IMTO – Italian Mission to Oman

University of Pisa

SUMHURAM

Preliminary Report

January – March 2011 (SUM11A)



PRELIMINARY REPORT (SUM11A)

January- March 2011

The first IMTO's campaign of 2011 (SUM11A), under the direction of prof. A. Avanzini, started on 22nd January and finished on 24th March 2011.

The campaign had a continuation of one month (till the 21st of April) under the supervision of Said al Mashani.

The main goals of excavations have been focused in area A (BA6 and streets A133 and A57), in area A/F (streets A156 and A80, news rooms southern from A156), in area F (A68 and street A129) and in area H, in the southern portion of the city.

The restorations activities have been carried on along the southern side of the city wall (walls M478/479 and M498) and at the corner of walls M19 and M23.

A consolidation of the basins placed outside the city wall has been carried on as well.

Some operations for a better enhancement of the site have been performed in the southern side of the city wall, in square A20 and near the modern platform in area F.

The excavations were conducted on the field by dr. Vittoria Buffa, dr. Alexia Pavan, prof. Alexander Sedov with the collaboration of Giulia Russo.

Arch. Elena Kurkina was responsible of the architectural survey and of the drawing of the pottery.

The consolidation and restoration of ancient masonry structures have been done by arch. Sergio Martelli.

Eng. Giuseppe Cecinato has been on the site for a general monitoring of the restoration and to schedule the next interventions.

Arch. Franco Ceschi took part to the mission with the aim to make a proposal for a new arrangement of the paths inside and outside the city.

The work of IMTO has been possible thanks to the collaboration of the Office of the Adviser of His Majesty the Sultan for Cultural Affairs in Salalah and in Muscat, in particular Ghanem al Shanfari, Said al Mashani, Ali al Kathiri, Said al Salmi, Hassan al Jabri and all the Museum's team for their kind helpfulness.

Sumhuram Preliminary Report SUM11A January-March 2011

INDEX

1. Archaeological Report

Excavations in area A: building BA6, streets A57 and A113

Excavations in area A/F: street A156, rooms A165, A166 and A170, deep sounding in

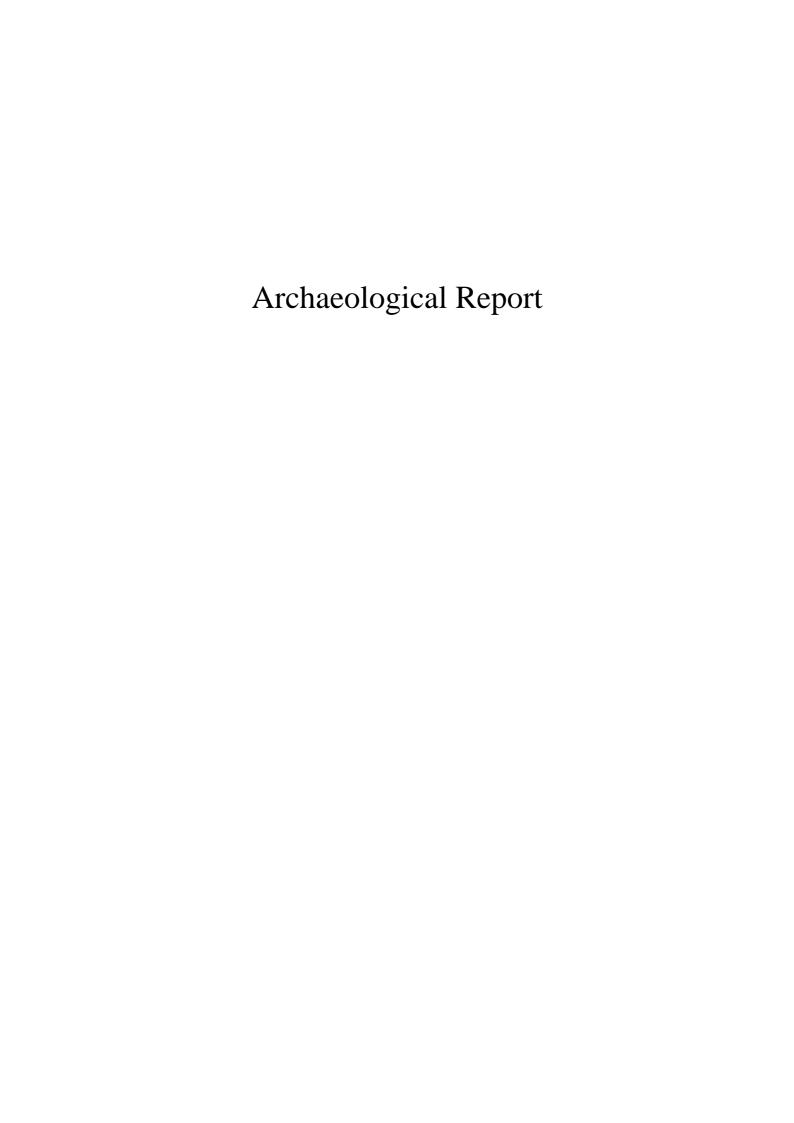
A80

Area F: street A129 Area F: room A68

Area H: a new industrial district

2. Technical Report

- 3. Restoration of the sandstone basins outside the city wall
- 4. Complementary works: enhancement of the site
- 5. Proposal for a new arrangement of the paths in Sumhuram



Excavations in area A: building BA6, streets A57 and A113 (trench supervisor: Vittoria Buffa)

During the SUM11A campaign, work concentrated in building BA6, room A64a, in street A57 and in street A113.

Building BA6

Building BA6 has been investigated in various campaigns: SUM04A, SUM04B, SUM05A, SUM06A and SUM10C. In the South East corner of the building a complex stratigraphic situation, prior to building BA6 proper, had been unearthed, with various construction phases. During this campaign work concentrated in the area South of room A65a, denoted as room A64a (see Preliminary Report SUM10C).

Room A64a

The space is defined by walls M230, M231, M148/M476 and M183. Here a floor (US454) was set at the elevation of 30.10 to 30.30 m and two limestone slabs were set at the height of the floor. During this campaign excavation reached the deposits under floor US454 in all the area. In order to investigate the deposits lying under the two slabs, these have been removed.

The excavation of the thin layer of deposit (US455), present in the room (except in the space West of slab 1 to wall M476) was completed. The deposit consisted in reddish brown, fine very loose loam. Underneath, the deposit US470 was present in all the room except West of slab 1. US470 had been excavated for a small part in SUM10C campaign (see Preliminary SUM10C). During this campaign US470 has been excavated completely down to US470floor. US470floor was hard packed, fine, reddish brown loam. It was reached at the elevation of 29.04 m. The deposit above the floor (US470) had the considerable thickness of about 1 m. It consisted in a massive accumulation of limestone small stones, a quantity of animal bones, fish vertebrae and pottery. US470 was present also under slab 1, but the pottery fragments were concentrated in the southern part of the room. US470 yielded nine oil lamps, *Chlamys townsendi* shells (Sh396), four complete *Strombus* shells (Sh400), two whetstones (S1670, S1671), a soft stone strainer (S1672), a soft stone mold for bronze tools (S1673), an incense burner (S1675), an anvil (S1678) and the head of a bull carved in limestone (S1677).

The space West of slab 1 was occupied by the collapse of limestone blocks from walls. Here the deposit, denoted as US459 in the SUM10C campaign, consisted in grayish brown loam; no finds were recovered. In the lower part of the collapse of blocks the deposit consisted of very fine, reddish brown loam. Some blocks lying deeper than US470floor were left *in situ*.

In the narrow long space defined by walls M147 and M183 another deposit (US451) had been partly excavated in SUM10C campaign. The accumulation of US451 was visible also in an opening (a door?) present in wall 101, connecting this area with street A113. The excavation of US451 was completed during the SUM11A campaign. US451 consisted in rather loose dark grey loam incorporating a quantity of white particles, possibly decayed mortar fragments. US451 was present not only in the narrow space, but also in front of this space, where it was accumulated on US470floor up to the collapse of blocks. US451 was covered by US470. Pottery shards and animal bones and a stone stopper were recovered from US451. US451 has been excavated completely. In the narrow space between M183 and M147 under US451 a reddish deposit was present. It has not been excavated. On its surface two parallel stretches of walls are visible; they have a North – South orientation.

Street A57

The space denoted as street A57 lies between wall M126 of building BA6 and wall M127 belonging to a building partially excavated by AFSM. It seems that it was at first a space open to the West to street A75; it was then closed on the side of street A75 by wall M184. On the side of room A64a, at the time of the construction of floor US454 in A64a (see above), a narrow door gave access to the

room. This door was later blocked with large limestone blocks (M231). To investigate the stratigraphic relations of the mentioned features a trench was opened in street A57. The trench occupies the eastern part of A57 for a length of 5.00 m from walls M231 and M148.

The elevation of the surface in A57 was 31.89 m. During the SUM05B campaign in A57 the surface near wall 148 has been cleaned. Here the dump of a fireplace contained very loose, grey loam with ashes and pebbles whitened by fire (US182). During the SUM11A campaign the remains of the dump were removed. The layer underneath was denoted as US482. It consisted of hard packed grayish brown loam, somewhere crumbled. It incorporated many pottery shards, animal bones and large fish vertebrae. A fireplace was present in the West of the trench, near M127. It contained pebbles whitened by heavy fire, fragments of mortar, some broken mud bricks. As already observed during the SUM05B campaign, US182 (and US482) was at least partly accumulated when wall M126 had already partly collapsed; some limestone blocks from this wall were covered by US482. Its base, not a well defined floor, was traced at the average elevation of 31.22. Finds from US482 included a bronze coin (Co712), a complete crucible (G162), a crystal? bead (S1642), a shell pendent (Sh399), a fragment of a glass vessel (G163), a nail (M182), two whetstones (S1651, S1652), several fragments of soft stone vessels (S1659, S1660, S1661, S1663, S1664, S1665, S1668, S1669), two oil lamps *Chlamys Townsendi* shell (Sh397), two *Strombus* shells (Sh398), a great quantity of iron slags.

The layer underneath was denoted as US485. It consisted in loose, fine reddish brown loam. It could be interpreted as the accumulation over US485floor. A structured fire place was present on the floor. Only some of stones possibly belonging to a fireplace were exposed; the rest lies under the section. A posthole is present near wall M127. The mortar lining the internal face of wall M127 was whitened by heavy fire. Finds included pottery fragments, four two oil lamps, *Chlamys townsendi* (Sh395), a net sinker (S1667) and iron slags. US485floor had an elevation of 30.66 m.

Street A113

The street is bordered by wall M101 of the building BA6 and by wall M262 of room A112 of a building partially excavated by AFSM. The street A113 has been partially excavated during the SUM10C campaign down to deposit US469.

During SUM11A campaign the trench has been extended to the East for the width of 2.50 m. The superficial deposit US458 has been removed. It consisted of hard packed reddish brown loam, incorporating fragments of plaster from walls, iron slags, pottery shards, animal bones. US458 yielded two bronze coins (Co715, Co705), a glass bead (G158), fragments of soft stone vessels (S1643, S1644), a clay stopper (Cl34), a fragment of a mortar (S1666). A row of limestone blocks was present in the upper part of US458 (M487) in the area interested by the sounding by AFSM next to wall M263 of room A112; wall M487 has been removed. Another wall (M486) was running N-S; it was leaning on wall M263; at the southern end it turned East. US458 was excavated down to reach US458floor, marked by some sandstone slabs. The floor was in connection with the fireplace excavated in SUM10C. It was reached at the elevation of 30.64 m.

The deposit underneath had been denoted as US469 in the previous campaign. It has been excavated down to US469floor. Floor US469 was reached at the elevation of 30.00 m; it consisted in hard packed grayish loam, marked by some sandstone slabs. On the floor, leaning next to wall M486, the lower half of an Egyptian amphora was found *in situ*. Floor US469 corresponds to floor US21 in street A45. The deposit above the floor (US469) consisted of hard packed grayish loam. It yielded two bronze coins (Co707, Co709), two crucibles (G159, G161), a polisher (S1648) and fragments of soft stone vessels (S1654, S1655, S1656, S1657, S1658) and some iron slags. Only on a narrow strip along wall M486 the deposit was more loose and reddish.

The trench has been extended also to the South and the superficial deposit South of wall M473 has been removed in order to clarify the relation with walls M101 and M230. Three walls delimit two small rooms only partially exposed. The first room is delimited to the North by wall M473, to the East by wall M482 running along wall M101, to the South by wall M483; an eastern wall has not

been unearthed. Here the superficial deposit (US458) consisted, as in the other part of the trench, of loose reddish brown loam. The deposit underneath (US471) consisted of grayish brown loam incorporating many medium and small pebbles and some burned stones and tiny charcoals. Only a shallow part of US471 has been removed. The other room is delimited by wall M483 to the North, wall M484 to the East and wall M101 to the West. The deposit US472 has not been removed in its totality.

Excavations in area A/F: street A156, rooms A165, A166 and A170, deep sounding in A80 (Trench supervisor: Alexia Pavan)

Excavations in area A/F started with the completion of the works performed in SUM10C and not finished during the previous campaign.

So, at the beginning, they have been focused in street A156.

Channel US468 (fig. 2a-b)

Channel US468 was cutting US440 floor. It's position has been clarified in the western portion of street A156 and in the southern portion of street A80. The soft filling inside the channel has been removed and few animal bones, together with some pieces of pottery have been found.

Kiln M480

Placed in the westernmost part of the street, not far from the corner with street A80, during the previous campaign has been defined as US466. Now US466 defines the filling, while the structure itself has been called M480. It was covered by US425floor and covered US440floor.

Kiln M480 was made of limestone masonry blocks mixed with sandstone ones scattered without a shape. The finding of ash and gypsum (?) lumps in the filling suggests that the kiln was used to produce plaster.

Kiln M481(fig. 3, see also the section and the drawing of the plan)

Placed in the easternmost part of the street was partially excavated in SUM10C. It was covered by US425floor and covered US440floor. In SUM10C it was named as US467 which now defines the filling of the main chambers. US467 has a very soft consistency; it's principally made by ash, so it's gray in colour, with greenish spots due to the crumbling of mud-bricks. Very few animal bones have been found together with shells completely burnt because of the high temperature. A small number of pottery shards have been discovered and sampled (sample n. 7).

Kiln M481 consists of a main elongated chamber (measure of the axis: 157x114 cm). The fragments of sandstone and mud-bricks found inside suggests the probably existence of a small chamber inside the big one, but the state of preservation was very bad to find confirmation to the hypothesis. Inside, among the ash, some gypsum (?) lumps have been found and sampled (sample's numbers: 5-6).

Outside the chamber, in the northern side, a kind of channel has been discovered, filled with ash (US474).

Connected with the excavation of kiln M480 has been the discovery of a new floor – US477- at an elevation of 28.04, below US440floor and above the foundation filling US418.

Structure A158

Delimited by the two walls M452 (measures: max. l. 1,05; max. h. 0,48; max. w. 0.44) and M453 (measures: max. l. 2,34; max. h. 0,37; w. 0,32), it was covered by US316floor and used contemporary with US425floor (28.40). Inside room A158 US426floor has been discovered at an elevation of 28.43. Below US425floor the sub-foundation of wall M453 (measures: max. l. 2,38; max. h. 0,19; w. 0,27) have been individuated: it's made from limestone blocks, while the upper part is made from limestone blocks.

The most probably explanation is that A158 was used to support a stairway to A128.

Stones at the corner of A156 and A80

In the corner between the two streets some stones have been individuated in SUM10C but it was not clear if they belonged to a structure or to the bedrock. They were covered by US425. The

excavations performed during this campaign reveal the stones delimited a kind of a "pit" – US473-roughly semi-circular, reddish in colour and rather soft. A large amount of bones and few shards of pottery have been found in the layer, together with two glass beads, overfired (G155, G166).

Street A156

A new floor has been discovered in street A156, precisely at the junction with A133. During the operations to check the foundation of kiln M481, 10 cm below US440floor, a new pavement – US477floor- has been individuated at an elevation of 28.04. No objects have been found in the layer.

Rooms A165, A166 and A170

During this campaign we decided to enlarge the excavated area southern from street A156. Three new rooms have been discovered: A165, A166 and A170 (from east to west).

Operations started with the removal of the collapse US481 from room A165 and of collapse US480 from A166. The two layers overlap in the space between wall M489 and wall M490. Below the collapses few traces of US302floor (=US442floor) have been brought to light. Some shards have been collected from the floor.

Both the collapse were made mainly from limestone blocks and few sandstone blocks.

The removal of US480 let us to clarify the northern portion of room A166 delimited eastward from wall M490, northward from M485 and westward from M492. The southern wall has not been brought to light.

Below US480 collapse a new layer, named US483, has been discovered at an elevation of 29.23, made from crumbled mud-bricks. The floor has been reached at an elevation of 29.08.

No small finds but a nice fragment of stone vessel (S1721) have been found.

Room A165 (fig. 4) is delimited eastward from M491, northward from M488, westward from M489 and southward from M493. Below the collapse US481, covering the whole area, US484 has been discovered. The top has been reached at 29.01, the floor is at 28.33. Few small finds have been found despite the thickness of the accumulation: a bronze object (MB672), a coin (Co718), an oil lamp (Sh405), a whetstone (S1696) and a pestle (S1697).

A number of iron slags have been found as well but they seem to come from the walls.

Some animal bones and pottery shards have been discovered in US484 made of medium compact earth with some stones. A new layer -30 cm thick- has been found below US484floor: it's US486 with its related floor (28.03) standing on the foundation filling.

The characteristics of the layer are not so different from those of US484 but the earth seems a little bit softer and more brownish.

Just an oil lamp (Sh404) has been found at the corner between walls M491 and M488.

Standing on US486floor a well dressed stone – placed circa in the middle of wall M488- has been discovered.

Room A170 (fig. 5) is placed westward from room A166 and it's delimited by walls M492, M485, M494 and M495. Also in this case the room was covered by the collapse US480.

Below, layer US487 has been found (top elevation 29.51). A pit – US488- filled in with ash and charcoal have been found cutting the layer US487. A large amount of stone tools have been found in the pit despite a small amount of animal bones and pottery shards. An oil lamp (Sh406) has been found as well.

US487floor has been reached at an elevation of 29.16 and, below it, accumulation US491 has been discovered. The accumulation is rich of animal bones and pottery shards, many of them with traces of murex. Not many objects have been discovered: some oil lamps (Sh409) and two strombo shells (Sh408), a door socket (S1727), a whetstone (S1728) and a mortar (S1729).

Below US491floor, reached at an elevation of 28.72, we removed US492 only in the western half of the room. An handstone (S1733), a pressing stone (S1734), a stone vessel with decoration (S1726), a coin (Co719), a crucible (G165) have been found together with a complete bronze palette (MB674) and a bronze object (MB675).

Deep sounding 1

During the last part of the campaign we decided to perform a deep sounding at the corner between streets A156 and A80 to check the stratigraphy below US440floor and the foundation of wall M464. A sequence of five new floors has been discovered, from US501floor to US505floor.

Deep sounding 2

A second deep sounding measuring 70x360 cm has been excavated near wall M290, in street A80. Unfortunately it was not possible to clarify the same sequence brought to light in deep sounding 1, also because of the pit placed in the northern part of the trench.

A bench, measuring 46x140 cm, has been found leaning to wall M290.

All the material collected during this operation has been named US494 (two small bags of animal bones, one of pottery, one iron slag, one clay polisher (Cl36) and a clay object (Cl37).

Area F: Streets A129 (Trench Supervisors: A. Pavan, S. Martelli)

The excavation of street A129 made in SUM11A let us to define a sequence of layers, clearly visible in sections A and B and in section of street A129 which has been integrated for the unexcavated part and for the part removed before the drawing.

We put in relation the stratigraphical sequence brought to light in sections A, B and the one about A129 with the sequence published in Report 2 regarding square A20 and with the sections drawn in the previous campaigns.

Of course the lower part is only hypothetical (the excavated part is defined by the black line) but it has been traced considering the general slope visible also in the upper levels and on the base of the elevations clarified at the eastern edge of street A129 and in square A20.

Section A

Five new layers have been discovered.

The top is the already exposed US56floor, named US313 during the excavations of SUM09A and corresponding to US196floor (see also the section drawn in SUM09A by A. Lombardi) at an elevation of about 27.80.

The floor called US56 in A129 should corresponds to US440 in A80 which has been disturbed by the pit placed in the northern part of street A80 and, for this reason, is not completely clear.

The first new floor recognized has been named US496floor.

It corresponds to US54floor discovered in square A20 (see the reconstructed slope of the floor). When this floor was in use, the third part of wall M307 (I called it M307b) has been built and, actually, it stands on this floor without foundations.

Below we have US497floor which in square A20 should be found at the same elevation of A54.

About US498+US499 I'm thinking to consider them corresponding to US55floor in A20. When US499floor was in use it's probable wall M307a has been added.

The last floor is US500 which should correspond to US98floor in square A20.

US495 is the filling of a pit cutting US499floor (and US500floor) filled with incoherent rocks which seems cutting also the bedrock reached at an elevation of 26.51.

What the explanation of the pit? Could be something linked with the water? It seemed "wet" inside.

Moreover the floors visible in section A finds very good comparisons with the situation discovered during the deep sounding 1, excavated in the corner between A156 and A80.

Area F, room A68 (trench supervisor A. Sedov)

During the short stay at Sumhuram in the SUM11A season (13.02 – 27.03. 2011) excavations of the street A68 in the Area F have been conducted. Street A68 is located along the city-wall M135, separating the city-wall and two buildings – BF6a and BF6b. Its continuation was street A69 running along the city-wall M134. Rather early the street A69 was blocked by the wall M143, erected between the NE corner of the building BF1 and the corner of the offset of the city-wall M135. During the previous campaigns SUM05B, SUM08B, SUM10B and SUM10C the street A69 was completely excavated down to the bed-rock (US429floor). The western part of the street A68, between the building BF6a (M153/M175 and M157), the city-wall M135 and the wall M143, was also excavated down to the US174floor and in some places – down to the bed-rock (US193floor).

Street A68

In the western part of the street A68 we were succeeded to clean the wall M175 and to understand that originally it was a continuation of the wall M153, the external northern wall of the building BF6a. Rather "early" (after construction) the wall M153 has been started to collapse, especially at the junction with the internal wall M156, and it was consolidated from outside by additional amorphic structure. Probably at the same time the additional skin-wall M157, of rather good quality, strengthened the external northern wall M153 of the building BF6a. Both amorphic structure in the junction of M175 and M153 and the skin-wall M157 were erected above the bedrock or above the layer of stone chips. The width of the western part of the street A68, between the external wall of the building BF6a (M157) and the city-wall M135, is 2.20 m.

During the present campaign the eastern part of the street A68 was completely excavated down to the bedrock or the US193floor. The excavated part of the street was delimited on the south by the NE corner of the building BF6a and the wall M182, blocked the entrance to the street from the east on US172floor, when, probably, the outlet of the water-channel (A12) running from the Monumental Building and through the city-wall M23 was constructed. On the north the street A68 was delimited by the pillars M181 and M182a, constructed against the city-wall M135. The purpose of such pillars, containing in its central exteriors vertical wooden beams, is not clear. Probably, they were constructed to support the wooden roof once covered the street A68: there are holes for horizontal wooden beams in the face of the city-wall M135 (two were cleared above the pillars M181 and M182a, and the third one – between them). Unfortunately, symmetrical holes in the external wall M180 of the building BF6b didn't preserve. The width of the street A68 is 3.40 m (between M135 and M180), its length is 3.50 m (between pillars M181 and M182a). The pillars M181 and M182a are 0.8x0.9 m in size.

The following structures were cleared in the street A68 above the bed-rock or the US193fllor. The SW corner of the street A68 (the corner formed by the junction of the buildings BF6a and BF6b) was occupied by a square structure made from stone blocks, a sort of platform, 1.25x1.25 m in size, and 0.4-0.6 m high. The upper part of the 'platform' didn't preserve, but most probably it was flat and horizontal. Two square stone blocks, 28x28 and 32x32 cm in size and 15 cm high, were placed against the 'platform' from the north. One more stone block, the round one, 25 cm in diameter and 11 cm high, was discovered to the east of the 'platform'. The NW corner of the street A68, formed by the pillar M181 and the city-wall M135, was occupied by a fire-place, circa 36x60 cm in size, surrounded by rough stones. The NE corner of the street A68, formed by the pillar M182a and the city-wall M135, was occupied by a semicircular structure circa 90x90 m in size and about 10 cm high. There was another projection, 42 cm in diameter and circa 8 cm high, in the centre of this structure. The entire surface of the structure was carefully plastered with lime mortar. Most probably, it was the place where low stone of a hand-mille was once fixed (fig. 9). Near the SE

corner of the street A68 one more round stone block, 40 cm in diameter and circa 40 cm high, was discovered.

All the above-mentioned structures were constructed on the US193floor, i.e. during the very first period of the city existence, and were in function during accumulation of the strata US193 (circa 20 cm thick) and US174 (circa 25 cm thick). It means that both strata produce artefacts from the so far "earliest" cultural deposits of Sumhuram. The US193 is very compact dark brown loam mixed with small stones, pieces of charcoal, animal bones and pottery fragments. The following small finds were found in the US193: a fragment of bronze bracelet (MB668) and a fragment of bronze fingerring (MB669), fragments of crucible (G157), a stone mortar (S1649), and two bronze coins (Co714, Co716). The US174 is less compact dark brown to greyish loam mixed with stones, flecks of charcoal, marine shells, animal bones and pottery fragments. It revealed the following small finds: a lid made from alabaster (S1637), a stopper (C132) and a spindle whorl made from pottery, a pendant made from shell (Sh394), a fragment of limestone vessel (S1641), and two bronze coins (Co711, Co713). Big amount of marine shells *Anadara* and *Oliva bulbosa* was found in the US174. Probably, a sort of workshop to produce shell tools (for instance, for pottery production) was once located here.

Cultural deposits accumulated in the street A68 in the strata US193 and US174 were intentionally sealed above with very compact layer of gravel mixed with very little amount of dark brown loam. Previously the stratum was denoted as US162, but during the SUM10C campaign this is the same layer was denoted as US450. The stratum is between 0.8 and 1.2 m thick, and is almost sterile (contains almost no artefacts with exception of shells, animal bones, pottery fragments, mostly walls of jars, and fragments of iron tools – MI178). We can suggest that the purpose of this intentional filling was caused by the necessity to block the street A68 before or during the construction of the water outlet with channel (A12) running from the Monumental Building to the north of the city through the city-wall M23. It was the period when the square A80 was constructed, closing the A68 with the wall M182, and leaving an access to the street in form of entrance between M182 and M180 with steps discovered against the NE corner of the building BF6b.

Area H, investigations along M351 (Trench supervisor: G. Russo)

M351 is a segment of the southern city wall, tied to M350 along its south-eastern side. The principal aim of the excavation was to remove the collapse of the wall in order to clarify its alignment and state of preservation.

The collapse of the wall caused a sloping of the external face: the SE corner is not preserved and it's recognizable only by the traces of wall preparation visible on the bedrock.

The SW corner is also partially preserved with some cornerstones missing. After the NW corner the wall is very bad preserved and it's difficult to recognize because of the complete collapse of the masonry. Only the bedrock and some traces of wall preparation on it are still visible.

For its whole external length, about three-four rows are preserved, built on the bedrock which is clearly visible at the wall feet. The internal face is irregularly preserved; the NE corner is preserved for one row only, then just one-two rows are still in place. Also along the internal face, it's difficult to recognize the wall because of the complete collapse of the structure.

Both the faces of the wall are made of dressed limestone and some of them are plastered; the wall was built using the sandwich construction technique.

During the cleaning of the internal face of M351, new structures have been discovered (fig. 10).

Close to the city wall – from south towards north – the following structures have been discovered: a mud-brick wall (preserved measures: 1. 2,55 m., w. 0,44 m.), a plastered floor (preserved measures: 1. 2,27, w. 0,43), a second mud-brick wall (preserved measures: 1. 3,30, w. 0,63), a second plastered floor (preserved measures: 1. 2,57, w. 0,41) and a third mud-brick wall (preserved measures: 1.3,50, w. 0,43). The mud-brick walls and plastered floors are rather well preserved, and all have been cut at the same height by intervention difficult to date.

Also on the eastern and western sides these structures have bee cut, making difficult to understand their use and original lay-out.

On the eastern side, not a clear stratigraphy was recognizable: some centimetres of mixed earth without floors nor findings covered the bedrock.

On the western side of the plastered structures, the stratigraphy is not clear again, looking like having been disturbed in recent times.

After the removing of the upper layer (the recent one, where a coin was found), a floor has been reached; leaning on it a big stone is visible, probably oval-shaped and still in section, with a thin black line on it (maybe a trace of something put on?).

On the western side of the floor, a plastered basin (l. max. 0,76, l. min. 0, 63, w. 0, 50) was excavated. It leans on a low wall at west, it's delimited on its southern side by a mud-brick wall and on the eastern side by a stone and by slightly curved plaster.

On its northern side there are some stones, maybe collapsed from the wall and not removed during the campaign.

South of these structures, the wall M351 was completely missing and scanty traces of wall preparation are visible. In the bedrock, covered by collapsed earth, a hole was discovered, circular in shape. Since the area is really disturbed it's not possible to bring any interpretation forward.

West of the wall with the plastered basin, a new area was discovered, reminding of the plastered structure till here described. Covered by a thin layer of accumulation, composed by different kinds of earth with different consistence (US490), five (?) plastered "basins" separated by low mud-brick walls were dug out. All the basins have been built on the bedrock and lean on the city wall (bad preserved here too); they are well plastered and preserved on their southern side leaning on the wall, while the northern side and the lateral sides are not completely preserved, sometimes missing and hard to recognize. Some coins and sherds of pottery were found, along with a small quantity of bones and a bronze and bone object identified as an earring (MB 673). On the western side of the

basins, two circular structures were found. They were both built close to the bedrock and with a hard filling in, containing nothing but earth. The measures are the following: n.1: w. 0, 65, diam. 0, 41, h. 0, 10; n. 2: w. 0,69, diam. 34, h. 8.

Their surfaces were both plastered with scanty traces of burning. West of these circular structures, the whole area was closed by a mud-brick wall, considered as the western limit of the excavated area (beyond it, the western section is visible). The northern section shows a thick upper layer of accumulation followed by a small succession of floors and fillings, difficult to recognize during the excavation, because the stratigraphy is really disturbed by natural and anthropic agents (some fireplaces and ash lenses were found, probably due to recent activities).

The preserved measures of the basins are the following:

- 1. l. 0, 54, w. 0, 45, h. 0,9.
- 2. 1. 0, 90, w. 0, 38.
- 3. l.1, w. 0,53, h. 0,11
- 4. 1. 1,10, w. 0,46, h. 0,13
- 5. l. 1,40, w. 0,66, h. 0, 14



Fig. 1 Room A64a at the end of the excavation



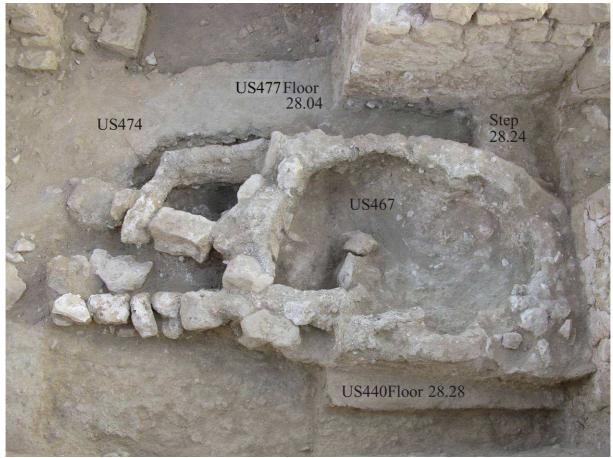


Fig. 3 Kiln M481



Fig. 4 room A165





Fig. 6 Deep sounding 1 (see also the section)



Fig. 7 Deep sounding 2



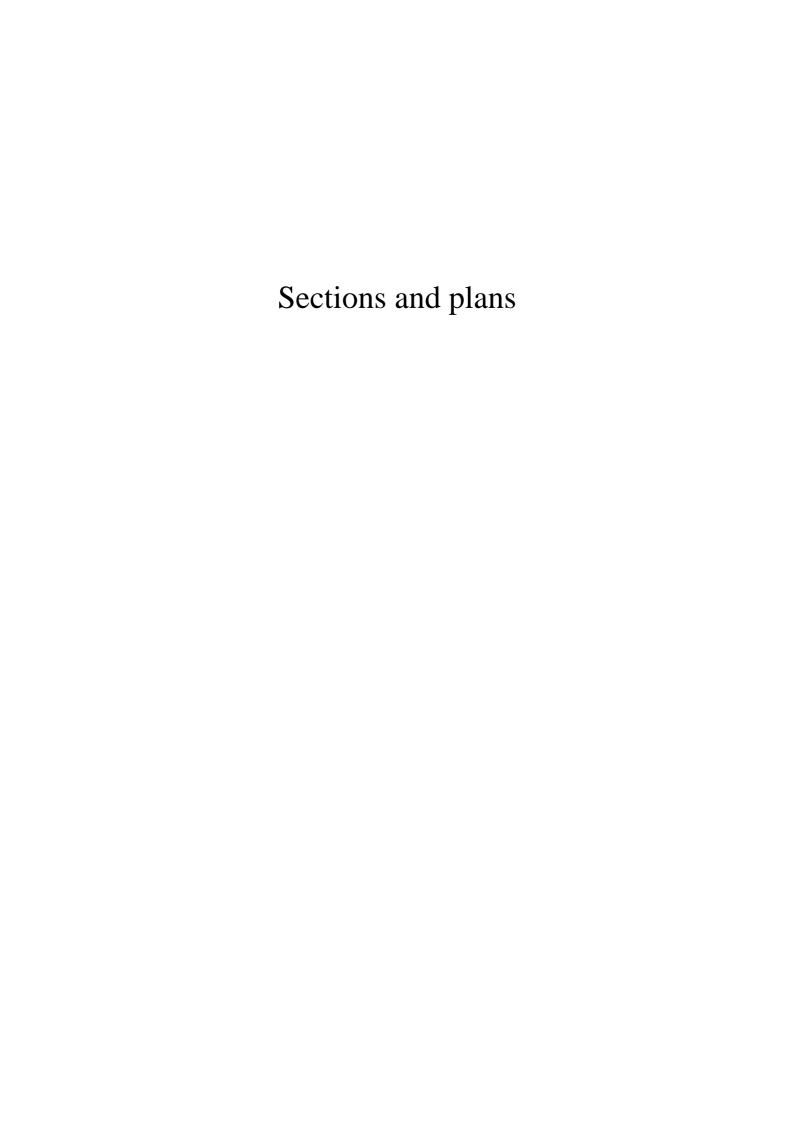
Fig. 8 Street A129

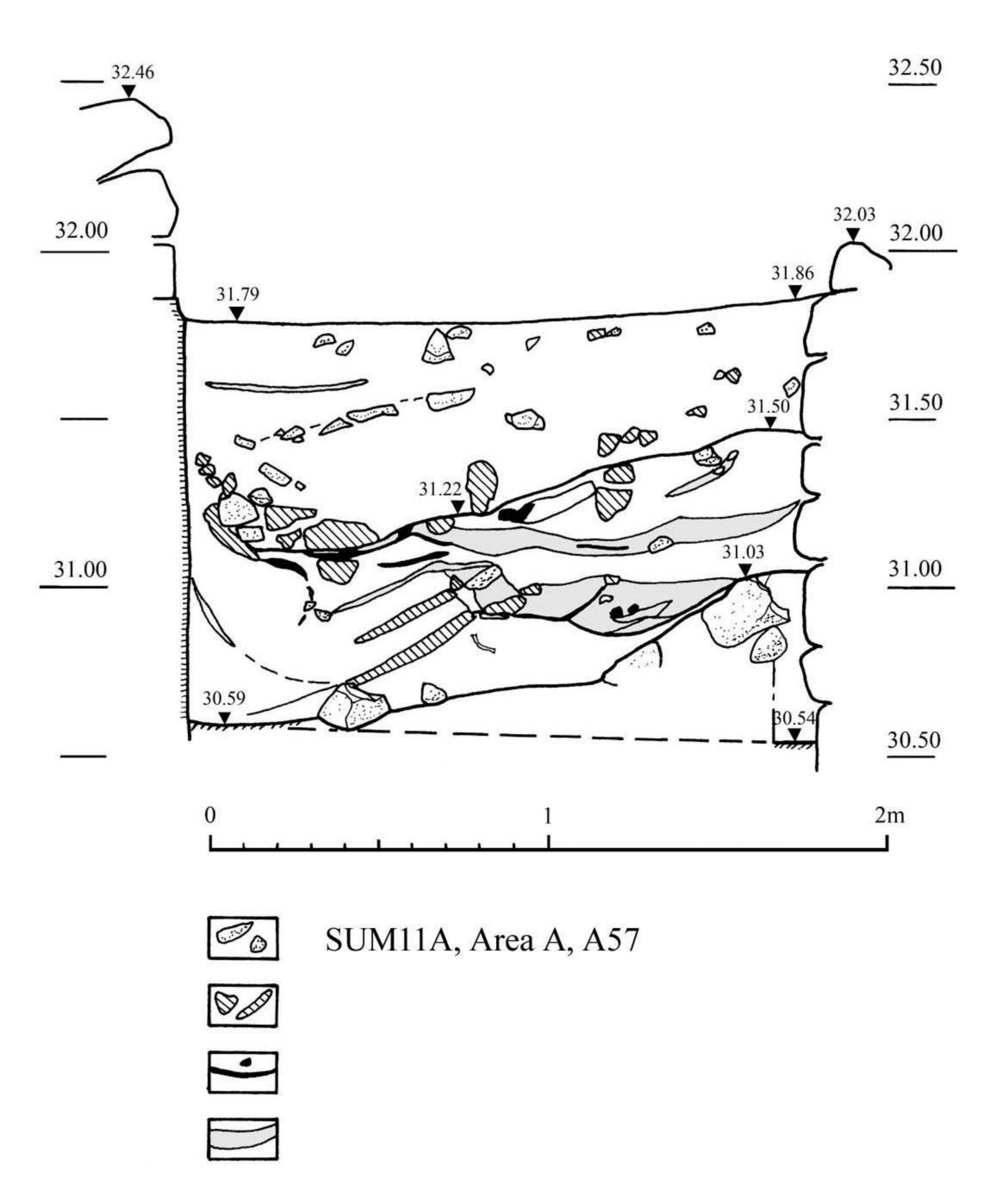


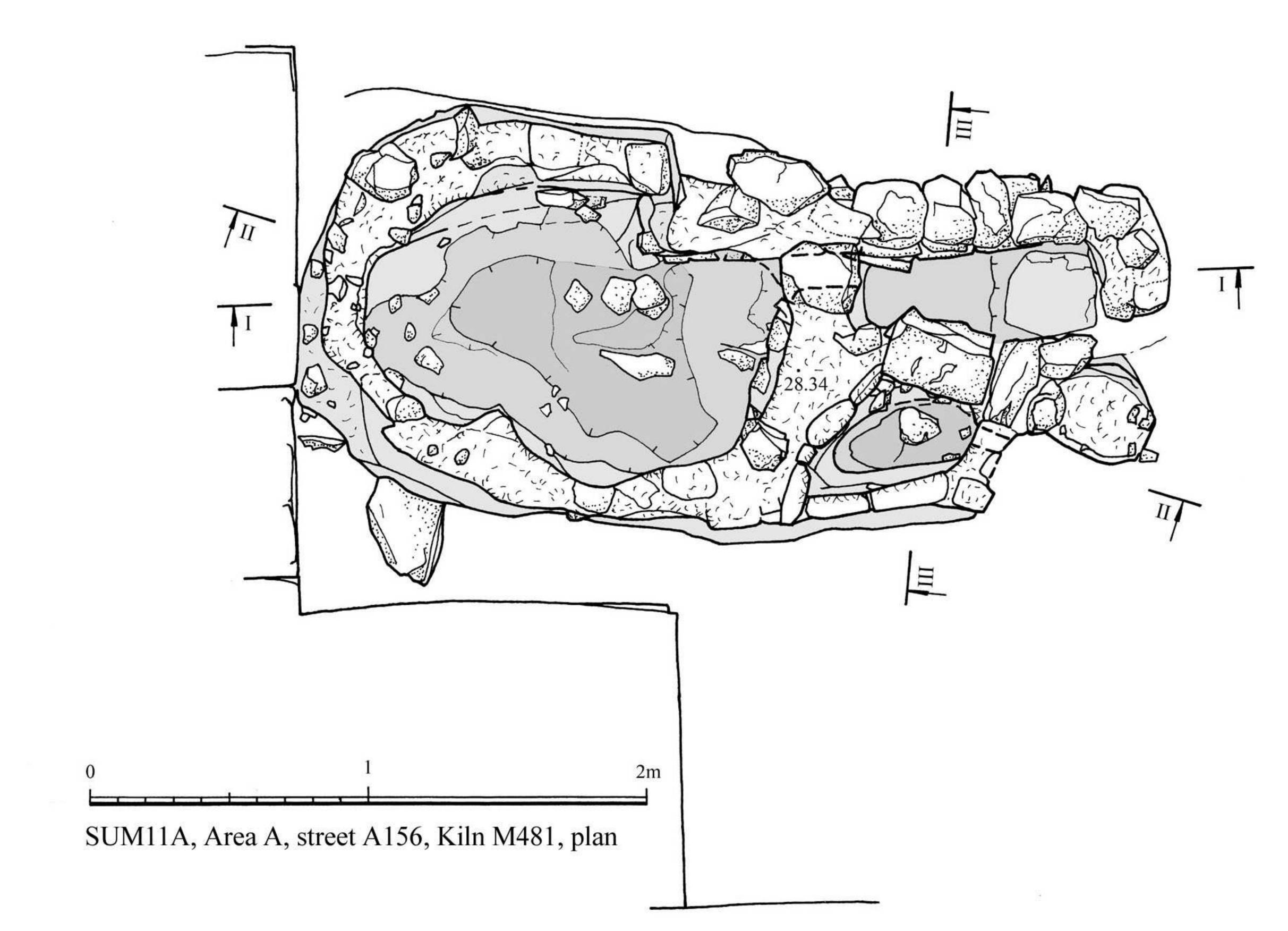
Fig. 9, Area F, A68, pillar M181, city wall M135, place for hand-mill, pillar M182a.

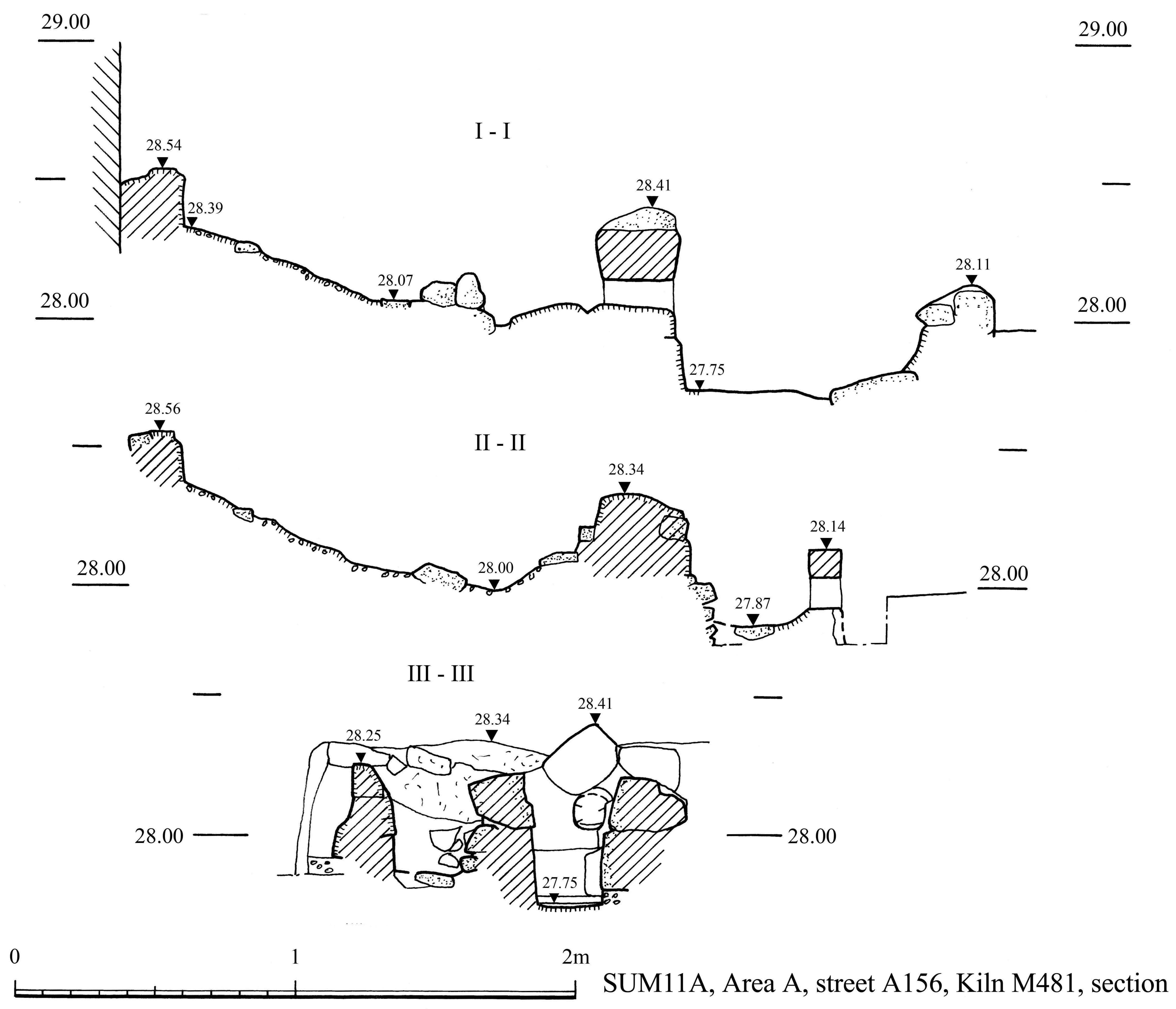


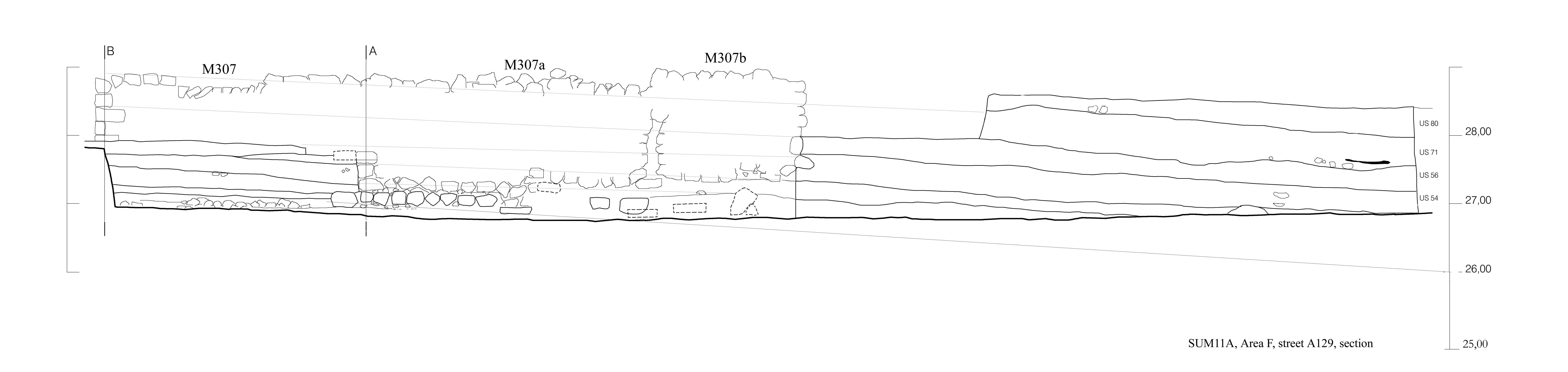
Fig. 10 General view of area H after excavations

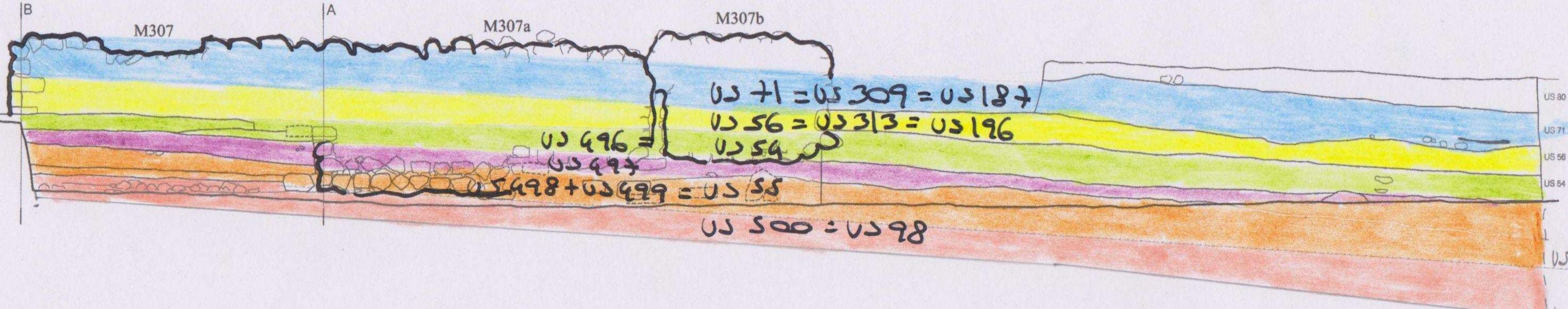


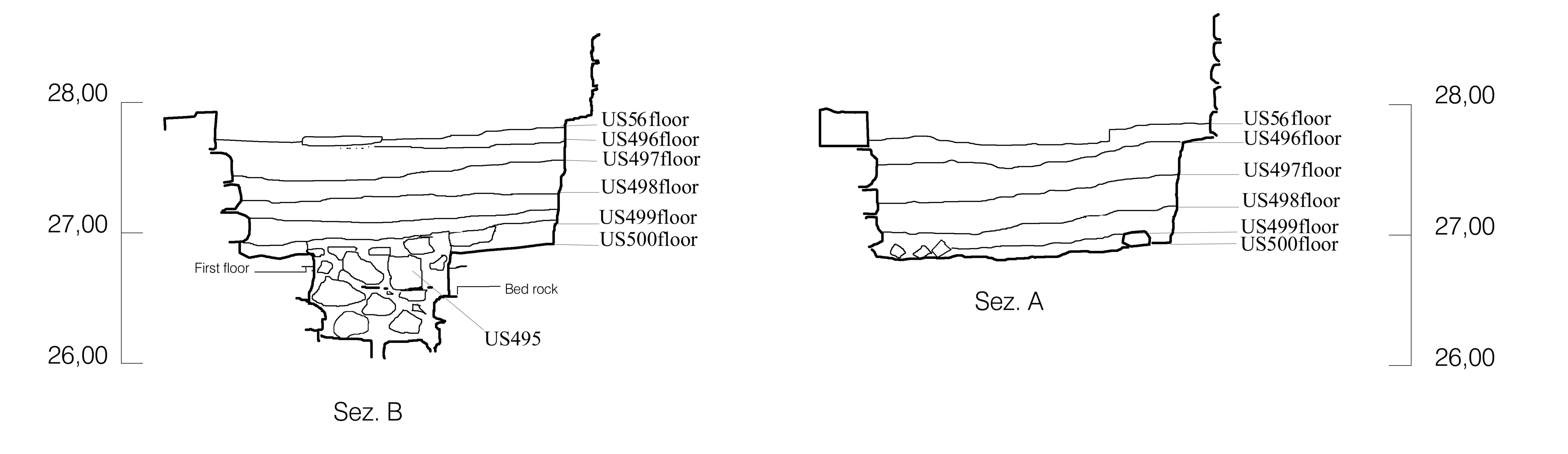


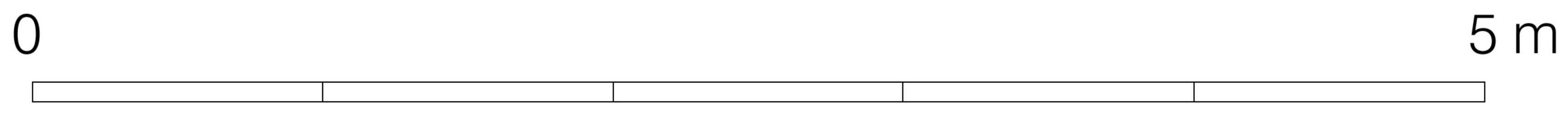




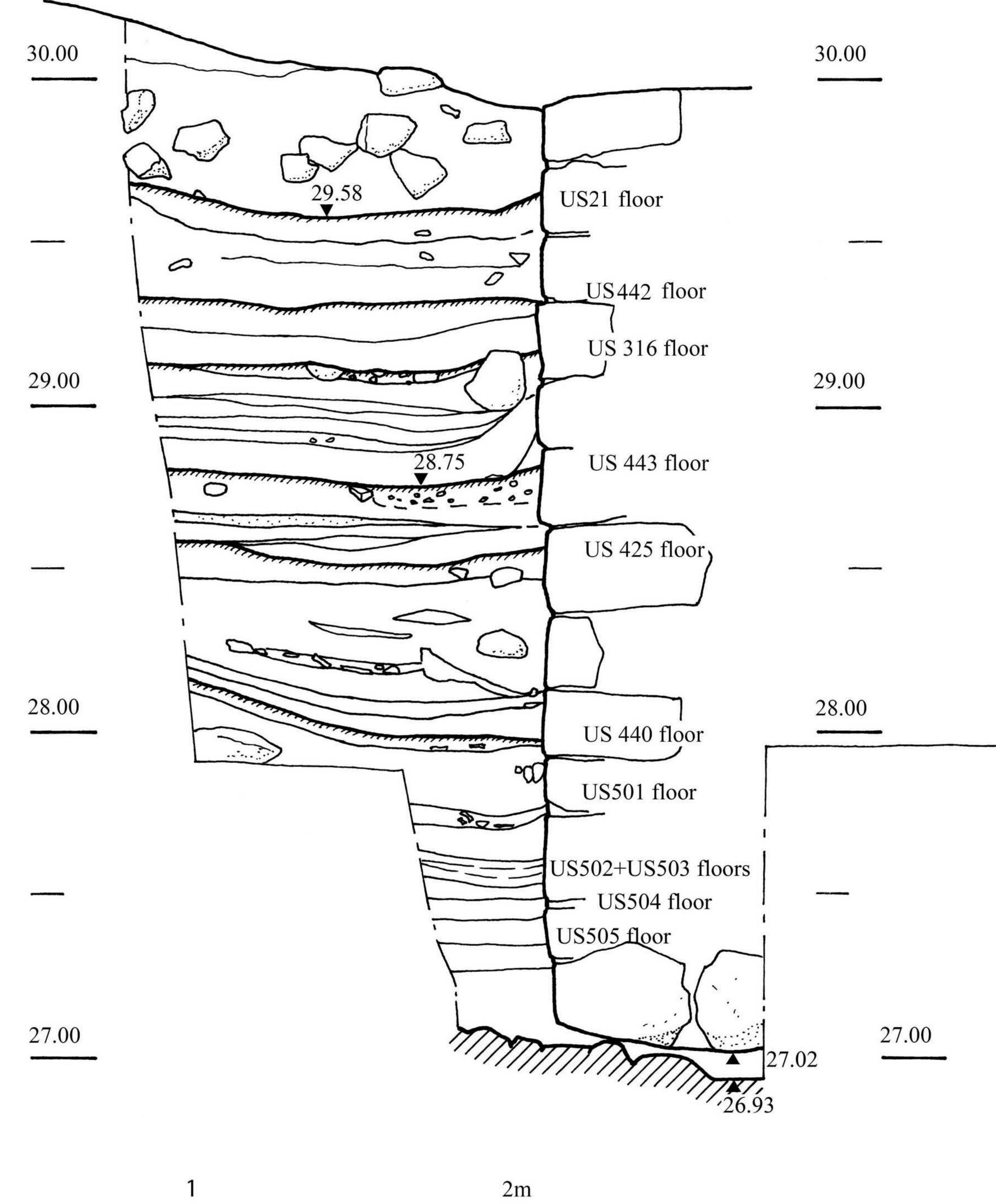




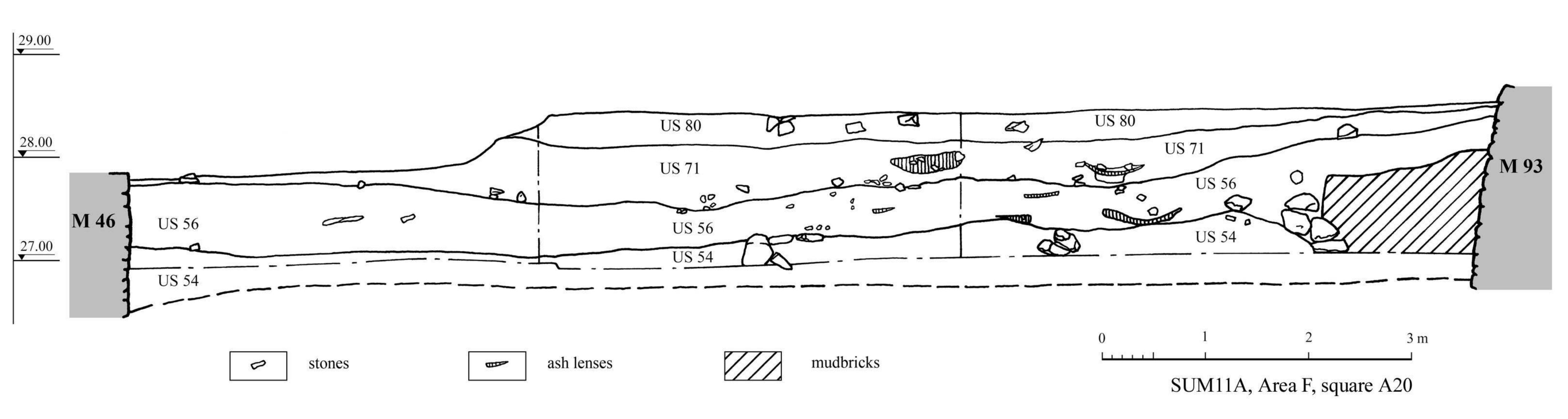


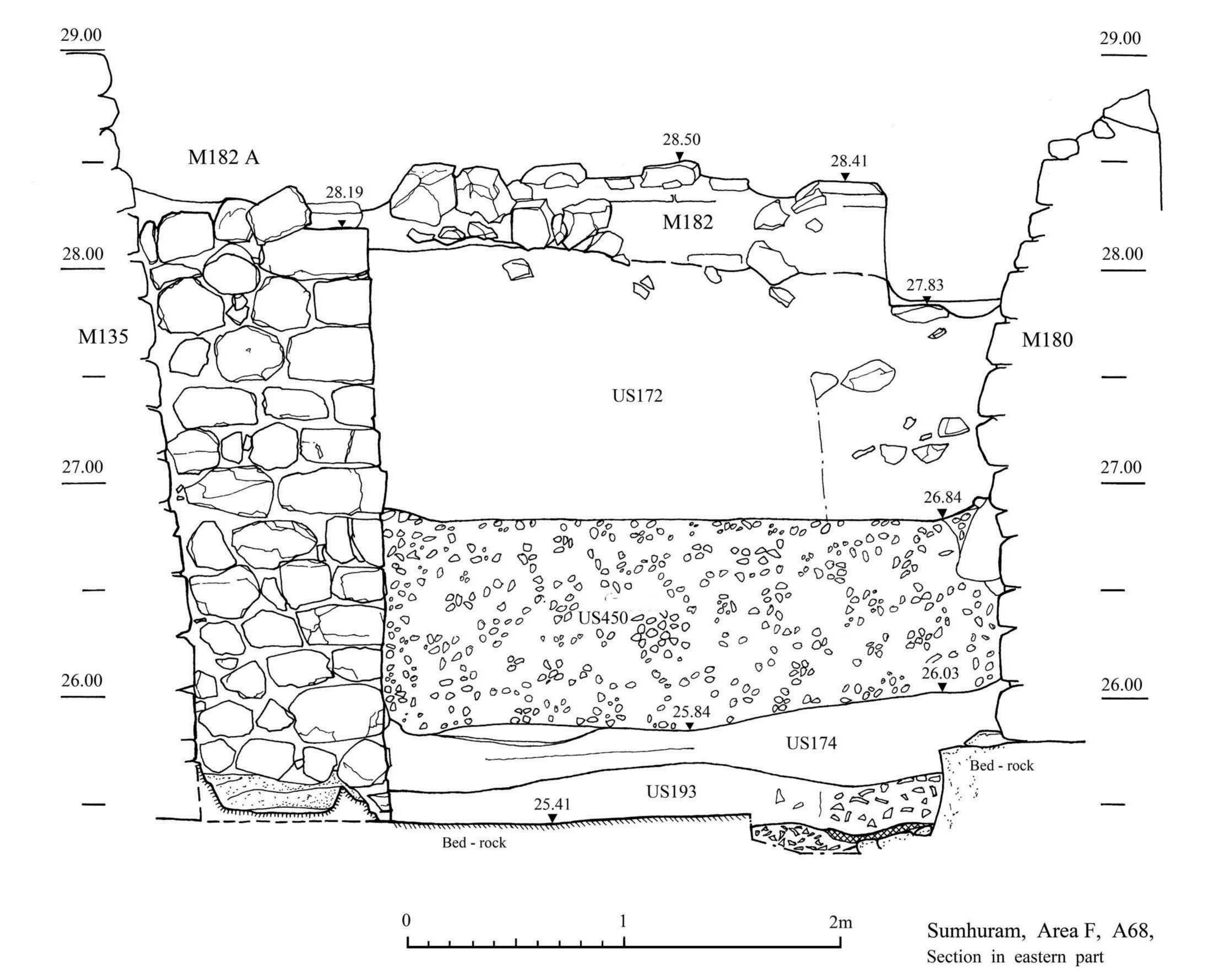


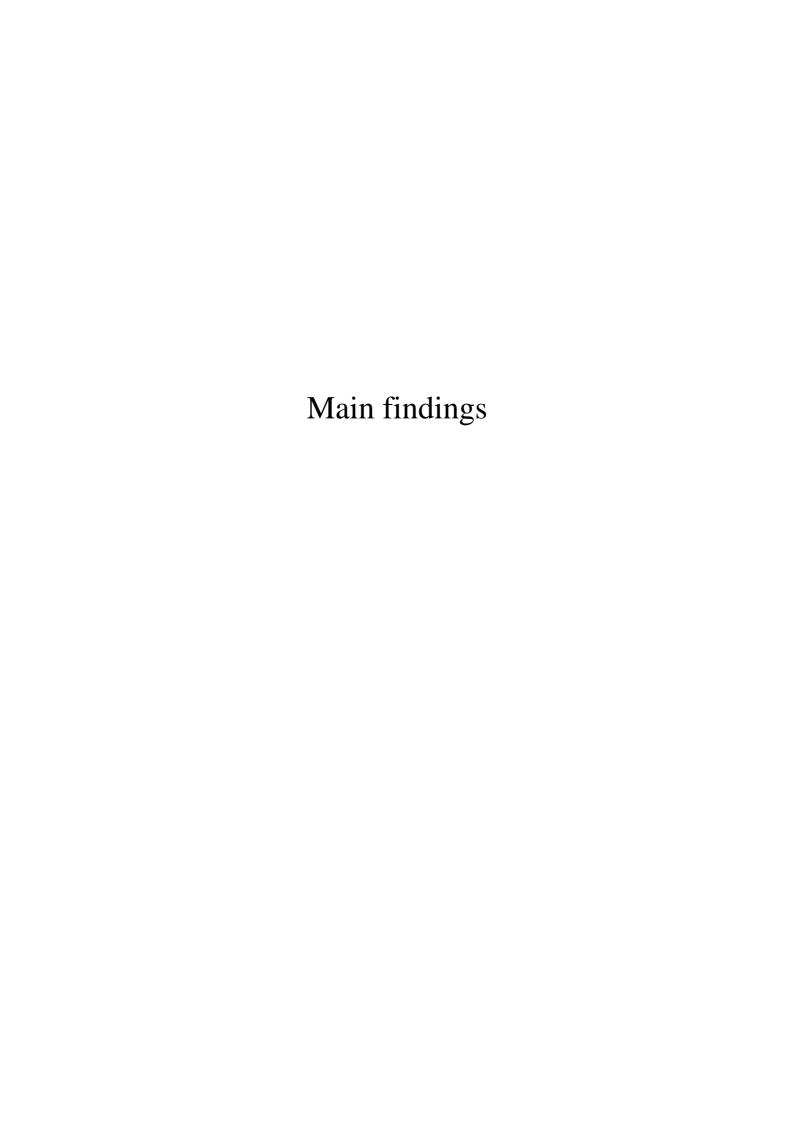
SUM11A, Street A80, section (north-south)



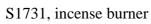
SUM11A, Area A/F, street A80, section













S1719 statuette



S1673 mould for metals



MB673 earring

Object Index Card

Γ=	T						
Registration Nr.							
SUM11A, US499,1							
S1731							
Provenance							
Area F, street A129							
1 1 2 3 1 2 3 1 2 3							
Drawing code Nr.							
Definition	State of preservation	Measures	Shape				
Incense burner	fair	l. 11	Composite				
meense sumer		w. 11,7	Composite				
Material	Preserved part	h. 18.7	Section				
Limestone	Almost complete	th.	Section				
Limestone	Annost complete	diam.					
Deganintian		uiaiii.					
Description Almost complete incense burner, fairly preserved. Three of the four decorations, placed at the upper corners, are missing. The shape could be considered truncated-pyramidal with the base measuring 10x11 circa and the top measuring 12.5x10.8 circa. The frontal face, rather worn and difficulty readable, presents, in its upper register, the crescent moon standing on a trapezoidal-shaped element. The symbol is framed by two false-windows, placed at each side. The lower part is decorated by geometric elements, irregular in height and thickness according to the faces. Rows of squares in low relief are visible in the frontal face, in the other the squares are slightly carved in the surface. The upper part of the three sides is decorated with a cross patterns of oblique lines. Remains of reddish colour. Burnt traces on the top.							
Responsible		Date					
A.P.		18.03.11					
/A.I .		10.03.11					

Object Index Card

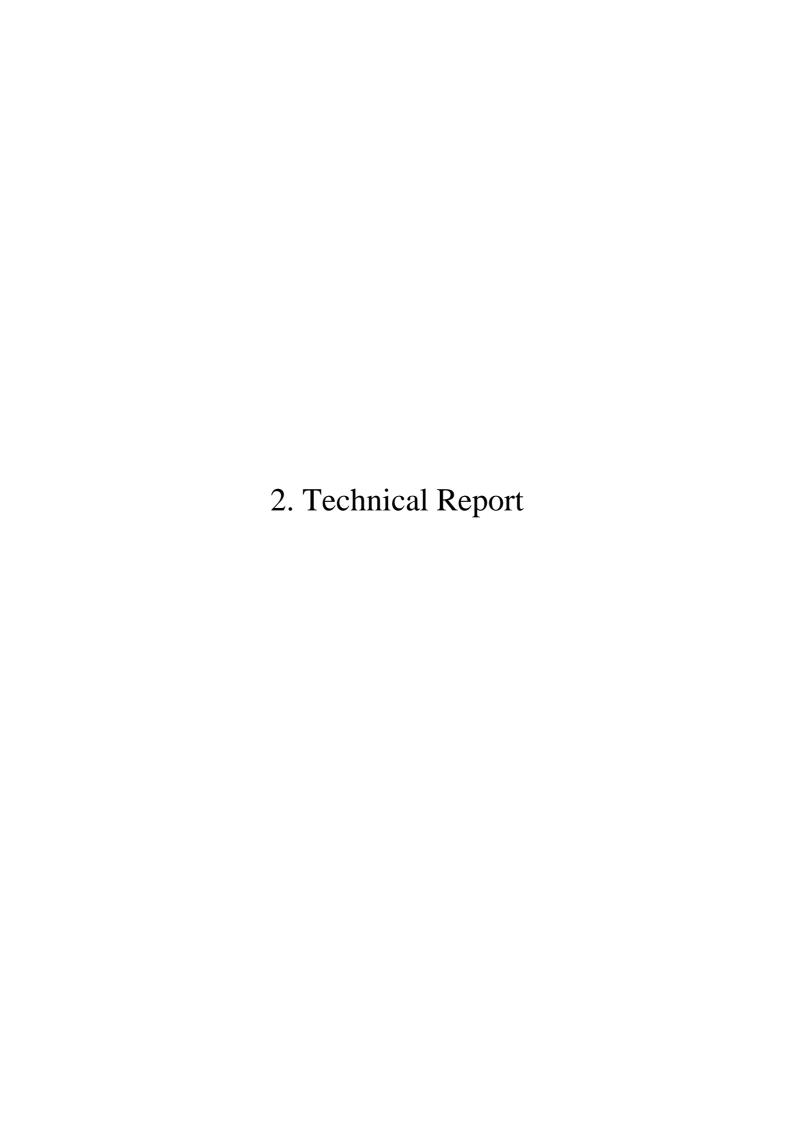
Registration Nr.				
SUM11A, US443,1				
S1719				
D				
Provenance				
Area A, street A156				
Drawing code Nr.				
X done by Martelli				
TD . 60 . 141	G4 . 4 P	M		CI
Definition	-	Measures		Shape
Statuette	Fair	1. 8.9		
		w. 7.1		
Material	Preserved part	h. 9.	1	Section
Limestone	Fragment	th.		
		diam.		
Description				
part of a human bust. T	element placed on the fr The arms of the figure are cating the spinal column	e joined un		
Responsible		Date		
AP		20.03.1	1	
		1		

Object Index Card

Registration Nr.			
SUM11A, US470,22			
S1673			
Provenance			
Area A, BA6, A64a			
Drawing code Nr.			
D. 6° . '4'	Ct. t. C	N	CI.
Definition	State of preservation		Shape
Mould (?)	Fair	1. 10,5	Rectangular
3.6 4 1 1	D 1 4	w. 6,8	G 4
Material	Preserved part	h. 2,3	Section
Steatite	Fragment	th.	Irregular
D : 4		diam.	
Description			
walls are straight. The Internal and external su	ar steatite mould, broken internal space is divided arfaces are well smoothe	in three contiguous rec	ctangular sectors.
Responsible		Date	
G.R.		05.03.11	

Object Index Card

Provenance Area H Drawing code Nr. Definition	SUM11A, US490,1			
Definition Ear-ring? Good Material Bronze and bone Complete (?) Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0.4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.	MB6/3			
Definition Ear-ring? Good I. W. h. 1 Material Bronze and bone Complete (?) Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations. Responsible Date				
Ear-ring? Good I. W. h. 1 The preserved part complete (?) Description Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.	Drawing code Nr.			
Ear-ring? Good I. W. h. 1 The preserved part complete (?) Description Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.	Definition	State of programation	Моокуумок	Chana
Material Preserved part th. Section Bronze and bone Complete (?) th. 1 Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.				Shape
Material Bronze and bone Complete (?) Description Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.	Lui iiig.	3004		
Bronze and bone Complete (?) diam. 1 Description Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.				
Bronze and bone Complete (?) diam. 1 Description Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.	Material	Preserved part	th.	Section
Composite object made of a bronze wire and a cilindric part made in bone. Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations.	Bronze and bone	_	diam. 1	
Complete bronze wire (d.max. 0,4), circular in shape and cross-section, with open thin ends. One end was found thread into a cylinder bone object (h. 3,2; d. 0,8; hole d.min. 0,3, d.max. 0,6), with surface well smoothed and some black incrustations. Responsible Date	Description			
	One end was found three 0,6), with surface well s	ead into a cylinder bone	object (h. 3,2; d. 0,8; ek incrustations.	
U.K. 11.U3.11	Responsible G.R.		Date 11.03.11	



2. Technical Report

Eng. Giuseppe Cecinato, expert in structural engineering applied to the cultural heritage, has been invited by the Italian Mission to Oman to have a general overview of the site.

The aim was to provide a general monitoring of the works, to estimate the situation of the operations already made and to plan the next interventions.

During his stay in Salalah eng. Cecinato visited also the site of Shisr.

The general estimate of Cecinato was good although he suggested some new improvements to increase the quality of the work and, thus, its duration.

These suggestions have been applied for the reconstruction of walls M23 and M19 and for M498.

He focused in particular on the mortar and on the arrangement of the masonry blocks.

According to eng. Cecinato the mortar not enough homogenous and so, not very compact and easily brittle. This is linked with the grain of the sand (the only kind available in Salalah).

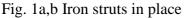
To avoid the brittle's effect, it was suggest to employ a sieve with a fine net: the sand, in this way, results more fine and, consequently, more compact and homogeneous.

About the arrangement of the stones, it was suggest to check the balance of the masonry blocks used for the reconstruction before the placement of the mortar, in order to increase the stability of the work. The procedure, also if takes a longer time for the correct choice and of the stone and for its modelling to fit in the right way in the place, offer a better result,

Eng. Cecinato was asked to make a schedule of the next interventions and two main works have been individuated.

The first one concerns walls M18, M76 and M277, in the western part of the Monumental Building. A preliminary intervention has been carried on during the campaign through the arrangement of three iron struts, fixed to prevent a worsening of the situation (fig. 1).







The second intervention considered urgent by Cecinato, has been focused in the corner between walls M23 and M19 and it was carried on and completed during the campaign.

The situation in this part of the masonry was particularly dangerous because the eventual collapse could damage the basins for the water running from the area of the well till outside the city wall. The procedure consisted in dismantling and, so on, reconstructing large parts of the two walls (fig. 2a,b).



Fig. 2a,b Corner between M19 and M23 before and after the intervention

Beside these two interventions, considered necessary to avoid collapses and damages to structures and peoples, IMTO's works have been focused in the southern side of the city wall with the goal to complete, before the end of 2011, the restoration of all the compartments placed in the southern side.

The preliminary step has been the archaeological excavation of all the compartments from wall M350 (restored in SUM10C) to the modern stair placed in the south-western corner (walls M351, M477, M496, M478, M479, M497, M498, M499).

The reconstruction involved walls M478, M479 and M498.

Wall M478
Wall M478 was in a very bad state of preservation. Both the facades have been reconstructed.



View of M478 from the north before the starting of the works



View of M478 after the excavation, before the restoration



View of M478 after the restoration (northern side)



View of M478 after the restoration (southern side)



View of M479 after the excavations (southern side)



View of M479 after the restorations (southern side)



View of M479 after the excavations (northern side)



View of M479 after the restorations (northern side)

Wall M498

Wall M498 was in a very bad state of preservation. The southern façade has been cleaned and then reconstructed.



Wall M498 at the beginning of the works



Wall M498 after the cleaning and before the restoration.



Wall M498 at the end of the works.

Mortar and sand

The proportions of sand, lime and colours at the beginning of the works were (for each wheel barrow):

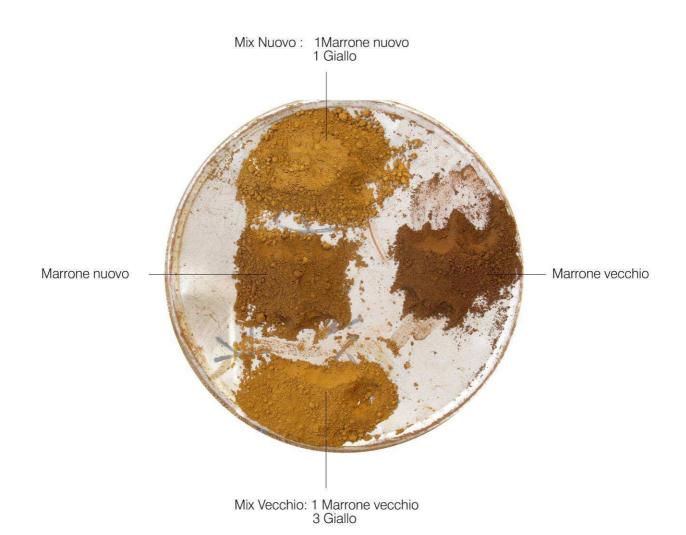
4 buckets of sand;

8 measures of lime (4,800 Kg)

100 gr. Brown colour

300 gr. Yellow colour

Because of the change of the brown colour available in Salalah we have been obliged to change the proportions:



3. Restoration of the sandstone basins outside the city wall
City wan

3. Restoration of the sandstone basins outside the city wall

Contemporary with the interventions on the masonry structures at the corner between M19 and M23, which have been dismantled and rebuilt – see above – IMTO with the collaboration of Gianluca Buonomini, carried on also a second intervention in the same area, focused on the consolidation of the sandstone basins placed outside the city wall.

The basins were in a bad state of preservation (figs. 1-2).

The deterioration of their conditions has been due to the rains (considering their position is not possible to imagine a covering), to the lack of a solid basement (they were just standing on earth) and to the movements of the masonry structures which caused also the ejection of the stones of M23.

The intervention has been developed according to the following procedure:

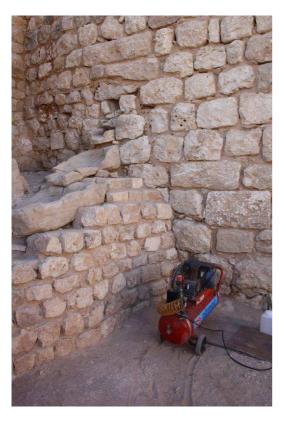
- the basins have been cleaned with compressed air (figs. 3-4);
- a solution of Paraloid 3% for the consolidation has been placed on the basins with brushes and syringes to permeate inside the fissures and the cracks (fig. 5);
- a special mortar used for restoration has been inserted in the cracks (figs. 6-7);
- a different mix of restoration mortar and mortar used for the masonry structures has been carefully placed at the base of the basins and in the fissures, to assure an uniform colouring to the structures and the basement (fig. 8-9);
- the basins have been brushed with soft sponges and the mortar at the base refined (fig. 10-11).

The intervention, photo gallery





Figs. 1,2 The basins before the intervention



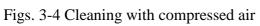






Fig. 5 Injection of Paraloid solution at 3%





Figs. 6-7 Preparation and placing of the restoration mortar



Figs. 8-9 Filling of the cracks and of the basement



Fig. 10 The basins after the intervention



Fig. 11 The basement after the intervention

4. Complementary works: enhancement of the site

4. Complementary works: enhancement of the site

During SUM11A some works linked with a better fruition and enhancement of the site have been carried on.

The modern wall dividing the so-called Monumental Building 2 from the platform in area F has been removed.



The modern wall



The area after the dismantling of the modern wall

The trench avoiding the collapse of one of the walls in BF3 has been removed as well. The top of the wall has been dismantled in order to proceed with the restoration (intervention planned for next July).



Square A20 before the removal



Square A20 after the removal

Two of the rooms placed at the side of the path for the tourists have been cleaned in order to have a better fruition of the ruins



5. Proposal for a new arrangement of the paths in Sumhuram

5. Proposal for a new arrangement of the paths in Sumhuram

The works performed during the last campaigns and, particularly, the excavations and restoration of the city walls along the eastern, western and southern sides, determined the necessity to re-think about the paths for the visitors, in order to offer a complete and enjoyable fruition of the site.

The proposal will offer the possibility to have a complete tour on the exterior of the wall and, moreover, the chance to have a charming path through the ancient buildings, walking on the ancient streets and entering in the ancient buildings.

The structure of Sumhuram, revealed in the last campaigns and during the on-going excavations, offers the unique possibility to have a real perception of an ancient town and it would be very important to give to the visitors the "feeling" of how was the architecture of a settlement in antiquity.

The project – fig. 1 - will be articulated in the following points:

- 1) removal of the modern stairway placed on the western side in order to proceed with the excavations and, eventually, the reconstruction of the south-western corner (now completely covered by the structure of the stairway);
- 2) creation of a path, linked to the existing, which allows to walk around the corner to be exposed (figures 2 and 3);
- 3) development of the new path along all the southern curtain. The path will be delimited by two rows of stones, one for each side, to suggest the direction of the visit and to invite the tourists to walk inside it, without placing other devices (walls/fences);
- 4) reconstruction of large portions of the southern side of the city wall, very badly preserved. We suggest to leave a gap in the curtain, where the masonry is completely missed, to allow the visitors to enter inside the city. Considering the length of the total tour could be useful to give the opportunity to have an access to the site also from the southern side.

Points 1-4 are supposed to be developed within the end of March 2012.

5) arrangement of the main entrance (fig. 6). Considering the large number of visitors and the architectural interest of the main entrance we suggest to create a device in order to protect the ancient steps and the channel placed in monumental gate.

In this way the entrance will be also easier for the people.

The idea is to place some wooden steps covering the ancient stone steps, in order to level the natural slope now existing, preserving, at the same time, the original structures.

The path through the ruins will be possible when the excavations of the area southern of Monumental Building and between the Monumental Building and the temple will be completed. It will be arranged with some wooden steps to fill the gap of the different exposed levels.

The removal of the modern staircase could be delayed after the reconstruction of the southern side of the city wall but, considering the results emerging from the last excavations and the discovery of a wall below it, it should be performed.

The removal of the modern staircase will make possible to follow the original perimeter of the city, showing the ancient south-western corner, and giving back the right and correct perception of the city, now partially faked by the modern addition.

