

IMTO – Italian Mission to Oman

University of Pisa

SUMHURAM

Preliminary Report

January – March 2010 (SUM10A)



PRELIMINARY REPORT (SUM10A)

January - March 2010

The first IMTO's campaign of 2010 (SUM10A), under the direction of prof. A. Avanzini, started on 21st January 2010 and finished on 11 March 2010.

The campaign could be considered an extension of SUM09C since, thanks to the active collaboration of Said al Mashani, it has been possible to proceed with the cleaning operations in the eastern and southern sides of the city wall also during the break of Christmas holidays.

The main goals of excavations were focused in area A (shrine A110, compound of rooms interpretable as "baths", building BA11, streets A156 and A80) and in the northern side of Monumental Building.

Maintenance works have been performed in area A, area F and area B.

The restorations activities have been carried on along the eastern side of the city wall (walls M439, M440, M454, M213) and in the northern part of the city wall (M179).

An intervention concerning the consolidation of the channel has been performed in order to ensure an appropriate conservation to the structure.

The excavations were conducted on the field under the direction of dr. Alexia Pavan by dr. Said al Mashani and dr. Michele Degli Esposti, with the collaboration of Emanuele Casagrande Cicci, Alessandro Fumagalli and Silvia Lischi.

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

Arch. Simona Rossi was responsible of the AUTO-CAD digitalization and updating of the plans.

The consolidation and restoration of ancient masonry structures have been done by arch. Riccardo Lovatini.

Arch. Christian Darles was guest of the mission from 30th January until 22nd February. His studies focused on the defensive structure of the city and on the area of the baths.

He draw some hypothetical reconstructions of the compounds of the "baths" and of the two main phases of the Monumental Building.

Dr. Michel Mouton was guest of the mission from 1st February until 8th February to study the pottery from Mesopotamia and from the Gulf area found on the site.

Prof. Marta Mariotti, dr. Riccardo Baldini, Tiziana Gonnelli and Giovanni Lippi have conducted botanical researches in Salalah from 20th to 26th February.

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, we would like to thank 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.

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Archaeological report

Area A: the shrine A110 (2nd period): further investigation (trench supervisors: Michele degli Esposti, Silvia Lischi).

During 2008B campaign, the trapezoidal room A110 had been excavated down to the level of floor US387, to which corresponded a general layout of the room clearly referable to some kind of cultic destination, further witnessed by the retrieval of three complete limestone incense burners, beside other objects which could be related to the same function (shells, worked and undressed stone burners). Remarkable was also the recovering of a fragmented limestone lion statuette (S1194) and of a full relief face (S1193), probably meant to be hung on the walls.

All these objects came from later fillings or destruction layer covering the phase finally reached in 2008B, that is the level from which excavation started during this campaign.

This corresponds to the laying down of the abovementioned floor US387, which actually represent just the latest of a series of superimposed floors, gradually raising the room's height and associated with corresponding modification of its spatial organization, also including the setting or elimination of different features.

A brief note needs to be made in here, in addition to 2008B report. There, the removal of US281 was accounted for, a thick deposit coming from gradual accumulation of loose soil inside the room, prior to its definitive collapse, which originated US247. A little sort of crescent-shaped platform, some 40 cm. higher than floor US387, stood between the door and the altar, apparently linked to US387 by means of two botchy made steps, retained by a semi-circular row of undressed stones and hosting on his top a rectangular stone basin (S1203).

This platform was not named at the time, because a few excavation was carried on after the report was finished. It is now named US393, sitting on top of US387.

Thus, the initial situation for present campaign was of a room showing benches on all its sides, with an altar almost in the south-eastern corner, and a roughly built, almost crescent-shaped wall, linking one side of the U-shaped altar to the bench in front of it (see plan Report SUM08B).

We will describe the modification that the shrine underwent starting from the most ancient phase, bearing in mind that the shrine was erected on top of massive fillings obliterating the room belonging to the more ancient phase of the town, and exploiting earlier walls subject to different restoration and integration works, for which we will also account.

Phase A

What was made definitely clear during this campaign, although already envisaged in 2008B report and further evident after the continuation of works in Area A, is that the crest of walls M247 and M249 only belonged to a very late phase of the room, and the masonry they stand on top of will be thus given new identification numbers.

Hence, the shrine belongs to what can broadly be defined as the second main period of the city, sitting on top of massive deposits obliterating the structures of the first.

That said, the original layout of the shrine did not include these late walls "capping": the room was initially delimited by walls M290+M291 (west), M248 (south), M403 (east, under M249) and M402+M404+M423 (north, under M247). The north side thus results to be closed by a more ancient wall M402+M404, with a passage in it, walled up by means of M423, that was first spotted from the north side, where it was clear that it had been realised placing the added stones against the soil already accumulated north of M402 (namely, US306, US396 and US403, see report for the adjacent area).

The entrance (elevation 28.66), on the west side, was marked by a two low steps threshold, made up of rough stones bound with clay.

Unfortunately, the remains of this phase are far from well preserved, much more disturbed than those pertaining to the following phase B.

Traces of a plastered floor (US391 at point 28.82), were visible just in a few points under the later benches, on the eastern side and in front of the U-shaped altar M419; more remains of this plaster showed up only after the removal of the later benches and of the main part of the mud-brick structure M409, that resulted to be enclosed by the plaster and thus has to be dated to this phase. In this wall the stone vessel, S1486, was found. Though some re-plastering of M409 took place during following phases, we can suppose that it had in phase A the same layout witnessed in phase B (see below), and that the plaster covered with continuity the structure and the room's walls (at least the eastern, M403).

Feature M409 displays a mud-brick structure, with grey clay mud-bricks laid down with a brown clay binder, affording the structure with a remarkable strength and compactness. Some little stones are inserted amidst the mud-bricks, and three roughly squared stones almost define the base of its western side, namely where the only traces of US391 have been retrieved against it. As already noted in 2008B, on top of this feature stands a kind of little tank, defined by a lowering of the mud-brick surface and marked by an irregular rough stones frame. It obviously was not meant to host liquids, but neither traces of burning, which one could expect, were retrieved.

US391 is a quite thin layer of plaster, 1 cm thick in plain areas, thickening where it embraces the altar's base. This plaster is also connected with the wall's plastering still visible on the south-eastern corner of the room, namely against walls 248 and M403; there is actually no discontinuity between the floor's and the wall's plaster.

The altar is made up with squared sandstone and more irregular limestone blocks, set in a lime mortar equal to the one used for the walls and floor. The shape is that of a right-angled U, with the two stems pointing north. Its base is composed by two parts: the left half constituted by a stone covered with mortar, while the right part filled just with mortar. The base reaches a height of 18 cm about the floor. The backside of the altar has an external face made of stones and an internal filling, adjacent to M248, made of mud-bricks covered by a single row of stones.

One of the stones composing the external face an architectural element, S1531 (see object card), decorated on a side which was joined with another stone and thus hidden. The sides and back of the altar reach a height of 85 cm above the floor.

Phase B

Associated with the same perimeter layout of the previous phase, and resting on the scanty remains of the plastered floor US391, stand the benches M411 (north), M412 (west), M413 (south), M414 (east), all set against the corresponding perimeter wall, as well as feature M409, which keeps standing. All these benches are realized with un-hewn limestone blocks, bound with clay and plastered on the top and sides (M414), placed on top of a mud-brick setting. Benches M411 and M413 actually have an L-shaped plan, the former being, at its eastern end, partially leant against the feature M409, and the latter following walls M248 and M291's corner. What initially appeared as a separated squared plastered structure in the north-west corner of the room, actually revealed itself as the corner of M412-M411 benches.

A structure similar to M409 is shown by another little sort of wall -M417-, erected between the altar eastern side and wall M403. Its mud-bricks directly cover the previous phase's wall plaster, and are The floor associated to this phase is US390, a well laid, up to 4 cm thick, compact layer of lime-base plaster, which shows gravel and rare pottery fragments used as temper. The layout of the plaster, which evidently incorporates the footings of the mentioned benches and of the two structures M409 and M417, stands to witness the contemporaneity of all these structural elements, with M409 remaining in use from the previous phase.

The threshold was kept in use as it was in the previous phase.

A dressed limestone block (S1533), which shows four shallow steps carved in its front, was leant against the front of the altar during this phase, set in a mortar that even in this case is equivalent to the one used for the floor. The floor plaster was laid to include this stone too, whose width results

inferior to that of the altar. Its upper edge shows evident breakings, hidden by plaster: all this points to a late reuse of what was probably a lintel belonging to an earlier building.

Two other features characterize the area in front of the altar. The first is **M416**, a low rectangular “hump” which runs from the end of the altar’s western side towards the opposite side of the room, ending on the same line as the bench M414. We would not call this feature a bench, due to its extremely reduced height; by the way, its structure, made up of grey mud-bricks bound with clay, closely resembles those of features M409 and M417, while its plaster is actually just a continuation of US391, which enclosed it.

The other, peculiar feature is a squared pillar (**M418**), aligned with M414’s and M416’s ends. It is constituted by a base of undressed stones, surmounted by a dressed sandstone parallelepiped; bound with mortar, its footings are enclosed in floor US390.

That this pillar was part of the cult taking place in the room is made evident by the presence of four holes, placed between the pillar and the altar; a suggestive hypothesis is that they were meant to host some kind of removable altar/offering table, possibly in bronze (traces of bronze, of poor consistency, have been retrieved in two of the holes), thus allowing an easy displacing at the moment in which the room’s layout was changed.

The plaster of floor US390 also covers a hollow pit located between the bench M414 and the altar. No evidence for its use has been recovered.

Phase C

The first intervention linked with the new layout of the shrine was the digging of a sub-oval post-pit almost in the middle of the room (**US395**). The pit, originally 68x50 cm wide (main axis), was dug in order to lay down a stone at its bottom, meant to serve as a base for the actual post. The diameter of the latter can be reconstructed from the width of the actual post-hole, that is visible on the plaster floor **US389**, laid down above US390, the filling associated with floor US390. Actually this filling seems to represent the preparation for US389, rather than the life-time accumulation above floor US390. US390 is a 8 to 15 cm. thick layer of brown soil, medium compact, with very few materials included. Remarkable is the retrieval of one architectonical element already mentioned and of another tool of stone (S1496).

Floor US389 thickness is around 2 cm, and the composition appears to differ from floor US390 in that it has a higher content of gravel used as a charge for the mortar, thus giving it a granular aspect in contrast with the plainer surface of US389.

The entrance still exploited the two steps threshold of previous phases, although with the laying down of US390 and floor US389, the lower step was now resting almost at the same level of the floor.

Some modifications occurred on the internal structures’ layout. A new bench (**M420**) was built against M409 southern face, and linked to the eastern bench M414 by setting a wide squared limestone in the void between the two older features. At its western end it was also linked to another new bench, **M415**, built on top of the plastered hump of phase B (M416). Both the new benches had a structure made up of rough stones (both lime and sandstone), bound with plaster. They were also plastered on the top, but later renovations caused the removal of this plaster, of which only minimum portions survived.

A second “pillar”, **M421**, was set between M418 and the altar. It was made of unhewn stones set in mortar, sitting on top of floor US390, topped by an undressed, irregularly circular limestone block.

The rectangular space now defined by three benches with the altar on the fourth side, was covered by a new layer of compact plaster (**US392**), which also embraced the two pillars. It also stood on top of US390 (up to 14 cm thick in this area), even though even in this case this layer is the setting for the upper mortar rather than a life-time accumulation on US390. The plaster defined a sort of hollow all around the two pillars, in front of the benches, and completely covered the dressed stone S1533 in front of the altar.

On the western side, both the new bench M415 and the altar were enclosed by US389.

It is possible that some renovation also was made on M409, possibly with the addition of a couple of stone at the (upper) west corner, but there is no clear evidence on this.

The last important feature added in this phase was a second plastered pit, adjacent to the one already visible in phase B, set against the altar's west side. The plaster floor US389 clearly covered the pit following its morphology, as well as it did with the older one, the new pit being obtained by not laying down US390 fill in this spot rather than by digging.

Phases C2 and C3

This sub-phases see no major change in the general layout of the room. The actions characterizing them consist in the laying down, only in places, of new layers of mortar. This occurred in particular in the area of the two pits, that were re-plastered at least once, with a general raising of the heights; against the corner between the benches M411 and M415; in the area in front of the altars, where the posing of two layers of mortar caused the reduction of the hollow around the pillars, now almost constituting a low platform from which the pillars top emerged.

Some re-plastering also took place on the top of the eastern bench M408, but no sound face was retrieved, due to later works.

Phase D

The general layout of the room did not undergo substantial modification in the shift from phase C (and sub-phases) to phase D. Nevertheless, a few intervention clearly mark this moment of the shrine's life.

The more significant is the covering of the two pits on the western side of the altar: the southern one (against perimeter wall M248) was completely filled by loose mortar and loam, and topped with a ½ cm thick, plain layer of compact mortar. The other one was partially filled by the new floor laid down in the room, **US388**, and shows an irregular shape as a result of such intervention.

The new floor **US388** was laid directly above the former floor US389, with no setting and no accumulation between the two. It considerably differs from the more ancient floor of the shrine, and its quality is neatly worse the theirs. Not a uniform plastered floor, it was made up of compact brown-greyish loam, intermixed with mortar, mostly pulverised, but which afford anyway the floor with a good compactness. This floor filled the gap between the previous and the entrance threshold, that was since no more in use.

A second main plaster layer was laid down in the area in front of the altar, surrounding the two pillars and covering the space between these and the benches, as the previous paving did. This floor, US398, was whitish, 5 cm in thickness (average), very compact, with almost no charge added to the mortar.

With the laying down of this layer, summed to the previous ones which characterised phases C2 and C3, the two pillars M418 and M421 lost most of their visual impact, now being not more than two low steps within the mortar surface.

Other small scale works were made in places. These included some repeated addition of uneven mortar layers on top of the bench M414, at the corner of which a little decorated limestone block (S1494) was placed, leant against the eastern side of the altar. Another decorated block was laid down near the mentioned one, west of it and west of the east side of the altar (S1495). Both the little blocks bore the high-relief image of a snake, and surely derive from a reuse of elements coming from an earlier building.

Other local addition of plaster were made against the west side of the altar, where they partially covered the earlier pit and obliterated the bench M415.

Here, what could be a shallow post-hole was retrieved (**US402**), partially breaking through the remains of M415. For sure, in this phase the post set in the post hole US395 was no more in place; this is witnessed by the fact that floor US388 covers the former post-pit, which anyway was not accurately filled back after the post removal, thus giving rise to a depression in the middle of the

room. Given this evidence, it would be tempting to envisage in US399 the actual new setting for the post clearly meant to sustain the roof ridge.

This also seems to be consistent with the fact that now there was no more an actual bench in the place of the earlier M415, but rather an uneven connection between the main floor US388 and the altar zone floor US398.

Phase E

Substantial changes occurred in this late phase of the shrine's existence.

One of the most important facts to note, is that the perimeter walls underwent a wide restructuring, with the capping of some of them by means of M247 and M249 (see above).

That meant that the overall plan of the shrine slightly changed, in particular with a narrower north-south width.

Wall M247, capping on top of the western part of the north wall, stands with its southern face more inside the room than the former wall, thus partially covering bench M411 and, most important, the new bench laid down on top of M411, namely **M405**. In this bench S1488, S1493 were found. This is one of four new benches built upon the earlier ones along the perimeter walls of the shrine: a part from M405 (north), **M406** (west), **M407** (south) and **M408** (east). All these benches were made up with rough stones, without a proper binder, resulting extremely uneven and botchy. Bench M420 seems to remain in use, and we cannot exclude a raising up of its level in the same way as the other benches, with the stones being later collapsed due to poor construction.

Another, extremely irregular bench was erected on the spot previously occupied by M415, joining M409's west corner with the altar west side (**M410**). Its structure share the same inaccuracy as the other benches, and its state of preservation is quite poor. The supposed post set in hole US402 during the previous phase, must have been removed prior to this latter bench's building.

This phase's floor is **US387**, an about 2 to 15 cm thick compact layer of brown loam with an abundant quantity of mudbricks lumps mixed with it, which somehow level the hollow that characterised the earlier floor US388.

In the altar zone, no new floor was laid, and US398 was kept in use; hence, this late phase again displays an almost U-shaped, continuous bench around a plastered area in front of the altar, just like during phases B-C3.

One last note on M409 structure. Although it is proven that the structure itself was erected already during phase A, the kind of niche standing on his top is difficult to associate with a specific phase; somehow, the inaccuracy of its stone framing would suggest a non-contemporaneity with phases A or B, but rather some late reshaping.

Phase F

The very last phase that could be hypothesized for the shrine, is the one already described in 2008B report; however, the preservation of structures doesn't allow a level of certainty on it.

Room A110's early arrangement (1st period): the original layout of the shrine

After completing the removal of the earliest structure related to the shrine, excavation was carried on within the wall delimiting room A110 until the first occupation floor of the area was reached, at the same height than in the adjacent east part of area A.

The first layer retrieved and dug out under the remains of floor US391 was **US394**, a massive deposit of brown loam, with grey mud-bricks lumps interspersed in it, a few mortar (S1518), nodules and several animal bones. A fragmented limestone incense-burner was retrieved (S1503, S1504) in this layer, beside a few pottery shards.

One pit was identified, dug against the corner between walls M424 and M402. It was dug seemingly to place a big irregular limestone, probably meant to afford some strength to the corner. The pit was then covered with the same grey clay used to make mud-bricks, before M409 being built upon it, further strengthening the walls' junction.

Two other shallow holes, one beside the other, equally filled with grey clay, were retrieved under the spot where M416 was subsequently built, without a clear identifiable function.

The relations existing between M424 and M402 are of actual interest, since they witness a number of different building phases in the area lately occupied by the “baths” instalments. No actual corner exists between the two walls, and they were apparently connected in a late phase, with stones placed just to link the capping (M247-M249). Anyway, a corner can be envisaged, dating to the first layout of the walls M403 and M402, before their collapse led to the erection of M424 and to the little “sheathing” of M402’s eastern survived front (**M434**).

The removal of US394 brought to light the supporting structure for a one-flight stairs – **M435** -, leant against M291, with four preserved steps.

Under US394, another deposit **US405** was retrieved, only in the eastern side of the room, characterised by a high quantity of ashes, charcoal (sampled), and bones. Abundant fragments of plaster were also visible in the layer together with a good amount of mud bricks. A fragment of a limestone mortar (S1522) came from this layer, as well as a carnelian bead (S1501), several pottery shards and various objects (S1505; S1507; S1508; MI159; S1519; MB622; G140; G141; MI160). To be noted among the objects is the finding a stone snake-shaped object (S1529).

The sequence of discovery of plaster and mudbricks suggests a layer of collapse. The fallen structure can be thought to be present only in the area where the later altar of the shrine’s 2nd period was built. It probably had mudbrick walls and a cover of plaster and straw. A further confirmation of the cover is given by the discovery of a bronze lion-shape appliqué (MB625) in the layer of plaster.

These two latter layers sit on top of what appears to be a floor, **US406**. This floor is not very well preserved although in some spots still visible, especially near the walls above the benches. The plaster is not well laid and it is mostly present only in places, while the floor itself has a thickness of around 1-2 cm maximum.

The landing of the stairs is on top of US406, as well as the walling up of the north side door (M405) seems to start from the same level, above the earlier threshold.

Floor US406 in the north stands on top of a preparation made up of rough stones amidst quite compact, light brown loam (**US416**). In the south US416 is still made of quite compact, light brown loam, but without stones. An architectonical element (S1532) came from this layer as well as object (S1509, S1526, S1530, S1532, Co628, Sh358, G142).

This layer, around 20-25 cm thick, fills the space encircled by stone benches, sitting on the packed earth floor not very well preserved (**US416fl**). This floor sits on the first plastered floor found inside the room, **US417**. This plaster floor is very well preserved in the north space between the benches while is poorly conserved between the southern benches.

Given this stratigraphical evidence, four phases can be envisaged for the shrine’s layout, within what can be defined as its first period of occupation, prior to the massive raising of occupational levels finally leading to 2nd period phase A (see above). These four phases can be described as follows:

Phase A0

The first phase of the little shrine is characterised by the presence of benches along the north wall (**M445**), until the entrance towards A152; along the east wall (**M446**), continuing under structure **M449**; along the south wall (**M448**) and finally in the middle of the room (**M447**). The floor in this phase was plastered (**US417fl**). The plaster, well preserved in the north wall, between M445 and M447 (27.79-27.74), has vacancies in the south wall, between M447 and M448 (27.75).

The benches along the walls are composed of single stones laid crosswise one next to the other, without mortar bedding. Mortar here was used only to cover them with a thin plaster layer, which probably joined the floor where the stones were inserted. The central bench is instead two stones

thick and facing M445 and M448. The filling among stones is just earth. Also this bench is covered by a thin plaster layer. Structure M449, in the south east corner of A110, was built later but it's to be considered of the same phase. This structure seems to be placed over the bench. It's composed of well square-shaped big stones located along the borders. When excavated these stones contained a quite homogenous filling of small and medium size stones. This rough amass of stones could be as well of later construction than the partial spoliation of the altar. At both sides of the structure, 20-30 cm over the benches, there are two little plastered basins (l. 66, w. 42). To this phase belongs also the 4 steps platform named M435 and laid on M290. The threshold of this phase is at a height of 27.95.

Phase A1

In this phase the plaster floor (US417) was again in use as well as the benches along the walls and the central bench (M445, M446, M447, M448) and also structures M449 and M435. The construction of **M451** in the south east part of the room can be considered belonging to this phase. M451 is placed in front of M449. This new bench is not different from the other in its structural system: it's composed by single stones laid crosswise one next to the other, without mortar bedding. To be mentioned is the fact that two of these stone had handwork marks and grooves on their surface, maybe to be ascribed to a reuse from the earliest phase. The building of this bench (M451) aimed to create a plastered basin at M449's feet. The plaster covers the base of structure M449 and the inside face of M451.

Phase A2

This phase begins with the laying of a pressed earth floor between M445 and M447 and also between M447 and M448. This latter floor is better preserved. This floor (**US416fl**) was not thicker than 3 cm and was made of compact brown loam, though easily removable.

The round benches **M443** and **M444** are in phase with floor US416fl. The first one was adjacent to M451 and placed between M447 and M448; the second, to the west, was adjacent to M449 and located between M445 and M447. These benches are laid next to the pre-existing ones and they're over floor US416fl. The examined benches are composed by roughly cut stones of various size. They're laid one next to the other to make up a good surface.

On the south side of the central bench, M443 smoothes the east corners between the other benches (M447 and M448). M443 runs towards the threshold until it ends with its last stone at the first step of M435. Stones probably belonging to the earliest phase of the shrine were reused in M443. Among these stones the most relevant are the offering table (S1538) and the pillar with snake decoration (S1539), found in the corner between M447 and M451. To this phase can be ascribed the placement of the big square stone lying at the altar's feet and in the middle of the basin between M451 and M449. For its type and craft, it even seems to belong to the structure itself (M449). Once placed it was used as border of the basin, making it smaller. On the opposite side, in the M451-M449 south east corner, a pit (**US420**) is made, passing through the plaster

Phase A3

The previous phase ends with the rise of the room floor through the accumulation of **US416**. The accumulation is compact and dark brown and has a thickness of about 10 cm. This layer fills the space between the two benches, over the pressed earth floor US416fl, permitting the laying of the new plaster floor **US406fl**. This floor is not well preserved. Lenses of it can be found all over the room near the walls and the benches. For this reason it probably completely covered all the pre-existing benches. In this phase structure 435 is still in use, but without a step, which was covered

when the floor was raised. Structure M449 seems to be still in use too, while the basin at the structure's feet is filled with plaster and rocks and then covered by the new floor.

This floor, at a height of 28.09, is to be related with the door (28.05) opening towards A152. Also the basin in M449 south east corner is rebuilt in this phase, reusing an architectural element (S1540) belonging to a previous phase to divide the basin in two and lay the plaster.

Layer **US405** seems to lay directly on the plaster floor (US406fl). It doesn't cover homogeneously all the room: it's mostly concentrated in the south east zone, under the place where the altar will be built during the second phase. Next to the east wall, beyond structure M449, there's a big concentration of charcoal and ash, which are not to be found anywhere else. In the remaining floor space instead, there's a series of plasters of different thickness, but hardly belonging to the floor plaster. In fact it looks bumpy and has various traces, maybe caused by a perishable material covering (samples).

It's to be noted that this layer reaches neither the north wall nor the western. Besides, two decorated plaster fragments were found in this layer. Given the neat and clear stratigraphy of the layer (plaster-mudbricks) it seems possible to identify it as a collapse. Anyway, after this layer the room flattens, the door leading to A152 is closed and the big layer **US394** covers everything. The room is then given a homogeneous quote, so to permit the laying of a new floor (US391) related also to the external phases of the road. The room threshold is obviously raised (28.66).

Linking area A and Area F: excavation between M17 (MB1) and M247

In this relatively narrow area, the removal of archaeological deposits started with what had been named US306 (equal to US80) in 2008A.

The removal of this US brought to light two new walls, **M400** and **M401**, the first parallel to M247, the latter perpendicular to it, connecting M400 with the southern wall of the Monumental Building (M17). Thus, two new spaces were defined, plus an open area west of wall M401.

The two new rooms were named **A151** (within M17, M401, M400 and M270), and **A152** (defined by walls M400, M274, M402+M23, M270).

Room A151

Between M17 and M400, the **US306** seems to reach a deeper level than in the adjacent spaces. This layer has a sandy reddish matrix, with coal, ceramics, plaster, shells (Sh356) and bones inside. Fragments of bronze and a coin (Co618, Co617) were also found. Other items found in this layer are stones (S1491, S1502).

Under US306 a plaster floor, named **US306fl** (28.46), was retrieved, with its preparation. This floor seems to be connected with the stairs leading to A109 and with the platform called M422, although its westward collapse hinders a clear reconstruction of its connections with adjacent features.

Just below the preparation of US306floor there's a new floor of plaster (**US408**), thinner than the former and likewise collapsed. Beneath this floor stands a further one, in direct contact, without any preparation. Given the absence of any accumulation layer between the two floors, it seemed appropriate to give the same number of US. Only one object was found in this US (S1490).

The plaster of the earlier floors is different from the later ones. In fact, US306floor is composed of a very compact, uniform plaster, with small dark inclusions. The two floors, called US408, are instead made of a much less cohesive, non-uniform, plaster, with vividly colored (yellow, red, green) inclusions of medium / large size. Samples n.21-22 were taken from this plaster.

Under US408 stands **US409** (28.16), a layer of not very compact earth, with a sandy yellow-reddish matrix, containing a few bones and pottery shards (C120).

A change of layer had been noticed when the excavation reached the level of the space between M422 and M400. The work was then stopped.

Room A152

Between M400 and M247, a layer similar to US187 (=309) has been retrieved, although the physical separation imposed us to name it **US396**. The layer was distinguished from US306 due to

the remarkable quantity of crumbled mudbricks present in its structure. This layer seems to be connected to no living surface, and no wall was laid down on top of it. In this layer MB605 and S1499 were found.

The underlying layer was **US403**. It differs from the previous layer by virtue of a darker colour and has a crumbly texture, with the presence of small stones like those used for the preparation of floors. A large quantity of charcoal and animal bones was found in this layer, from which also came S1497. In the north east of the room an ash lens was spotted out, directly resting on the underlying floor **US403fl** (28.01). This floor consists of a well-preserved plaster and presents two similar anomalies, one in the north east and the other in the south west. Both consist of plaster, probably subjected to heat and hence baked. Similar spots can be seen in the earliest floor in A110 (US417fl). Floor **US403fl** is contemporary with the passage between this room and A110, passage which was walled up by means of M405.

Open area west of M401

Under US306, US187 was obviously retrieved in the space west of M401, where it had only been excavated west of M18's face, and thus left visible in the exposed section. The layer showed no different feature from what already recorded in previous campaigns.

Actually, the stratigraphical sequence of the area as a whole resulted consisted with the one reported in previous campaigns and visible in Area F eastern section – SUM2009A.

Its removal brought to light a new stone structure, **M422**, possibly a one-flight staircase, leant to the MB's southern wall.

Under US187 stands its floor (US187 floor=US309 floor). Although it doesn't seem to be a well laid down floor (quite compact, greyish brown loam with mudbrick lumps and scanty bone fragments), the presence of three pits cutting through this layer points to it being an occupational surface.

These three pits have been defined as follows: **US399**, a sub-circular, about 25 cm deep pit located against M274 and the south section of the excavated area, as currently left. Hence, the filling of this pit is still visible in the mentioned section. The pit was filled by a grey compact loam, containing a remarkable amount of charcoal and lime-based mortar (both dispersed in little crumbles, almost pulverized), several animal bone fragments. Only rare small pottery shards were retrieved in the pit. The second pit, **US400**, located in the space between walls M400, M401 and M422 was filled by brown crumbly loam, and showed a depth around 30 cm.

The last, wider pit (**US401** - little less than 1 m.), had already been spotted in previous campaigns, though no clear limit was traced. It stands in front of M422 and was partially dug out in 2009A, when only the eastern part was left, exceeding excavation limit. Its structure has been better defined in the current campaign. Its filling shows two different compositions, one against its walls, and the other in the its central part (namely, two fillings could be distinguished, though both clearly pertaining to the same action). The external part of the filling showed a greater compactness, given by the high amount of lime (disaggregated mortar), with scanty traces of brown loam intermixed. The central part of the filling displayed an inverse lime to loam ratio, thus resulting looser, further containing small shell fragments and medium size stones. In correspondence with this pit's perimeter (above the more compact filling) some limestone blocks were retrieved, with a layout (circular) that would suggest them being fallen inside the pit, when this was already almost completely filled up. Among these stones stood a 80x45 cm wide stone slab, probably collapsed from top of one of M422's steps. From the pit came a roughly worked limestone incense burner (S1482).

The last layer dug out in the area was US313, defined as it already was in previous campaigns: brown-beige, semi-compact loam layer, with pottery shards, shells (and fragments) and animal bones. It sits on top of street A80.

The removal of this latter US allowed the understanding of M422-M276 relations, with the former being linked to the latter, if not being covered by it. This could point to the contemporaneousness of M422 building with the renovation of MB's west side by means of the "sheathing" wall M276.

Excavations in area A, the new building BA11 and the street A156 connecting area A and F (trench supervisor: Alexia Pavan).

SUM10A excavations in area A have been carried on with a double purpose. The first was excavating the new building BA11 down to the first occupational phase and the second was linking the two main areas A and F, following the streets A156 (southward from room A110) and A80 (westward from A110), placed in the connection point between the two areas.

Building BA11

The excavations carried on during this campaign together with the data collected in the previous seasons (see SUM06B, SUM07A, SUM07B and SUM08B reports), let us to single out four main occupational phases for building BA11.

First phase (see sketch n.1)

During the first and most ancient phase the building was slightly trapezoidal in plan and its ground floor consisted of three main rooms (A108, A85, A153) together with the small premise A154.

The overall external dimensions were 7.10x 9 m. *circa*.

Its outer walls were M17, the Monumental Building's southern wall, on the northern side, walls M191 and M425 on the eastern side, wall M426 on the southern side and M430 with M237 on the western side.

The staircase M436 made from three steps and a basement and placed in room A153 at the corner between walls M193 and M425, shows that the building had two storeys.

The general measures of the staircase were 163x114x97; it should be provided with a parapet and probably an upper ramp made from mud-bricks (see also US411 below) while the basement was made from sandstone masonry blocks of medium-big size.

The entrance to the building was located between M430 and M237. The threshold, which incorporated on its surface also a fragment of millstone (left *in situ*) has been called M450 with the aim to distinguish it from the other thresholds related to the late occupational phases, but it's part of wall M430 which represents the basement of BA11. It's placed at point 28.06.

The floor of the room in this first occupational phase, i.e. US421 floor, was reached at point 27.97 *circa* and it was made from hard packed grey loam. It's rather poorly preserved and was directly on top of layer of chips which has been used as foundation filling (here named US413). Connected with floor US421 and the cultural deposit above it (10-15 cm in thickness) we found the following objects: Co631, Co632, the head of bronze nail MB628 and the iron stem MI161.

This situation was brought to light just in the northern half of the room A153, while in the southern part we noticed a very disturbed stratigraphy with the foundation filling covered by a soft and greasy layer with organic matrix and a noticeable quantity of charcoals connected with the presence of a fireplace placed along wall M425, near by the staircase M436 and with an other fireplace (not numbered) near wall M428.

Also if they have been built later than the other walls of building BA11, walls M428 and M429, delimiting the small room A154, belong to the first constructional phase too.

They tie on each other but they lean to wall M430 on the west and to M426 on the south.

The most interesting feature connected with room A154 (internal measures: 1.18x0.72 m), is a small door (60x82 cm), placed in M426, visible just from inside room A154. Its external face has in fact been walled up and covered with a thick layer of plaster.

No floors have been found inside the room but just the foundation filling with a thick deposit above (see below). A storage room or a tower could be the possible interpretations of the function of the room.

This first occupational phase, marked in A153 by US421 floor, has not been exposed in room A85 where the excavations stopped at point 28.10, while has been brought to light in A108 where it corresponds to US284 floor reached at point 27.84 and the related cultural deposit.

The entrance to BA11 was from A133 where the first floor, i.e. US418floor, made of compact plaster, was reached at point 27.79. The floor is very bad preserved and actually is visible just in a rather small portion in front of the door. A squared stone, measuring 28x36x11.5 cm, probably used as a base for a pillar, has been found on the floor and it was partly covered by the filling between M237 and M253. The cultural deposit above US418floor (i.e. US418, top elevation reached at 28.20) was rather poor with some pottery (one shard with bitumen – sample n. 44), animal bones and sea-shells.

Contemporary to the first occupational phase of BA11, related with US418floor in A133, we discovered bench (?) M437, made of two rows of stones and built directly on the foundation filling. The measures of the bench are 366x41x52. It's made just from the external face with a not coherent filling. The southern part of M437 is not clear and actually it's covered by US425floor. The upper part of the bench is at point 28.28 on the sea level, the lower part is at point 27.81.

Second phase (see sketch n.2)

The second occupational phase of the building presents almost no changes except for a general rise of the floors.

In room A153 US407floor has been reached at point 28.40/28.20. It's made by a packed gray loam. It covers the lowest step of staircase M436 at point of 28.38. US410, used to level the surface above US421floor in front of the entrance to room A85, has been exposed. US410 is a very hard reddish layer with granular matrix which has been sampled to analyze the quite unusual composition (sample n. 41).

On the cultural deposit above US407floor the following small finds have been discovered: a fragment of stone vessel (S1506), a coin (Co620), a bronze ear-ring (MB612), pieces of bronze objects (MB613 and MB614), a fragment of iron rod (MI157) and the complete iron blade of a dagger (MI158). A scarce quantity of sea-shells in front of a quite a large number of animal bones and pottery (one shard with traces of purple – sample n. 37 -) have been found as well.

Along wall M425 a fireplace was found with remains of it scattered in all the southern half of the room, obliterating US407floor. It's US412, a greasy and soft layer with organic matrix and many charcoals (sample n. 29). A large number of bones and shells (with quite numerous *chlamys townsendi* without burning traces and, probably, used as plates or vessels) have been found.

The fireplace was roughly circular in shape and it was defined by un-dressed sandstone blocks and shore pebbles. A quartz pebble has been found among the materials (sample n. 33). Interesting shards of pottery (among them a good preserved deep bowl -US412,7-, and one with traces of purple inside –sample n. 30-) have been discovered together with the following objects: Co623, Co624, Co625, Co626, Co627, the bronze objects MB620 and MB621, the stone tools S1515 and S1516 and the fragmentary stone vessels S1513 and S1517.

On the top of the layer with the remains of the fireplace, below US404floor, we noticed, roughly delimited by the staircase M436 and the walls M425 and M426, a layer with undefined edges, US411, made from crumbled mud-bricks (point 28.89). The covered surface is 135x130 cm *circa* but the remains of mud-bricks are not compatible with a living surface; so it's probable they were connected with the upper ramp of the staircase which could have been made from perishable materials.

The second occupational phase of the building is attested in room A108 by US260floor, reached at point 28.12, and in room A85 by US214floor, reached at point 28.10.

The entrance to the building was from M438, a threshold made from two low steps of limestone and sandstone slabs with an average thickness of 10 cm, placed at point of 28.52, 10 cm higher than the living floor of the house (general measures of the threshold: 60x100x22).

The building overlooked A133 where the floor, in this phase, was represented by US414floor, reached at point of 28.60/28.67 *circa*. The gap between US414floor and the threshold M438 was filled by the presence of three stones, creating a supplementary step. On the cultural deposit above US414floor (i.e. US414), sea-shells, animal bones and pottery (one shard with bitumen – sample n.

42) have been found together with a fragmentary incense burner (S1524), a whetstone (S1525) and a fragment of bronze plaque (MB624).

Below US414floor, the layer US415, with a variable thickness has been found in all A153 (elevation of US415 in correspondence with wall M254: 28.61). US414floor, made of packed earth, was very bad preserved and in many parts it's not recognizable, while it's clearly visible the change of stratum between US414 and US415. US415 seems made of gypsum (sampled), and it has a granular, quite crumbly consistency. No findings have been discovered in the layer, attesting its function which was linked with the filling and the levelling of the room.

The removal of US415 let us to notice an interesting feature in wall M254, i.e. the partition wall dividing A128 from A133.

Here, in correspondence with the re-employed fragmentary basin brought to light in SUM09A during the excavation of room A128, we found a series of very carefully worked sandstone slabs, which seems fill the "gap" of the basin (see sketch n. 5); in other words the slabs seem to close one of the sides of the basin.

However, to understand the constructional phases of this wall we should remove the bench M437.

Regarding the second phase, it remains obscure the relationship between street A156 with US425floor reached at point 28.12 and the level in A133 where we reached a floor (US414floor) at point 28.66. The key is represented by the intentional filling US415 which stands above the accumulation US418 (elevation 28.20) and below US414floor. We can guess the existence of a floor (not preserved) above the cultural accumulation US418 which is supposed to have been at the same level of US425floor (28.12)

Third phase (see sketch n.3)

Considerable changes took place during the third phase, connected with the obliteration of some parts of the building (i.e. rooms A85, A108 and A154).

BA11 seems to have not been linked with residential purposes.

In A153 the occupational level, reached at 29.10/29.00, was US404floor, made from hard packed light reddish loam with white inclusions (plaster) and small gravels.

The staircase M436 was completely covered and there are not traces of threshold between A133 and A153, that means that the two rooms were characterized by a uniform surface (so US316floor in A133 is equal to US404floor in A153).

The following objects have been collected from the cultural deposit above US404floor (i.e. US404): the bronze rivet MB606, the bronze objects MB608, MB615, MB616, the iron object MI156, the pillar S1510 and the complete millstone S1511.

The presence of a millstone in building BA11 confirms the general trend emerged from all the private buildings in Sumhuram where at least one hand-mill has been found.

Stones of small size, pottery (one fragment in coarse and porous ware with an un-readable stamp), animal bones and sea shells, together with iron slags, characterize the matrix of US404, rather soft and reddish in colour.

About room A133, the cultural deposit above US316floor was already excavated in SUM09A; only the bronze object MB627 has been found during the removal of the floor.

In A133 two huge steps made from sandstone monoliths connected the higher part of US316fl (elevation: 29.17) with the lower part of it, reached at point 28.90.

The steps, as well as S1541, the sandstone basin standing on US316floor, have been removed during the present campaign.

The most interesting feature related with this phase was the obliteration of the two rooms A108 and A85. Here, in fact, we found a noticeable phase of accumulation: US256+US260 in A108 and US209 in A85, testifying a lack of occupation.

The same phase of accumulation emerged also in the small room A154 where we dug US423 (detectable from points 28.92 and ??). In this layer a large quantity of pottery, above all, storage

vessels and particularly amphorae, has been discovered together with many animal bones and a small quantity of sea-shells. The shards recovered in US423 appear very similar to those found in US209 (see SUM06B pottery cards); in particular we have been able to recognize in US423 some shards belonging to the cooking vessel US209,29, unearthed in SUM06B, confirming that the accumulation in rooms A108, A185 and A154 were the result of the same phenomenon.

The obliteration of rooms A108 and A85 seems to correspond to the enlargement of the building BA11 southward where the room A155, closed by walls M441 and M442, tied to each other, has been built. It's probable that the building of the new room A155 was contemporary with the walling up of the door in M426 and with its obliteration (US423). Considering the position of the room and its dimensions (very similar to those of A154) it's highly probable that A155 had the same function of A154 (storage room?). The composition of the filling of room A154, US424, was made from earth without any kind of stones, a few amount of bones and no pottery. One coin (Co633) has been collected.

For what concerns walls M431 and M432, we think that they could date back to this occupational phase but we need to enlarge the trench towards south to have a clearer idea.

Fourth phase (see sketch n.4)

Significant changes marked the fourth occupational phase, modifying radically the lay-out of the building. The entrance was now from the eastern side, precisely from street A75, through a threshold obtained in M425 (measures: 115x60). This is the reason the south-eastern wall was interpreted in SUM06B as made from two different compartments M425 and M196 (see wall cards) when, instead, it's just a single wall.

In room A153 the floor related with this phase was US206floor, while outside, in street A75, we have US22floor at point of 29.40. The two floors have the main composition – hard packed greysh loam mixed with lime mortar – and the same elevation (29.40 *circa*) ; they have been called with different names because they are attributable to different spaces: a room (A153) and a street (A75).

The sandstone seat S1534 (measures: 90x40x10) was standing on the floor, leaning, with the back, to M426. The former entrance from A133 was closed by wall M243, removed in SUM07B, and with an upper height at 29.97 on the sea level.

The living space in A153 during the fourth phase was considerably reduced because of the presence of the two walls M194 and M427 delimiting the small room A157. The walls, preserved for just one row of stones, probably were employed as basement for a structure in perishable materials. Wall M427 (measures 162x54x19 cm) was removed at the beginning of the campaign as well as M194 (measures 310x50x20) with an upper height at point 29.95; both of them were built not above US22floor but above a cultural accumulation of 20/25 cm *circa* (point of 29.60).

Contemporary to these two compartments were wall M242, brought to light in SUM07B in room A108 and wall M195, brought to light in SUM06B in room A85 and removed before this campaign. The first, related with US243floor, has been correctly attributed to the last occupational phase of this area, contemporary with US206fl in A153, while M195 seems to not have relations with any kind of floor.

The same grounding level, placed at 29.60, was reached also in room A157, closed by walls M194, M427, M426 and M428 and in A154, below 15 cm of surface accumulation.

In this phase room A155 was completely covered by street A156, US203floor, at point 29.33.

A possible connection between area A and F: street A156.

During SUM10A the trench excavated in SUM09A southward from the compound BA8, interpreted by arch. Darles as “baths”, has been enlarged towards east, southern from building BA11 and towards west southern from the shrine A110. The actual dimensions of the trench are 19x1.30 *circa*.

A trench along the western side of A110 has been moreover excavated to connect street A156 with street A80.

In area A, street A75, the exposed living floor is represented by US22floor, reached at point 29.32 near the “tower” and at 29.40 near wall M425, the eastern compartment of BA11. It belongs to the third constructional phase brought to light in area A.

According to the situation emerged after SUM06B excavations and after the cleaning works performed during the last campaigns, it seems that A75 was blocked southward by wall M431 but the lay-out of this part of the city will be clearer only after new excavations.

The excavations, however, showed that a floor with identical features (hard packed greysh loam mixed with lime mortar) has been found in A133 (US203floor) where it covered the two huge steps M331 (sup. elevation 29.35), and in the new street A156 where it covered M322. In the street it covered also the two walls M452 and M453 delimiting the surface of room A157 with its filling constituted by US426 (US426floor reached at 28.43).

Here the floor of the street has been disturbed by US203, already put in connection with US22floor in SUM06B and which transforms all the area in a garbage dump.

The presence of this kind of pit made difficult to follow in a proper way the elevation of 203floor varying from 29.33 until 29.45 southward from A110.

However it has been possible to individuate the floor also westward from A110 where it turns of the right at the corner with M291 following the perimeter of the shrine in A80.

In front of the entrance the street floor reaches the elevation of 29.55 and this let us to put in relation the last phase of street A80 with the last phase of the shrine, corresponding to US393(phase with basin and platform).

The elevation of 29.55 in A80 could be related with US302floor reached in the eastern part of the trench made in SUM10A at point 29.40 and let us to propose the equivalence US22floor in A75 = US203floor in A156 = US302floor in A80 reached respectively at points 29.42, 29.33, 29.55 and 29.40. The gap between the two points in A80 could be explained considering the natural slope followed by US302floor and already noticed in SUM10A.

The way connecting area A and area F in the previous phases is more difficult to follow because of the lowest levels of A75 have not been excavated as well as the area southern from M426.

However the enlargement of the trench southward let us to reach some interesting results.

Also if in correspondence with walls M431, M441 and M442, the situation seems rather disturbed, a good floor has been reached along the trench in correspondence with steps M331.

The floor, named US316floor, is graysh in colour, due to the presence of mud-bricks, and very compact. The pavement is clearly related with the first huge sandstone step connecting M254 with M430 and with the fragmentary basin S1541.

US316floor has been reached at point of 28.90 and it has been followed westward, southern from M322 and M243, turning on right, in A80.

The elevation is, also in this case, quite different: it's highest level in street A156 has been reached at point 29.10 in correspondence with M332 while it decreases in the corner between M243 and M291 at point of 28.95; in correspondence with the entrance to A110 it reaches the point 28.93, going finally down to 28.75 towards the northern part of A80.

The presence of a pit (US399) discovered during this campaign and placed between the southwestern corner of MB and A80 does not let us to follow in the proper way the floor in the northern part of street A80.

However a compact and greysh floor characterized by the presence of mud-bricks was noticed during previous excavations in A80 and A129 (see SUM09A) at an elevation of 28.40 (i.e. US309floor).

Considering the features of the two floors and above all the presence of mud-bricks it seems possible to make an equivalence between US316floor and US309floor.

The difference in elevation could be explained by the natural slope of area F.

We can remember, in fact, that all the strata brought to light in area F follows a noticeable natural slope towards west.

The lower limit of US80 for example, has been brought to light at an elevation of 29.20 southern from M276 (see sketch n. of SUM10A report), in street A129 at an elevation of 28.90 (see sketch n. of SUM10A report), while US80floor in square A20/street A20 was reached at points of 28.32-28.45.

This street appears to be in clear correspondence with phase F in A110, corresponding to the occupational phase where we found the incense burners.

The floor of A110 was in fact discovered at an elevation of 28.92 (point reached inside the room where the floor is at a lower level), while the corresponding floor on the street A80 at 29.00.

The most ancient occupational phase in street A156 has been reached with US425floor at point 28.18. Westward the street has been blocked by the two walls M452 and M452 delimiting US426floor but the floor US425 has been found again western from M452 at 28.51.

Also in this case it has been possible to follow the floor in A156 until the corner between walls M258 and M291 of room A110 where it turns right in street A80.

In front to the entrance of A110 it has been reached at 28.41 and it was connected to the threshold corresponding to phase through a step (higher elevation of the step: 28.61).

In the northern part of A80 the street follow a quite steep slope, varying from 28.41 – 28.71 – 28.21 until reaching the elevation of 27.88 which corresponds to US313floor (=US196floor) discovered in the previous campaigns.

Area A, investigations northward from Monumental Building (Trench Supervisor: Emanuele Casagrande Cicci)

M19 is situated northward from the Monumental Building, along the northern side of the city. The main goal of this campaign was understanding the alignment and the structure of M19. M19 on its northern side was not entirely exposed; before excavation the connexion between M19 and M15 and M23 was not clear; unknown was also its easternmost inner part.

The preliminary operation has been the cleaning of the terrace situated north from M19: the whole area has been flattened to create an horizontal level.

Besides, a S-N slope was modelled above M25.

Archaeological works started near the outer face of M19. During the excavations the western corner of M19 has been found. It was previously covered by collapsed stones and earth.

The corner is composed by large limestone blocks, but it's not well preserved (only two stones are visible). This corner has a recess of 1.52 m towards south: during excavation the other corner was not found, probably because preserved only at a lower level.

The second operation was cleaning the easternmost inner part of M19, covered by the "beautification" of M15 and filling of M16. During the removal of collapsed stones and earth it was possible to recognize the inner corner of M19, projecting northward for 0.80 m. The corner, slightly curved towards north, is composed by three limestone blocks with an irregular shape which were tied to the southern side of M15.

The eastern side of the outer face of M19 was unknown: the most important activity was the excavation of a trench along its northern side to check its alignment and its connexion with M15. A first trench (square shape, 0.83 m E-W x 0.53 m N-S) allowed to found three lower rows of M19, preserved 0.82 m below the rows already visible. The trench was then enlarged for 1 m towards north. On the eastern side of the trench was found a stones alignment which could be part of a structure leaning towards M19 (stones could also represent a collapse of surrounding structures). The L-shaped trench (max. depth 1.80 m; N-S width 1.40 m; EW length 1.74) was again enlarged also towards north and west near the northern face of wall.

Because of excavation activity it was possible to recognize lower rows of M19, best preserved than the upper ones. Visible are also differences in blocks sizes (upper blocks: 0.34 x 0.21 x 0.42 m; lower rectangular blocks: 0.55 x 0.30 m). M19 has 12 visible rows of limestone blocks for a total height of 3 m. Some of the blocks have traces of the same mortar used in M179 and M370. Along the westernmost part of the trench collapsed stones belonging to M19 were recognized. On this side, in fact, the wall is not well preserved.

M19 is part of the city walls and was realized at the same time of M15 and M23, together with other defensive walls. The structure may have the same outer shape of M135 further west (although not completely clear). Measures (total external length: 14.40 m; max. visible thickness: 2.86 m) and three inner corners of M19 could be clues to distinguish two different structures: the westernmost tied to M23 and the easternmost tied to M15.



Fig. 1 Area A, shrine A110, before the excavations (phase F)



Fig 2 Area A, shrine A110 after the excavations (phase A0)



Fig. 3 Area A, shrine A110, the altar M419



Fig. 4 Area A, shrine A110, the altar M419



Fig. 5 Area A, room A152, before the excavations



Fig. 6 Area A, room A152, after the excavations



Fig. 7 Area A, room A151, before the excavations



Fig. 7 Area A, room A151, after the excavations



Fig. 9 Area A, BA11, before the excavations



Fig. 10, Area A, BA11, after the excavations



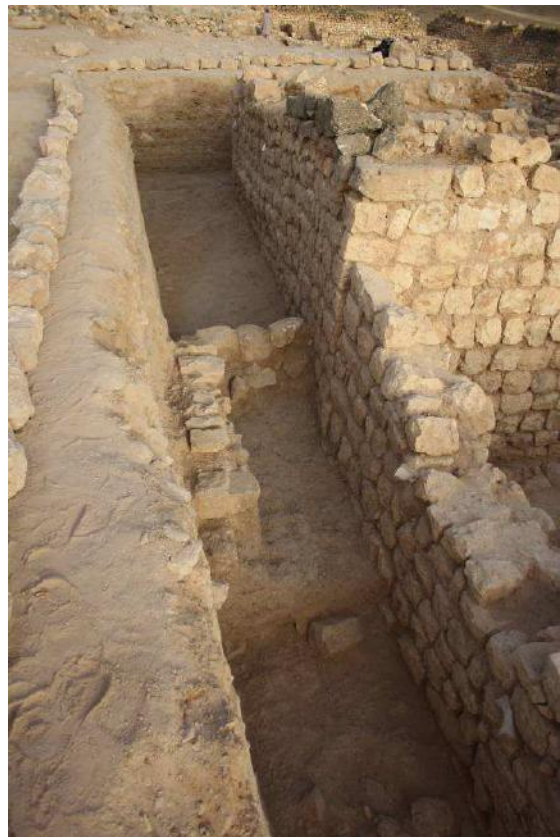
Fig. 11, Area A, BA11, room A153, fireplace US412



Fig. 12, Area A, general view of the area after excavations



Fig. 12, Area A, view of the trench



Figs. 13, 14 Area A, streets A80 and A156



Fig. 15 Area A, Monumental Building, northern side before excavations



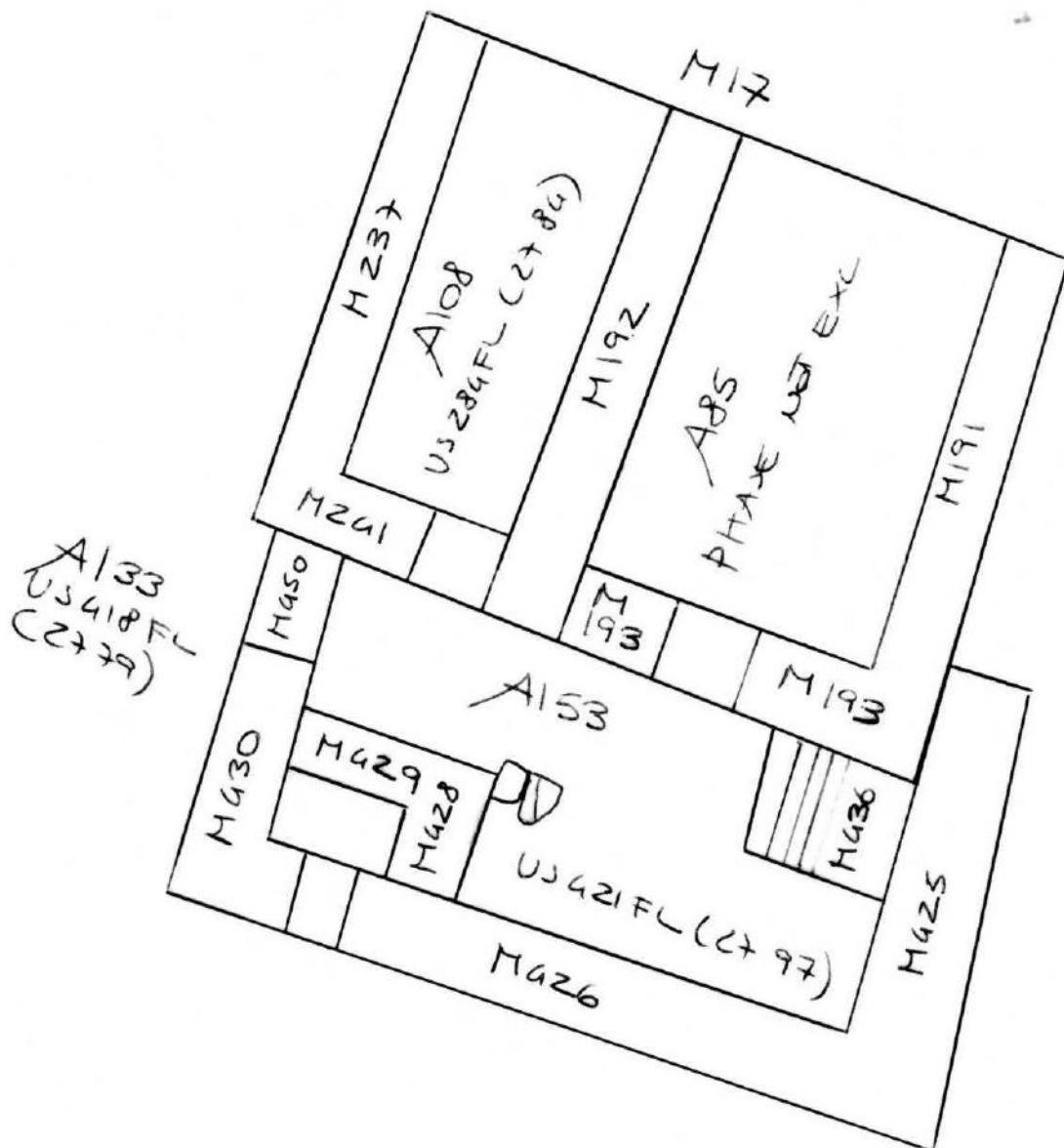
Fig. 16 Area A, Monumental Building, northern side after excavations



Fig. 17 Area A, squares 110/11, before the maintenance works

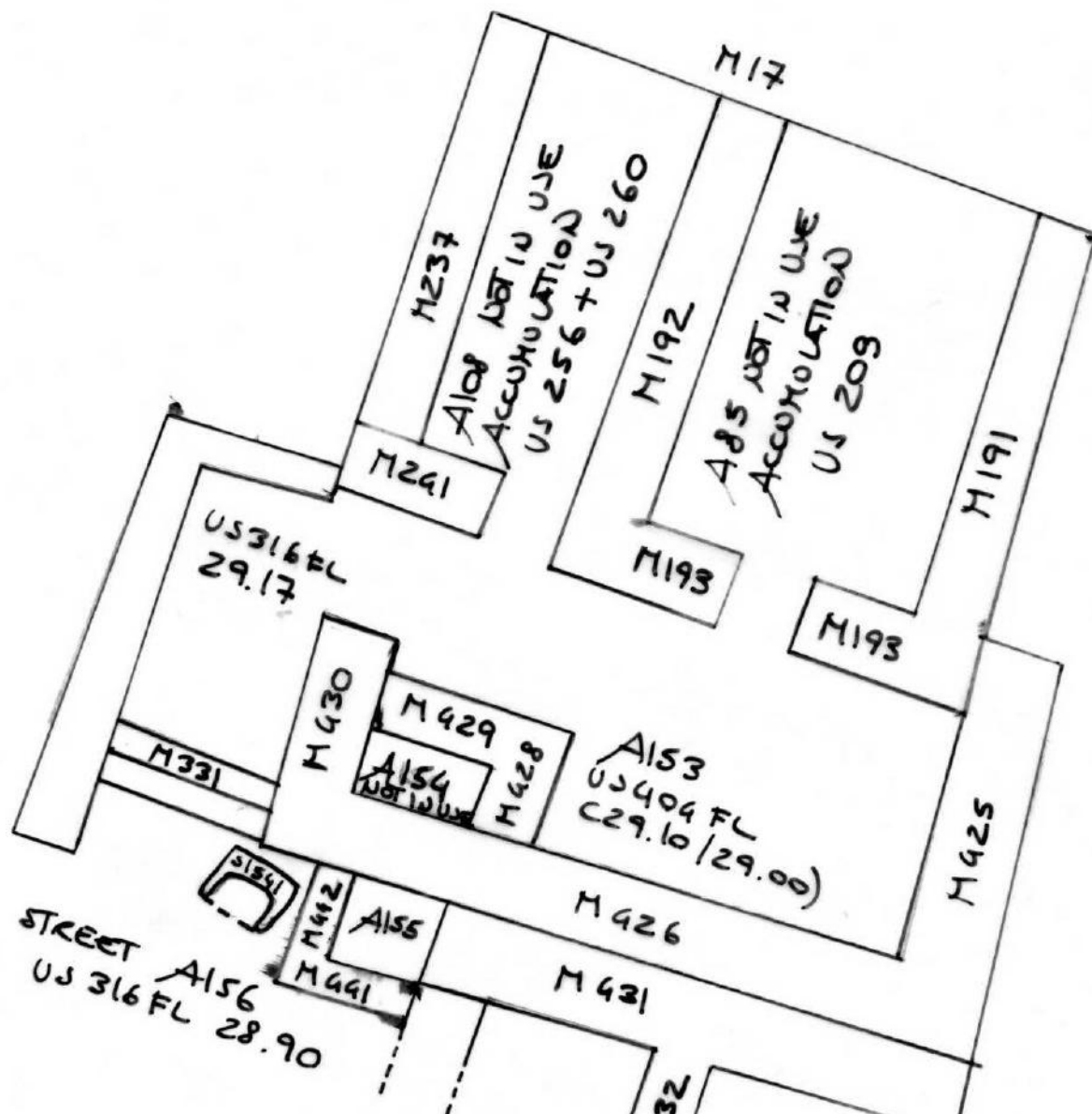


Fig. 18 Area A, squares 110/11, after the maintenance works

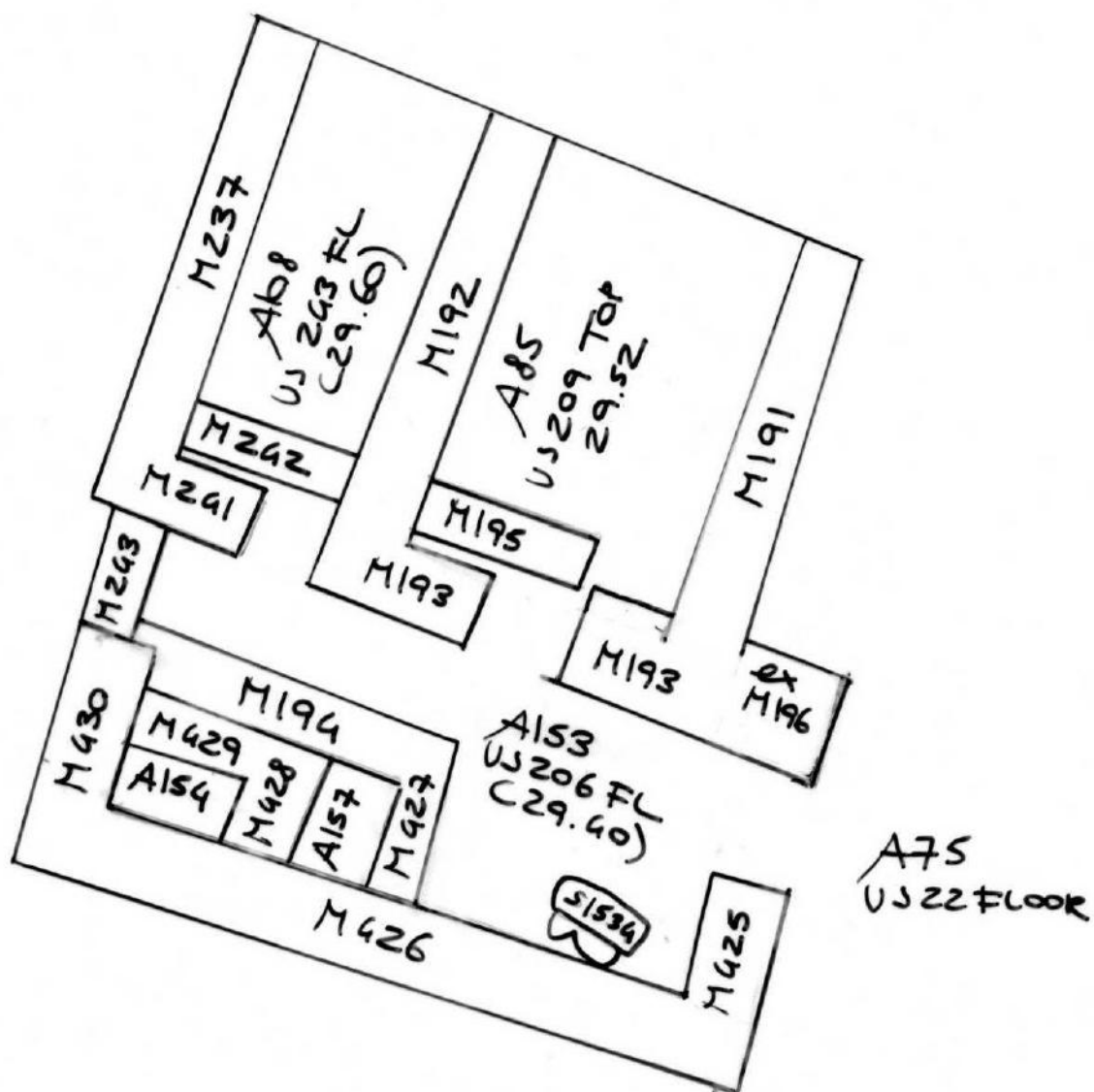


SUM10A, Area A, BA11, First phase

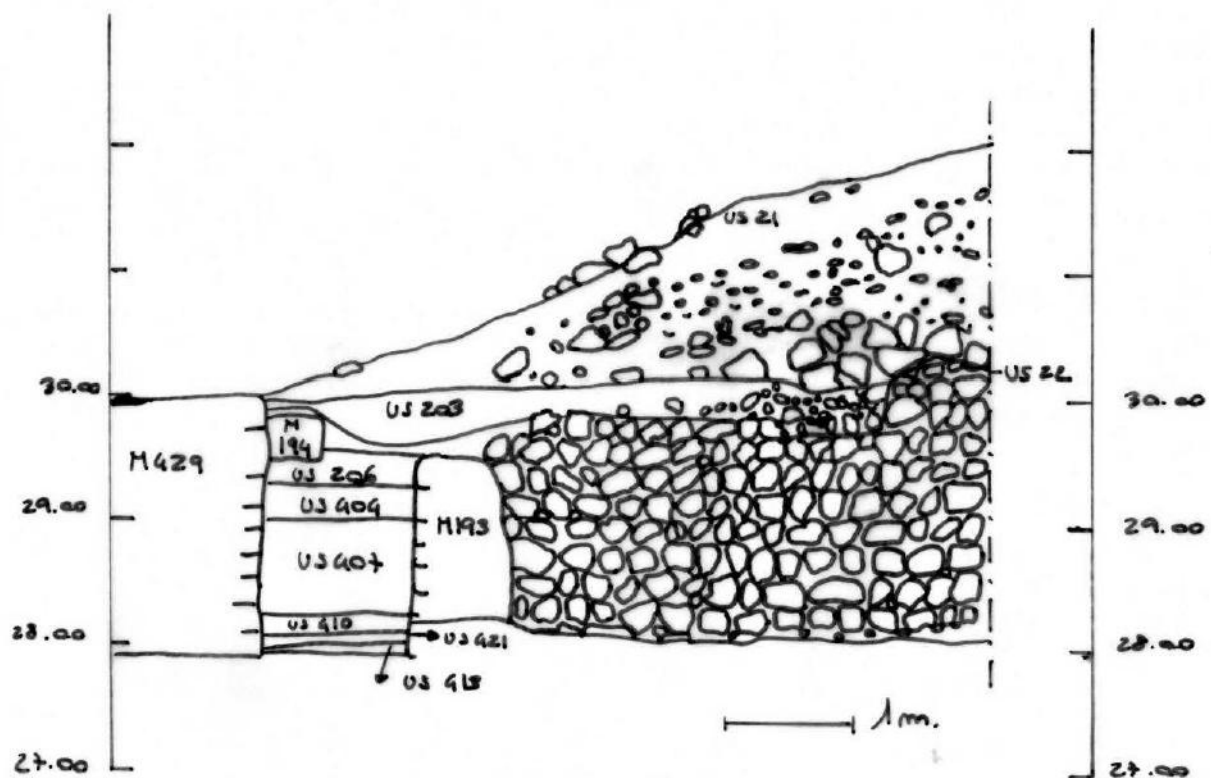




SUM10A, Area A, BA11, Third phase




SUM10A, Area A, BA11, Fourth phase




SUM10A, Area A, BA11, section in A85, A153


Object Index Card

Registration Nr. SUM10A; US405,12; MB625			
Provenance Area A, room A110, US405			
Drawing code Nr.			
Definition Applique	State of preservation Very good	Measures l. 10 w. h. 8 th. 0.4 diam.	Shape Lion-shaped
Material bronze	Preserved part complete		Section
Description <p>Complete bronze applique, depicting a lion. The body of the animal is represented in profile, the head is frontal. All the four legs, suggesting the movement of the animal, stand on a base slightly trapezoidal in shape with a thin protruding step.</p> <p>The muzzle is partially covered by encrustations but a swollen mane with small semi-circular ears are recognizable. The mouth is open, suggesting an aggressive attitude, with canine teeth clearly in evidence.</p> <p>The long tail seems partially damaged but the real conditions and the details will become clearer after restoration.</p> <p>The actual condition of the object does not let to argue the way in which the applique was fixed to the support.</p> <p>On the bases of the bronze appliques found in South Arabia, the one discovered in A110 seems belong to the type influenced by the Hellenistic style.</p>			
Responsible A. Pavan		Date 22.02.2010	


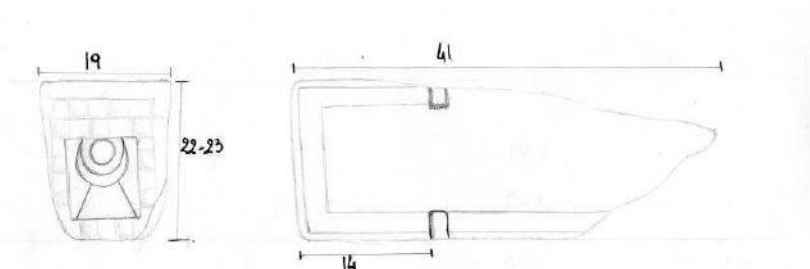
Object Index Card

Registration Nr. SUM10A; US398,1; S1494 Provenance Area A, A110 Drawing code Nr.			
Definition Pillar with snake decoration	State of preservation Fair	Measures l. w. 15 cm h. max. 37 cm th. 13 cm diam.	Shape Truncated-pyramidal
Material Limestone	Preserved part fragmentary		Section Squared
Description <p>Pillar made from a three-stepped squared base (measures 15x13x10.5) and a truncated-pyramidal vertical element (measures: 13x11.5x26.5), with the representation of a snake on the frontal side. The top of the pillar is not preserved but probable it was flat and used to hold an object, possibly an incense burner, as attested by the finding of S1997, S1200 and S1201 near by. It's possible to notice traces of a fresh break, caused by a attempt of theft performed when the pillar was <i>in situ</i>. The pillar is decorated with a representation of snake in bas relief with wavy body and pointed tail. The head, probably rhomboidal in shape, is missing as well as the top of the object.</p> <p>A poor quality of limestone has been employed for the object.</p> <p>For comparison see S1495 and S1539. For the representation of the snake see also S1529.</p>			
Responsible A.P.		Date 03/03/2010	


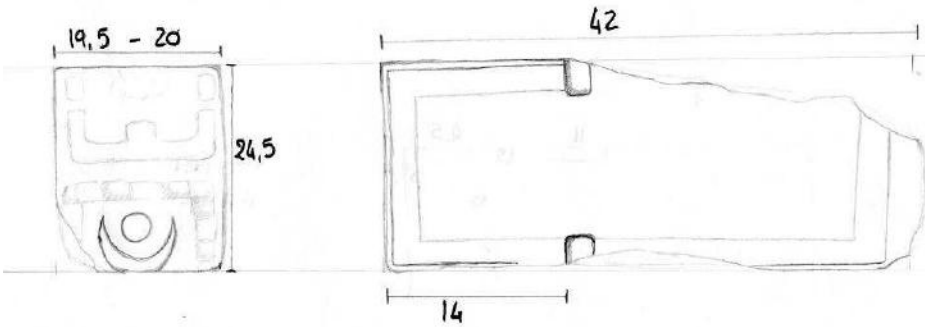
Object Index Card

Registration Nr. SUM10A; US398,2; S1495			
Provenance Area A, A110			
Drawing code Nr.			
Definition Pillar with snake decoration	State of preservation Fair	Measures l. w. 13 cm h. max. 41 cm th. 17 cm diam.	Shape Composite
Material Limestone	Preserved part fragmentary		Section
Description <p>Fragmentary pillar with composite shape, decorated with the representation of a snake on the frontal side. The back presents a kind of recess to fit in somewhere, probably in one of the sides of the altar.</p> <p>Top and bottom are both missed. The snake is represented in bas-relief with wavy body, pointed tail and rhomboidal head. A circular protuberance on the left side of the head could represent one of the eyes.</p> <p>Traces of plaster are visible near the bottom. The limestone employed for the pillar is of rather poor quality.</p> <p>For comparison see S1494 and S1539. For the representation of the snake see also S1529.</p>			
Responsible A.P.		Date 03/03/2010	


Object Index Card

Registration Nr. SUM10A; M419,1; S1531			
Provenance Area A, A110, altar M419			
Drawing code Nr.			
Definition Architectural element	State of preservation fair	Measures l. 41 w. 19 h. 22,5 th. diam.	Shape Rectangular
Material Limestone	Preserved part Fragmentary		Section Rectangular
Description <p>Architectural element rectangular in shape and section, decorated on one of the small faces. All the sides are smoothed also if in a rather poor state of preservation. The top has a raised margin (th. 1.2-1.7 cm). Two rectangular cavities, one almost completely missed, are visible on the top (measures: 2x3.1x0.3). The cavities, as well as in S1531, are placed 14 cm from the corner. Their function seems to be connected with the fixing of the object (cavity for clamps? Traces of bronze are not visible inside).</p> <p>The most interesting feature is represented by the decoration of the frontal side where the crescent moon with the disk inside are depicted above a trapezoidal base. On the top and on the lateral sides framework made from a series of squares alternating plain surface with a very low relief. Two rows, placed horizontally, are clearly visible on the top of the representation; the rows placed vertically at the sides are, instead, quire eroded.</p> <p>The object has been found during the dismantling of the altar. As well as S1532, it has been re-employed. The original position is not sure.</p> <div style="text-align: center; margin-top: 20px;">  <p>(Sketch Silvia Lischi)</p> </div>			
Responsible A. Pavan		Date 23.02.2010	

Object Index Card

Registration Nr. SUM10A; US416,7: S1532			
Provenance Area A, A110			
Drawing code Nr.			
Definition Architectural element	State of preservation fair	Measures l. 42 w. 20 h. 24,5 th. diam.	Shape Rectangular
Material Limestone	Preserved part Fragmentary		Section Rectangular
Description Architectural element rectangular in shape and section, decorated on one of the small faces. All the sides are smoothed. The top has a raised margin (th. 1.2-1.7 cm). Two rectangular cavities, one almost completely missed, are visible on the top (measures: 3x3x1.6; 2x3x1.5). The cavities, as well as in S1531, are placed 14 cm from the corner. Their function seems to be connected with the fixing of the object (cavity for clamps? Traces of bronze are, however, not visible inside). The main representation is inside a framework made from squares alternating plain surface with a very low relief. Above the horizontal row of squares, it's possible to distinguish the representation of merlons, probably depicting the façade of the temple.			
 <p>(Sketch Silvia Lischi)</p>			
Responsible A. Pavan		Date 23.02.2010	

Object Index Card

Registration Nr. SUM10A; M443,1; S1538			
Provenance Area A, h-i /8, A110, bench			
Drawing code Nr.			
Definition Offering table	State of preservation Fair	Measures l. 87 w. 29 h. 15 th. diam.	Shape Rectangular
Material Sandstone	Preserved part Complete		Section
Description <p>Rectangular offering table, broken in two parts. The terminal part with rectangular gutter is preserved (measures of the gutter: 14x6x2). The table is raised all along the margins by a frame 5 cm wide. The rectangular cavity on the top of the table is 2.5 cm deep. Along the margins visible signs of chisel.</p> <p>The offering table has been re-employed, turned upside down, as part of the bench M443. Below it a chlamys townsendi shell without burnt traces has been found.</p>			
Responsible A.P.		Date 07/03/10	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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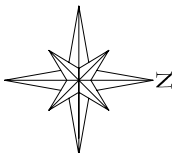
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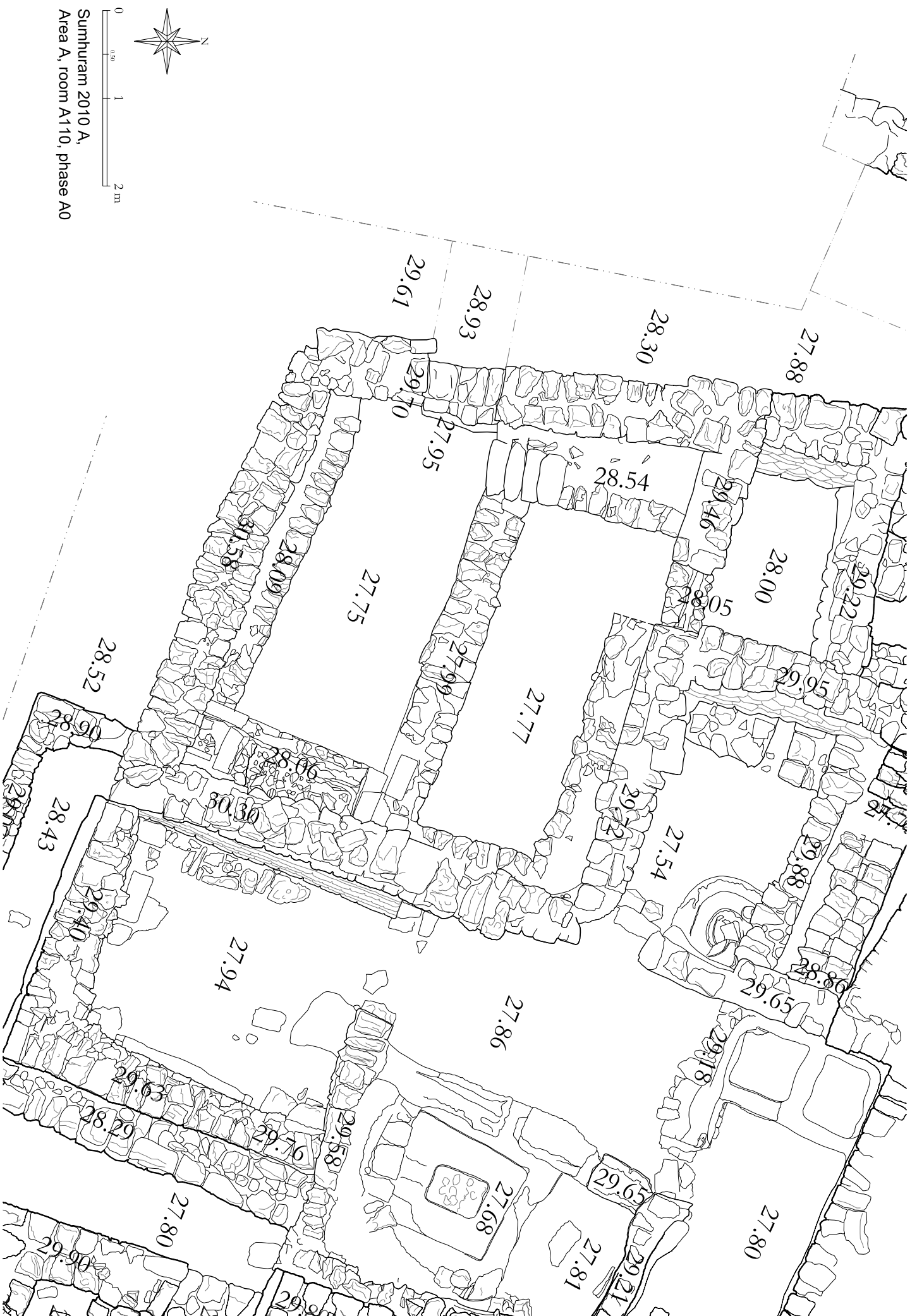
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Sumhuram 2010 A
General Plan

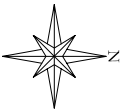
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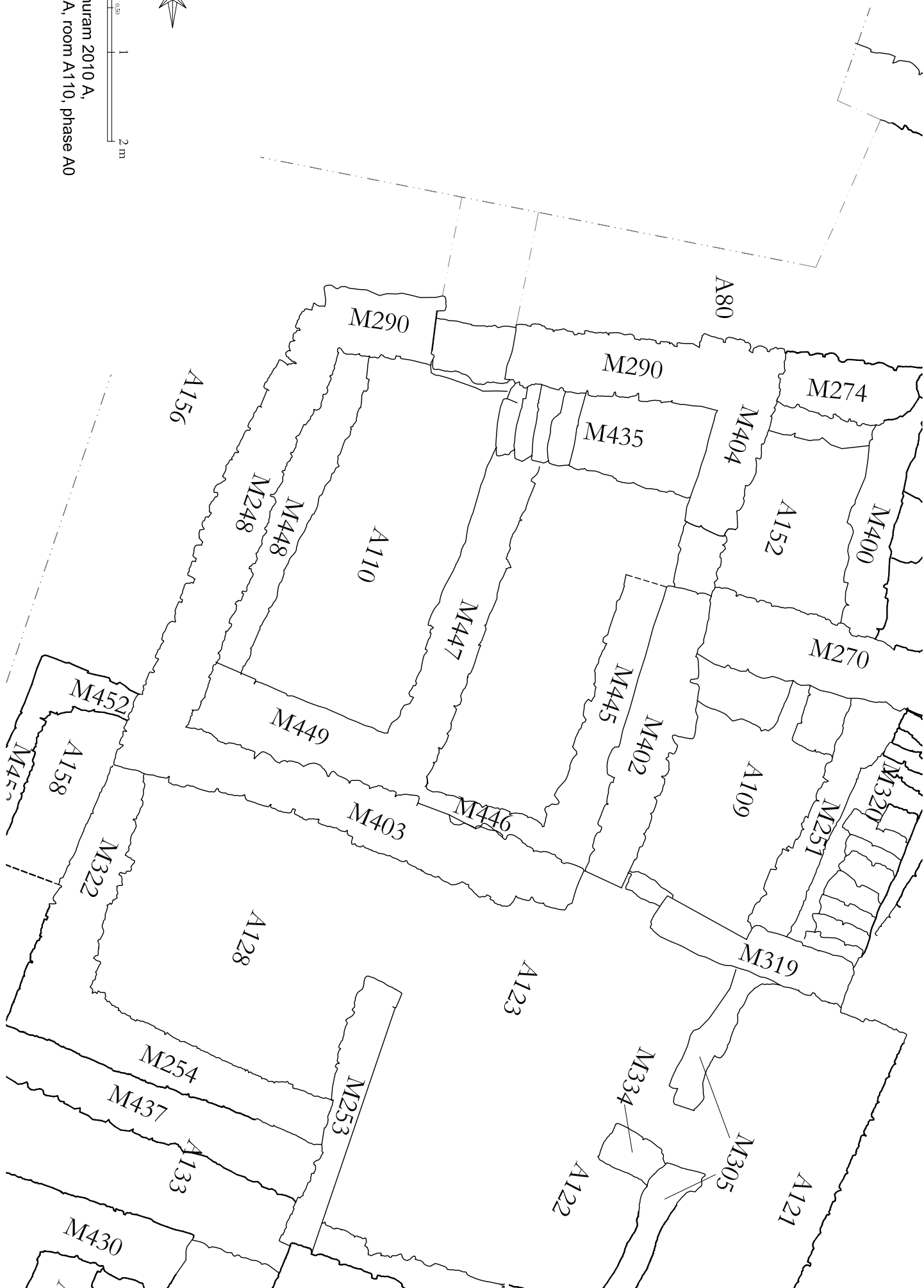


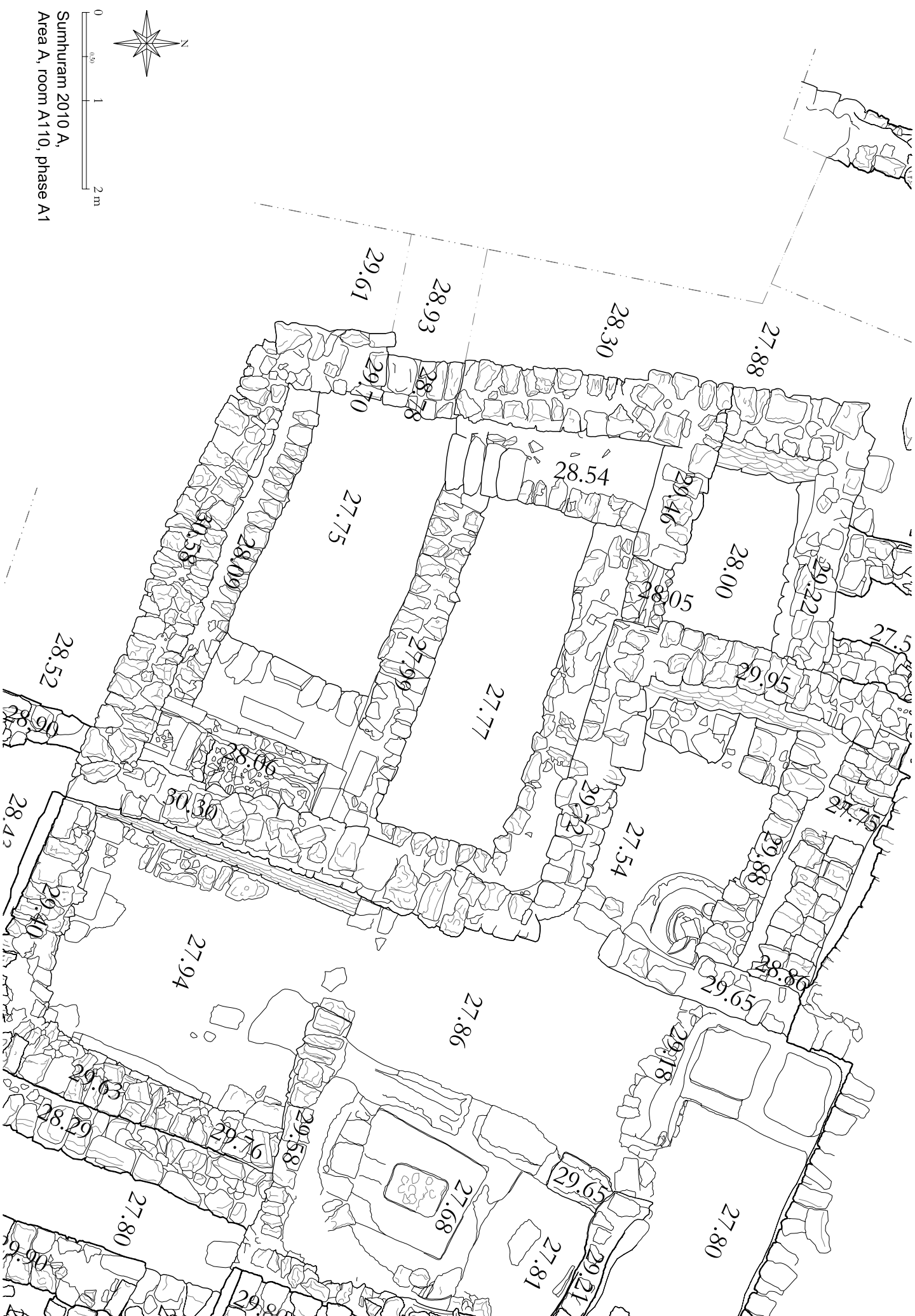
Sumhuram 2010 A,
Area A, room A110, phase A0

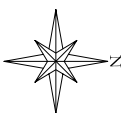


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Sunthuram 2010 A,
Area A, room A110, phase A0

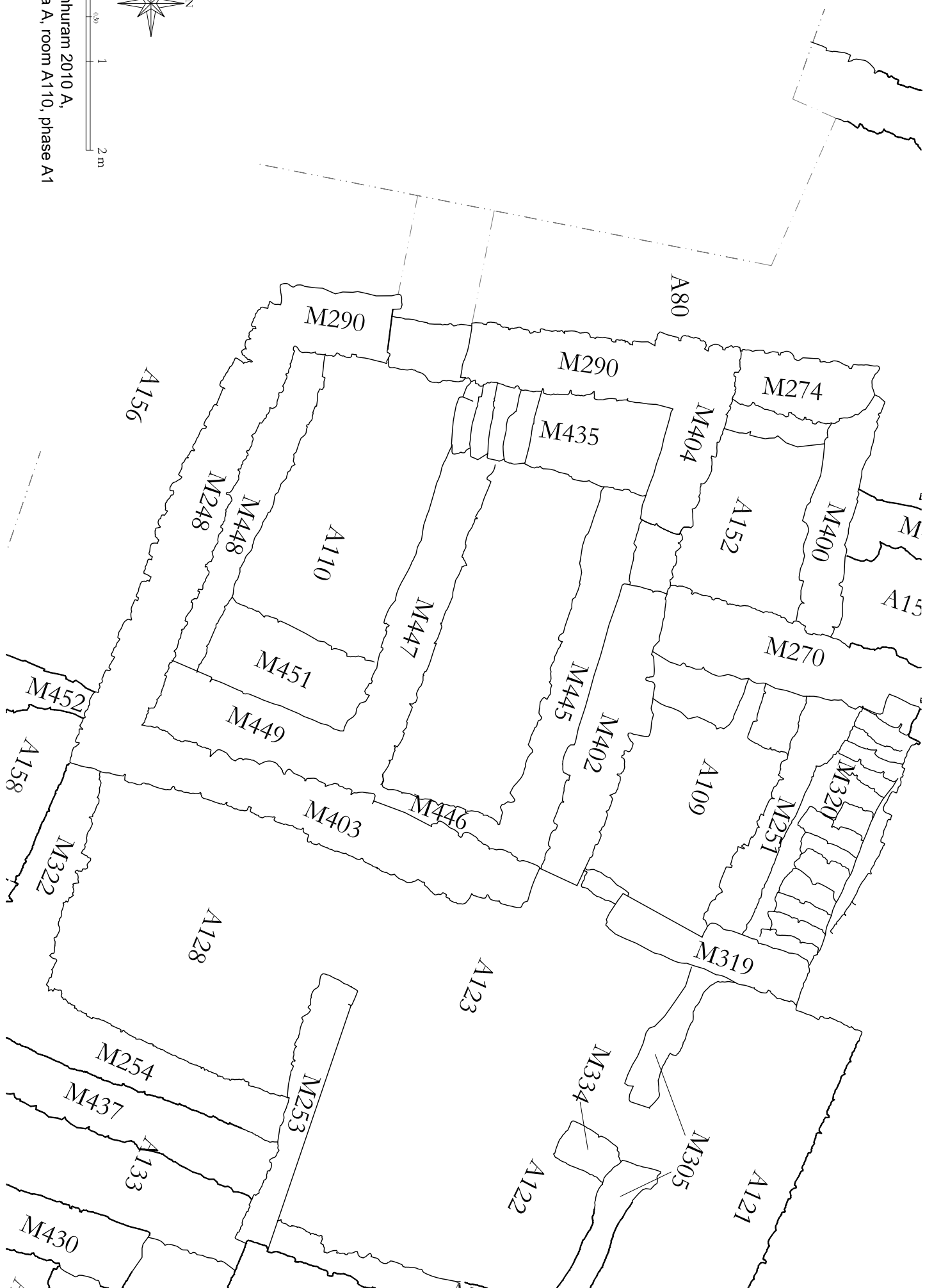


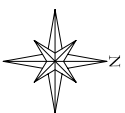




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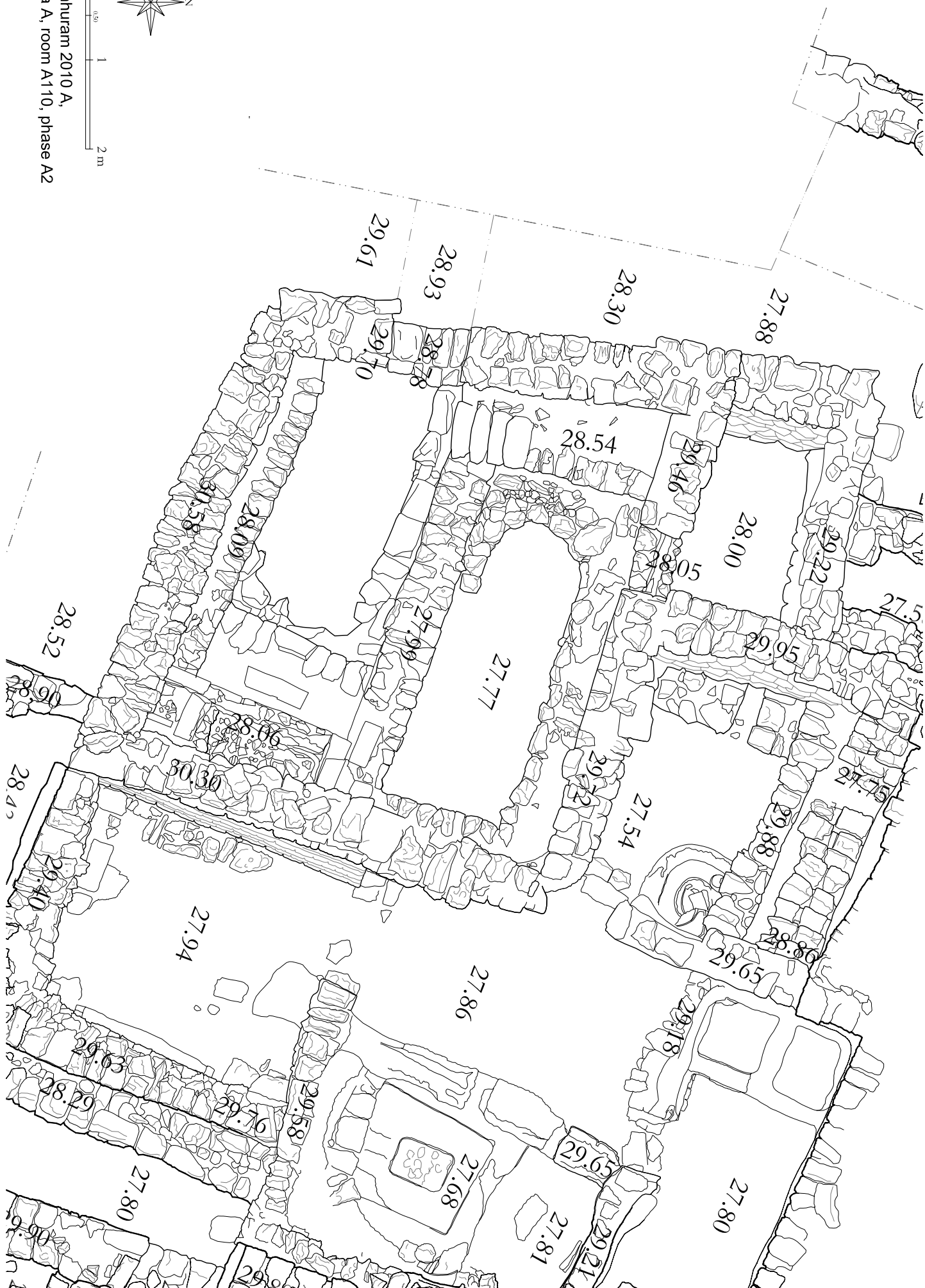
Sunbaram 2010 A,
Area A, room A110, phase A1

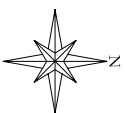




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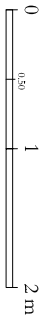
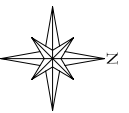
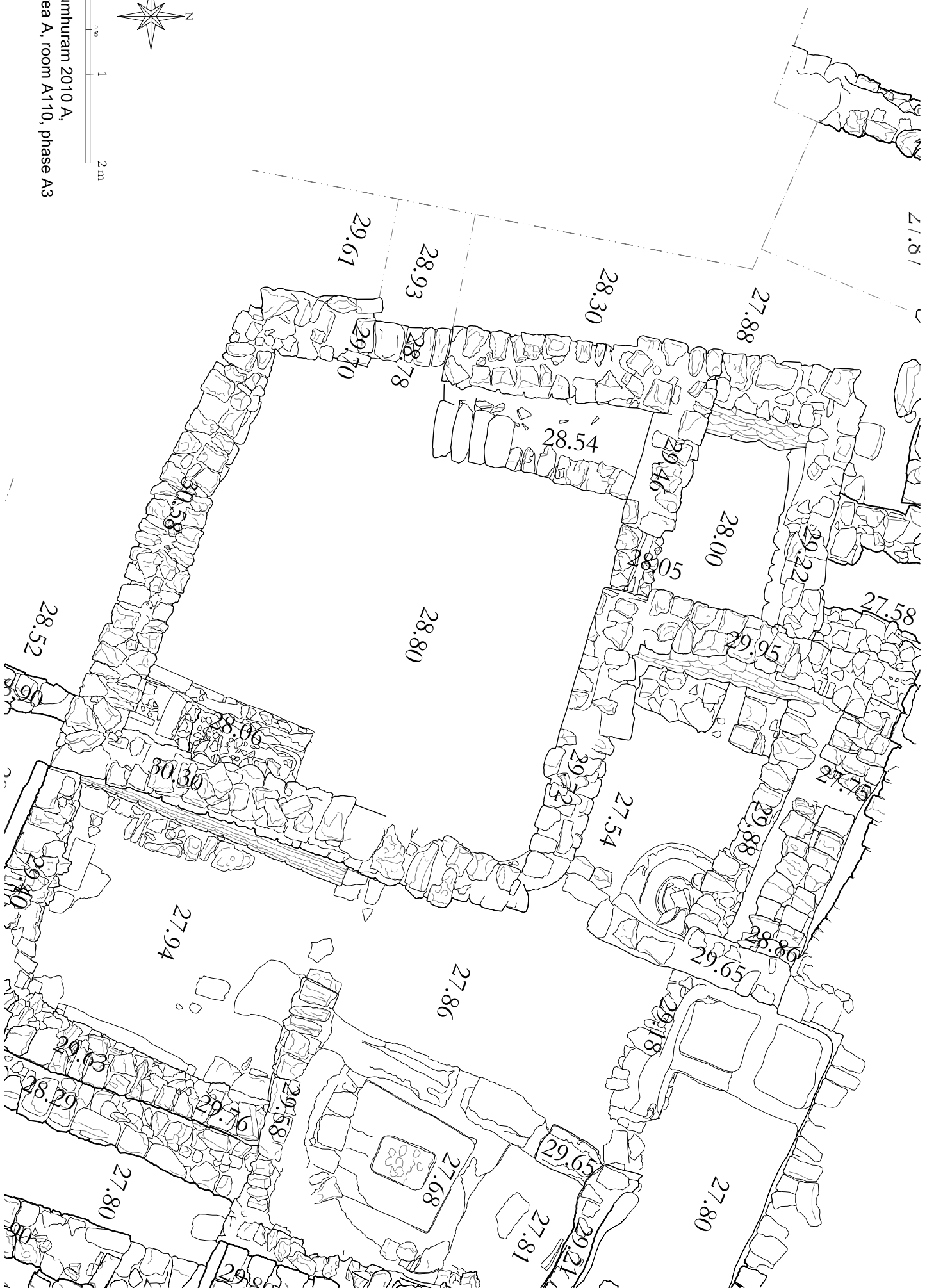
Sunbhuram 2010 A,
Area A, room A110, phase A2



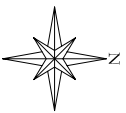


Sunbaram 2010 A,
Area A, room A110, phase A2





Sumburam 2010 A,
Area A, room A110, phase A3

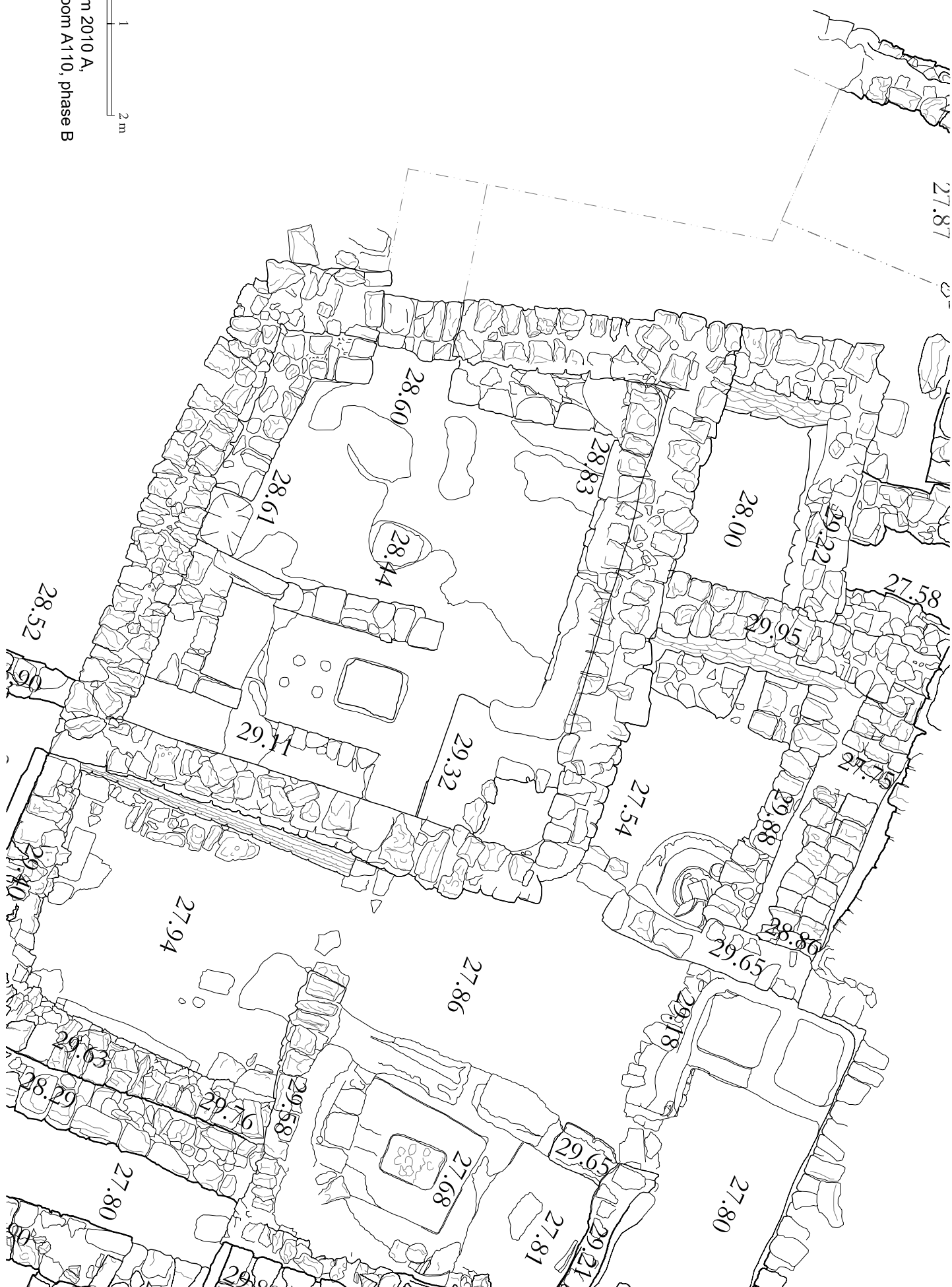
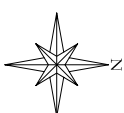
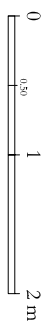


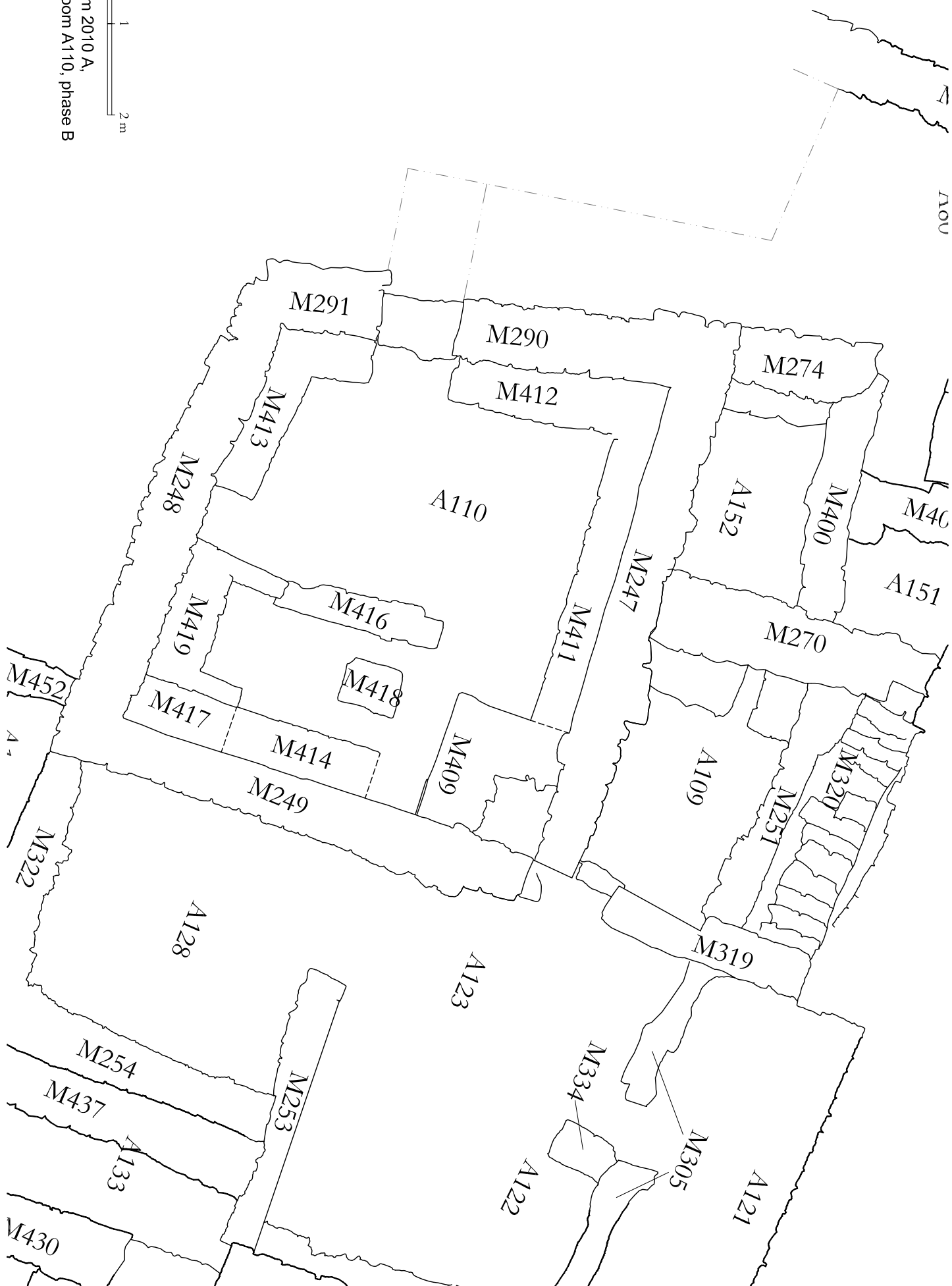
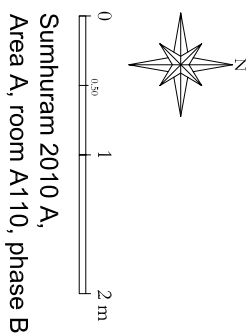
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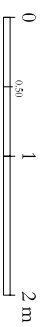
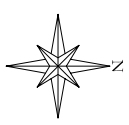
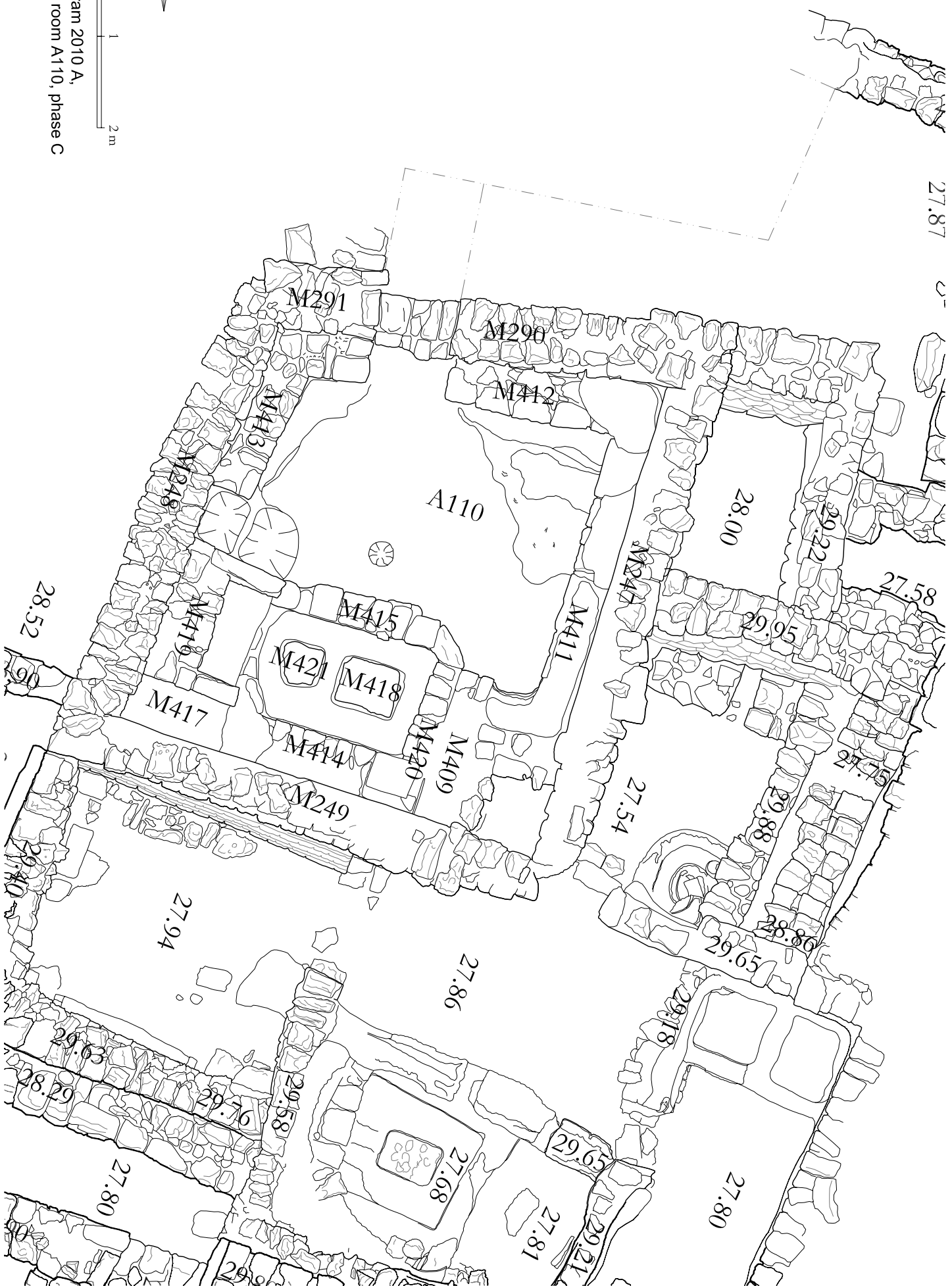
Sumhuram 2010 A,
Area A, room A110, phase A3



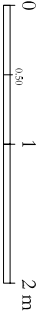
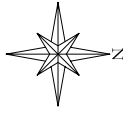
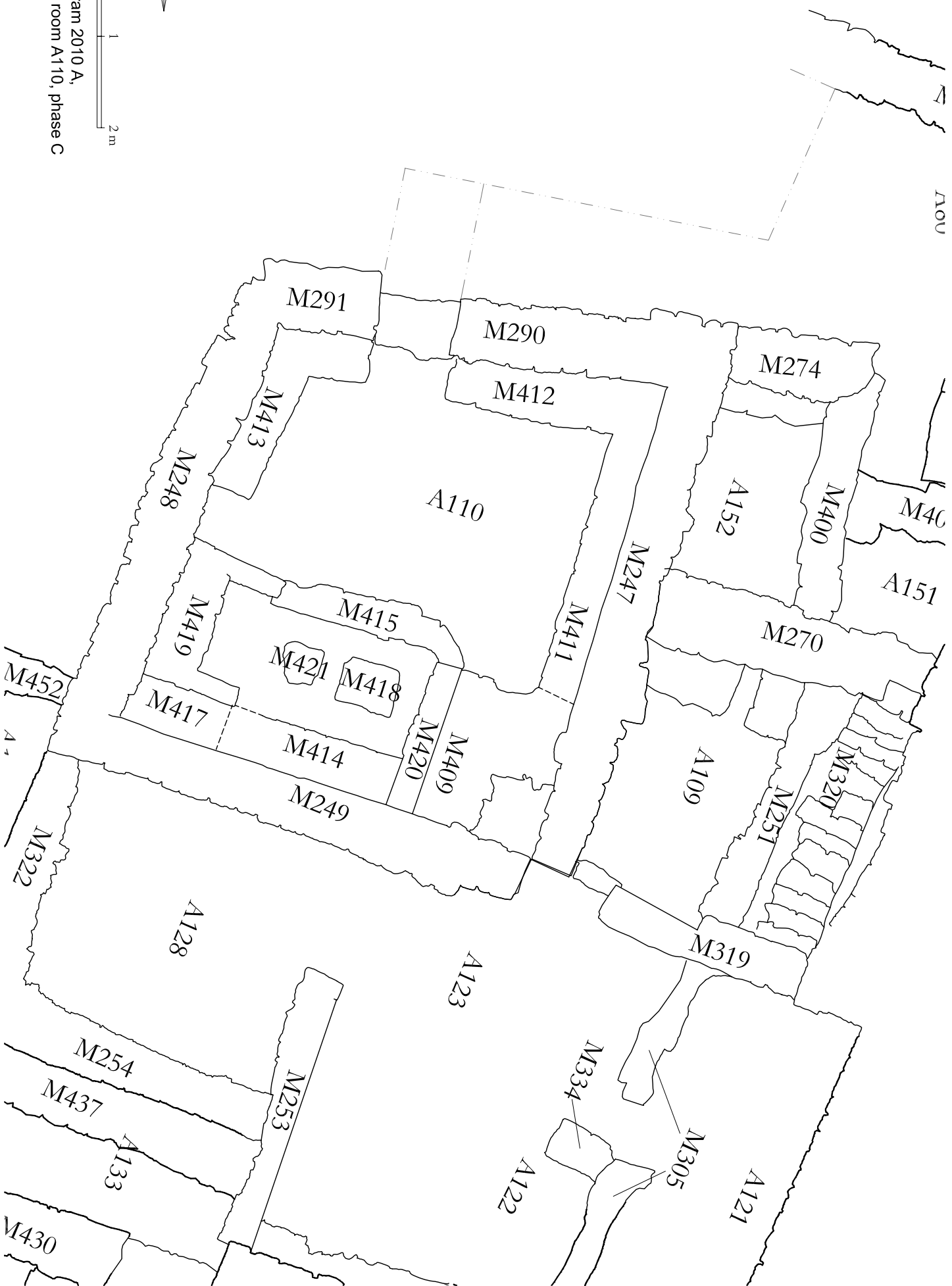
Sunbhumram 2010 A,
Area A, room A110, phase B





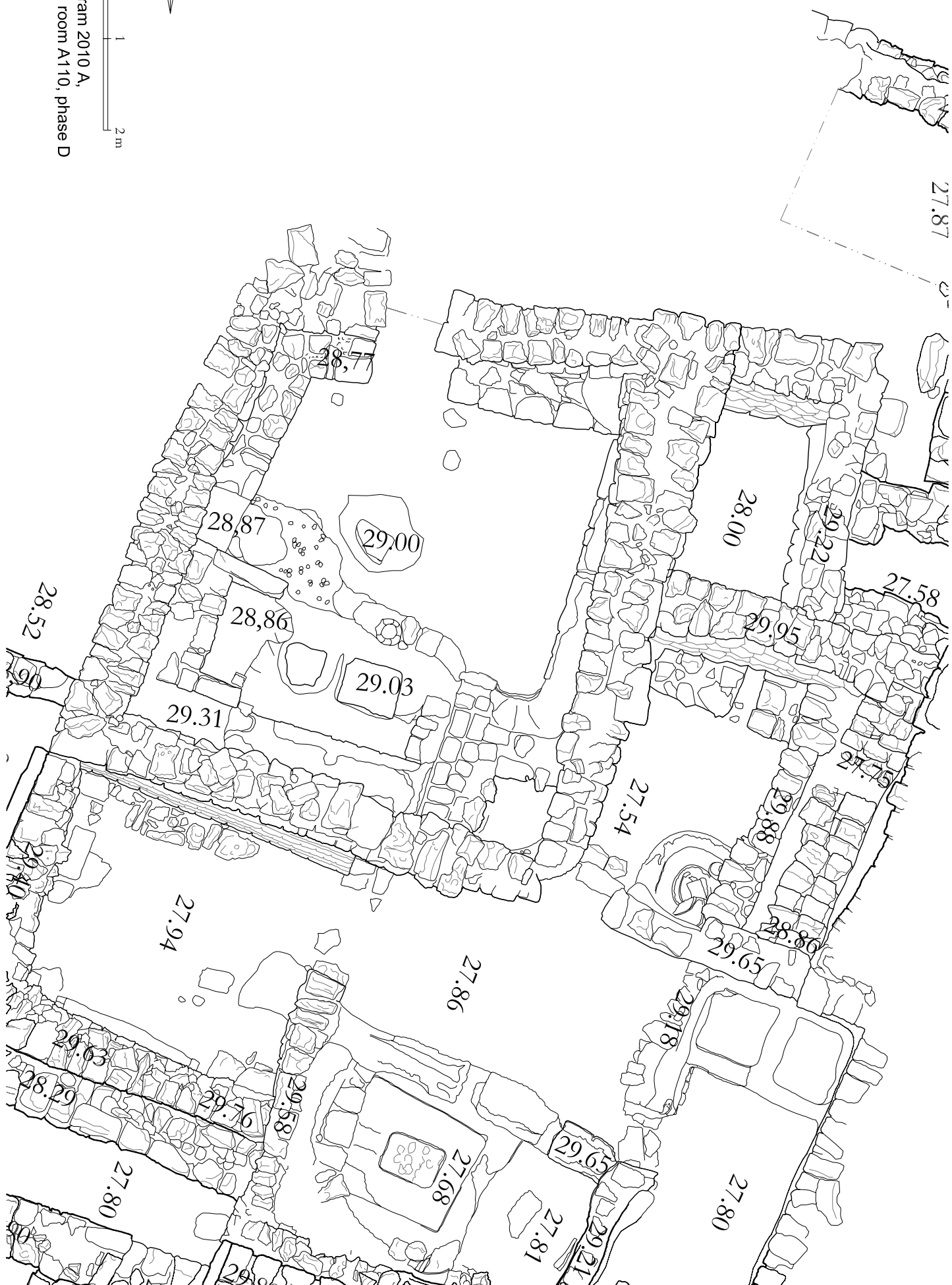
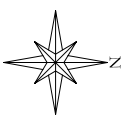
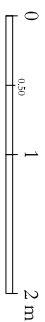


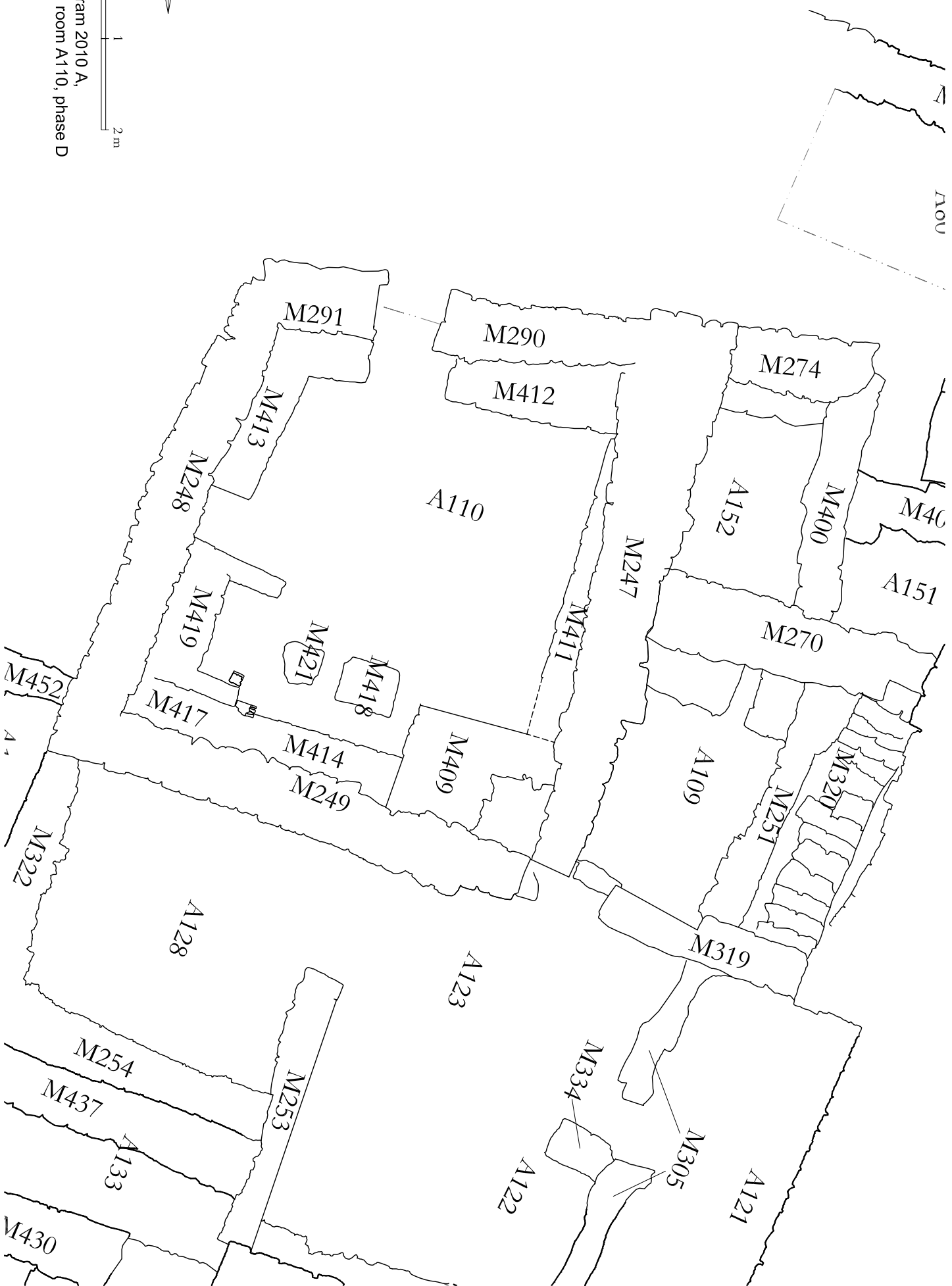
Sumthuram 2010 A,
Area A, room A110, phase C



Sunthuram 2010 A,
Area A, room A110, phase C

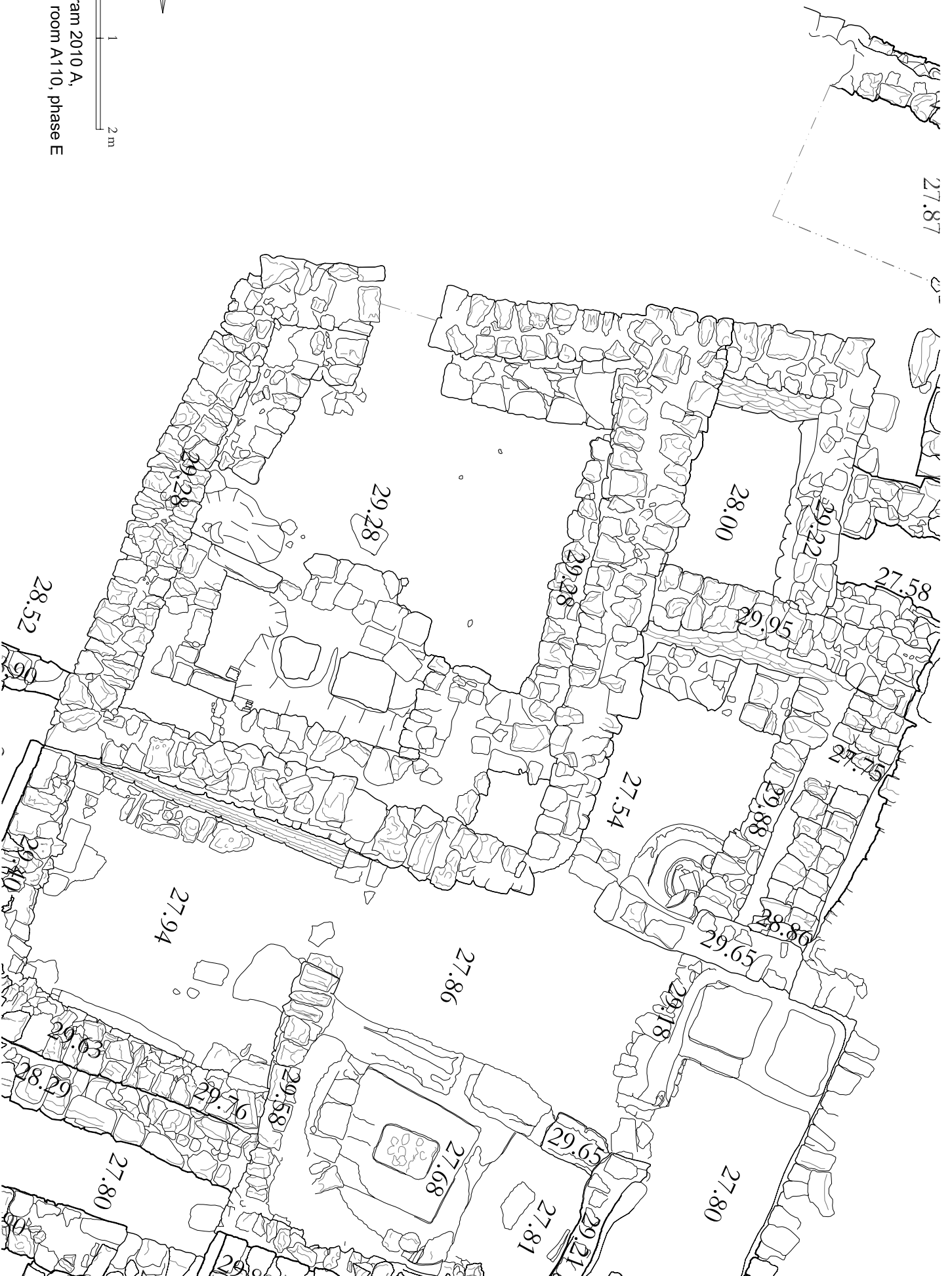
Sumhuram 2010 A,
Area A, room A110, phase D



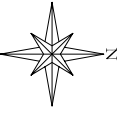


Sumhuram 2010 A,
Area A, room A110, phase D

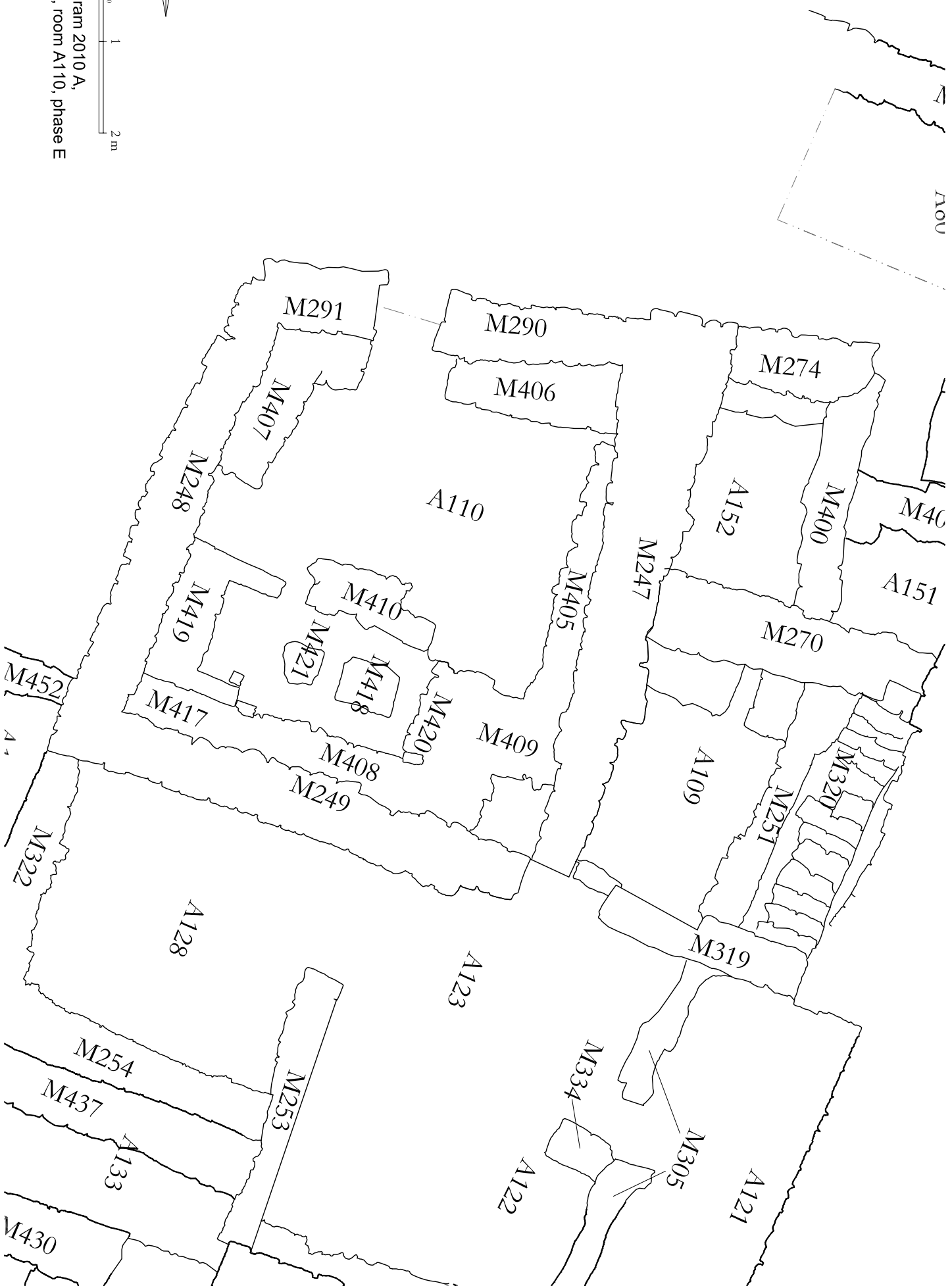
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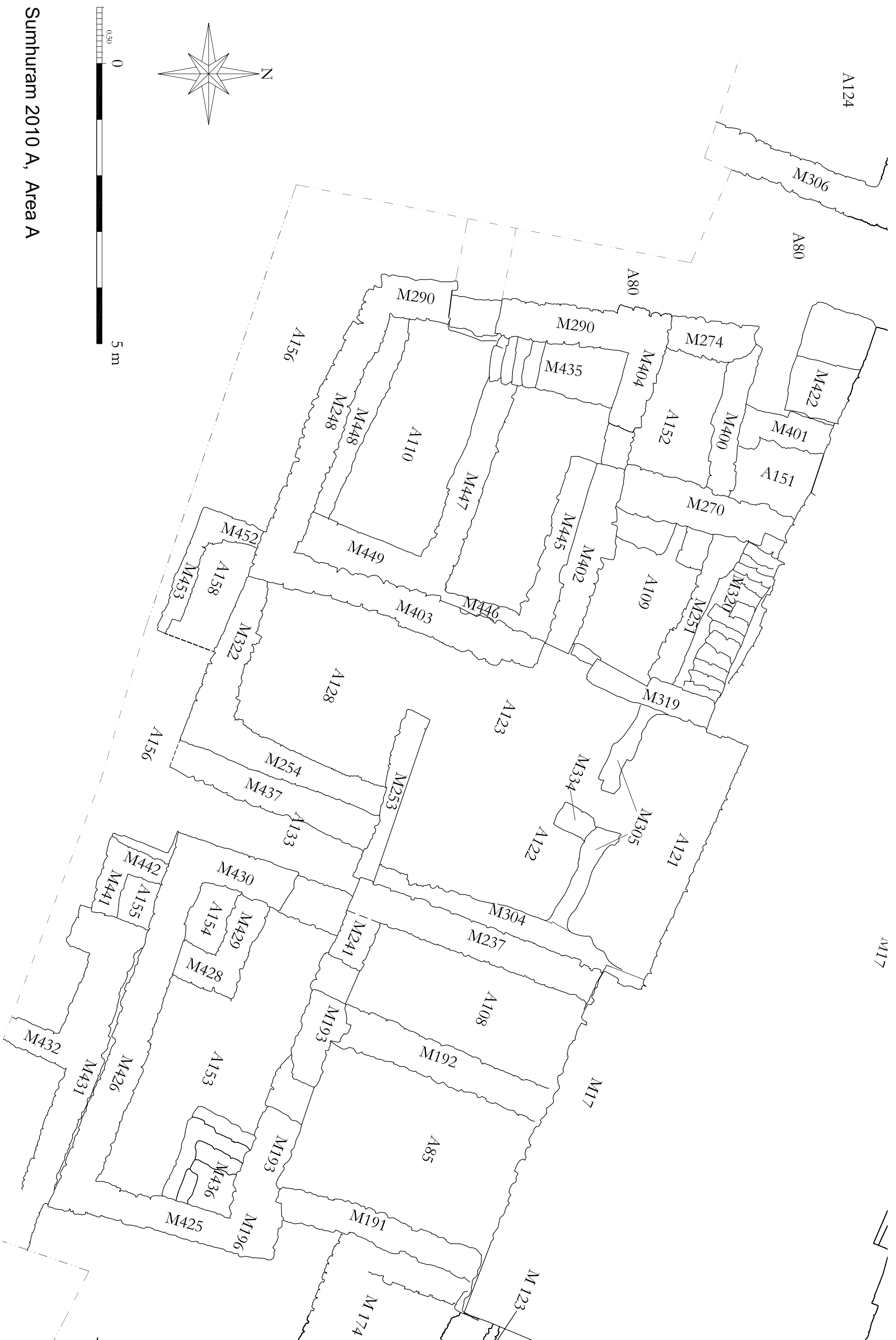
Sumhuram 2010 A,
Area A, room A110, phase E



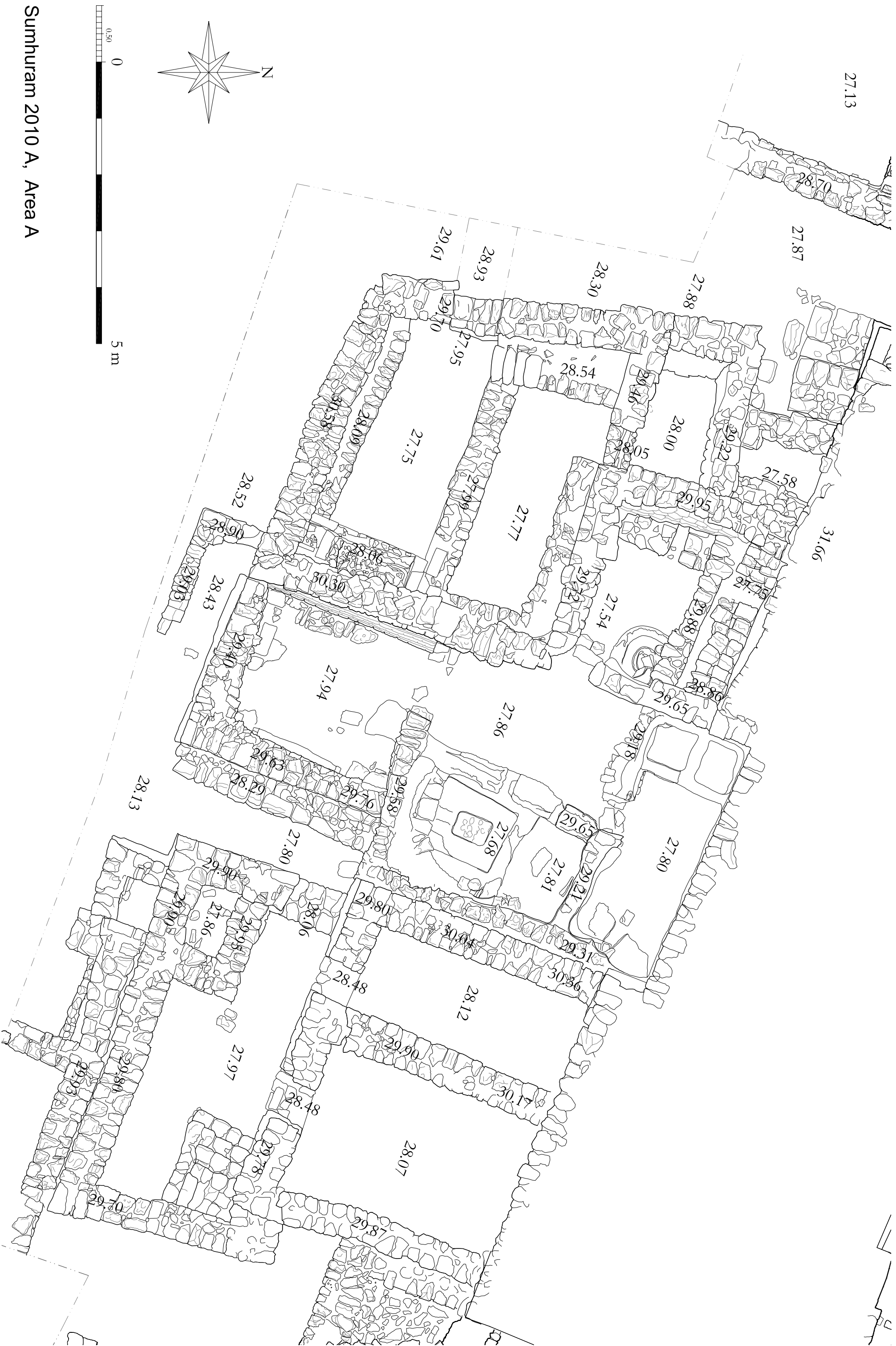
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Sumhuram 2010 A,
Area A, room A110, phase E



Sumhuram 2010 A, Area A



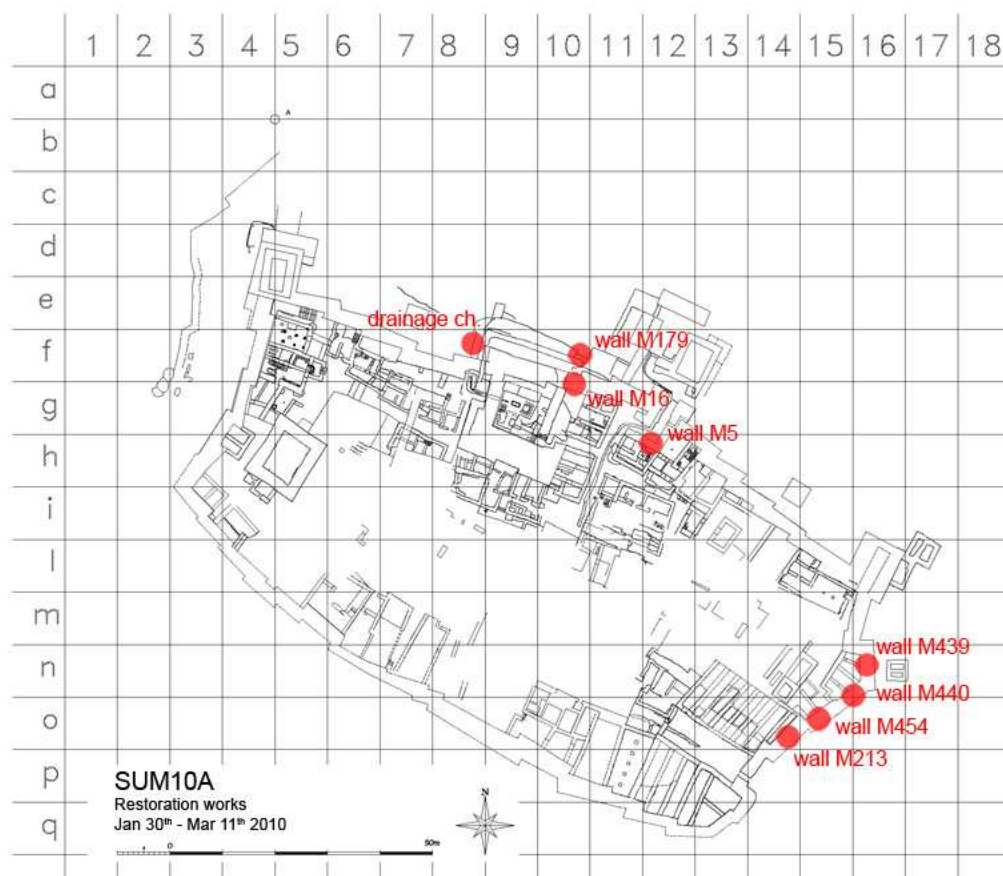
Sumhuram 2010 A, Area A

SUM10A – TECHNICAL REPORT

RESTORATION WORKS

The restoration during the SUM10A campaign was focused on the rebuilding of the eastern walls of Sumhura (M439, M440, M454, M213). Other relevant works consisted in the protection of the drainage channel, uncovered during the previous campaign; the partial rebuilding of wall M179, hidden under a section of earth before SUM10A; the dismantling of an altar (M419) in room A110 and the transformation of the ground near the Gate Complex from a rough trench into a smooth slope. Further minor works involved the removal of black and collapsed stones from walls M5 and M16.

The works followed the long-term goals of the previous restoration campaigns: ensure the conservation of the structures and reconstruct the architectonic image of the city.



Italian Mission to Oman - University of Pisa

MORTAR COLOR TESTING

Four samples of mortar were prepared using different dilutions of color pigments as follows:

1. 4 buckets of sand, 600g x7 of lime, 150g of brown pigment, 300g of yellow pigment
2. 4 buckets of sand, 600g x8 of lime, 150g of brown pigment, 300g of yellow pigment
3. 4 buckets of sand, 600g x8 of lime, 100g of brown pigment, 300g of yellow pigment
4. 4 buckets of sand, 600g x7 of lime, 150g of brown pigment, 350g of yellow pigment

The samples were left to dry in the sun to be verified two days later.

Sample “3” was chosen: 4 buckets of sand, 600g x8 of lime, 100g of brown pigment, 300g of yellow pigment.

EASTERN WALLS

Walls M439, M440, M454 and M213 were uncovered at the end of SUM09C campaign, when the east staircase was removed. Most parts of the walls were damaged or collapsed, thus, a rebuilding intervention was needed to restore the architectonical image of this side of the city.

M439 WORK

Dismantle of collapsed stones.

Removal of earth from the upper exposed part, in order to lay the geo-textile film on a clean surface.

Placement of geo-textile layer over the existing stones.

Rebuilding of the wall.

Construction of a top slope.

Beautification.

M440 WORK

Dismantle of collapsed stones.

Removal of earth from the upper exposed part, in order to lay the geo-textile film on a clean surface.

Placement of geo-textile layer over the existing stones.

Rebuilding of the wall.

Construction of a top slope.

Beautification.

M454 WORK

Dismantle of collapsed stones.

Removal of earth from the upper exposed part, in order to lay the geo-textile film on a clean surface.

Placement of geo-textile layer over the existing stones.

Rebuilding of the wall.

Construction of a top slope.

Beautification.

M213 WORK

Dismantle of collapsed stones.

Removal of earth from the upper exposed part, in order to lay the geo-textile film on a clean surface.

Placement of geo-textile layer over the existing stones.

Rebuilding of the wall.

Construction of a top slope.

Beautification.

M179 WORK

Dismantle of the deformed part of the wall until the fifth row from the bottom.

NOTES

For safety reasons more rows of original stones weren't removed in the eastern corner of the wall. These stones in fact were in good condition and ensured the stability of the wall behind, M15, which was seriously deformed.

Removal of earth from the upper exposed part, in order to lay the geo-textile film on a clean surface.

Placement of geo-textile layer over the existing stones.

Rebuilding of the wall.

Beautification on the western top slope, where the wall reaches a lower height to join M25 at the same level.

DRAINAGE CHANNEL PROTECTION

The drainage channel was completely uncovered during SUM09C campaign. The excavation revealed the cascading basins, but at the same time exposed them to weather deterioration. This problem, common to every structure, is more relevant for the basins, since they are made of sandstone and they are lying on an earth basement.

The aim of the intervention was to protect the basins and their basement from deterioration by the rain, avoiding modifications and preserving as much as possible the comprehension of the original structure. The approach behind the intervention was reversibility.

As first action geo-textile was laid on the existing structure to distinguish it from the new intervention and also to physically separate the mortar from the basins and the earth basement, therefore allowing a complete reversibility.

The work then consisted in the construction of a small limestone wall to protect the earth basement running from M25 to M23. The new wall was built at a minor height than the drainage channel to permit the complete view of the basins.

Besides, the last two rows of the new wall were each built on an inner line than the previous, thus breaking the perception of a high wall.

As a collateral protection action, the pit behind the highest basin was covered by geo-textile and then filled with sandstones and little limestone rocks. The sloping amass will evacuate some of the water outside the channel, while the filled space will permit to have less still water in the pit.

ALTAR DISMANTLING

During excavation works in room A110, altar M419 had to be dismantled to continue the archaeological investigation and uncover previous phases. Given the relevance of the structure, it was decided to number and mark every stone, so to permit a reconstruction as similar as possible to the original.

Waiting for the reconstruction, the dismantled stones were placed near the tool storage area and protected with a waterproof cover.

GATE COMPLEX TRENCH

A rough trench made the entrance difficult from the west side of the Gate Complex.

The trench was modeled to create a smooth slope.

MINOR WORKS

Removal of black and collapsed stones from the top of walls M5 and M16.

EASTERN WALLS RESTORATION: M439

BEFORE



AFTER



Restoration project and building site manager:
Arch. Riccardo Lovatini

EASTERN WALLS RESTORATION: M440, M454, M213

BEFORE



AFTER



Restoration project and building site manager:
Arch. Riccardo Lovatini

DRAINAGE CHANNEL PROTECTION

BEFORE



AFTER



Restoration project and building site manager:
Arch. Riccardo Lovatini

M179 RESTORATION AND GATE COMPLEX TRENCH

BEFORE



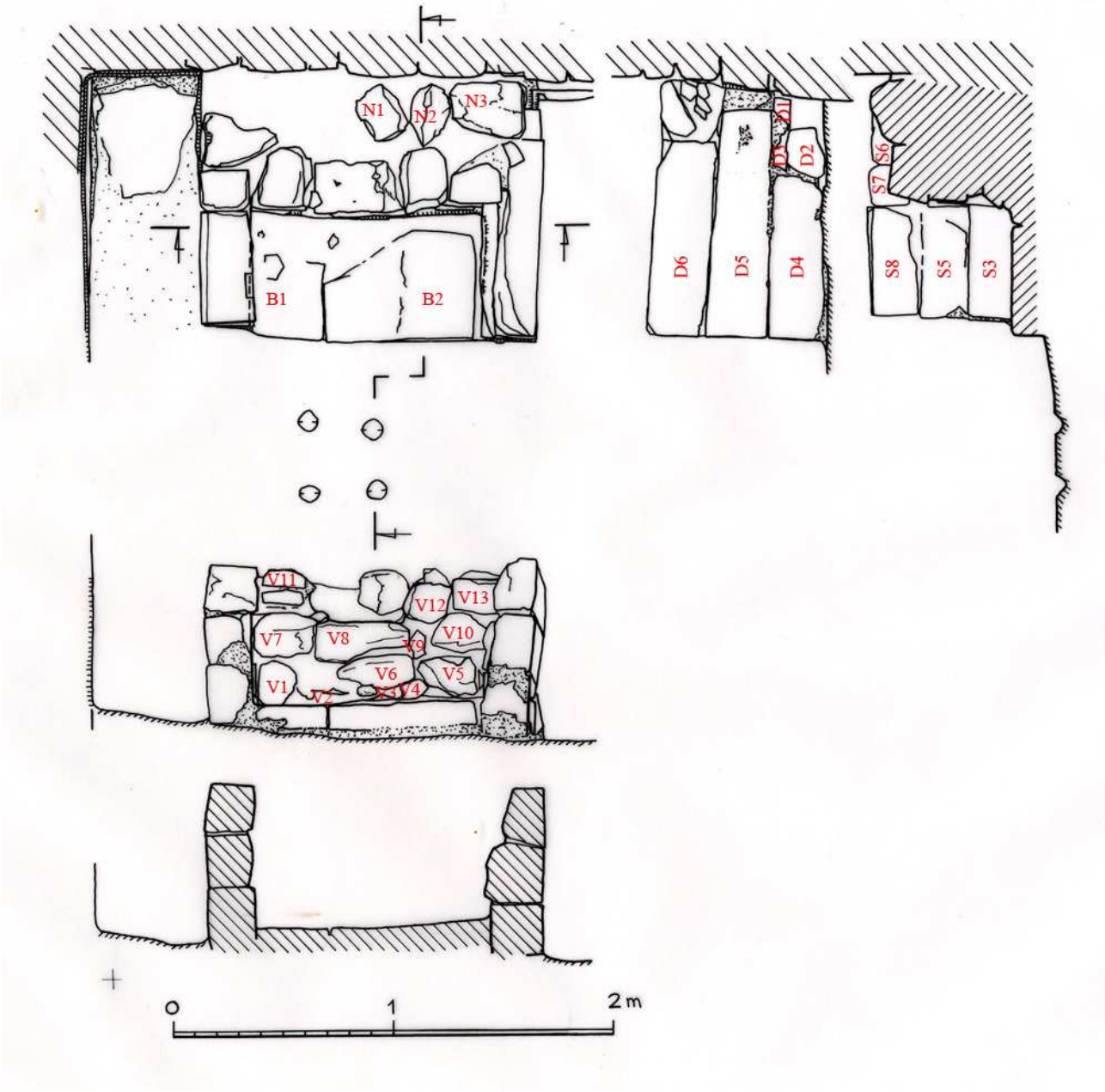
AFTER



Restoration project and building site manager:
Arch. Riccardo Lovatini

ALTAR M419 DISMANTLING

STONE NUMBERS



MINOR WORKS: M5

BEFORE

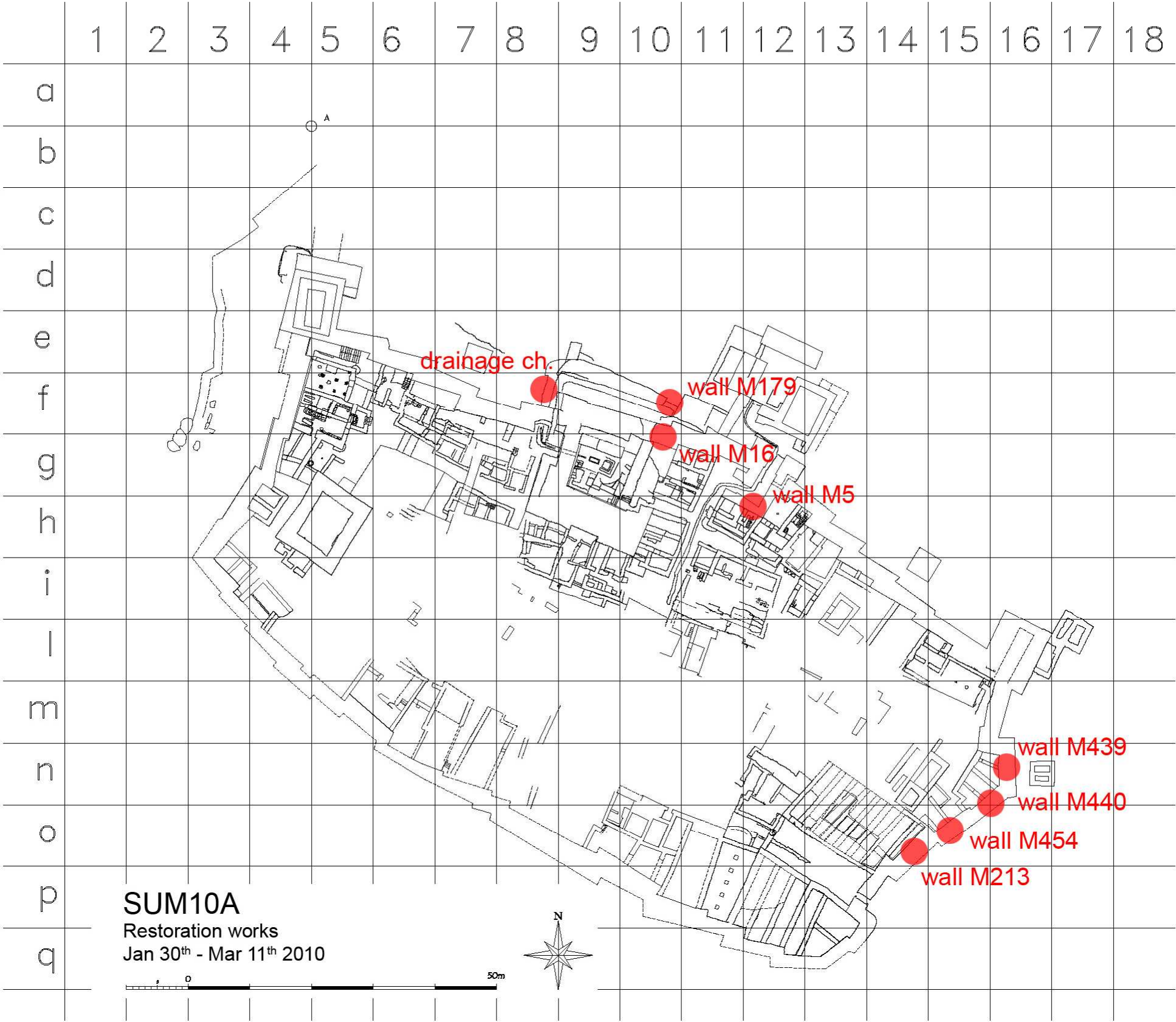


AFTER



Restoration project and building site manager:
Arch. Riccardo Lovatini

RESTORATION WORKS



Italian Mission to Oman - University of Pisa