with structure nos. 5, 11 and 13. It runs north-south to a length of 2.17 m and takes a turn to east and runs to a length of 1.88 m. It has two courses of bricks.

The aforesaid structures comprise a room (vide plan) having 1.95x1.70 m dimension.

**STR 1 (Qd. 1)** It is available on the plan and runs north-south to a distance 4.20 m, width 64 cm. It has 6 courses at present. However, at

present, it may be taken in Phase VII. Layers (3), (4), (5) are contemporary. The bricks are laid in headers and stretchers.

**STR 1 A Wall** It runs parallel to structure 1 and is joined to it. At present 5 courses have been found. It has a width of 52 cm. Bricks are laid in headers and stretchers in alternate rows. It belongs to Phase VII.

**STR 1 B Wall** It runs in east-west direction and joins with 1A. It has a width of 55 cm. 3 courses of bricks are available. This belongs to Phase VII.

**STR 1 C Wall** It is a one course brick wall running east-west and joining with 1A. (It joins with wall no. 13 of XA-9).

**STR No. 2** It runs east-west and joins with 1 on the western side. It has maximum length of 6 m and a width of 90 cm. 4 courses of bricks are available in the Qd. 1. The bricks are laid in headers and stretchers. Phase VII.

**STR 10 Wall** It is a wall running north-south. Only two courses of bricks are available. It has a width of 45 cm. Its available length is 4.80 m. This is built on layer (4) and belongs to phase III.

**STR 18 Wall** It is single brick-wall running in north-south direction having a length of 2.10 m. It is built on the top of layer (12). Layer (11) is a contemporary deposit. It belongs to Phase II.

**STR 20** This structure is built on layer (8). Width of the structure is 70 cm. It belongs to Phase III.

**34. TRENCH NO. XA-8**

1. Location KLB-2 Square No. XA-8 Quadrants 2 and 3
2. Type of structure: Street and lane
3. Stratigraphic position : Sealed by layer (1)
4. Period and Structural phase: Harappan, Phase VII
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Four courses
7. Masonry and bond: Header and stretcher, English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: North-south
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is one side of the crossing of street and lane. It is a house wall length 3 m, width 80 cm with a platform in the corner. On the other side of the lane there is corner of a house wall having two post holes one by the side of the wall and another on the street itself. Length of the wall is 6 m and then it turns 1.25 m width 70 cm.
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses: One to Twelve
7. Masonry and bond: English Bond, also bricks are put vertically
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features: In this trench quadrant 2, 3 and 4 have been exposed. In quadrant 4, natural soil has been touched. The house walls are described as below:-

**STR 1 & 2 Walls** (Both these walls join at right angles) in quadrant 3. It has a length of 1.50 m (east-west) and 1.15 m (north-south) and width 50 cm. This seems to be an extension of wall no. 1 of XA-9 and has the same structural phases. It has been exposed to a depth of 3.56 m. Courses are not very clear. However the feature of putting stretchers bricks vertically is again repeated here. From here the lane found in A-8 starts. The wall presently involves Phase II and VI.

**35. TRENCH NO. XA-8**

1. Location KLB-2 Square No. XA-8 Quadrants 2, 3 and 4
2. Type of structure: House-walls, beginning of lane east-west
3. Stratigraphic position: (1) to (24)
4. Period and Structural phase: Harappan, Phases I - VI

**STR 3 Wall** One brick wall running north to south and turning to east and thus giving a circular shape has been found. The structure is not very clear and quite damaged. At present it is first exposed. It lies on the top of layer (5). It belongs to Phase III.

**STR 4 Wall** It runs from north to south and turns at right angle to east. It

has a length of 3.20 m. It has a width of 85 cm. It has 8-9 courses. Its building level has not been exposed. Its phase could not be determined.

**STR 6 Wall** So far exposed, it is a one brick wall running north-south having a length of 2.10 m. Its bottom has been not exposed so its phase could not be determined. All the bricks are stretcher-wise. At present only one course of bricks is available.

**STR 5 Wall** Wall no. 5 has been found running north-south in quadrant 4. As a matter of fact it is a continuation of wall no. 6 of XA-9. This wall has three successive phases of construction.

The wall was raised on the top of layer (24). Contemporary deposits are layers (23) and (22). The first phase is sealed by layer (21). It has 6 courses of bricks. The wall is considerably damaged. Phase I.

In this phase the wall rests on the top of layer (15). It has 12 courses of bricks. Layers (13), (14), (12), (11), (10), (9), (8) and (7) are contemporary to this structure. Brick size is 16x10 cm, 32x10 cm laid in header and stretchers. Layer (5) seals the structure. Phase II.

In this phase the wall was again erected in layer (21). Contemporary layers are (20), (19) and (16). Layer (15) seals this phase. Six to seven courses of bricks are available. Size of bricks is 32 x 10 cm. The wall is very much damaged. Phase III.

### 36. TRENCH NO. A-8, Fig. 6.39

1. Location KLB-2 Square No. A-8 All Quadrants
2. Type of structure: Lane and House wall
3. Stratigraphic position: (1) to (20)
4. Period and Structural phase: Harappan Phase I - IV
5. Measurement of structure: (a) length  
(b) width (c) height as below
6. Number of courses: One to Ten
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster is available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm
13. State of preservation: Good
14. Shape and other distinguishing features:

Digging has been done in all the four quadrants. In quadrant 3 i.e. S.E. quadrant Natural soil has been touched. Keeping in view the section available in S.E. quadrant and the building construction of the wall, it is worthwhile to mention here that wall no. 3 and 4 run parallel to each other and there is a space of 1.60 m in between the two indicating it to be a lane.

**STR 3 Wall** It runs in quadrants 3 and 4. It runs in east-west direction. It has an average width of 1.05 m. It has a height of 3.12 m. This wall has been built over Natural soil. Layers (19) and (20) are contemporary layers. It belongs to Harappan, Phase I.

Wall no. 3 has the first phase up to the top of layer (19). It has 9-10 courses. Layers (19) and (20)

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH A-8

HOUSE WALLS

PHASE ...IX  
PHASE ...I



1 0 1 2 3 4 METRE

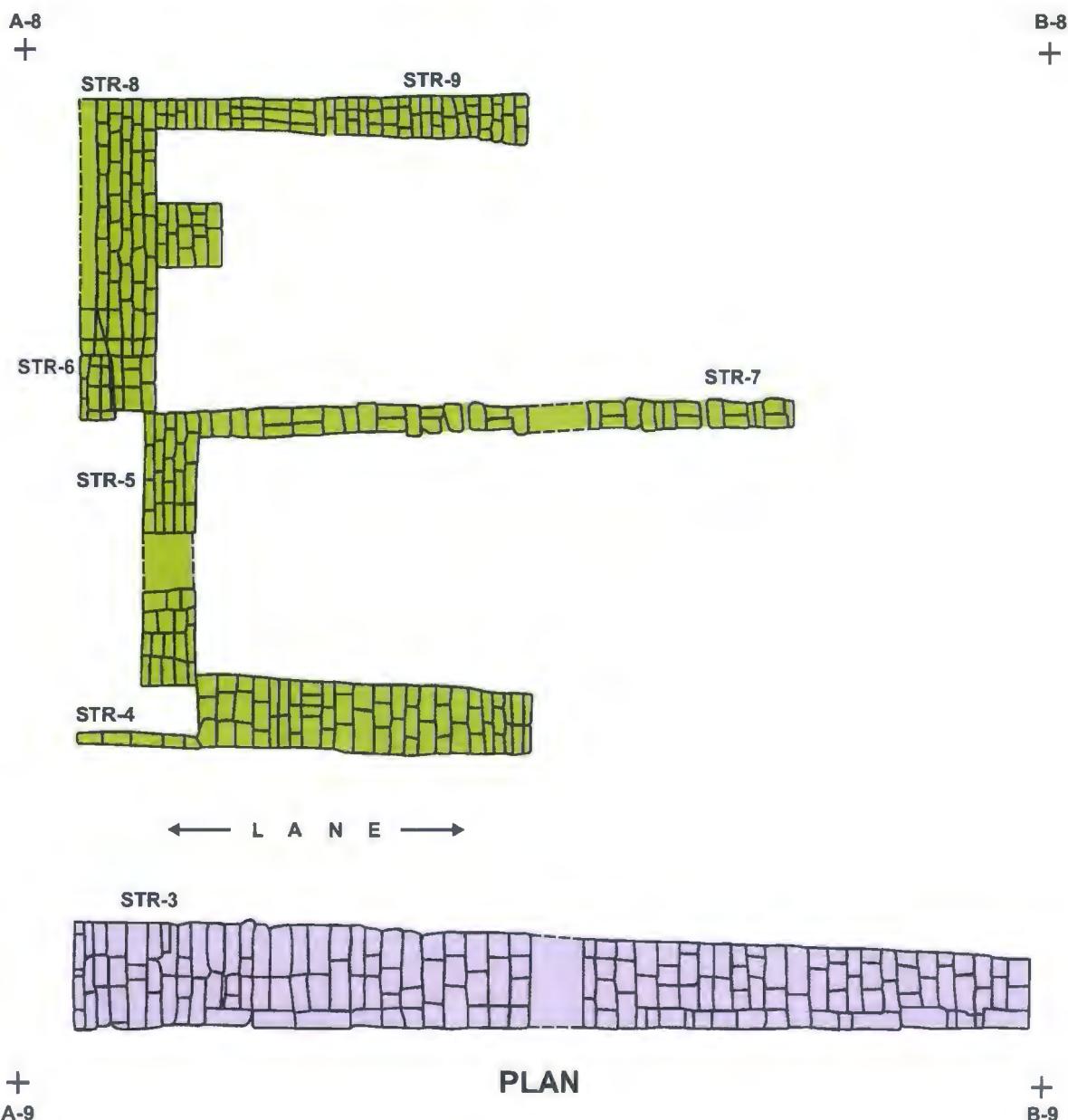


Fig. 6.39

are contemporary layers of this phase.

In this phase wall no. 3 was built on the top (19). Its courses are not clearly visible due to the damaged condition. It belongs to Harappan, Phase II.

In this phase wall no. 3 has been rebuilt on the top (10). It has 9-10 courses. Layers (19) and (20) are contemporary layers of this phase. It belongs to Harappan, Phase III.

**STR 4 Wall** Wall no. 4 has been found running in east-west direction. It has a length of 4.75 m and width of 80 cm. It is built on top of layer (4). Layer (3) is its contemporary deposit. It belongs to Harappan, Phase IX.

**STR 15 Wall** This wall is built on top of layer (18). It is made of headers and stretchers. Layer (13), (14), (15) and (16) are contemporary layers. It belongs to Harappan, Phase I of the structural activity. The exact courses could not be counted because of the plastering.

**STR 5 Wall** This wall is running in north-south direction in quadrants 1 and 4. Length 2.65 m, width is 44 cm. It has four courses. The wall rests on layer (4). Contemporary layer is (3). The wall belongs to Harappan Phase IX. This wall joins with 6 and 7. The arrangement of layout of bricks is headers and stretchers.

**STR 6 Wall** Wall no. 6 is running east-west in quadrant 1 and joins with 5. It has three courses and other courses have not been exposed.

Most probably this may belong to Harappan, Phase IX.

**STR 7 Wall** It runs in east-west direction to a distance of 6 m. Width of the wall is 28 cm. The wall rests on layer (4). Layers (2) and (3) are contemporary deposits. It has six courses. It belongs to Harappan, Phase IX.

**STR 8 Wall** It runs in north-south direction. Length 2.60 m, width 70 cm. It is built on layer (6). It has eight courses. A projection of 60x60 cm has been also noticed in this wall. This wall joins with other walls in X-A8. It belongs to Harappan, Phase VIII.

**STR 9 Wall** Wall no. 9 runs east-west having a length of 4.35 m. It rests on layer (5). 4 courses of bricks are available. Headers and stretchers are laid in the wall. It belongs to Harappan, Phase IX.

### 37. TRENCH NOS. C-5 AND C-6, Fig. 6.40

1. Location KLB-2 Square Nos. C-5 and C-6 All Quadrants
2. Type of structure: House complex of Phase IX, partition wall of I to IX Phases
3. Stratigraphic position: (1) to (46)
4. Period and Structural phase: Harappan, Phases I to IX
5. Measurement of structure: (a) length (b) width (c) height as below
6. Number of courses:
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: Clay
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm

- 13. State of preservation: Good
- 14. Shape and other distinguishing features: A partially exposed house complex admeasuring 16 m. east-west and 12 m north-south having rooms on three sides around a courtyard. The house has a partition-wall. This partition-wall is traced for about 28 m, and was found running east-west making a lane. An attempt to trace the earlier phases of the partition wall has been rewarding and in a narrow area of 1 x 1 m, it was found that it was existing right from the earliest habitation and has nine phases of existence with reconstructions. A room admeasuring 4x2.40 m, a wall running north-south of length 5.40 m x width 2 m along with a floor on brick-on-edge having length 4.20x 3.50 m belonging to an earlier Phase IV. (See section looking east). The co-relation of structures and phases is as below:-
- 6. Number of courses: Three to Eight
- 7. Masonry and bond: Header stretchers, English Bond
- 8. Composition of mortar: Earth and grit
- 9. Composition of plaster: No plaster is available.
- 10. Orientation of longer axis: North-south
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm
- 13. State of preservation: Good
- 14. Shape and other distinguishing features: It is a partially exposed house complex with two rooms and a platform with two parallel walls. Platform with two parallel walls : The size of the platform is 2.70x2.30 m. It is located on the north side of the trench. This belongs to Harappan Phase VI. The parallel walls run north-south and join the platform. The size of the walls is 1.90 m x80 cm.

<b>Layers</b>	<b>STR Nos.</b>	<b>Phases</b>
(1) - (7)	1	Phase IX
(7) - (11)	2	Phase VIII
(12) - (15)	3	Phase VII
(16) - (18)	4	Phase VI
(19) - (20)	5	Phase V
(21) - (23)	6	Phase IV
(24) - (25)	7	Phase III
(26) - (27)	8	Phase II
(28)	9	Phase I

### **38. TRENCH NO. XF-1, Fig. 6.41**

- 1. Location KLB-2 Square No. XF-1 Quadrants 3 and 4
- 2. Type of structure: Partially exposed house walls, Platform
- 3. Stratigraphic position: Sealed by (2)
- 4. Period and Structural phase: Harappan, Phases V and VI
- 5. Measurement of structure: (a) length (b) width (c) height

Room No. 1 : Size 2.05 x 1.90 m

Room No. 2 : Size 2.10 x 2.10 m

The rooms belong to Harappan Phase V. The partition wall of the rooms is 1 m. This structure belongs to Phase V.

There is a cluster of bones of Phase V towards eastern side of the house.

### **39. TRENCH NOS. YA-15 AND YA-16**

- 1. Location KLB-2 Square Nos. YA15 and YA16 All Quadrants
- 2. Type of structure: House-complex
- 3. Stratigraphic position: Sealed by (1)
- 4. Period and Structural phase: Harappan, Phases I to IV

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH C-5, Qd.-3 AND C-6, Qd.-2



### PARTIALLY EXPOSED HOUSE WALL

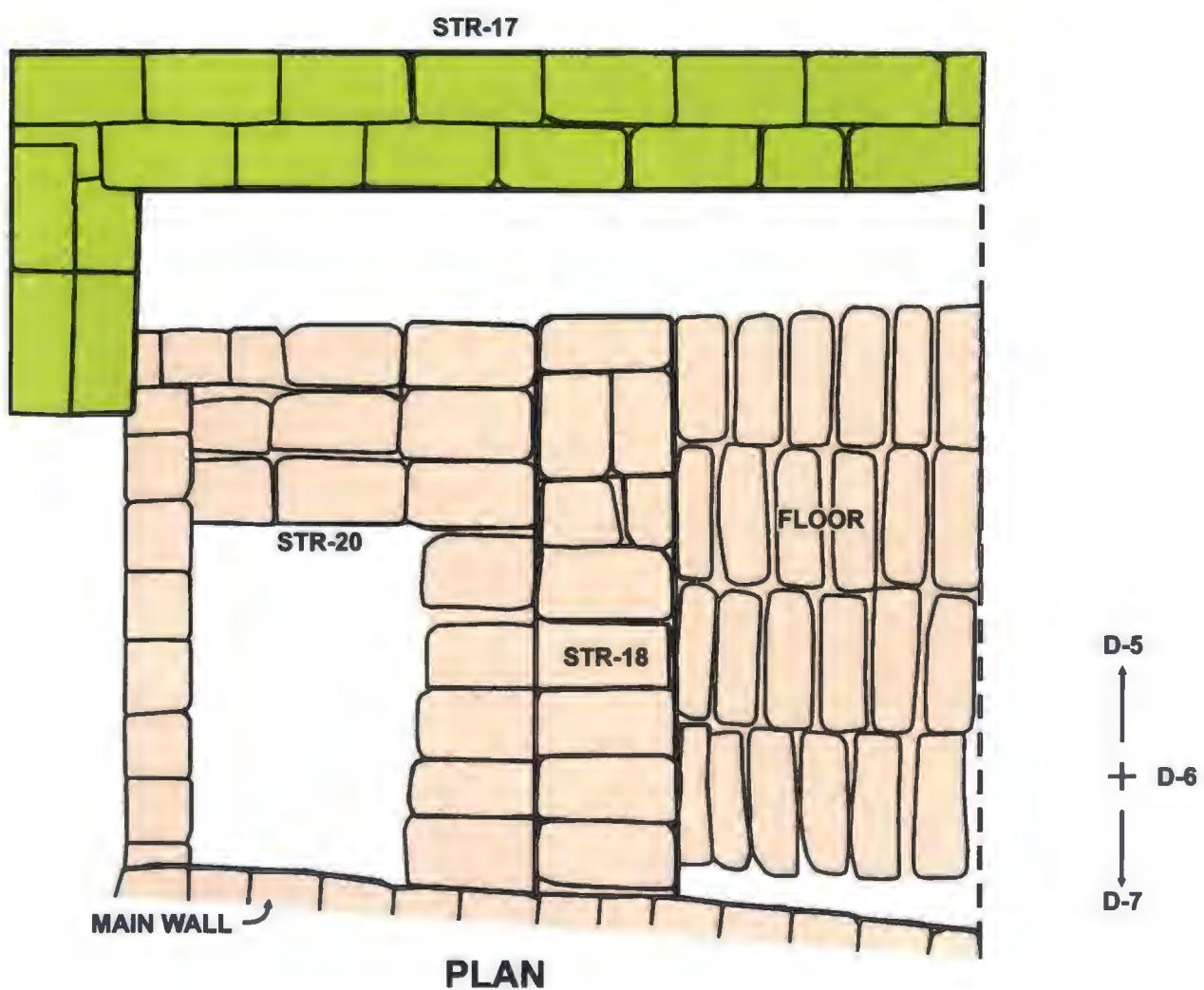
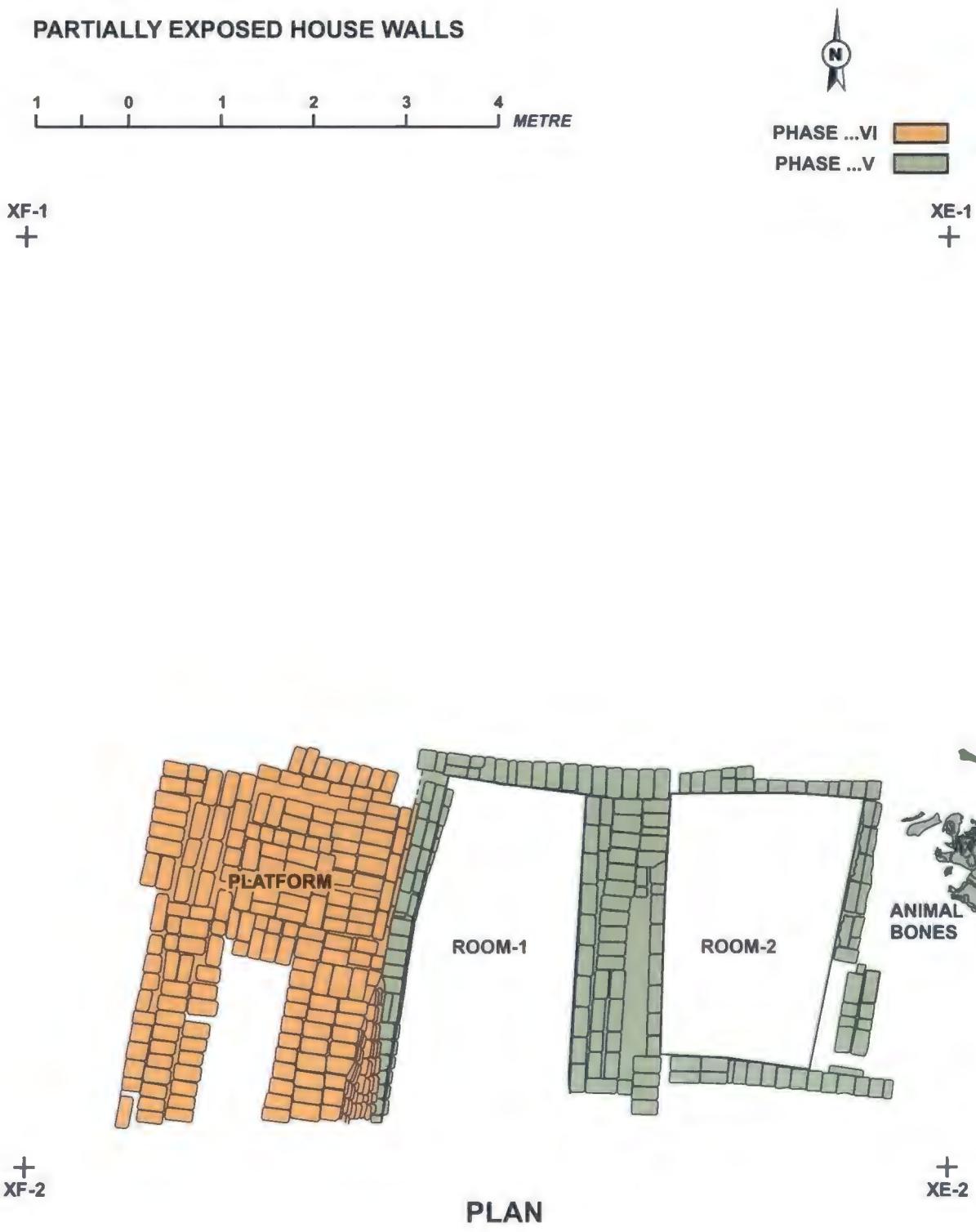


Fig. 6.40

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH XF-1, Qd.-3 AND 4

### PARTIALLY EXPOSED HOUSE WALLS



**PLAN**

**Fig. 6.41**

- 5. Measurement of structure: (a) length  
(b) width (c) height as below
- 6. Number of courses: Three to Four
- 7. Masonry and bond: English Bond
- 8. Composition of mortar: Earth and grit
- 9. Composition of plaster: Not available
- 10. Orientation of longer axis: As below
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks: (a) length 30 cm  
(b) width 14.5 cm (c) thickness 10 cm.
- 13. State of preservation: Good
- 14. Shape and other distinguishing features: This entire complex is situated in YA-15 and YA-16. It is located to the north-west of the staggered street no. NS 3 first before the gateway complex at the junction of streets NS2 and 3. It has a house complex having six rooms and central courtyard with a hearth or bread oven. This complex has walls of earlier phases also but that do not make a definite plan. The walls belong to Phases I, II, III and IV .

#### 40. TRENCH B-7, Fig. 6.42

- 1. Location KLB-2 Square No. B-7 Quadrants 4 & 1
- 2. Type of structure: Partially exposed house complex. Walls, Ovens and Floors
- 3. Stratigraphic position : Layers (1) to (15)
- 4. Period and structural phase : Harappan, Phases IV, V, VI, VII and VIII
- 5. Measurement of structure : (a) length (b) width (c) height As below
- 6. Number of courses : One to Twelve
- 7. Masonry and bond: Headers and stretcher kept in courses alternatively
- 8. Composition of mortar: Thin clay mortar mixed with husk

- 9. Composition of plaster: 1 cm of plaster which was removed consisting of ordinary clay
- 10. Orientation of longer axis : As below
- 11. Nature of bricks used: Mud-bricks
- 12. Dimension of bricks: (a) length 30 cm  
(b) width 14.5 cm (c) thickness 10 cm.
- 13. State of preservation: Bricks are well preserved.
- 14. Shape and other distinguishing features: This is a partially exposed house complex belonging Phases IV, V, VI, VII and VIII. It has ovens and saddle querns on floor.

**STR 1 Wall** It is sealed by layer (1), (2N) and (3N) are contemporary layers (3N) proceeds below the wall. Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 4.40 m and further goes in the section towards north and it built STR 4 towards south (b) width 60 cm so far exposed and further unexposed in the section towards west (c) height 1.06 m. Number of courses is eleven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 14.5 cm (c) thickness 10 cm.

**STR 2 Wall** As it is surrounded on all 4 sides by walls. No section has been preserved inside but towards south layers are as follows (2N) and (3N) are contemporary and (1) seals and (3N) goes further down. Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 2 m so far clearly visible (b) width 60 cm further extends in south towards north (c) height 1.03 m. Number of courses is

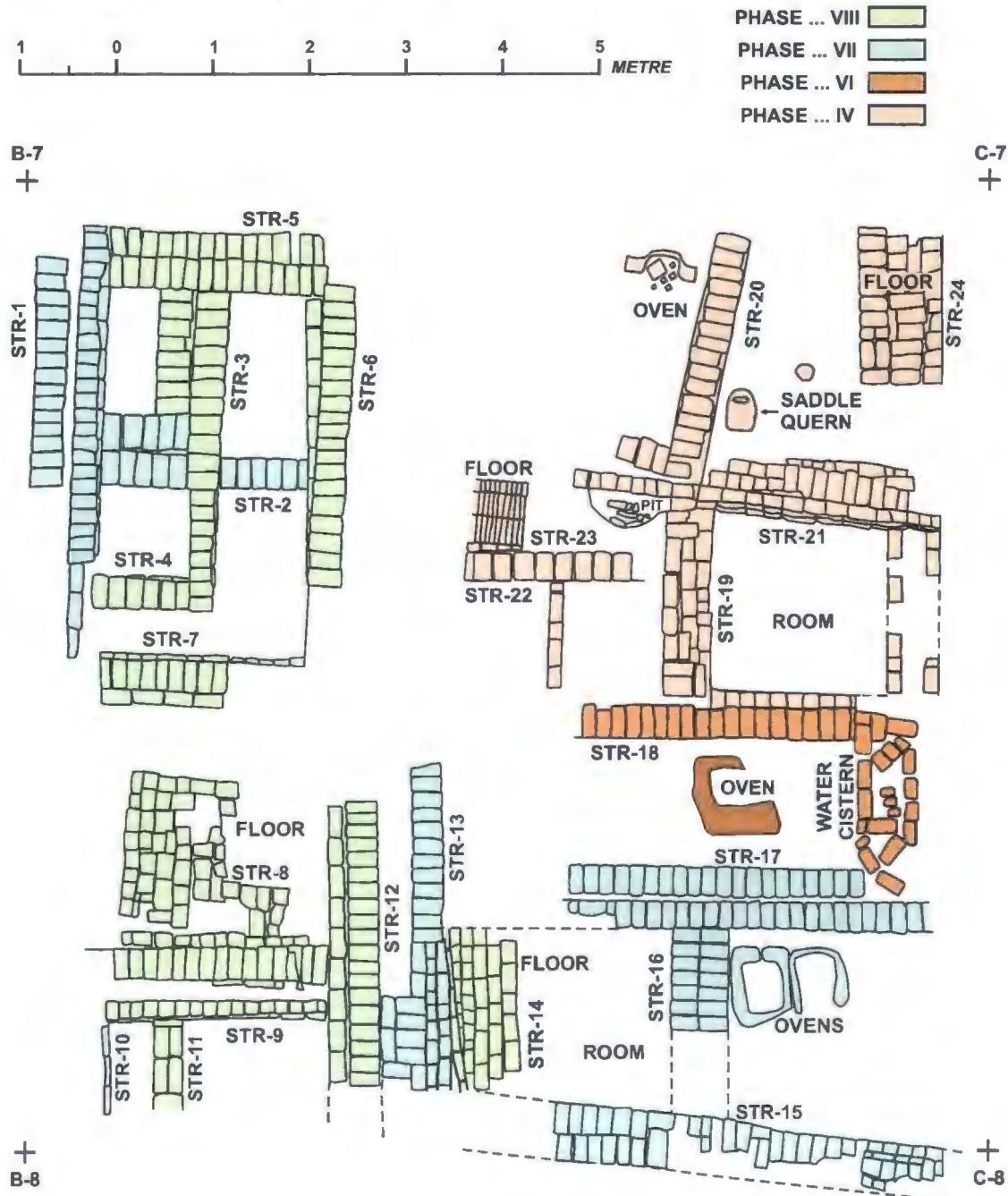
## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH B-7



### PARTIALLY EXPOSED ROOMS OF A HOUSE COMPLEX WITH OVENS



### PLAN

Fig. 6.42

twelve. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 7.5 cm.

**STR 3 Wall** Its contemporary layers are (2) (3) (4) and (5) below the wall (6) seems to be a filling. Top sealed by (1) of about .40 m depth. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 3.30 m and further extends towards south in the section (b) width 67 cm the layer of width (c) height 50 cm and further a few bricks observed down below. Number of courses is three to seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 9 cm.

**STR 4 Wall** Its contemporary layers as observed in STR 3 are (2) (3) (4) and (5) and below a filling is observed. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1 m (b) width 36 cm longest width (c) height 94 cm. Number of courses is ten. Orientation of longer axis is east-west running in south towards west. Dimension of bricks: (a) length 30 cm (b) width 14.5 cm to 15 cm (c) thickness 10.5 cm.

**STR 5** It is sealed by layer (1) Its structural phase is Harappan, Phase VIII. Orientation of longer axis is east-west. Measurement of structure is (a) length 2.25 m (b) width 65 cm (c) height 50 cm. Number of courses is six. Dimension of bricks: 30x15x10 cm.

**STR 6** It is sealed by layer (2). It belongs to Harappan, Phase VIII. The wall

has an earlier phase also. Orientation of longer axis is north-south. Measurement of structure is (a) length 3.50 m (b) width 35 cm (c) height 40 cm. Brick size is 40x20x10 cm.

**STR 7** It is sealed by layer (1). It belongs to Harappan, Phase VIII. Orientation of longer axis is east-west. Measurement of structure is (a) length 2.10 m (b) width 60 cm (c) height 40 cm.

**STR 8 Floor** Its stratigraphic position is Platform sealed on top by surface humus layer (1) and continuing layer seen to be filling of hard earth which continuing further damaged so far unexcavated. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1.70 m going inside section towards south (b) width ranges from 1.60 m to 1.40 m (c) height 40 cm so far exposed. Number of courses is four courses exposed so far. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9** It is a wall running east-west. It belongs to Harappan, Phase VIII. Measurement of structure is (a) length 2.30 m (b) width 60 cm (c) height 30 cm. Dimension of bricks: 40x20x10 cm.

**STR 10** It is a simple brick wall running north-south having a length of 90 cm. width 10 cm. It belongs to Harappan, Phase VII.

**STR 11** It is a small projecting wall running north-south. It belongs to Harappan,

Phase VIII. Measurement of structure is (a) length .90 m (b) width .35 m (c) height.10 m.

**STR 12** It is sealed by layer (1). It belongs to Harappan, Phase VIII. Orientation of longer axis is north-south. Measurement of structure is (a) length 2.90 m (b) width 45 cm (c) height 40 cm.

**STR 13 Wall** It is sealed by layer (9) and contemporary layers are (10) (11) and (12). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 3.40 m (b) width 60 cm (c) height 64 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 14 Floor** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 58 cm (b) width 1.50 cm (c) height 60 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 15 Wall** It is sealed by layer (9) and contemporary layer is (10). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 4.20 m (b) width 50 cm (c) height 45 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 16 Wall** It is sealed by layer (7) and contemporary layers are (8) and (9). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 1 m (b) width 60 cm (c) height 82 cm. Number of courses is not clear. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 17 Wall** It is sealed by layer (7) and contemporary layers are (8) and (9). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 3.55 m (b) width 65 cm (c) height 30 cm. Number of course is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 18 Wall** It is sealed by layer (9) and contemporary layers are (10) (11) (12) and (13). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.80 m (b) width 50 cm (c) height 1.20 m. Number of courses is twelve. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 19 Wall** It is sealed by layer (15) and contemporary layer is (16). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.90 m (b) width 50 cm (c) height 30 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a)

length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 20 Wall** It is sealed by layer (15) and contemporary layer is (16). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2.60 m (b) width 40 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 21 Wall** It is sealed by layer (14) and contemporary layer is (15). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 3.80 (b) width 80 cm (c) height 10 cm. Number of course is one. Orientation of longer axis is east-west. Dimension of bricks : are (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 22 Wall** It is sealed by layer (15) and contemporary layers are (16) and (17). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.70 m (b) width 35 cm (c) height 10 cm. Number of course is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm. There is a one brick wall emanating from this wall in north-south direction, length is 1 m.

**STR 23 Floor** It is sealed by layer (11) and contemporary layers are (12) (13) and (14). Its period and structural phase is Harappan, Phase IV. Measurement of

structure is (a) length 60 cm (b) width 50 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 24Floor** It is sealed by layer (13) and contemporary layers are (14) and (15). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.60 m (b) width 80 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

#### 41. TRENCH B-8

1. Location KLB-2 Square No. B-8 Quadrants 2 & 3
2. Type of structure: Walls
3. Stratigraphic position: Sealed by (1) cont. (2) (2a) (3) & (4)
4. Period and structural phase: Harappan, Phase VI
5. Measurement of structure: (a) length 1.57 m (b) width not seen (c) height 85 cm
6. Number of courses: Eight
7. Masonry and bond: Header and stretcher, English Bond
8. Composition of mortar: Loose clay
9. Composition of plaster: Ordinary clay mixed with straw
10. Orientation of longer axis: East-west
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm
13. State of preservation: Well preserved
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and its contemporary layers are (2) (2a) (3) and (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.57 m (b) width not clear (c) height 85 cm. Number of courses is eight. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layers are (2) (2A) (3) and (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.57 m (b) width not clear (c) height 85 cm. Number of courses is eight. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Wall** It is sealed by layer (2) and contemporary layers are (2x) (3x) (4x) (5x) and (6x). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.14 - 1.74 m (b) width 60 - 70 cm (c) height 85 - 80 cm. Number of courses is nine. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 24 (b) width 14 cm (c) thickness 9 cm.

**STR 4 Floor** It is sealed by layer (1) and contemporary layer is (16). Its period and structural phase is Harappan, Phase II. Measurement of structure is (a) length 2.97 m (b) width 21 cm (c) height 7.5 cm. Only single course is available. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c)

thickness 9 cm.

**STR 5 Wall (part of the lane)** It is sealed by layer (2), contemporary layers are (3) (4) are (5) and built over (6). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 4 m (b) width 66 cm (c) height (so far exposed) 62 cm. Number of courses is six. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Indeterminate structure over structure 1** It is built over structure 1, (2) sealed it. Contemporary is (2N). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2 m (b) width 75 cm (c) height 22 cm. Number of courses is two. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 7** It is sealed by layer (1), partly contemporary (1) and built over (2x). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.10 cm (b) width 70 cm (c) height 30 cm. Number of courses is two. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

#### 42. TRENCH B-9

1. Location KLB-2      Square No. B-9  
Quadrants 2 & 3
2. Type of structure: Wall
3. Stratigraphic position: Layers (1) - (5)
4. Period and Structural phase:  
Harappan Phases IV-V

5. Measurement of structure: (a) Length (b) width (c) height  
As below
6. Number of courses: One to Six
7. Masonry and bond: English Bond
8. Composition of mortar: Burnt mud & husk
9. Composition of plaster: Not available
10. Orientation of longer axis: As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length (b) width (c) thickness As below
13. State of preservation: Due to rammed earth being used. The wall has rug at all few clearly exposed. It is in bad state of preservation.
14. Shape and other distinguishing features: Described as below

**STR 1 Wall** It is sealed by layer (2) and contemporary layer is (3) (4) built over (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length (clear on plan) 1.85 m (b) width not clearly visible (c) height 60 cm. Number of courses is six. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by layer (3) and contemporary layer is (4) built over (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.30 m (b) width 74 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3. Wall** It is sealed by layer (2) contemporary layers are (3) (4)

and (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 93 cm (b) width 75 cm (c) height 49 cm. Number of courses is five. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 4** It is built over layer (5) sealed by layer (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.35 m (b) width 15 cm (c) height 7.5 cm. Number of courses is one . Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5** **Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4 m (b) width 70 cm (c) height 16 cm. Number of courses is two clear. Orientation of longer axis is east-west. The bricks are highly disintegrated.

#### 43. TRENCH C-7

1. Location KLB-2 Square No. C-7 Quadrants 1, 2, 3 & 4
2. Type of structure: Wall
3. Stratigraphic position: Layer (1) to (11)
4. Period and structural phase: Harappan phase I-VIII
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses: One to Eight
7. Masonry and bond: Header structure
8. Composition of mortar: Loose
9. Composition of plaster: Loose
10. Orientation of longer axis: As below

11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features: described as below :-

**STR 1 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 64 cm (b) width 29 cm (c) height 22 cm. Number of courses is three. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 29 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Floor 1** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3.83 m (b) width 30 cm (c) height 8. Only single course is available. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 17 cm (c) thickness 8 cm.

**STR 3 Floor 2** It is sealed by layer (3) and contemporary layer is (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3.89 m (b) width 28 cm (c) height 15 cm. Number of courses is three. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 28 cm (b) width 9 cm (c) thickness 7 cm.

**STR 4 Wall** Layer (5) is contemporary as well as sealing too. Its period and structural phase is Harappan, Phase VI. Measurement of

structure is (a) length 1.55 m (b) width 19 cm (c) height 50 cm. Number of courses is four. Orientation of longer axis is north-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5 Platform** Layer (5) is sealing and contemporary also. Its period and structural phase is Harappan, phase VI. Measurement of structure is (a) length 1.12 m (b) width 98 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is north-west. The dimensions of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 9 cm.

**STR 6 Wall** It is sealed by layer (1) contemporary layers are (2), (3) and (4). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 3.15 m (b) width 45 cm (c) height 45 cm. Number of courses is five. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 10 cm (c) thickness 10 cm.

**STR 7 Wall** It is sealed by layer (6) and contemporary layers are (6) (7) and (8). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 2.13 m (b) width 50 cm (c) height 27 cm. Number of courses is three. Orientation of longer axis is north-west. The dimension of bricks: not clear.

**STR 8 Wall** It is sealed by layer (7) and contemporary layer is (8). Its period and structural phase is Harappan,

Phase-IV. Measurement of structure is (a) length 2.80 m (b) width 15 cm (c) height 27 cm. Number of courses is three. Orientation of longer axis is east-west. The dimensions of bricks: not clear.

**STR 9 Wall** It is sealed by layer (8) contemporary layers are (9) & (10). Its period and structural phase is Harappan, Phase-III. Measurement of structure is (a) length 2.65 m (b) width 30 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 16 cm (c) thickness 9 cm.

**STR 10 Wall** It is sealed by layer (10). Its period and structural phase is Harappan, Phase-III. Measurement of structure is (a) length 1.80 m (b) width 40 cm (c) height 65 cm. Number of courses is not clear. Orientation of longer axis is north-south. The dimensions of bricks : not clear.

**STR 11 Drain** It is sealed by layer (11). Its period and structural phase is Harappan, Phase III. Measurement of structure is (a) length 1.33 m (b) width 36 cm (c) height 35 cm. Number of courses is six. Orientation of longer axis is east-west. The dimension of bricks: (a) length 20 cm (b) width 13 cm (c) thickness 8 cm.

**STR 12 Platform (square)** It is sealed by layer (10) and contemporary layer is (11). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a)

length 35 cm (b) width 50 cm (c) height 40 cm. Number of courses is six. The dimensions of bricks: (a) length 20 cm (b) width 13 cm (c) thickness 7.5 cm.

**STR 13 Wall** It is sealed by layer (8). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 1.52 m (b) width 38 cm (c) height not exposed. Number of course is one. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 16 cm (c) thickness 9 cm.

**STR 14 Wall** Its contemporary layer is (2) and sealing layer (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.85 m (b) width 65 cm (c) height 16 cm. Number of courses is two. Orientation of longer axis is north-south. The dimensions of brick: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 15 Wall** Its contemporary layer is (2w) and sealing layer (1w). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 86 cm (b) width 70 cm (c) height 10 cm. Number of course is one. Orientation of longer axis is east-west. Only brick pieces are available.

**STR 16 Wall** Its contemporary layers are (2x) and (3x) and sealing layer (1x). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 2.27 m (b) width 50 cm (c) height 80 cm still going down. Number of courses is eight.

Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 17 Wall** Its contemporary layers are (4) (5) and (6) and sealing layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.70 m still going into baulk (b) width 55 cm (c) height 62 cm. Number of courses is eight. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 18 Wall** Its contemporary layers are (2x) and (3x) and sealing layer (1x). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 72 cm (b) width 41 cm still going into baulk (c) height 40 cm. Number of courses is four. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 19 Wall** Its contemporary layer is (3) and sealing layer (2). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 1.15 m (b) width 37 cm still going into baulk (c) height 37 cm. Number of courses is four. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 20 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a)

length 3.95 m (b) width 54 cm (c) height 10 cm. Number of courses is two. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 21 Wall** Its contemporary layer is (2w) and sealing layer (1w). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 85 cm (b) width 60 cm (c) height 30 cm still going down. Number of courses is three. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 m (b) width 15 cm (c) thickness 7.5 cm.

#### 44. TRENCH C-8

1. Location KLB-2      Square No. C-8  
Quadrants 1 to 4
2. Type of structure: Walls
3. Stratigraphic position: Layer (1) to (7)
4. Period and structural phase:  
Harappan, Phases III-VIII
5. Measurement of structure: (a) length  
(b) width (c) height As below
6. Number of courses : One to Eleven
7. Masonry and bond: Header & stretcher
8. Composition of mortar: Brownish clay
9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length (b)  
width (c) thickness As below
13. State of preservation: In good state  
of preservation
14. Shape and other distinguishing  
features:

**STR 1 Wall** Its contemporary layers are (2) and (3) and sealing layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 3.65 m continuing into

QD-2 of B8 (b) width 65 cm (c) height 60 cm. Number of courses is five. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 2 Wall** Its contemporary layer is (2N) and sealing layer (1N). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2 m (b) width 70 cm (c) height 70 cm. Number of courses is six. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 3 Wall** Its contemporary layers are (2) and (3) and sealing layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 3.10 m continuing QD-2 of B8 (b) width 46 cm going into baulk (c) height 60 cm. Number of courses is five. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 4 Wall** Its contemporary layer is (2x) and sealing layer (1x). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1.77 m (b) width 47 cm (c) height 55 cm. Number of courses is not clear. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5 Wall** It is sealed by layer (1). It belongs to Harappan, Phases VIII having phases VII and VI. Number of courses is Phase VIII

five, Phase VII seven & Phase VI not clear. Orientation of longer axis is east-west. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Wall** Its contemporary layers are (2) and (3) and sealed by layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 4.08 m (b) width 50 cm (c) height 1.10 m. Number of courses is eleven. Orientation of longer axis is north-south. The dimensions of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 7 Wall** Its contemporary layer is (3w) and sealing layer (2w). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 50 m still continuing into QD-1 (b) width 55 cm (c) height 9 cm. Number of courses is one still going down. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 8 Wall** Its contemporary layers is (3E) and sealing layer (2E). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 47 cm continuing into Qd-1 of D8 (b) width 16 cm Rest going into baulk (c) height 22 cm. Number of courses is not visible. Orientation of longer axis is east-west. The dimension of bricks: Not fully visible.

**STR 9 Wall** Its contemporary layers are (2) and (3) and sealing layer (1). Its period and structural phase is

Harappan, Phase III. Measurement of structure is (a) length 65 cm continuing into QD-3 of C-7 (b) width 55 cm still going into baulk (c) height 60 cm. Number of courses is six. Orientation of longer axis is north-south. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 10 Wall** Its contemporary layers are (2) to (5) and layer (1) seals it. Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 4.05 m (b) width 65 cm (c) height 85 cm. Number of courses is nine. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 11 Wall** Its contemporary layers are (2) to (5) and sealing layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.30 m continuing still into QD-2 (b) width 60 cm (c) height 80 cm bottom not yet resumed. Number of courses is nine. Orientation of longer axis is north-south. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 12 Wall** Its contemporary layers are (2) to (5) and sealing layer (1). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 2 m (b) width 50 cm (c) height 75 cm. Number of courses is nine. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 13 Wall** Its contemporary layers are (2E) and (3E) and sealing layer (1E). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 2.47 m continuing into QD-2 (b) width 55 cm (c) height 45 cm. Number of courses is five. Orientation of longer axis is north-south. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 14 Wall** Its contemporary layers are (6) and (7) and sealing layer (5). Its period and structural phase is Harappan, phase IV. Measurement of structure is (a) length 4.25 m continuing into QD-3 (b) width 55 cm (c) height 55 cm. Number of courses is five. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 15 Wall** Layers (2) to (5) are contemporary and (1) is sealing layer. Its period and structural phase is Harappan, Phase-VII. Measurement of structure is (a) length 4.25 m continuing into QD-3 (b) width 55 cm (c) height 85 cm. Number of courses is nine. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 16 Wall** Layer (3) is contemporary and layer (2) is sealing. Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 65 cm still continuing into QD-3 of B8 (b) width 38 cm (c) height 80 cm still continuing. Number of courses is

one. Orientation of longer axis is east-west. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 17 Wall** Layers (3) to (6) are contemporary layers and sealing layer is (2). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.25 m still continuing into QD-1 (b) width 60 cm (c) height 80 cm. Number of courses is ten. Orientation of longer axis is north-south. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 18 Wall** Its contemporary layers are (3) to (5) and sealing layer is (2). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.28 m still continuing into QD-1 (b) width 50 cm (c) height 75 cm still going down. Number of courses is seven. Orientation of longer axis is north-south. The dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

#### 45. TRENCH C-9

1. Location KLB-2 Square No. C-9 Quadrants 1, 3 & 4
2. Type of structure: Wall
3. Stratigraphic position : Layers (2) to (5)
4. Period and structural phase : Harappan, Phases V to VIII
5. Measurement of structure is (a) length (b) width (c) height As below
6. Number of courses : Four to seven

7. Masonry and bond: Header & stretchers
8. Composition of mortar: Thin mortar of brown clay
9. Composition of plaster: Plaster is removed
10. Orientation of longer axis : As below
11. Nature of bricks used : Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** Layers (2) and (3) are contemporary, layer (1) seals it. Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 2.48 m (b) width 75 cm (c) height 68 cm. Number of courses is 6 exposed so far 7<sup>th</sup> is running down. Orientation of longer axis is north-south. Dimension of bricks: (a) length 31 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** Layers (2) and (3) are contemporary. Layer (1) seals it. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.23 m (b) width 77 cm (c) height 73 cm. Number of courses is 7 courses exposed so far 8<sup>th</sup> is running down. Orientation of longer axis is east-west. Dimension of bricks are (a) length 30 cm (b) width 16 cm (c) thickness 9 cm.

**STR 3 Wall** Layers (3x) (4x) and (5x) are contemporary and layer (2x) is the sealing layer. Its period and structural phase is Harappan, Phase VII. Measurement of

structure is (a) length 1.58 m (b) width 79 cm (c) height 55 cm. Number of courses is 5 exposed so far. Orientation of longer axis is north-south. Dimension of bricks: (a) length 31 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Wall** It is sealed by layer (4) and contemporary layers are (5) and (6). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 4 m (b) width 70 cm (c) height 66 cm still going deep so far exposed. Number of courses is 7. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5 Wall** Layer (2) is contemporary and layer (1) is sealing. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.30 m (b) width 88 cm (c) height 30 cm. Number of courses is 4 exposed so far. Orientation of longer axis is north-south. Dimension of bricks: (a) length 31 cm (b) width 15 cm (c) thickness 9 cm.

#### 46. TRENCH E-6

1. Location KLB-2      Square No. E-6 Quadrant 4
2. Type of structure: Wall
3. Stratigraphic position: Layers (1) to (3)
4. Period and structural phase : Harappan, Phase V
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Three

7. Masonry and bond: Headers
8. Composition of mortar: Brownish clay
9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks are (a) length (b) width (c) thickness As below
13. State of preservation: In very much disintegrated state
14. Shape and other distinguishing features:

**STR 1 Wall** Its contemporary layer is (2) and sealing layer is (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 4 m (b) width 55 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** Its contemporary layer is (2) and sealing layer is (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.90 m (b) width 75 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Wall** Layer (2) is contemporary and layer (1) seals it. Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.29 m (b) width 65 cm (c) height 10 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks: are (a)

length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 4 Wall** Layer (1S) seals it and contemporary layers are (2S) and (3S). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.82 m (b) width 45 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 17 cm (c) thickness 10 cm.

#### 47. TRENCH XC-6

1. Location KLB-2 Square No. XC-6 Quadrants 1 & 4
2. Type of structure: Wall
3. Stratigraphic position : Layers (1) to (4)
4. Period and structural phase : Harappan, Phase V
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Four
7. Masonry and bond: One headers and two stretchers on plan
8. Composition of mortar: Brownish clay
9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks are (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.30 (b) width 60 cm (c) height 17 cm. Number of courses is two. Orientation of longer axis is north-

south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by layer (1) contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 3.05 m (b) width 62 cm (c) height 20 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of brick: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Wall** It is sealed by layer (1) contemporary layer is (2) structure still continued. Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.50 m (b) width 62 cm (c) height 22 cm. Number of courses is three, structure still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Wall** It is sealed by layer (1) and contemporary layer is (2) structure still continued. Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2 m (b) width 46 cm (c) height 29 cm. Number of courses is four still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 5 Floor** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.20 m

(b) width 1.07 m (c) height 8 cm. Number of course is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 6 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.33 m (b) width 16 cm (c) height 24 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 7 Wall** It is sealed by layer (1) and contemporary layers are (2) (3) and (4) structure still continued. Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.20 m (b) width 30 cm (c) height 56 cm. Number of courses is 6 structure still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 8 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 3.05 m (b) width 65 cm (c) height 10 cm. Number of course is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural

phase is Harappan, Phase V. Measurement of structure is (a) length 4.25 m (b) width 50 cm (c) height 33 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.35 m (b) width 47 cm (c) height 9 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

#### 48. TRENCH XD-6

1. Location KLB-2 Square No. XD-6 Quadrants 1 to 4
2. Type of structure: Walls
3. Stratigraphic position : Layers (1) to (6)
4. Period and structural phase : Harappan, Phases IV, V, VI
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to thirteen
7. Masonry and bond: Headers & stretchers
8. Composition of mortar: Brownish clay
9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features: as below

**STR 1 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase V.

Measurement of structure is (a) length 3.38 m (b) width 95 cm (c) height 86 cm. Number of courses is nine. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30/40 cm (b) width 15/20 cm (c) thickness 9/10 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 40 cm (b) width 1.10 m (c) height 85 cm. Number of courses is nine. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30/40 cm (b) width 15/20 cm (c) thickness 9/10 cm.

**STR 3 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.50 m (b) width 45 cm (c) height 37 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Wall** It is sealed by layer (2) and contemporary layers are (3) and (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.10 m (b) width 50 cm (c) height 71 cm. Number of courses is seven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 5 Wall** It is sealed by layer (3) and contemporary layer is (4) (inside

house). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 3.30 m (b) width 50 cm (c) height 60 cm. Number of courses is not clear. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 6 Wall** It is sealed by layer (4) and contemporary layers are (5) and (6) structure still continued. Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 2.30 m (b) width 40 cm (c) height 65 cm. Number of courses is seven, structure still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 7 Trough** It is sealed by layer (6) and contemporary layer is (6). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 57 cm (b) width 15 cm (c) height 20 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 8 Trough** It is sealed & contemporary layer is (6). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 45 cm (b) width 15 cm (c) height 18 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9 Wall and foundation pit** It is sealed by layer (3) and contemporary layer is (3). Foundation pit cutting the layers (4) and (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.43 m (b) width not seen (c) height 30 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layer is (2) structure still continued. Its period and structural phase is Harappan. Phase V. Measurement of structure is (a) length 54 cm (b) width 38 cm (c) height 18 cm. Number of courses is four structure still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 11 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan. Phase V. Measurement of structure is (a) length 51 cm (b) width 33 cm (c) height 27 cm. Number of courses is four. structure still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 12 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan. Phase V. Measurement of structure is (a) length 2.90 m (b) width 85 cm (c) height 1.29 m. Number of courses

is thirteen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 13 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan. Phase V. Measurement of structure is (a) length 75 cm (b) width not clear (c) height 1.16 m. Number of courses is twelve. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 14 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan. Phase-V. Measurement of structure is (a) length 2.36 m (b) width 65 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 15 Wall** It is sealed by layer (1) and contemporary layers are (2) & (3). Structure still continued. Its period and structural phase is Harappan. Phase-V. Measurement of structure is (a) length 75 cm (b) width not seen (c) height 64 cm. Number of courses is eight structure still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 16 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan. Phase-V. Measurement of structure is (a)

length 70 cm (b) width 45 cm (c) height 32 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 17 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 3.05 m (b) width 16 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 18 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 1 m (b) width 70 cm (c) height 37 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 19 Wall** It is sealed by humus and contemporary layers are (1) and (2). Its period and structural phase is Harappan, Phase-V. Measurement of structure is (a) length 93 cm (b) width 50 cm (c) height 26 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 20 Wall** It is sealed by layer (1) and contemporary layer is not visible. Its period and structural

phase is Harappan, Phase-V. Measurement of structure is (a) length 1.17 m (b) width 45 cm (c) height 10 cm. Number of courses is two, structure still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 21 Wall** It is sealed by layer (1) and contemporary layer is (2). structure still continued. Its period and structural phase is Harappan, Phase-VI. Measurement of structure is (a) length 72 cm (b) width 80 cm (c) height 19 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 22 Wall** It is sealed by layer (1) and contemporary layer is (2). structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.40 m (b) width 81 cm (c) height 36 cm. Number of courses is four structure still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 23 Wall** It is sealed by layer (1) and contemporary layer is (2). structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 26 cm (b) width 55 (c) height 30 cm. Number of courses is three structure still continued. Orientation of longer axis is east-

west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 24 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3.20 m (b) width 75 cm (c) height 10 cm. Number of courses is not clear. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 25 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 30 cm (c) height 35 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 26 Wall** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.10 m (b) width 50 cm (c) height 28 cm. Number of courses is four, still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 27 Trough** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.15 m (b) width 30 cm (c)

height 26 cm. Number of courses is three, structure still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 28 Wall** It is sealed by layer (1), and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.46 m (b) width 55 cm (c) height 22 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 29 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 60 cm (b) width 55 cm. Number of courses is not very clear. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 30 Wall** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 45 cm (b) width 85 cm (c) height 32 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 31 Wall** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period

and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 85 cm (b) width 48 cm (c) height 30 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

#### 49. TRENCH XD-7

1. Location KLB-2 Square No. XD-7 Quadrants 1 to 4
2. Type of structure: Wall
3. Stratigraphic position : layers (1) to (10)
4. Period and structural phase : Harappan, Phases V & VI
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to nine
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Brownish clay
9. Composition of plaster: Brownish clay
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: In good position
14. Shape and other distinguishing features: as below

**STR 1 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.77 m (b) width 77 cm (c) height 48 cm. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.45 m (b) width 75 cm (c) height 57 cm. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.36 m (b) width 70 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.35 m (b) width 70 cm (c) height 61 cm. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 5 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width not available (c) height 49 cm. Number of courses is six, structure still continued. Orientation of longer axis is north-south. Dimension of

bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 6 Wall** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.42 m (b) width 15 cm (c) height 36 cm. Number of courses are four, structure still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 7 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.71 m (b) width 45 cm (c) height 40 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 8 Wall** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 45 cm (c) height 15 cm. Number of courses is three, structure still continued. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9 Wall** It is sealed by layer (1) and contemporary layer is (2), structure still continued. Its period and structural phase is Harappan,

Phase VI. Measurement of structure is (a) length 3.57 m (b) width 50 cm (c) height 10 cm. Number of courses is one, structure still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layers are (2) (3) (4) & (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 4.25 m (b) width 75 cm (c) height 55 cm. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 11 Wall** It is sealed by layer (5) and contemporary layers are (6) to (10). Its period and structural phase is Harappan, Phase IV. Measurement of structure is (a) length 4.25 m (b) width 75 cm (c) height 1 m. Number of courses is nine. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 12 Wall** It is sealed by layer (1) and contemporary layers are (2) & (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 75 cm (c) height 50 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 13 Wall** It is sealed by layer (1) and contemporary layers are (2) to (5).

Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.30 m (b) width .45 m (c) height .58 m. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 14 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, phase V. Measurement of structure is (a) length 1.95 m (b) width 45 cm (c) height 42 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 15 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 50 cm (b) width 75 cm (c) height 30 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 16 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 70 cm (b) width 15 cm (c) height 20 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

## 50. TRENCH XE-6

1. Location KLB-2 Square No. XE-6 Quadrants 2 & 3
2. Type of structure: Walls
3. Stratigraphic position : Layers (1) to (5)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Two to Five
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Brownish clay
9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and contemporary layers are (2) & (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 48 cm (c) height 40 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2 m (b) width 30 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.25 m (b) width 47 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.55 m (b) width 45 cm (c) height 35 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 5 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.49 m (b) width not available (c) height 44 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 6 Wall** It is sealed by layer (3) and foundation pit cuts the layers (4) and (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width not seen (c) height 22 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 7 Wall** It is sealed by layer (3) and resting on (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.20 m (b) width 62 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 8 Trough** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan, VI. Measurement of structure is (a) length 90 cm (b) width 15 cm (c) height 9 cm. Number of course is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9 Wall** It sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 55 cm (c) height 22 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 65 cm (c) height 33 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 11 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 85 cm (b) width 16 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 12 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 25 cm (b) width 17 cm (c) height 10 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 13 Trough** It is sealed by layer (3) and contemporary layer is (4), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.29 m (b) width 15 cm (c) height 15 cm. Number of courses is two, still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 14 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 75 cm (b) width 15 cm (c) height 9 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 15 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 25 cm (b) width 15 cm (c) height 9 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 16 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 77 cm (b) width 30 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 17 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 80 cm (b) width 16 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 18 Trough** It is sealed by layer (1) and contemporary layers are (2) and (3), structure still continued. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1 m (b) width 15 cm (c) height 30 cm. Number of courses is four, still continued. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

### 51. TRENCH XE-7

1. Location KLB-2 Square No. XE-7  
Quadrants 1 to 4
2. Type of structure: Walls
3. Stratigraphic position : Layers (1) to (4)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to four
7. Masonry and bond: Header and stretcher
8. Composition of mortar: Brownish clay
9. Composition of plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: In good position
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 50 cm (c) height 35 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by humus and contemporary layer is (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.40 m (b) width not determined (c) height 30 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Trough** It is sealed by layer (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure not determined. Number of course is not available. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 4 Wall** It is contemporary & sealed by layer (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.40 m (b) width 45 cm (c) height 8 cm. Number of course is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 60 cm (b) width 15 cm (c) height 16 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 6 Trough** It is sealed by layer (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 60 cm (b) width 75 cm (c) height 16 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 7 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan,

Phase VI. Measurement of structure is (a) length 86 cm (b) width 15 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 8 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan. Phase VI. Measurement of structure is (a) length 87 cm (b) width 15 cm (c) height 29 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan. Phase VI. Measurement of structure is (a) length 85 cm (b) width 16 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan. Phase VI. Measurement of structure is (a) length 2.40 m (b) width 50 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is East-west. Dimension of bricks are (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 11 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan.

Phase VI. Measurement of structure is (a) length 2.40 m (b) width 30 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 12 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan. Phase VI. Measurement of structure is (a) length 1.67 m (b) width 50 m (c) height 13 m. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 13** It sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan. Phase VI. Measurement of structure is (a) length 1.67 m (b) width 30 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 14** It is sealed by layer (3) and contemporary layer is (4). Its period and structural phase is Harappan. Phase VI. Measurement of structure is (a) length 1.30 m (b) width 30 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 15 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period

and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 45 cm (c) height 30 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 16 Wall** It is sealed by layer (3) and contemporary layer is (4). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.50 m (b) width not clearly seen. Only three courses are clear. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 17 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 45 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

## 52. TRENCH XE-8

1. Location KLB-2 Square No. XE-8 Quadrants 1 to 4
2. Type of structure: Wall
3. Stratigraphic position : Layers (1) to (6)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure: (a) length (b) width (c) height As below
6. Number of courses : One to Six
7. Masonry and bond: Stretcher and Header
8. Composition of mortar: Greyish clay

9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.40 m (b) width 34 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.51 m (b) width 31 cm (c) height 11 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 31 cm (b) width 16 cm (c) thickness 9.5 cm.

**STR 3 Wall** It is sealed by layer (2) and contemporary layers are (4) & (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.42 m (b) width not available (c) height 53 cm. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 9.5 cm.

**STR 4 Wall** It is sealed by layer (6) and contemporary layer is lower

portion of (6a). Its period and structural phase is Harappan Phase VI. Measurement of structure is (a) length 2.09 m (b) width not available (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 10 cm.

**STR 5 Trough** It is sealed by layer (6). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.23 m (b) width 1.22 m (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 10 cm.

**STR 6 Wall** It sealed by layer (5) and contemporary layer is (6). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 83 cm (b) width 43 cm (c) height 9.5 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 9.5 cm.

**STR 7 Trough XE8 & XE7** It is sealed by layer (5) and contemporary layer is (6). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.43 m (b) width 1.20 m (c) height 9.5 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 9.5 cm.

**STR 8 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.72 m (b) width 30 cm (c) height 40 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 9 Wall** Its stratigraphic position is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.80 m (b) width 32 cm (c) height 40 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of brick: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 10 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.35 m (b) width 45 cm (c) height 43 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 11 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.34 m (b) width 1.15 m (c) height 18 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 12 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4 m (b) width 30 cm (c) height 35 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

**STR 13 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.80 m (b) width 30 cm (c) height 29 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8.5 cm.

### 53. TRENCH XF-7

1. Location KLB-2      Square No. XF-7  
Quadrants 1 to 3
2. Type of structure: Platform
3. Stratigraphic position : Level Humus (1) to (5)
4. Period and structural phase : Harappan, Phases V and VI.
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Six
7. Masonry and bond: Two header one Stretcher
8. Composition of mortar: Brownish clay
9. Composition of plaster: Brownish clay
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-Bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: In good condition

14. Shape and other distinguishing features:

**STR 1 Platform** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 85 cm (b) width 65 cm (c) height 15 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 45 cm (c) height 51 cm. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 3 Trough** It is sealed by layer (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 35 cm (b) width 15 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 4 Trough** It is sealed layer (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1 m (b) width 15 cm (c) height 7 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 5 Wall** It is sealed by layer (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.60 m (b) width not determined. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 6 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 60 cm (b) width 15 cm (c) height 7 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 7 Trough** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 40 cm (b) width 15 cm (c) height 7 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 8 Wall** It is sealed by humus and contemporary layer is (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.60 m (b) height 30 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 9 Wall** It is sealed by humus. Its period and structural phase

is Harappan, Phase VI. Measurement of structure is (a) length 2.20 m (b) width 45 cm (c) height 20 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 10 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.40 m (b) width 30 cm (c) height 42 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 11 Wall** It is sealed by humus. contemporary layers are (1) and (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.40 m (b) width 30 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 12 Wall** It is sealed by layer (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 m (b) width 45 cm (c) height 30 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 13 Trough** It is sealed by layer (1) and contemporary layer is (2). Its

period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.35 m (b) width 15 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 14 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 80 cm (b) width 15 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 15 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 70 cm (b) width 15 cm (c) height 20 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 16 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3 m (b) width not available (c) height 45 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 17 Wall** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.42 m (b) width 45 cm (c) height 20 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 18 Trough** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.25 m (b) width 30 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 19 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 60 cm (b) width 15 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 20 Trough** Its stratigraphic position is sealed & contemporary (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 2.10 m (b) width 15 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 21 Trough** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length 1.40 m (b) width 16 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 33 cm (b) width 16 cm (c) thickness 8 cm.

**STR 22 Trough** Its is sealed & contemporary (5). Its period and structural phase is Harappan, Phase V. Measurement of structure is (a) length .60m (b) width .16m (c) height .07m Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15cm (c) thickness 7.5cm.

#### 54. TRENCH XG-6

1. Location KLB-2 Square No. XG-6 Quadrants 3
2. Type of structure: Wall
3. Stratigraphic position : Sealed by humus contemporary (1)
4. Period and structural phase : Harappan, Phase VI.
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One
7. Masonry and bond: Header & stretcher
8. Composition of mortar: Brownish clay
9. Composition of plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-Bricks
12. Dimension of bricks : (a) length 30 cm (b) width 15 cm (c) thickness 9 cm
13. State of preservation: Good
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by humus and contemporary layer is (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.05 m (b) width 40 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 2 Wall** It is sealed by humus and contemporary layer is (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 35 cm (b) width 32 cm (c) height 10 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Trough** It is sealed by humus and contemporary layer is (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.45 m (b) width 15 cm (c) height 9 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 4 Trough** It is sealed by humus and contemporary layer is (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 50 cm (b) width 15 cm (c) height 9 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**55. TRENCH A-7, Fig. 6.43**

1. Location KLB-2 Square No. A-7 Quadrant 1
2. Type of structure: Walls; floor
3. Stratigraphic position : Sealed by (1) to (7)
4. Period and structural phase : Harappan, Phase VIII
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Fourteen
7. Masonry and bond: Header & stretcher laid alternatively
8. Composition of mortar: Clay
9. Composition of plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Well preserved
14. Shape and other distinguishing features: This is a partially exposed house with a room paved by bricks-on-edge and part of another thick wall on its northern side.

**STR 1 Wall** Stratigraphically this wall is sealed by layer (1). It has east-west orientation. Its length is 4.25 m and a width of 70 cm. It has five courses of bricks. The bricks are laid in header and stretchers.

**STR 2 Wall** It is sealed by layer (1). It has east-west orientation. Its length is 3 m and width is 70 cm.

**STR 3 Wall** It is sealed by layer (1). It has north-south orientation and has four courses of bricks. Measurement of structure is (a) length 3.20 m (b) width 46 cm.

**STR 4 Wall** It is sealed by layer (1). It has east-west orientation. Measurement of structure is (a) length 3 m (b) width 30 cm.

**STR 5 Floor** It is sealed by layer (1). Measurement of structure is (a) length 2.40 m (b) width 1.20 m. Bricks are laid on edge.

**56. TRENCH A-7, Fig. 6.44**

1. Location KLB-2 Square No. A-7 Quadrant 2
2. Type of structure: Walls; floor
3. Stratigraphic position : Sealed by (1) to (7)
4. Period and structural phase : Harappan, Phase VIII
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Fourteen
7. Masonry and bond: Header and stretcher laid alternately
8. Composition of mortar: Clay
9. Composition of plaster: -
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Well preserved
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 3.85 m (b) width 40 cm (c) height 65 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 8.5 cm.

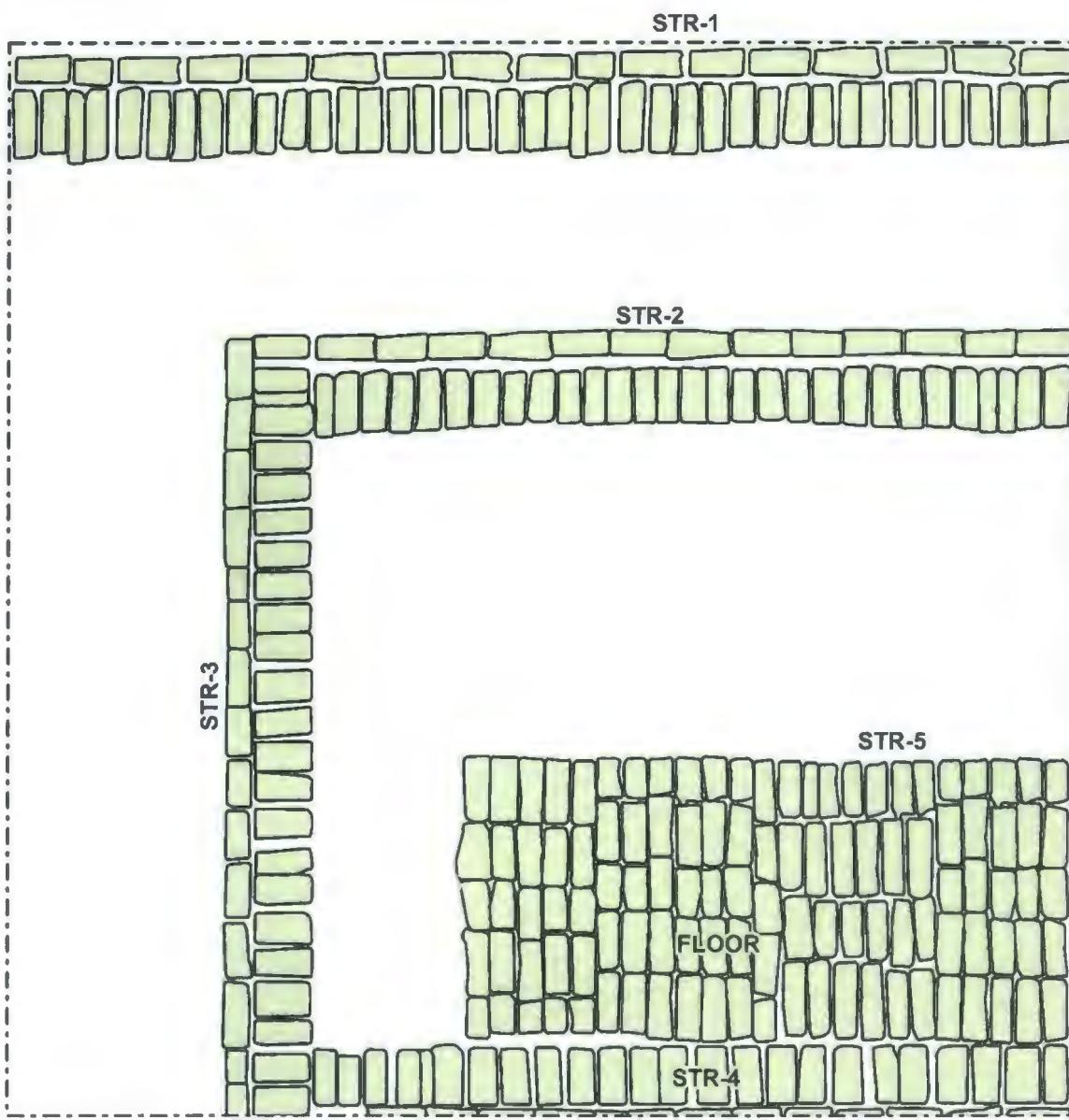
**STR 2 Wall** It is sealed by layer (1) and laid on layer (3). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.90 m Probably continuing Qd 2 (b)

**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH A-7, Qd.-1

PARTIALLY EXPOSED HOUSE

PHASE ...VIII

1 0 1 METRE



PLAN

Fig. 6.43

width 30 cm (c) height 25 cm. Number of courses is three. Orientation of longer axis is west- east. Dimension of bricks: (a) length 34 (b) width 17 cm (c) thickness 8.5 cm.

**STR 3 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.20 m (b) width 50 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 4 Wall** It is sealed by floor (2) laid on (3). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.20 m (b) width 80 cm (c) height 15 cm it is laid brick-on-edge. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 (b) width 16 cm (c) thickness 10 cm.

**STR 5 Floor** Layers (2) & (3) are contemporary and sealed by layer (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 2.20 m (b) width 1.80 m. Orientation of longer axis is north-south. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm. It is a room-floor and has two post holes.

**STR 6 Wall** Connected with STR-4. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1 m (b) width 60-65 cm (c)

height 1.50 m. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

**STR 7 Wall** Layers (5) (6A) and (6B) are contemporary and it is sealed by layer (4). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1 m (b) width 65-70 cm. Number of courses is not distinguishable. Orientation of longer axis is north-south. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

**STR 8 Floor** Layers (2) and (3) are contemporary and sealing layer is (1). Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1.20 m (b) width 1 m. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

#### 57. TRENCHES XA-7 AND A-7, Figs. 6.45 and 6.46(a)

1. Location KLB-2 Square Nos. XA-7 and A-7 Quadrants 1, 2, 3 and 4
2. Type of structure: House walls and floors
3. Stratigraphic position : Sealed by (1) to (7)
4. Period and structural phase : Harappan, Phases V, VI, VII and VIII
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Three to six
7. Masonry and bond: Header and stretcher and only headers

## KALIBANGAN : 1960-69

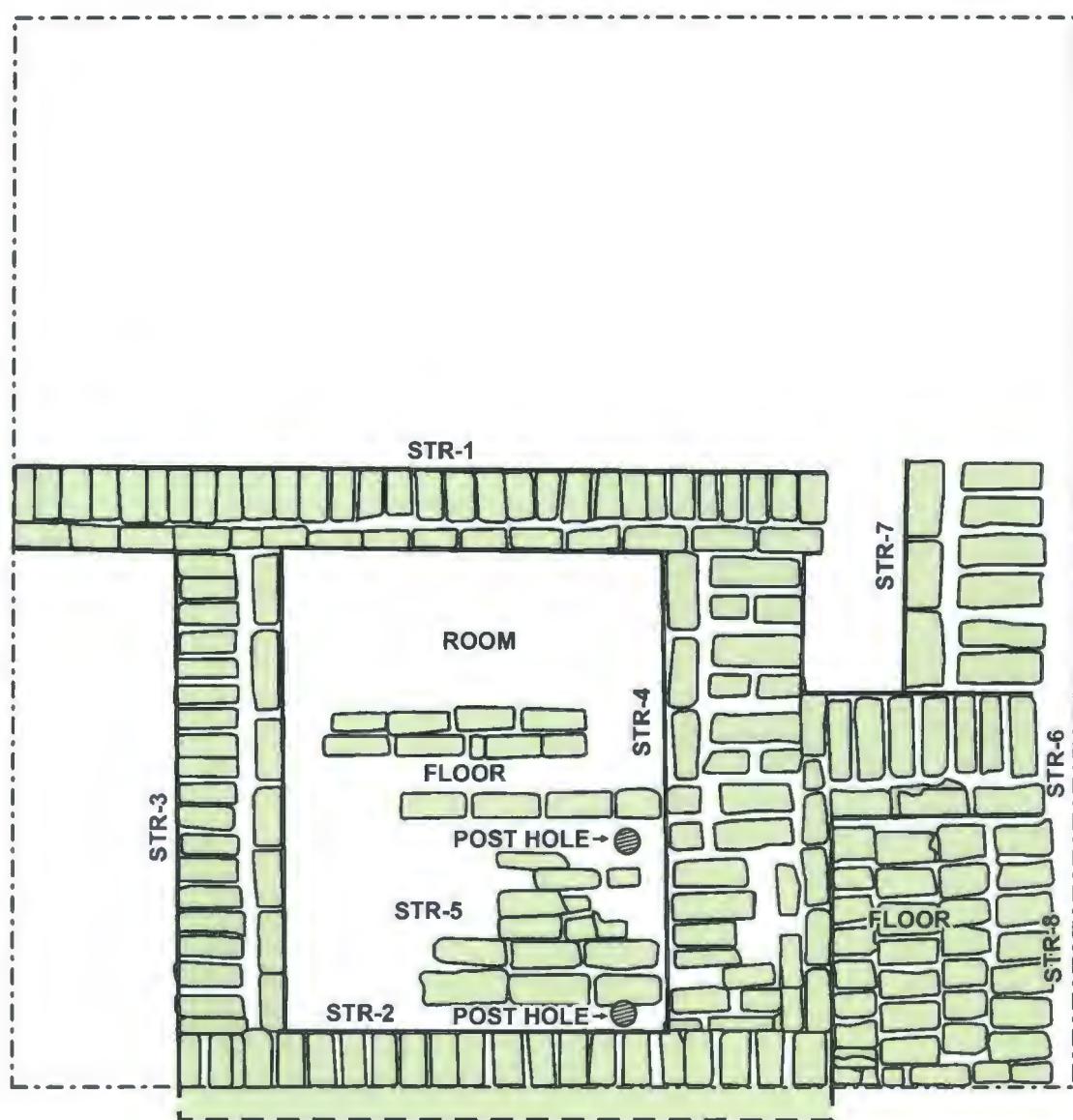
DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH A-7, Qd.-2

### PARTIALLY EXPOSED HOUSE

PHASE ...VIII

1 0 1 METRE



PLAN

Fig. 6.44

8. Composition of mortar: Mud mortar with grid
9. Composition of plaster: No plaster is available
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 40 cm  
(b) width 20 cm (c) thickness 10 cm.
13. State of preservation: Very good
14. Shape and other distinguishing features: This trench in all the quadrant has house walls of rooms belonging to Phases V, VI, VII and VIII. Through the various structural phases this house appears to be an important one. While the house of Phase V has a room with decorated tiled floors having incised intersecting circles, the room-walls of Phase VII are not fully exposed and do not give exact dimensions but the rooms of Phase VIII are large ones and one of the rooms has six large jars embedded in earth, possibly for storage of grains for the household. The structures of various phases which are eighteen in number are described as below :-

**STR 1 Wall** It is sealed by layer (1) and layers (2) and (3) are contemporary to it. It has three courses. Its orientation is north-south. It is 8.25 m long and has a 70 cm width.

**STR 2 Wall** It is sealed by layer (1) and layers (2) and (3) are contemporary to it. Its orientation is east-west. It has length of 2.55 m and its width is 70 cm. It has five courses.

**STR 3 and 4** Both are sealed by layer (1) and layers (2) and (3) are contemporary to them. Their

orientation are north-south. combined length is 7.70 m and the width is 70 cm.

**STR 5** It is sealed by layer (1) and layers (2) and (3) are contemporary to it. Only two bricks are available which indicate east-west orientation of wall shown in doted lines. It has length 40 cm and width 20 cm.

**STR 6 and 7 Walls** These are sealed by layer (1) and layers (2) and (3) are its contemporary deposits. These are made of headers and stretchers and have five to six courses. STR 6 and 7 are one same wall have east-west orientation. Combined length is 6.30 m and width is 55 cm.

**STR 8 and 9 Floors** These are remnants of floors of the room having dimensions in two clusters (1) 1.50 x 1 m, (2) 1.60 m x 90 cm while STR-1, 2, 3 and 6 (green) make room having length x width 3.80 x 2.55 m with six storage jars for keeping grains. Originally the room appears to have a floor on bricks-on-edge as remains of the same are available in the southern side. STR-1, 6 and 4 also make a room having a length of 3.10 and width 2.60 m. The northern wall is missing.

STR 4 and STR 7 are walls of the room. Its western wall is completely missing while northern side is indicative of by two bricks. The exact dimensions can not be discerned. The fourth room is indicated by brick-floors. This appears to be a four roomed big house complex belonging to Phase VIII.

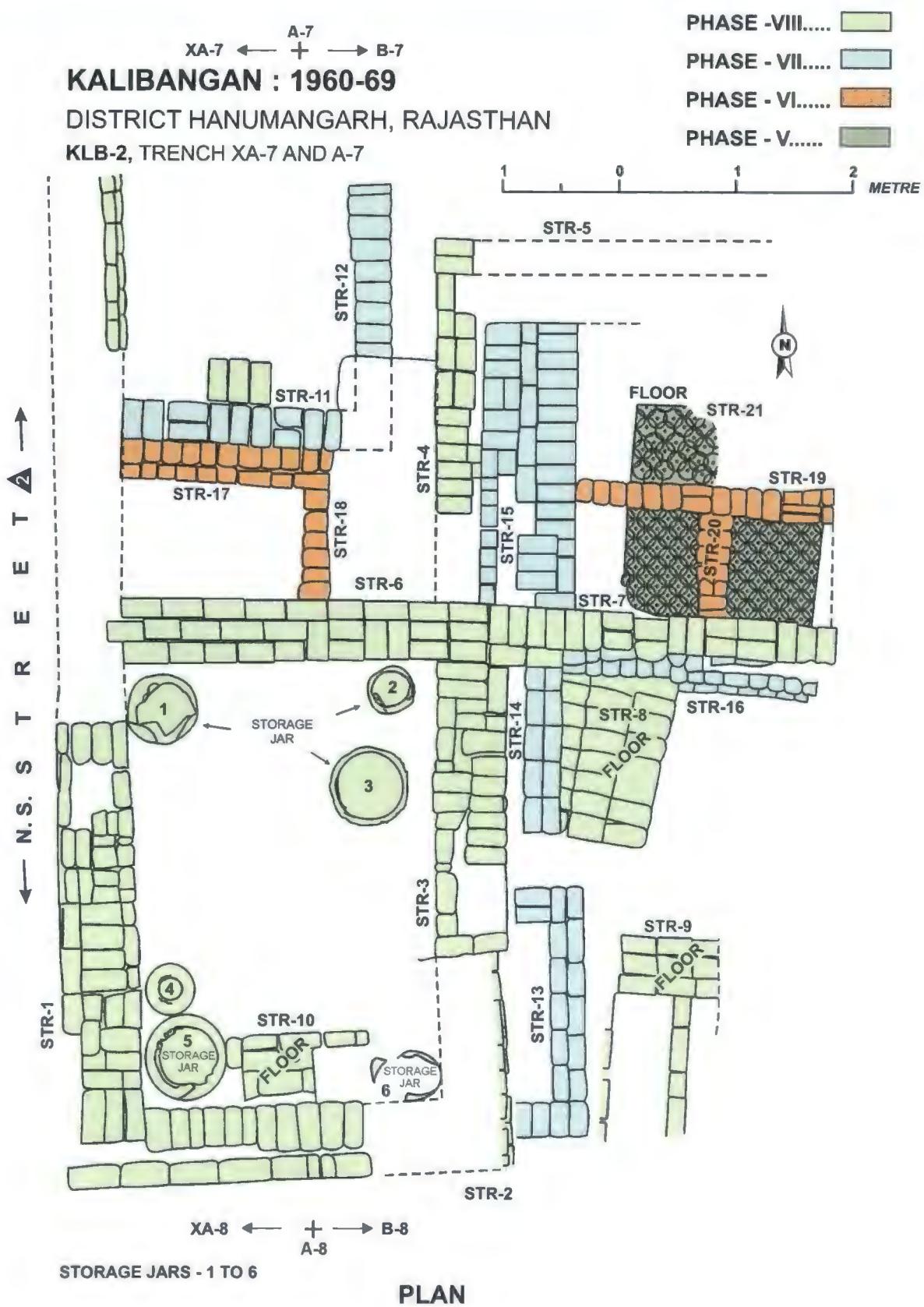


Fig. 6.45



Fig. 6.46 KLB 2 Street corner showing remains of fender-post at successive levels



Fig. 6.46(a) KLB 2 A room showing tile-flooring with typical Indus design of intersecting circles

**STR 10 Floor** Sealed by layer (1) length 1.15 m x 55 cm. Orientation is east-west.

**STR 11, 12 13, 14, 15 and 16** These are sealed by layer (5) and their contemporary deposits are layers (6) and (7). These are partially exposed house walls but exactly do not give dimensions of the rooms. These house walls belong to Harappan Phase VII. Size of bricks is 40x20x10 cm.

**STR 11 Wall** Measurement of structure is (a) length 1.90 m (b) width 30 cm. Orientation is east-west. Number of courses is four.

**STR 12 Wall** Measurement of structure is (a) length 1.50 m (b) width 30 cm. Orientation is north-south. Number of courses is three.

**STR 13 Wall** Orientation is north-south. Number of courses is three.

**STR 14 Wall** Orientation is north-south. Number of courses is three.

**STR 15 Wall** Orientation is north-south. Number of courses is four.

Total measurement of structure STR 13, 14 and 15 is length 7 m and width 80 cm.

**STR 16 Wall** Orientation is east-west. Measurement of structure is length 2.10 m; width 30 cm. Number of courses is four.

**STR 17 and 18 Walls** It is sealed by layer (9) and its contemporary deposits are layers (10), (11), (12) and (13). These two walls make a corner

of the room. Orientation is east-west. Measurement of structure is (a) length 1.55 m (b) width 30 cm. STR 18 Length 1 m width 30 cm. Orientation is north-south.

**STR 19 Wall** It is sealed by layer (9) and its contemporary deposits are layers (10), (11), (12), and (13). STR 19 is east-west oriented. Measurement of structure is (a) length 2.20 m (b) width 30 cm.

**STR 20 Wall** Measurement of structure is (a) length 90 cm (b) width 30 cm. Orientation is north-south.

These walls STR 19 and 20 are later to the decorated floor but fall in the same phase.

**STR 21 Decorated Tiled Floor** Measurement of structure is (a) length 1.80 cm (b) width 1 m. Orientation is north-south.

## 58. TRENCH B-8

1. Location KLB-2 Square No. B-8 Quadrants 1 & 4
2. Type of structure: Walls, lane
3. Stratigraphic position : Layers (1) to (16)
4. Period and structural phase : Harappan, Phases III, IV and V
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to Twenty-six
7. Masonry and bond: Headers & stretchers
8. Composition of mortar: Thin clay mortar
9. Composition of plaster: Plaster of 1 cm but removed
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length (b) width (c) thickness As below

13. State of preservation: Preservation is good
14. Shape and other distinguishing features: 3 constructional phases are visible.

**STR 1 Wall** It is sealed by layer (1) and its contemporary layers are (2) (3) (4) & (5). Layer (6) goes below the structure. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.50 m continues but much eroded (b) width 95 cm further continuing in the section (c) height 95 cm. Number of courses is ten. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 & 28 cm (b) width 15 & 14 cm (c) thickness 9 & 7.5 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layers are (2) (3) (4) & (5). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 3.23 m goes further on north section & about STR 2 to south (b) width 83 cm is the longest width (c) height 85 cm but further excavated. Seven courses are visible. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by humus and its contemporary layers are (2) & (3). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 1.70 m (b) width 40 cm and joins with STR 3 (c) height 35 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks:

(a) length 28 cm (b) width 13 cm  
(c) thickness 7 cm.

**STR 3** Layer (1) surface seals the wall and its contemporary layers are (2), (3), and (4). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 1.22 m (b) width 58 cm (c) height 60 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 27 cm (b) width 14 cm (c) thickness 7 cm.

**STR 4 Wall trough** It is sealed by layer (1) and its contemporary layer is (2). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 1.30 m so far exposed (b) width 86 cm so far excavated (c) height 25 to 40 cm. Number of courses is two to four courses seen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 13.5 cm (c) thickness 7 cm.

**STR 5 Mud-brick wall** It is sealed by layer (1) and its contemporary layers are (2) to (9). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.75 m (b) width 60 cm (c) height 2.40 m. Number of courses is twenty four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Mud-brick wall** It is sealed by layer (2) and layers (3), (4) and (5) are contemporary. Its period and structural phase is Harappan, Phase VIII. Measurement of

structure is (a) length 1.85 m (b) width 75 cm (c) height 60 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 7 Mud-brick wall** It is sealed by humus and layers (2) to (8) are contemporary. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1.50 m (b) width not clear on the plan (c) height 2.05 m. Number of courses is twenty. Orientation of longer axis is east to west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 8 Mud-brick wall** Its stratigraphic position is sealed by humus and layers (2) to (9) are contemporary. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 3.55 m (b) height 2.38 m. Number of courses is twenty-four. Orientation of longer axis is east to west. Dimension of bricks are (a) length 31 & 36 cm (b) width 16 & 18 cm (c) thickness 9 & 10 cm.

**STR 9 Mud-brick wall** It is sealed by humus and layers (2) to (9) are contemporary. Its period and structural phase is Harappan, Phase III. Measurement of structure is (a) length 63 cm (b) height 2.67 m. Number of courses is twenty six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 8 cm.

### 59. TRENCH B-9

1. Location KLB-2 Square No. B-9 Quadrants 1 & 4
2. Type of structure: Mud brick wall
3. Stratigraphic position : Layers (1) to (4)
4. Period and structural phase : Harappan, Phases VI and VIII
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to twenty
7. Masonry and bond: Header & stretcher English bond
8. Composition of mortar: Mud clay
9. Composition of plaster: No plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks are (a) length 32 (b) width 16 (c) thickness 8 cm
13. State of preservation: In good state of preservation
14. Shape and other distinguishing features:

**STR 1 Mud-brick wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.10 m (b) width 75 cm (c) height 80 cm. Number of courses is eight. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 8 cm.

**STR 2 Mud-brick wall** It is sealed by (1) and layers (2) & (3) are contemporary. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 2.85 m (b) height 1.30 m. Number of courses is thirteen. Orientation of longer axis is north-south. Dimension of bricks: (a) length 34 & 30 cm (b) width 17 & 15 cm (c) thickness 8 & 7.5 cm.

**STR 3 Mud-brick wall** It is sealed by (1) and layers (2) (3) & (4) are contemporary. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.15 m (b) height 1.75 m. Number of courses is twenty. Orientation of longer axis is east to west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 4 Wall** Layer (1) seals the wall and layer (2) is contemporary continues further down. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.25 (b) width 65 cm (c) height 55 cm. Number of courses is six courses so far exposed. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7 cm.

**STR 5 Wall** Layer (1) seals the wall and layer (2), a filling is contemporary to the wall. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3.60 m and extends further towards south (b) width 90 cm and extends further to east in section (c) height 40 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 9 cm.

**STR 6 Wall** Layer (1) seals it and layer (2) is contemporary to the wall. Its period and structural phase is Harappan, Phase VIII. Measurement of structure is (a) length 1.82 m (b)

width 70 cm (c) height 42 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

#### 60. TRENCH XB-6, Figs. 6.47, 6.48 and 6.49

1. Location KLB-2 Square No. XB-6 Quadrants 2 to 4
2. Type of structure: House complex with rooms, courtyard, steps and walls
3. Stratigraphic position : Layer (1) to (6)
4. Period and structural phase : Harappan, Phase VI
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to twenty-eight
7. Masonry and bond: Headers and stretchers alternately
8. Composition of plaster: Clay plaster
9. Orientation of longer axis : As below
10. Nature of bricks used: Mud-bricks
11. Dimension of bricks: (a) length 30 cm (b) width 14 cm (c) thickness 10 cm.
12. State of preservation: Well preserved
13. Shape and other distinguishing features: The wall strikes against a platform that is excavated further up.

**STR 1 Wall** It is sealed by layer (4) and contemporary layers are (5) & (6). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.50 m it further goes to section looking west to east (b) width 46 cm (c) height 50 cm so far exposed. Number of courses is six courses so far exposed. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 14 cm (c) thickness 10 cm.

**STR 2 Wall** It is sealed by layer (3) and contemporary layers are (4) & (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.82 m (b) width 49 cm (c) height 75 cm. Number of courses is seven courses. Orientation of longer axis is east-west the wall goes in section looking west and east. Dimension of bricks: (a) length 26 cm (b) width 12 cm (c) thickness 10 cm.

**STR 3 Steps** It is sealed by layer (2) and contemporary layers are (3) (4) & (5). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 1.05 m (b) width 77 cm (c) height 75 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 4 Wall** Its contemporary layer is (2). It is sealed by (1). Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 4.65 m (b) width 65 cm (c) height 85 cm. Number of courses is nine courses as the highest point. (slopes towards west). Orientation of longer axis is north-south. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 8.5 cm.

**STR 5 Wall** It is sealed by layer (1) and contemporary layers are (2) floor 1 & layer (3). Its period and structural phase is Harappan, Phase VI. Measurement of structure (a) length 7.30 m continues in Qd.2 of XB7 (b) width 60 cm (c) height 50 cm. Number of courses is five.

Orientation of longer axis is north-south. Dimension of bricks: (a) length 34 cm (b) width 17 cm (c) thickness 9 cm.

**STR 6 Well** It is sealed by layer (2) and contemporary layers are (3) (4) (5) (5A) & (5B) bottom not reached. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) Outer diameters 1.40 m, inner diameter 90 cm. Number of courses is twenty-eight. Dimension of burnt bricks: (a) length 26 cm (b) width 12.5 x 10 cm (c) thickness 6 cm.

**STR 7 Wall** It is sealed by layer (1) and built on layer (3) with no foundation trench. Its period and structural phase is Harappan, Phase VI. Measurement of structure is (a) length 3.50 m (b) width 35 cm (c) height 50 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness 9 cm.

**STR 8 - 9** Both are sealed by layer (1) and built on (4) and belong to Phase V. Measurement of structure is (a) length 1.75 m (b) width 60 cm (c) height 40 cm. Number of courses is four to five. Orientation of longer axis is east-west.

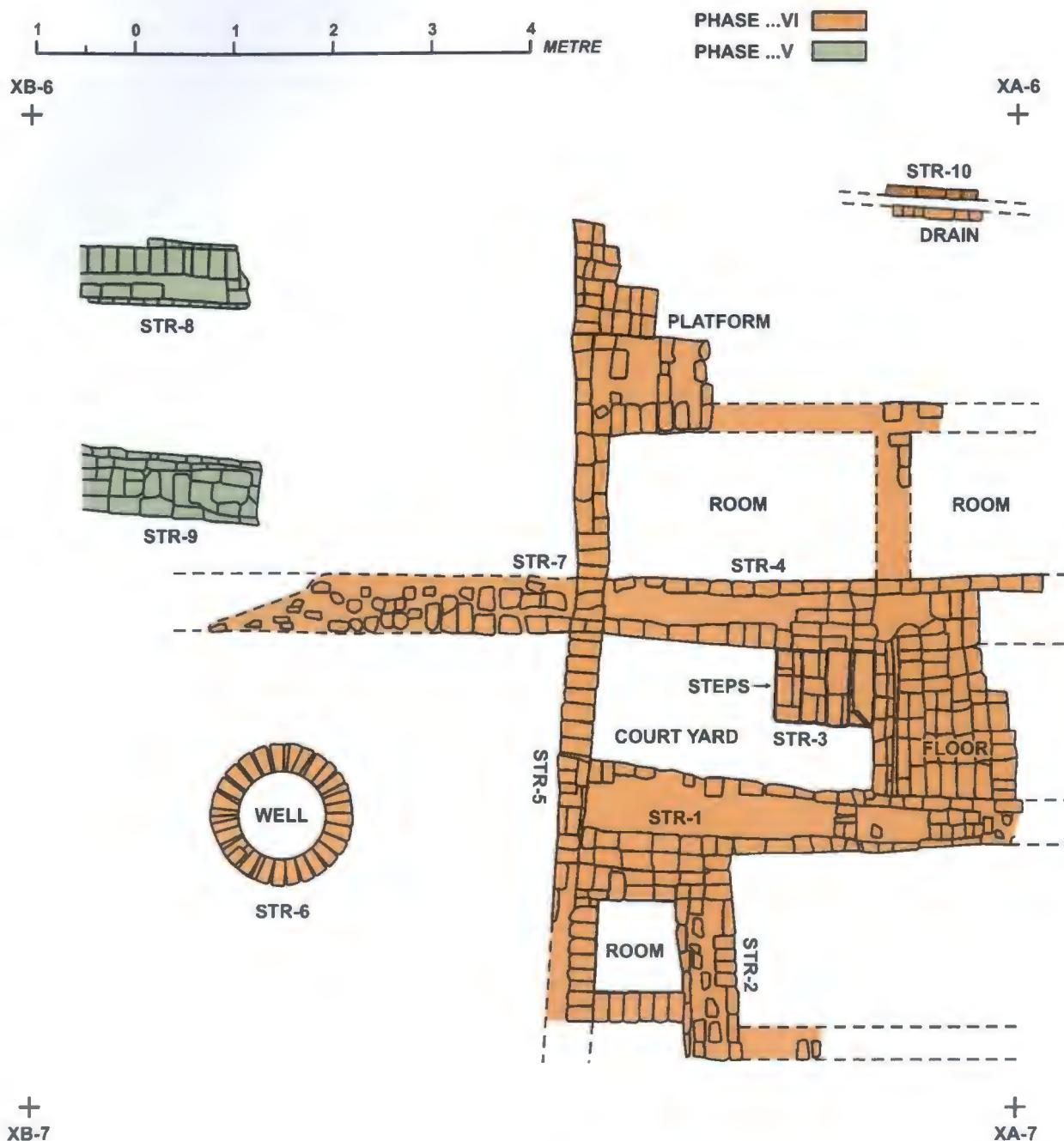
**STR 10** It is sealed by layer (2) and built on layer (4). It is open drain running east-west. Measurement of structure is (a) length 1 m. (b) width 35 cm. This is a damaged double-storied house having steps for going to the first floor from the courtyard. Perhaps it had four

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH XB-6



### HOUSE COMPLEX WITH WELL AND STEPS



PLAN

Fig. 6.47



Fig. 6.48 KLB 2 A view of steps for going to first floor



Fig. 6.49 KLB 2 A view of a well

rooms and a courtyard with a well on the outer court and a drain to take away the sullage.

#### **61. TRENCH XC-6**

1. Location KLB-2      Square No. XC-6  
Quadrant 2
2. Type of structure: Wall
3. Stratigraphic position : Sealing by  
(1) contemporary layer (2)
4. Period and Structural phase:  
Harappan, Phase
5. Measurement of structure is (a)  
length    (b) width    (c) height  
As below
6. Number of courses : Four to Five
7. Masonry and bond: Headers,  
stretchers and so on
8. Composition of mortar: Clay
9. Composition of plaster: Thick sandy  
clay
10. Orientation of longer : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 30  
cm (b) width 15 cm (c) thickness 8  
cm
13. State of preservation: Rain gully  
has wiped away its upper course
14. Shape and other distinguishing  
features:

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.50 m (b) width 66 cm (c) height 65 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and Structural phase is Harappan,

Phase IX. Measurement of structure is (a) length 4.10 m (b) width 60 cm (c) height 40 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

#### **62. TRENCH XC-8**

1. Location KLB-2      Square No. XC-8  
Quadrants 1 to 4
2. Type of structure: Wall
3. Stratigraphic position : Layer (1) to (5)
4. Period and Structural phase:  
Harappan, Phase IX
5. Measurement of structure : (a)  
length    (b) width    (c) height As  
below
6. Number of courses : One to eight
7. Masonry and bond: Stretchers and  
headers
8. Composition of mortar: Thin clay
9. Composition of plaster: 1 cm thick  
plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks: (a) length 30  
cm (b) width 14.5 cm (c) thickness  
8.5 cm.
13. State of preservation: The bricks  
are well preserved
14. Shape and other distinguishing  
features:

**STR 1 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 4.03 m (b) width 74 cm (c) height 20.5 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 14.5 cm (c) thickness 8.5 cm.

**STR 2 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.60 m (b) width 38 cm (c) height 27 cm. Number of courses is three. Orientation of longer axis is south-north. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

**STR 3 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its Period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.38 m (b) width 77 cm (c) height 10 cm. Number of courses is only one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm.

**STR 4 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan. Measurement of structure is (a) length 4.25 m (b) width 70 cm (c) height 90 cm. Number of courses is eight. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 8 cm.

**STR 5 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.33 m (b) width 32 cm (c) height 8 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Wall** It is sealed by layer (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.45 m (b) width 62 cm (c) height 7 cm (present height). Number of courses is only one. Orientation of longer axis is east to west. Dimension of bricks: (a) length 32 cm (b) width 16 cm (c) thickness not available.

**STR 7 Floor** It is sealed by layer (2) and layer (3) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.98 m (b) width 1.07 m (c) height 63 cm. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 28 cm (b) width 14 cm (c) thickness 8 cm.

**STR 8 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 4.05 m (b) width 54 cm (c) height 43 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 29 cm (b) width 14 cm (c) thickness 9 cm.

**STR 9 Wall** It is sealed by layer (5) and contemporary layer is (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.77 m (b) width 70 cm (c) height 28 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm.

**STR 10 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.70 m (b) width 26 cm (c) height 21 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8.5 cm.

**STR 11 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.27 m (b) width 42 cm (c) height 22 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 27 cm (b) width 13.5 cm (c) thickness 8 cm.

**STR 12 Wall** It is sealed by layer (4) and layer (5) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 75 cm (b) width 23 cm (c) height 8.5 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8.5 cm.

#### **STR 13 Floor (Rammed with hard earth)**

It is sealed by layer (5). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.20 m (b) width 85 cm (c) height Not available. Orientation of longer axis is east-west. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8.5 cm.

#### **63. TRENCH XC-9, Fig. 6.50**

1. Location KLB-2 Square No. XC-9 Quadrants 1 to 4
2. Type of structure: Wall
3. Stratigraphic position : Layer (1) to (6)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Two to eight
7. Masonry and bond: Stretchers and headers
8. Composition of mortar: Thin clay mortar
9. Composition of plaster: No plaster found
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length (b) width (c) thickness As below
13. State of preservation: Though it is found on surface it is not much disintegrated
14. Shape and other distinguishing features:

**STR 1 Wall** It is sealed by layer (1) and layer (2) is contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.04 m (b) width 28 cm (c) height 17 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 26 cm (b) width 13 cm (c) thickness 8 cm.

**STR 2 Wall** It has no foundation trench. Sealed by layer (1) built on top of layer (4). Layers (2) and (3) are contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.41 m (b) width 30 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is

north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

**STR 3 Wall runs parallel to STR-3 in the same quadrant** Its foundation was not exposed layer (4) is the first contemporary layer and it is sealed by (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 6.60 m (b) width 1.04 m (c) height 30 cm at the highest available point. Bottom has not exposed. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 16 cm (c) thickness 9 cm.

**STR 4 Outer wall of house complex** It has no foundation trench, built on layer (6), contemporary layers are (2), (3), (4) and (5) and sealed by (1). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length 9 m traced so far (b) width 65 cm traced so far but goes in the baulk (c) height 80 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 32 cm (b) width 15 cm (c) thickness 9 cm.

**STR 5 Outer wall of one house complex** It has no foundation trench, built on layer (6), layers (2), (3), (4) and (5) are contemporary and sealed by (1). Its period and structural phase is Harappan, Phase VII. Measurement of structure is (a) length approximately 4.10 m traced so far (b) width 68 cm (c) height 63 cm. Number of courses is six.

Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 & 30 cm (b) width 15 & 15 cm (c) thickness 10 & 9 cm.

**STR 6 Wall** It is lying under layer (1). Its period and structural phase: Harappan, Phase VII. Measurement of structure is (a) length 1.75 m (b) width 65 cm extends in the baulk (c) height 90 cm. Number of courses is eight. Orientation of longer axis is east to west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 9 cm.

#### 64. TRENCH XA-2

1. Location KLB-2 Square No. XA-2 Quadrant 1
2. Type of structure: House wall, platform, drains
3. Stratigraphic position : Layer (1) to (8)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : Four to six
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster:
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks/ burnt-bricks both
12. Dimension of bricks : (a) length 30 (b) width 15 (c) thickness 7.5 cm.
13. State of preservation: Good
14. Shape and other distinguishing features:

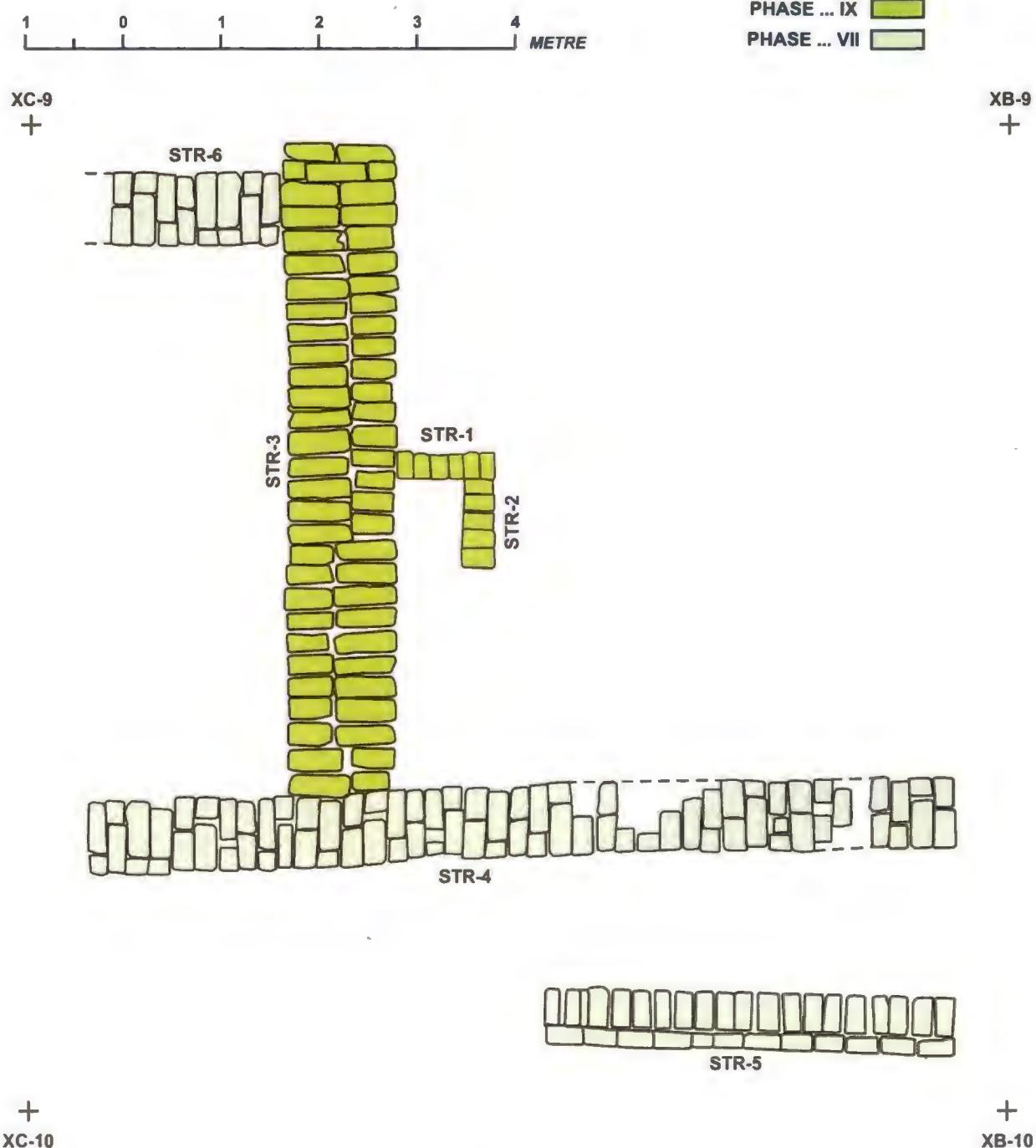
**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH XC-9



### PARTIALLY EXPOSED HOUSE



### PLAN

Fig. 6.50

structure is (a) length 1.90 m (b) exact width is not discernable (c) height 55 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layers are (1A) & (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.50 m (b) height 1 m. Number of courses is twelve. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Drain** It is resting on structure 2. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 27 cm (b) width 38 cm (c) height 5 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 27 cm (b) width 13 cm (c) thickness 5 cm.

**STR 4 Drain** It is resting on structure 2. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 27 cm (b) width 23 cm (c) height 13 cm. Number of courses is one horizontal & one on edge. Orientation of longer axis is north-south. Dimension of bricks: (a) length 27 cm (b) width 13 cm (c) thickness 5 cm.

**STR 5 Drain** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan,

Phase IX. Measurement of structure is (a) length 46 cm (b) width 23 cm (c) height 20 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 27 cm (b) width 13 cm (c) thickness 5 cm.

**STR 6 Drain** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) width 75 cm (b) height 15 cm. Number of courses is two. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 7 Wall** Its contemporary layer is (5) and sealed by layer (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.45 m (b) width 1.60 m (c) height 2 m. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 8 Trough** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 95 cm (b) width 95 cm (c) height 15 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 9 Wall** It is resting on (6). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 75 cm (b)

width 60 cm (c) height 7.5. Number of courses are one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 10 Drain** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.50 m (b) width 85 cm (c) height 40 cm. Number of courses is six. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 11 Platform** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.75 m (b) width 75 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 12 Platform** It is sealed by layer (1). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.15 m (b) width 1.05 m (c) height 15 cm. Number of courses is two. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 13 Wall** It is sealed by layer (1). Layers (2A) to (6) are contemporary. Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.20 (b)

width 70 cm (c) height 1.20 m. Number of courses is fifteen. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

#### **65. TRENCH D-5, Figs. 6.51, 6.52, 6.53 and 6.53(a)**

1. Location KLB-2 Square No. D-5 Quadrants 1 to 4 and baulk
2. Type of structure: House complex
3. Stratigraphic position : Layer (1) to (4)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to ten
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster: No plaster
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks
12. Dimension of bricks : (a) length 30 (b) width 15 (c) thickness 7.5 cm.
13. State of preservation: Good
14. Shape and other distinguishing features: It is a house complex having six rooms and a central courtyard with an entrance in the south from lane joining street no. 3 NS belonging to Phase IX. The outer dimension of the house complex is 11 m. north-south x 7 m. east-west. The average width of the outer wall is 80 cm. It has an outer verandah on the lane side admeasuring 7 m x 60 cm. The dimensions of the various rooms are as below :-

Room No. 1	2 x 1.90 m
Room No. 2	3.50 x 1.90 m

Room No. 3	1.90 x 1.80 m
Room No. 4	1.60 x 1.10 m
Room No. 5	1.60 x 1.10 m
Room No. 6 (store)	1.90 x 1.4 m
Courtyard	3 x 2.25 m
Entry	3.50 x .95 m
Floored rooms with brick-on-edge	3, 4, 5 and 6

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 7.50 m (b) width 66 cm (c) height 66 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.85 m (b) width 78 cm (c) height 40 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.57 m (b) width 65 cm (c) height 33 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 4 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.10 m (b) width 80 cm (c) height 42 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.65 m (b) width 65 cm (c) height 35 cm. Number of courses is four. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Wall** It is sealed by layer (1) and contemporary layers are (2) and (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.87 m (b) width 72 cm (c) height 82 cm. Number of courses is ten. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 7 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.82 m (b) width 35 cm (c) height 88 cm. Number of courses is nine. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH D-5

HOUSE



1 0 1 2 3 4 METRE

D-5  
+

PHASE- IX .....

E-5  
+

← L A N E →



Fig. 6.51

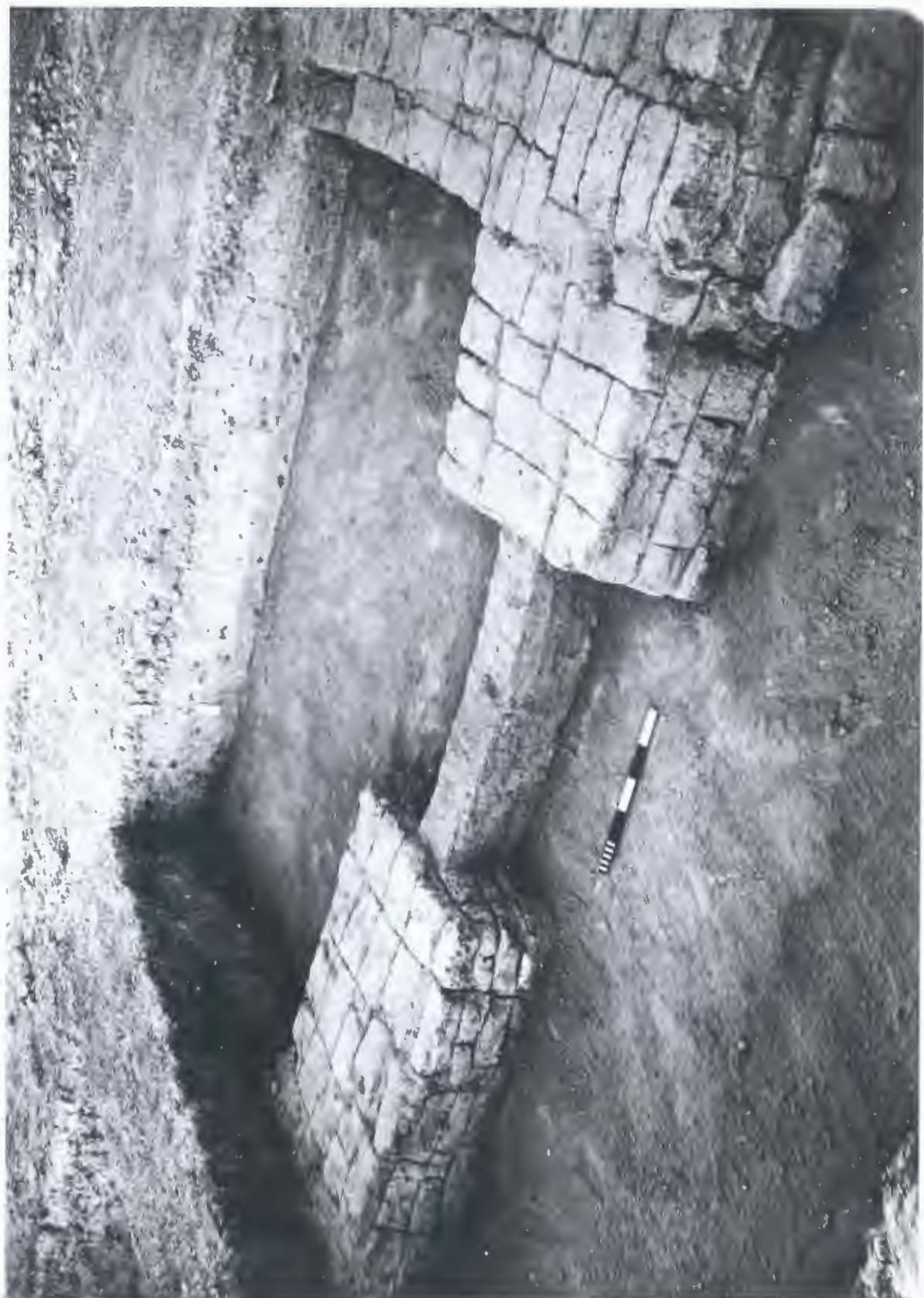


Fig. 6.52 KLB 2 Entrance of a house



Fig. 6.53 KLB 2 Blocks of houses at the junction of two roads



Fig. 6.53(a) KLB 2 Blocks of houses facing a smaller street

**STR 8 Wall** It is sealed by layer (2) and contemporary layers are (3) and (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.70 m (b) width 45 cm (c) height 67 cm. Number of courses is seven. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 9 Wall** It is sealed by layer (2) and contemporary layers are (3) and (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.46 m (b) width 65 cm (c) height 90 cm. Number of courses is nine. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 10 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.05 m (b) width 75 cm (c) height 75 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of brick: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 11 Wall** It is sealed by layer (2) and contemporary layers are (3) and (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.35 m (b) width 65 cm (c) height 83 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension

of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 12 Wall** It is sealed by layer (2) and contemporary layers are (3) and (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 9.70 m (b) width 85 cm (c) height 80 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 13 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.30 m (b) width 30 cm (c) height 85 cm. Number of courses is eight. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 14 Platform** It is sealed by layer (2) and contemporary layers are (3) and (4). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.42 m (b) width 1.15 m (c) height 95 cm. Number of courses is eight. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 15 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.53 m (b) width 42 cm (c) height 46 cm. Number of courses is four. Orientation of longer axis is north-

south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 16 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 3.44 m (b) width 78 cm (c) height 18 cm. Number of courses is three. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 17 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.02 m (b) width 98 cm (c) height 30 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 18 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.12 m (b) width 73 cm (c) height 32 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 19 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.25 m (b) width 65 cm (c) height 20 cm. Number of courses is two.

Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 20 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 1.65 m (b) width 62 cm (c) height 67 cm. Number of courses is seven. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 21 Platform** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 6.30 m (b) width 55 cm (c) height 8 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 22 Trough** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, Phase IX. Measurement of structure is (a) length 2.45 m (b) width 87 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

#### 66. TRENCH XA-15, Figs. 6.46, 6.54 and 6.55

1. Location KLB-2 Square No. XA-15 Quadrants 1 to 4

2. Type of structure: House wall, platform and fender-post hole at street corner
3. Stratigraphic position : Layer (1) to (8)
4. Period and Structural phase: Harappan, Phase IX
5. Measurement of structure : (a) length (b) width (c) height As below
6. Number of courses : One to six
7. Masonry and bond: English Bond
8. Composition of mortar: Earth and grit
9. Composition of plaster:
10. Orientation of longer axis : As below
11. Nature of bricks used: Mud-bricks/ burnt bricks both
12. Dimension of bricks : (a) length 30  
(b) width 15 (c) thickness 7.5 cm
13. State of preservation: Good
14. Shape and other distinguishing features: It is a crossing of streets with three bazar Platforms. The platforms have on the side a post-hole also for the pole of shed for the shop. Platform 1 has a heap of bones suggesting a butcher's shop.

**STR 1 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 2.25 m (b) width 50 cm (c) height 50 cm. Number of courses is five. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 2 Wall** It is sealed by layer (1) and contemporary layer is (2). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 2.15 m (b)

width 40 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 3 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 2.90 m (b) width 28 cm (c) height 40 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 4 Wall** It is sealed by layer (2) and contemporary layer is (3). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 2.50 m (b) width 32 cm (c) height 30 cm. Number of courses is four. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 5 Wall** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 1.90 m (b) width 56 cm (c) height 55 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 6 Wall** It is sealed by layer (4) and contemporary layer is (5). Its period and structural phase is Harappan phase IX. Measurement

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH XA-15

### STREET CROSSING WITH PLATFORMS



1 0 1 2 3 4 5 METRE

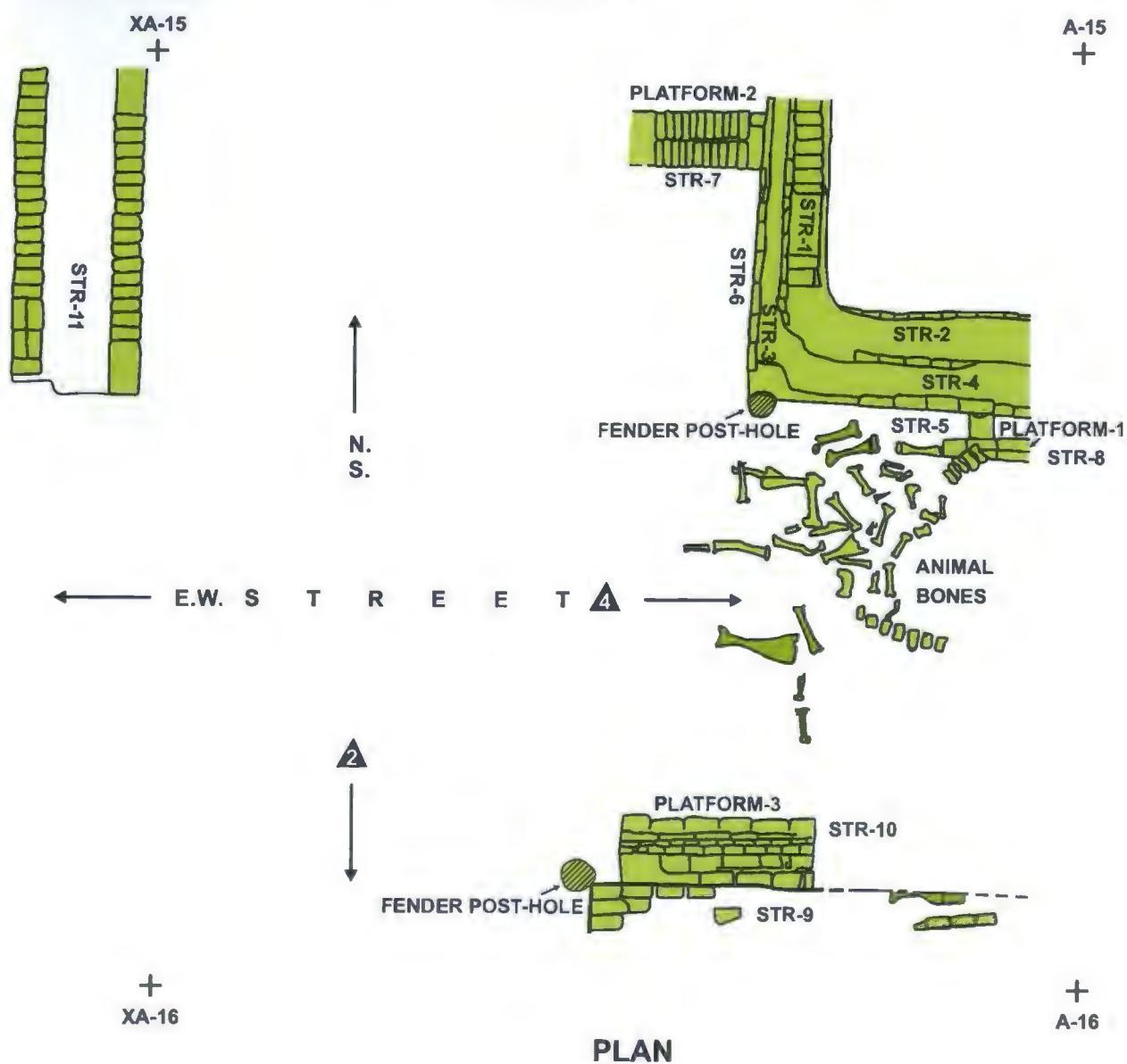


Fig. 6.54



Fig. 6.55 KLB 2 Animal bones with cut marks and fender-post holes

of structure is (a) length 2.45 m  
 (b) width 28 cm (c) height 40 cm.  
 Number of courses is four.  
 Orientation of longer axis is  
 north-south. Dimension of bricks:  
 (a) length 30 cm (b) width 15 cm  
 (c) thickness 7.5 cm.

**STR 7 Brick-on-edge Platform** It is resting on layer (4) and sealed by layer (3). Its period and structural phase is Harappan. phase IX. Measurement of structure is (a) length 1.15 m (b) width 90 cm (c) height 15 cm. Number of courses is one. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 8 Platform** It is resting on layer (7) sealed by layer (6). Its period and structural phase is Harappan. phase IX. Measurement of structure is (a) length 90 cm (b) width 50 cm (c) height 7.5 cm. Number of courses is one. Orientation of longer axis is east-west.

**STR 9 Wall** It is sealed by layer (6) and contemporary layer is (7). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 4.25 m (b) width 50 cm (c) height 30 cm. Number of courses is three. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 10 cm.

**STR 10 Wall** It is sealed by layer (7) and contemporary layer is (8). Its period and structural phase is Harappan, phase IX.

Measurement of structure is  
 (a) length 2 m (b) width 90 cm  
 (c) height 40 cm. Number of courses is five. Orientation of longer axis is east-west. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 11 Wall** It is sealed by layer (1). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 3.35 m (b) width 1.10 cm (c) height 40 cm. Number of courses is six. Orientation of longer axis is north-south. Dimension of bricks: (a) length 30 cm (b) width 15 cm (c) thickness 7.5 cm.

**STR 12 Wall Junction or corner with a post hole** It is sealed by layer (6). Its period and structural phase is Harappan, phase IX. Measurement of structure is (a) length 75 cm (b) width 40 cm (c) height 45 cm. Number of courses five. Orientation of longer axis is east-west. Dimension of bricks is not determinable.

**67. TRENCH NO. ZC-19, Fig. 6.56**

1. Location KLB-2 Square No.  
ZC-19 Quadrant 3
  2. Type of structure: House with  
remains of a kitchen
  3. Stratigraphic position : Sealed by  
(2)
  4. Period and Structural phase:  
Harappan. Phase V
  5. Measurement of structure : (a)  
length (b) width (c) height As below
  6. Number of courses : Three to five  
courses
  7. Masonry and bond: Header and  
stretcher, English Bond

- |     |   |       |                             |
|-----|---|-------|-----------------------------|
| 8.  | Composition of mortar: Earth and grit   | STR 2 | Length 2.75 m ; width 40 cm |
| 9.  | Composition of plaster: No plaster is available   | STR 3 | Length 1.20 m ; width 30 cm |
| 10. | Orientation of longer axis: East-west   | STR 4 | Length 1.70 m ; width 30 cm |
| 11. | Nature of bricks used: Mud-bricks   | STR 5 | Length 60 cm ; width 30 cm  |
| 12. | Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm   |       |                             |
| 13. | State of preservation: Good   |       |                             |
| 14. | Shape and other distinguishing features: This is a partially exposed house with two rooms. Store 3.30 m x 2 m (2) Kitchen length 3.20 m width 1 m. with two successive fire places and a third fire place also. |       |                             |

**68. TRENCH NO. ZL-15, Fig. 6.57**

- |     |   |  |  |
|-----|---|--|--|
| 1.  | Location KLB-2 Square No. ZL-15 Quadrant 3                                |  |  |
| 2.  | Type of structure: Partially exposed house walls                          |  |  |
| 3.  | Stratigraphic position : Sealed by (1)                                    |  |  |
| 4.  | Period and Structural phase: Harappan, Phase V                            |  |  |
| 5.  | Measurement of structure : (a) length (b) width (c) height As below       |  |  |
| 6.  | Number of courses : Three courses   |  |  |
| 7.  | Masonry and bond: Header and stretcher                                    |  |  |
| 8.  | Composition of mortar: Earth and grit                                     |  |  |
| 9.  | Composition of plaster: No plaster is available                           |  |  |
| 10. | Orientation of longer axis: North-south                                   |  |  |
| 11. | Nature of bricks used: Mud-bricks   |  |  |
| 12. | Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm |  |  |
| 13. | State of preservation: Good   |  |  |
| 14. | Shape and other distinguishing features: Partially exposed house walls.   |  |  |

STR 1      Length 1.20 m ; width 20 cm

**69. TRENCH NOS. YB-16, YA-16, ZA-16, YB-15, YA-15 AND ZA-15, Figs. 6.58 and 6.59**

- |     |   |  |  |
|-----|---|--|--|
| 1.  | Location KLB-2 Square Nos. YB16, YA16, ZA16, YB15, YA15 and ZA15 Quadrants: All   |  |  |
| 2.  | Type of structure: House complex and street   |  |  |
| 3.  | Stratigraphic position : Sealed by layer (5)  |  |  |
| 4.  | Period and Structural phase: Harappan, Phases I, II, III and IV   |  |  |
| 5.  | Measurement of structure : (a) length (b) width (c) height As below   |  |  |
| 6.  | Number of courses : Header and stretchers   |  |  |
| 7.  | Masonry and bond: English Bonds   |  |  |
| 8.  | Composition of mortar: Earth and grit   |  |  |
| 9.  | Composition of plaster: No plaster is available   |  |  |
| 10. | Orientation of longer axis: North-south   |  |  |
| 11. | Nature of bricks used: Mud-bricks   |  |  |
| 12. | Dimension of bricks: (a) length 40 cm (b) width 20 cm (c) thickness 10 cm   |  |  |
| 13. | State of preservation:  |  |  |
| 14. | Shape and other distinguishing features: Fragile bricks in trench nos. YB16, YA16, ZA16, YB15, YA15 and ZA15 remains of the streets no. NS3 and NS2 are found. This is the area wherein street no. NS2 joins with the staggered street no. NS3. In phases I and II both the streets joined in this area and led to the river front entrance of the settlement with one bastion on each side of the entrance |  |  |

## KALIBANGAN : 1960-69

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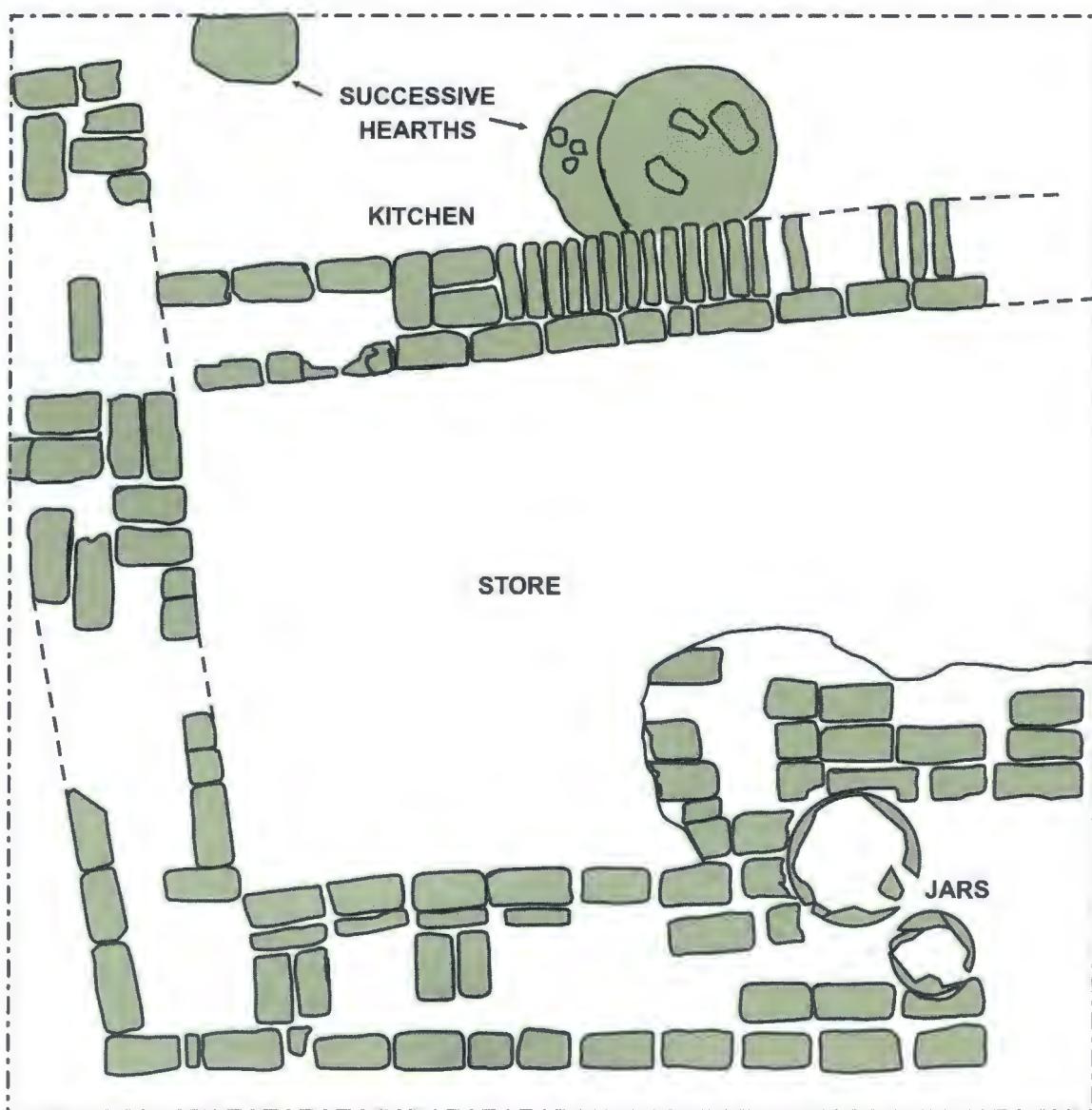
KLB-2, TRENCH ZC-19, Qd.-3



### HOUSE PARTIALLY EXPOSED-KITCHEN AND STORE

1            0            1  
METRE

PHASE ...V



PLAN

Fig. 6.56

## KALIBANGAN : 1960-69

DISTRICT HANUMANGARH, RAJASTHAN

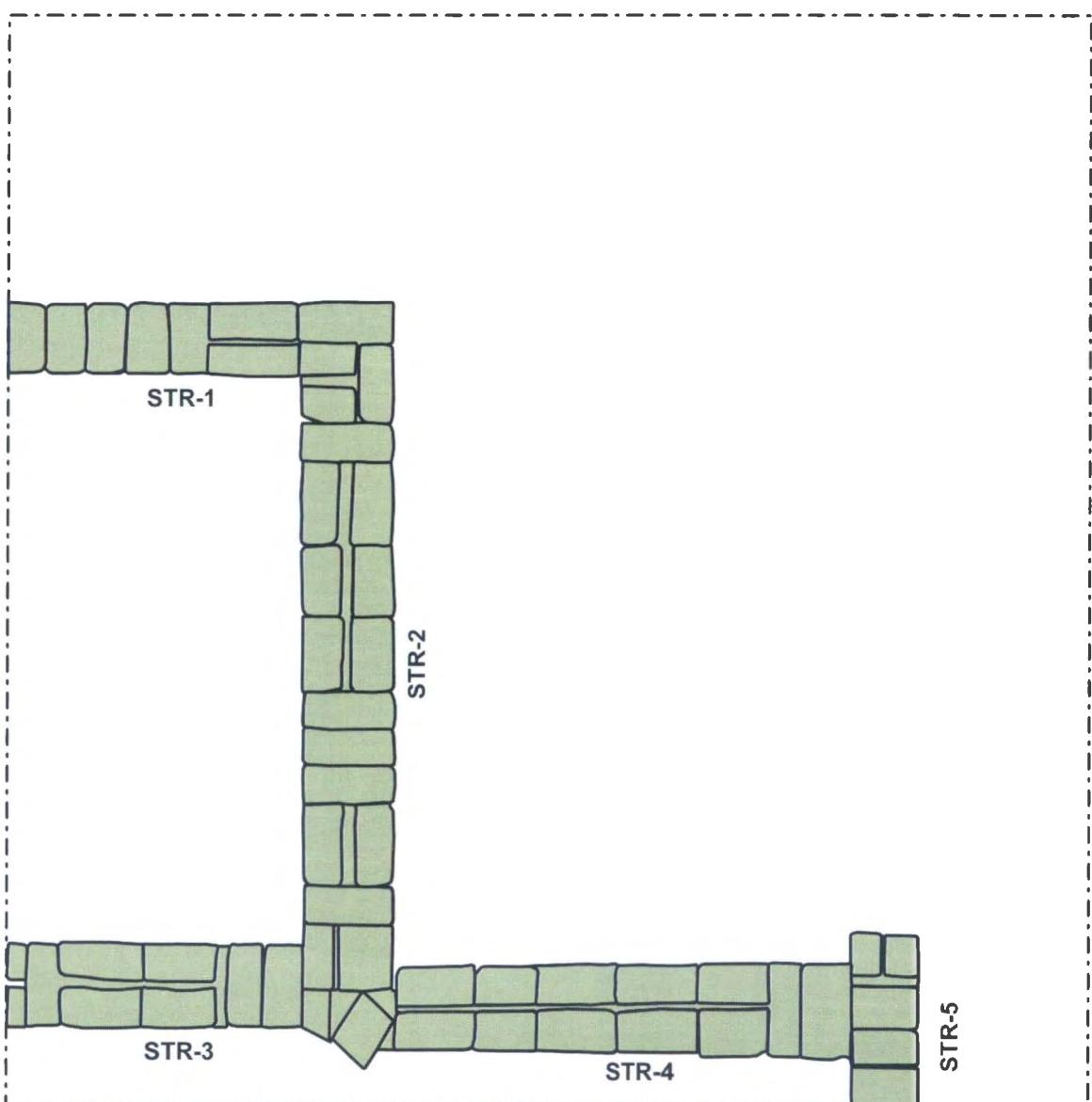
KLB-2, TRENCH ZL-15, Qd.-3

### TURNING OF A HOUSE WALL



1                    0                    1  
METRE

PHASE ...V



**PLAN**

**Fig. 6.57**

and the north-eastern bastion having two guard rooms in the thickness of the fortification wall. In Phase III the space was filled by the construction of two sets of houses having seven rooms on the western side house and three rooms and a courtyard on the eastern side. These rooms might have been made for storage purposes. In Phase III and onwards up to phase IX, NS2 remained almost blocked but NS3 remained in use throughout. It is supposed for security reasons only one street was kept open for public and vehicular traffic. The size of the rooms on eastern and western sides is as below :-

#### **Western side**

Room No. 1	Size 3 x 2.20 m
Room No. 2	Size 2.80 x 1.80 m
Room No. 3	Size 2.90 x 2.90 m
Room No. 4	Size 3.30 x 2.10 m
Room No. 5	Size 4.50 x 4 m
Room No. 6	Size 4 x 3.60 m
Room No. 7	Size 3.60 x 2.20 m
Courtyard	Size 6.30 x 3.30 m

It has three hearths, one embedded jar and Room No. 1 has a semicircular structure in the corner. The hearth on the courtyard has a small platform attached with the hearth. Remains of a bathroom (bricks have been robbed).

#### **Eastern side**

Room No. 1	Size 3.30 x 2.30 m
Room No. 2	Size 4.40 x 2.10 m
Room No. 3	4.80 x 2.10 m

Room No. 1 has brick-on-edge flooring also.

The walls of the complex have an average width of 90 cm. These rooms might be for guards.

#### **E. FIRE ALTARS**

A number of fire altars are available in private houses and some of these are described below :-

#### **70. TRENCH NO. D-7, Figs. 6.60 and 6.61**

1. Location : KLB-2 Square No. D-7 Quadrant 4
2. Type of structure: Fire altar
3. Stratigraphic position: Built on the top of (2)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: (a) length (outer) 2 m, (inner) 1.70 m (b) width (outer) 90 cm, (inner) 80 cm (c) height of the wall of altar 50 cm and width of the wall of the altar 30 cm.
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of the wall : Earth and grit, cow-dung and husk burnt
9. Composition of plaster: as above
10. Orientation of longer axis: North-south
11. Nature of bricks used: Mud structure burnt
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Very good
14. Shape and other distinguishing features: The fire altar is within a room of the house, around the square stump of 20 x 20 cm. on the northern half of the oval shaped structure, it is full of ash. Six circular terracotta cakes one piece of triangular cake and one piece of broken brick was found. The altar was found sealed by layer (1), its contemporary deposit is layer (2) and it is built on layer (3). It has been found in a fairly good state of preservation.



Fig. 6.58



Fig. 6.59 KLB 2 Excavated area in the north-western part of the city and eastern flank of the northern gateway

**71. TRENCH NO. XD-9, Figs. 6.62 and 6.63**

1. Location KLB-2 Square No. XD-9 Quadrant 1
2. Type of structure: Fire altar
3. Stratigraphic position: Sealed by layer (2)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: Round (a) Diameter 1.40 m. (b) width (c) Depth of the pit
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of mortar: Earth, cow dung, husk and grit
9. Composition of plaster: as above
10. Orientation of longer axis: Round structure
11. Nature of bricks used: N.A.
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Good
14. Shape and other distinguishing features: It is a round fire altar having a stump rectangular in shape of 20 x 40 cm. The thickness of wall 15 cm. It is full of ash. The depth of the pit is 50 cm. It has potsherd and pieces of triangular terracotta cakes.

**72. TRENCH NO. D-7, Fig. 6.64**

1. Location KLB-2 Square No. D-7 Quadrant 1
2. Type of structure: Fire altar
3. Stratigraphic position: Sealed by layer (2A)
4. Period and Structural phase: Harappan, Phase VII
5. Measurement of structure: Oval in shape (a) length 1.75 m (b) width 1.50 m (c) height 50 cm.
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure

8. Composition of mortar: Mud, grit, husk and ash
9. Composition of plaster: as above
10. Orientation of longer axis: North-south
11. Nature of bricks used: N.A.
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Badly damaged
14. Shape and other distinguishing features: It is a badly damaged oval fire altar having a cracked terracotta stump in the centre with pottery and ash. The depth of the pit is 60 cm.

**73. TRENCH NO. D-7, Figs. 6.65 and 6.66**

1. Location KLB-2 Square No. D-7 Quadrant 1
2. Type of structure: Fire altar
3. Stratigraphic position: Sealed by layer (2)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: (a) length 8 m (b) width 3 m. (c) height 3 m.
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of mortar: Ash, grit, cow dung and husk
9. Composition of plaster: as above
10. Orientation of longer axis: North-south
11. Nature of bricks used: N.A.
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Damaged
14. Shape and other distinguishing features: This is a unique fire altar having two terracotta stumps having a height of 2 m and diameter of 1 m. The depth of pit is 3 m. It is full of blue and white ash and burnt charcoal with terracotta cakes.

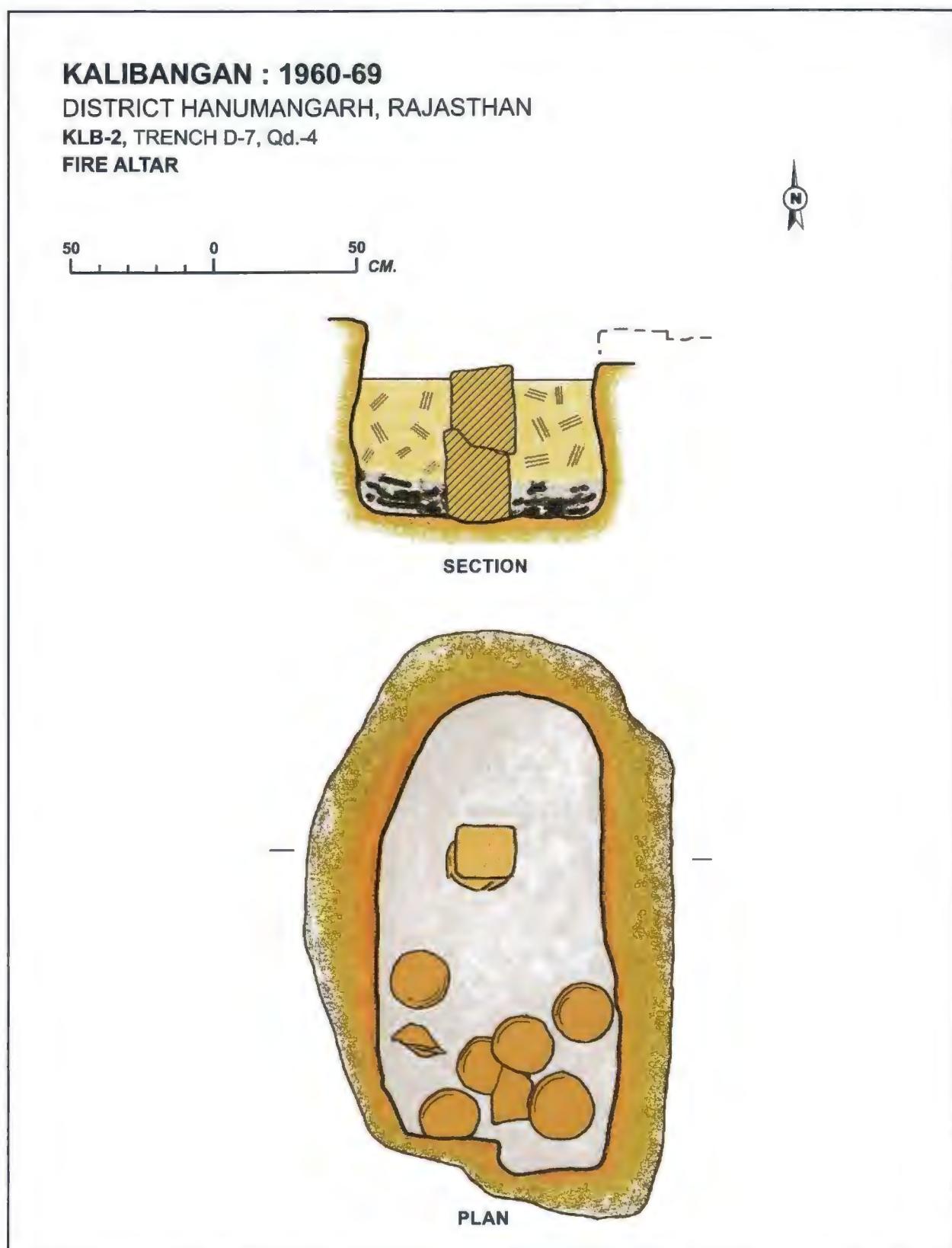


Fig. 6.60

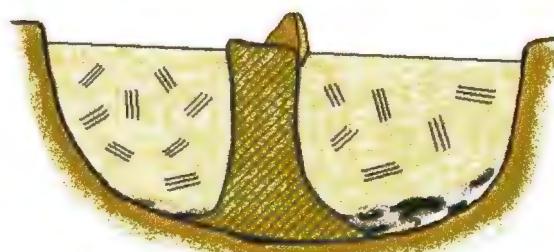


Fig.6.61 KLB 2 Trench D-7, Qd.4: A view of a fire altar

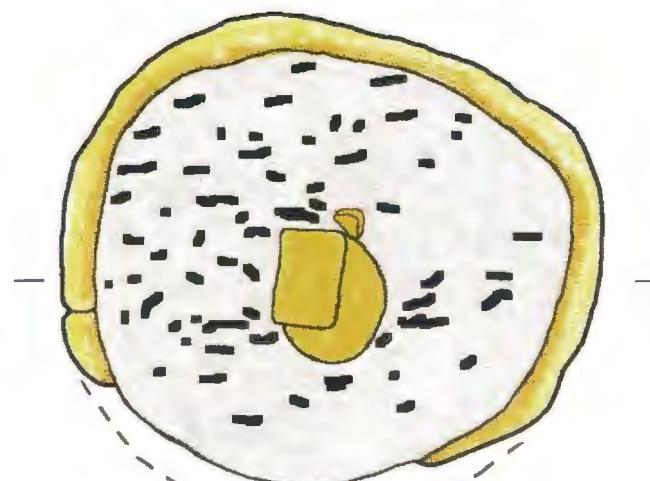
**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH XD-9, Qd. -1  
FIRE ALTAR



50            0            50 CM.



SECTION



PLAN

Fig. 6.62

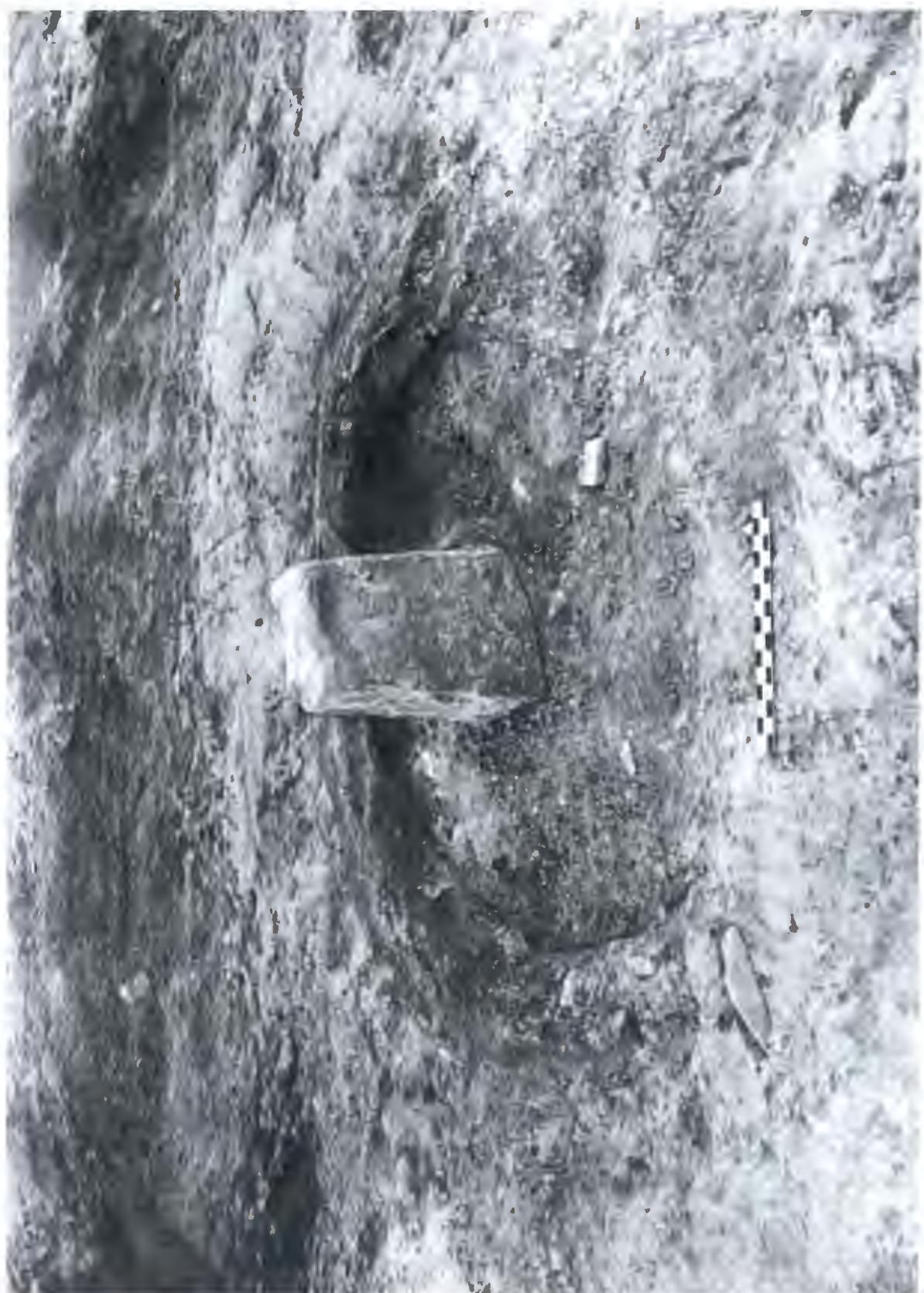


Fig.6.63 KLB 2 Trench XD-9, Qd.I; A view of a fire altar

**74. TRENCH NO. E-8, Figs. 6.67 and 6.68**

1. Location KLB-2 Square No. E-8 Quadrant 4
2. Type of structure: Fire altar
3. Stratigraphic position: Sealed by layer (4)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: (a) length 50 cm (b) width 50 cm (c) height 45 cm (d) Round stump 40 cm high.
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of mortar: Earth, grit, cow-dung and husk
9. Composition of plaster: as above
10. Orientation of longer axis: North-south
11. Nature of bricks used: Mud structure
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Damaged
14. Shape and other distinguishing features: This is a fire altar full of ash, pot sherds and a broken brick.

**75. TRENCH NO. E-8, Figs. 6.69 and 6.70**

1. Location KLB-2 Square No. E-8 Quadrant 4
2. Type of structure: Fire altar
3. Stratigraphic position: Sealed by layer (2)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: (a) length (outer) 1.75 m (b) width 1.10 m (c) Depth of the pit 40 cm
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of mortar: Earth, grit and husk

9. Composition of plaster: as above
10. Orientation of longer axis: North-south
11. Nature of bricks used: Mud structure
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Damaged
14. Shape and other distinguishing features: This is a fire altar full of ash, pot sherds and a broken brick.

**76. TRENCH NO. XD-9, Figs. 6.71 and 6.72**

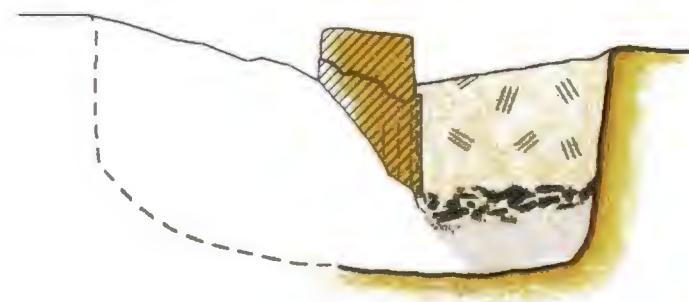
1. Location KLB-2 Square No. XD-9 Quadrant 1
2. Type of structure: Fire altar
3. Stratigraphic position: Sealed by layer (2A)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: Round (a) Diameter 1.35 m (b) wall 15 cm (c) Depth of the pit 50 cm
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of mortar: Earth, grit, husk and ash
9. Composition of plaster: as above
10. Orientation of longer axis: Round
11. Nature of bricks used: N.A.
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Good
14. Shape and other distinguishing features: This is a round fire altar having ash, terracotta triangular cakes, pottery and brick pieces. The terracotta stella is missing.

**77. TRENCH E-8, Figs. 6.73 and 6.74**

1. Location KLB-2 Square No. E-8 Quadrant 4
2. Type of structure: Fire altar

**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH D-7, Qd.-1  
FIRE ALTAR

50            0            50 CM.



SECTION

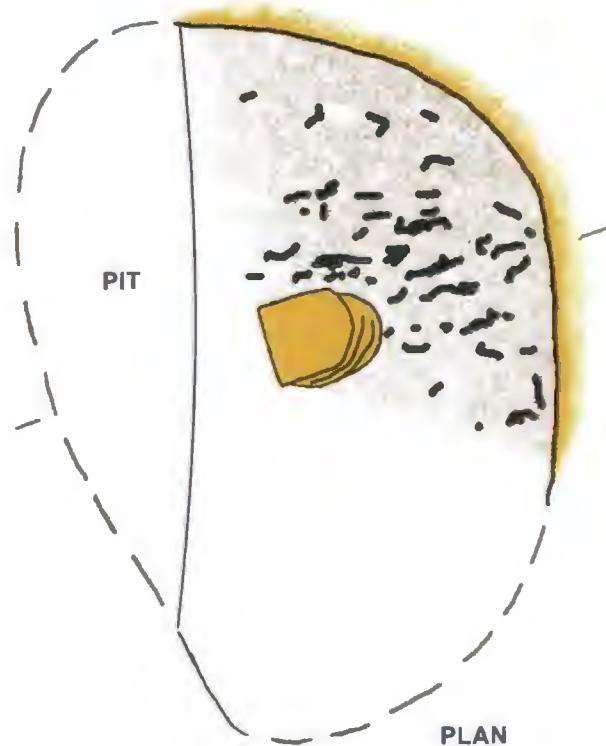
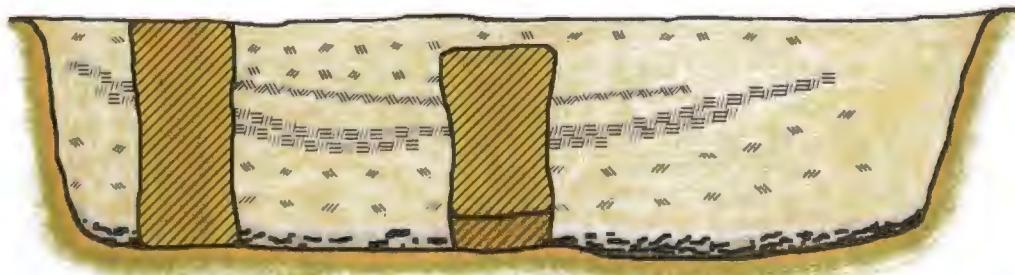


Fig. 6.64

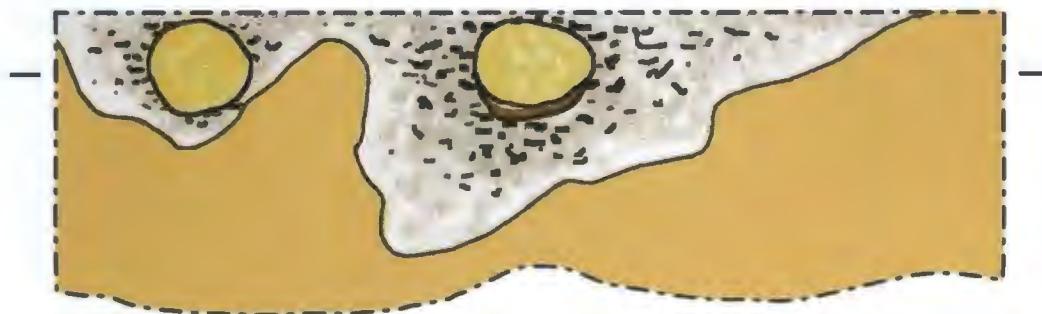
**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH D-7, Qd. -1  
**FIRE ALTAR**



1      0      1      2      3 METRE



SECTION



PLAN

Fig. 6.65

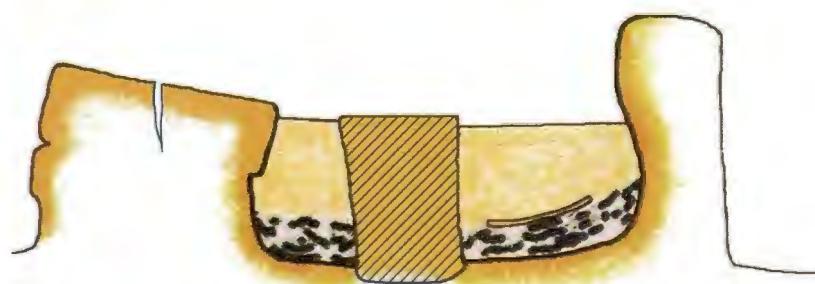


Fig. 6.66 KLB 2 Trench D-7, Qd.I: A view of a fire altar

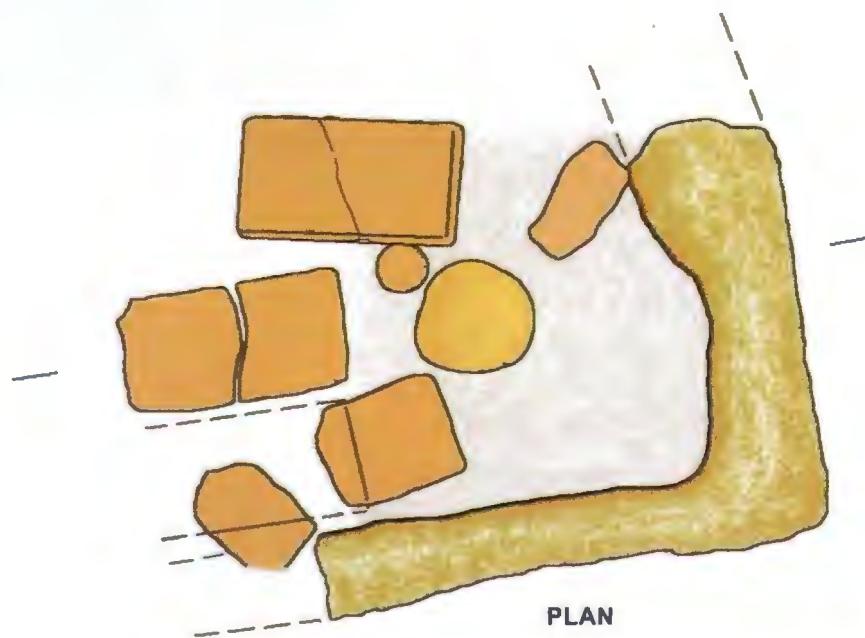
**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH E-8, Qd.-4  
FIRE ALTAR



50            0            50 CM.



SECTION



PLAN

Fig. 6.67



Fig. 6.68 KLB 2 Trench E-8, Qd.4: A view of a fire altar

3. Stratigraphic position: Built on the top of layer (2)
4. Period and Structural phase: Harappan, Phase VI
5. Measurement of structure: (a) length (outer) 1.20 m (b) width 1.00 m (c) Depth of the pit 0.50 m
6. Number of courses: Mud structure
7. Masonry and bond: Mud structure
8. Composition of mortar: Earth, cow dung
9. Composition of plaster: as above
10. Orientation of longer axis: North-south
11. Nature of bricks used: Mud structure
12. Dimension of bricks: (a) length (b) width (c) thickness N.A.
13. State of preservation: Badly damaged
14. Shape and other distinguishing features: Badly damaged fragment of the stump are available.

**KALIBANGAN : 1960-69**

DISTRICT HANUMANGARH, RAJASTHAN

KLB-2, TRENCH E-8, Qd.-4

FIRE ALTAR



50                    0                    50 CM.



SECTION



PLAN

**Fig. 6.69**

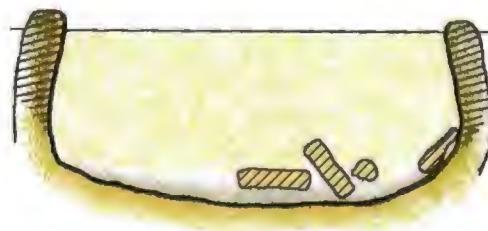


Fig. 6.70 KLB 2 Trench E-8, Qd. 4: A view of a fire altar

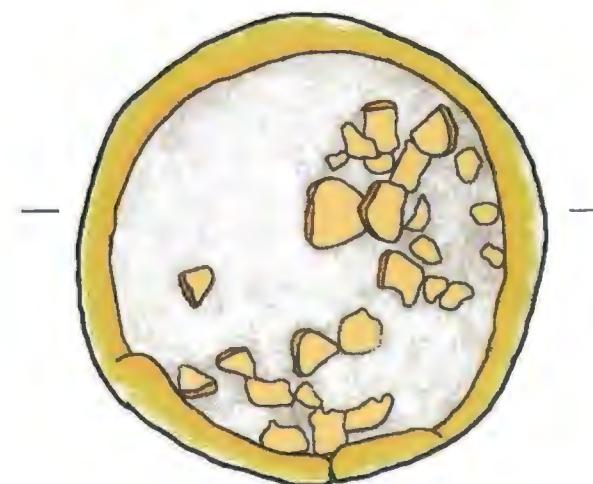
**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH XD-9, Qd. -1  
**FIRE ALTAR**



50                    0                    50 CM.



SECTION



PLAN

**Fig. 6.71**



Fig. 6.72 KLB 2 Trench XD-9, Qd.1: A view of a fire altar

**KALIBANGAN : 1960-69**  
DISTRICT HANUMANGARH, RAJASTHAN  
KLB-2, TRENCH E-8, Qd.-4  
**FIRE ALTAR**



50            0            50 CM.



SECTION



PLAN

**Fig. 6.73**



Fig. 6.74 KLB 2 Trench E-8, Qd.4: A view of a fire altar

