

IMTO – Italian Mission to Oman

University of Pisa

SUMHURAM

Preliminary Report

February – March 2016 (SUM16A)



PRELIMINARY REPORT (SUM16A)

February – March 2016

The first IMTO's campaign of 2016 (SUM16A), under the direction of prof. A. Avanzini, started on January 30th and ended March 24th 2016.

Excavation was performed in three areas with different goals.

In Area A, street A75 to check the stratigraphy in Area A, Area B, west of building BB4, in Area G, m-n/14-15, in Area F, square A20 to check the stratigraphy below the floor US54 and in Area H.

Excavations were conducted on the field by Prof. Yuri Vinogradov, dr. Vittoria Buffa, Mr. Said al Mashani and Mr. Said al Amri, Mr. Cleto Carbonara, with archaeologist Giulia Pizzato.

Prof. Vinogradov, and Mr. Cleto Carbonara were responsible for documentation of pottery finds and objects.

Arch. Alessandro Massa was responsible of the architectural survey, the CAD digitalization and the updating of the plans of the city.

Architects Emiliano Mura and Miriam Rossetti were responsible for restoration of buildings in the town.

Architects Andrea Moretti, and Antonio Salvi were responsible for restoration of structures in Hamr al-Sharqiya.

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 Amri, Said al Salmi, Hassan al Jabri. We thank them all, together with all the Museum's team, for their kind helpfulness.

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Archaeological Report

Excavation in Area A, sounding in street A75 (trench supervisors: Cleto Carbonara and Vittoria Buffa, with Giulia Pizzato)

In Area A the street A75 runs from the City Gate in a southern direction. In front of the entrance to the Monumental Building 1 it meets street A44 leading to the MB1 and street A45, running West – East. It is bordered by residential buildings whose long life attests the numerous phases of the existence of the city of Sumhuram in the area. In an early phase it was in fact a street bordered by building BA5 to the West and BA2 and BA6 to the East. Later with the destruction of BA5 it became a square with the Monumental Building to the West, building BA6 to the East and room A175 to the South. To the North it met the square A8 in front of the City Gate. This latest spatial arrangement remained unchanged until the end of the life of the city.

From the early phase to the partial abandonment of the area, an open drainage channel was running South- East North-West to exit through the City Gate where it went underground and was carefully covered by stone slabs.

Street A75 has been excavated during several campaigns since 2004.

In the SUM15A campaign a small sounding was dug in A75 in front of wall M184 that was connecting wall M126 of building BA6 with wall M185 of building BA12. This work led to the discovery not only of the stratigraphy below the floor US22 down to the bedrock, but also of a short portion of a channel that seemed to run East-West. This second channel was dug in the bedrock and represents one of the earliest feature discovered so far in Area A. This discovery led in the SUM15C campaign to the enlargement of the sounding to the West to follow the direction of the channel. It was confirmed that this indeed a second channel running East West.

At the same time in SUM15C the original sounding of SUM15A was enlarged toward South and North, confirming, with few new data, the stratigraphy unearthed in SUM15A. Further more in what was at the time the northern portion of the sounding, the same was enlarged to the West to reach the external wall M66 of building BA5. The purpose of this operation was to verify at which elevation and on which level the wall was set. This has been checked again in this campaign further North in the trench, because a complex situation was unearthed in this small space, complicated also by the presence along wall M66 of a modern trench dug at the time of the restoration of the walls of BA5.

Considering the situation described above, we decided, in this campaign, to further enlarge the sounding toward North to reach the crossroad with street A45. The purpose was to obtain a long section that could give us a complete stratigraphy in the street (and therefore in the all Area A) linking the earliest layers documented in the northern part of the street and square A8 with the later ones so far documented in the southern part.



A75 before excavation

The *new trench* is now 12.60 m long and 1.70 m wide in the southern portion, while the presence of the channel made us to restrict the sounding to 0.89 m in the northern part.

Results of the sounding are visible in the section and can be summed up as follows, from the bedrock to what was the surface at the time of beginning of our work in SUM15A.

Bedrock

It was unearthed in the whole sounding. It has almost the same elevation of 28.23/28.24 m.

US775

Over the bedrock the so called foundation filling was made of loam reddish brown in colour and compact in consistence, with a clayish matrix, and mixed with a lot of limestone chips and blocks small in size. It had a thickness of 0.18 m to 0.30 m.

US846

It is the first living surface in street A75. US846 floor consists of an earth packed soil, very compact in consistence and greyish brown in colour. US846 floor had an almost even elevation of about 28.40 m in all the trench. A drain channel running from South to North and cutting the floor was detected. It is 0.26 m wide and 0.10 m deep. Its lower surface reached the foundation filling.

The accumulation US846 over the floor consisted of compact greyish loam, mixed with some calcareous stones small in size and few charcoals. It has an average thickness of about 0.15 m. US846 returned few fragments of animal bones and shells and seven pottery sherds: six belonging to storage vessels and one to a kitchen vessel.



US846 floor

US770

It is the layer that covers US846. US770 floor has been reached at an average elevation of 28.56/28.58 m in the all trench. It consists of an earth packed soil greyish in colour and very compact in consistence. US770 floor was cut by a drain channel 0.28 m wide and 0.08 m deep, with a south-north orientation.

The accumulation layer above the floor, US770, consists mainly of loam, compact in consistence and light brown in colour, with some mudbricks and few scattered small limestone stones. It has an average thickness of about 0.20 m. The layer returned a small amount of animal bones and shells. No pottery sherds have been recorded from US770.



US770 floor

US769

Above US770 there is US769. It has a slope from south toward north. In the northern part of the trench US769 floor has been reached at an elevation of 28.60 m. In the southern part of the trench the level of US769 floor raises up until the elevation of 28.77 m. US769 floor consists of an earth packed soil compact in consistence and grayish brown in colour. A drain channel cutting US769 floor was detected. It is 0.27 m wide and 0.20 m deep.

The accumulation above the floor is mainly composed by loam medium compact in consistence and light reddish brown in colour. US769 has a thickness of 0.15 m. It has also returned a good amount of bones and shells. In the layer it is possible to recognize some limestone blocks and some fragments of mudbricks. Pottery sherds from US769 consist of 23 storage vessels, among which 5 amphorae, and 6 table vessels.



US769 floor southern part



US769 floor central part



US769 floor northern part

US833

US833 covered US769. It has a slope from south toward north. In the northern part of the trench US833 floor has been reached at an elevation of 28.69 m. in the southern part of the trench the level of US833 floor raises up until the elevation of 28.92 m. US833 floor consists of an earth packed soil compact in consistence and grayish in colour.

The accumulation US833 above the floor was composed of loam, reddish in colour and compact in consistence. In the central part of the trench the layer shows a more soft consistence and a reddish brown colour with limestone fragments. US833 returned seventeen pottery sherds, 12 belong to storage vessels and 5 to table vessels.



US833 floor northern part



US833 floor southern part

US804

US833 was covered by US804. US804 floor consisted of hard packed soil, grayish in colour and compact in consistence. It has been reached at an average elevation of 29.05 m in the southern part of the trench. It had a slight slope toward North. US804 floor is not preserved in the southern part of the trench, because it was partially removed during the previous campaigns (see Buffa below).

Accumulation above US804 floor consisted of loam, grayish in colour and medium compact in consistence. In it a good amount of charcoals has been found. The layer has also returned some limestone fragments and a small amount of animal bones and marine shells.



US804 floor

US802

US804 was covered by US802. It was not preserved in all of the trench, but it stops at a distance of 4.54 m from the southern end of the trench, because it was partially excavated during previous campaigns. US802 floor has been reached at an elevation of 29.20 m.

The accumulation above the floor consisted of loam, medium compact in consistence and light brown in colour, mixed with some charcoals and few small stones. Only three pottery sherds were recovered : two fragments of storage vessels, and one of a table vessel.

The floors of US802, 804 and 833 were cut by a drain channel 0.54 m wide and 0.34 m deep. It has a filling of brown loam loose in consistence mixed with sandstone blocks small and medium in size. From the channel come 15 pottery sherds. 13 belong to storage vessels and 2 to table vessels.



US802 floor southern part



US832 (drain channel) after excavation, southern part



US832 (drain channel) after excavation, northern part



East-West section (South)



North-South section (southern part)



North-South section (central part)



North-South section (northern part)



North-South section (northern part)



A75 after excavation

In the last days of excavation in A75 the sounding was extended westward toward M66 of building BA5 to check the level at which M66 had been set. As it could be expected, the same stratigraphic sequence was present in the enlargement, except the presence at the US769 and US770 of US849, the result of the digging during the 12C campaign of a trench in order to restore the wall M66.

US770 floor and US769 floor were cut by the drain channel oriented North-South. US770 floor is at an elevation of 28.58 m.

Below US770 floor in US846 we noticed the presence of some stones and limestone slabs medium in size. They were only near the wall M66 and probably are linked with its construction. The floor of this layer, found at an elevation of 28.42 m, is grey and very compact and it returned animal bones. The foundation of M66 is set at the level of US846 floor. Between the last row of stones of the wall and the floor there is a row of mudbricks. The mudbricks can be put in relation with the levelling of the bedrock in order to build the wall M66.

US 775, the foundation filling, returned only few animal bones, covers bedrock. Bedrock has a slope from east to west. Its elevation from 28.14 m near M66 raises up to 28.24 m in the eastern part of the trench. In the enlargement toward West of the trench further South, near the corner of walls M66 and M120 of building BA5, the bedrock has been found at the elevation of 27.47 m, forming in this point a deep depression in the bedrock that is not present further North.

US775, between the bedrock and US846 floor, didn't return materials for which it is possible to think that the area was frequented before the construction of BA5. So we can infer the house belongs to the first phase of occupation of the site.



US846 floor with drain channel



Bedrock



Particular of the foundation of M66



East-West section (North)

The constructional phases in Area A after the completion of the sounding in street A75 (Vittoria Buffa)

Introduction

With the completion of the sounding in the street A75 it has been possible to establish the correlation between the stratigraphy unearthed in square A8, street A44, street A75 northern part, street A45, and the related constructional phases (see Buffa – Sedov, Report 2, p. 15-59), with the stratigraphy revealed in the middle and southern part of street A75 (from now on “*new trench*”), and the buildings facing the street (see Preliminary Reports 15A, 15C, 16A).

Buildings BA6, BA12, BA15 are the object of a forthcoming publication. In this report only walls of these buildings discovered in connection with street A75 are mentioned. For a brief, preliminary reconstruction of history of the buildings, especially BA6, see Preliminary Report 15B, p. 37-39.

Square A8 and street A75 were excavated from 2000 to 2006, then a last time in the SUM11C campaign. The stratigraphic situation left at that moment is as follows, starting from the city gate:

- In square A8, from the wall M15 of the city gate to gone past the entrance to BA1, the exposed level at present is US76floor (=US846floor in the new trench) of the 1st constructional phase
- Going South from there until the entrance to BA5 the floor exposed at present is US38floor (=US833floor in the new trench), the early floor of the 3rd constructional phase

- From the entrance to BA5 to past the corner formed by walls M66 and M120 of BA5 the floor exposed at present is US22floor (=US804floor in the new trench), the late floor of the 3rd constructional phase. Right at the corner formed by the two walls the floor now is not preserved anymore because of the presence of the modern trench dug to restore walls of BA5 in 2012.
- In the last southern 4.50 m of the trench a floor named US802 covers US804floor. The description of US22floor in the Preliminary of the SUM04A campaign helps to understand the nature of US802floor. “US22floor has been made from very hard packed greyish loam. It was *trumped several times with small stones and peddles, slightly raising its level.*” At that time it was decided to remove the upper part of US22floor to expose the first “original” floor. So in the part of A75 in question the floor US22 was not excavated to its “original” level and US802floor represents the rearrangement of the US22floor/US804floor with some additional loam and pebbles.

The stratigraphy and the constructional phases in Area A

A. In the new trench the earliest attestation of the occupation in the area is the channel M719, running East – West, dug in the bedrock. It runs under all the construction unearthed in the area and it has been tentatively attributed to a first, early settlement present in Sumhuram (see Preliminary Report SUM15A and SUM15C).

B. The stratigraphy in Area A is as follows:

1. The 1st constructional phase

The bedrock near the city wall M15 had been found at the elevation of 27.32 m, near M16 at 26.39 m. In this part of Area A the space between the bedrock and the earliest habitation level was filled up with the “foundation filling”, made of hard packed reddish or reddish brown loam, mixed with medium size and large stones, topped by lime chips (US87, 88, 89, 91).

In the new trench, in the northern part, the bedrock was found at the elevation of 28.24 m. The space between the bedrock and the earliest floor, US846floor, was filled up in the same manner: lime chips and below hard packed reddish loam with some stones (US775). In the southern part the bedrock was higher, the elevation of 28.30 m, and the foundation filling was made up only of lime chips.

The floor related to this phase in A8, eastern part, is **US76floor**, found at the elevation of 28.24 m. A channel running South – North to reach the city gate has been documented on the floor. The same floor (with the channel) has been documented in the new trench, with the number **US846floor**. The floor was found in the whole new trench at about the same elevation of 28.40 m.

During the first constructional phase three buildings have been constructed on the bedrock in the area inside the city gate: BA2 and BA5 in A8, BA4 in street A45.

Two walls related to this phase have been detected in the new trench, leaning on the bedrock or better on the thin layer of lime chips (US775): the first one M767, a long wall made of very well dressed limestone blocks, stands below wall M185 of building BA12 (see below) and wall M184 of A57. The second one is M126a, that later became the southern wall of BA6.

An extension westward of the new trench to reach wall M66, the eastern external wall of BA5, demonstrated that it was built directly on the bedrock that in this point had a drop of 1 meter to 27.47 m.

US76floor = US846floor

2. The 2nd constructional phase

In the 2nd constructional phase the floor in the northern part, A8, remained almost unchanged. In this phase building BA1 was built in the corner formed by M15 and M16 of the city wall. It stood on a thin layer of accumulation over US64floor, the floor of the first constructional phase in that corner. The other existing buildings remained unchanged or underwent some interior changes.

Now building BA6 is constructed.

In the new trench, in A75, **US770floor** marks this phase at an average elevation of 28.50 m. This was renovated with a new floor: US769floor at a level, from few cm to 15/20 cm higher than US770floor. On both floors the channel has been documented.

The walls at the sides of the entrance to BA6 from street A75, M106a and M104a, are documented; they are made of roughly dressed limestone blocks of different size. They are built on US770floor. Also BA15 is constructed during this phase. For layers inside BA6 related to this phase and BA15 in this phase see Preliminary Report SUM15C, p. 37-38.

3. The 3rd constructional phase

In the 3rd constructional phase major changes took place in A8 and A75.

Building BA1 was demolished and its ruins levelled with **US38floor**, the first floor that marks this phase at an average height of 28.70 m. The street A44, leading to the Monumental Building, was paved with stone slabs at the same elevation. In the northern part of A8 US38floor merged with **US22floor** that, at a higher level, covered the ruins of BA5 and all the area in question.

US38floor has been numbered **US833floor** in the new trench. Its highest level is at the southern end at 28.93 m, with a slope from South to North of 20 cm. US22floor was named **US804floor** and **US802floor** (see above) in the new trench where it covers US833floor (= US38floor).

BA6 underwent some important changes in the internal layout (see Preliminary SUM15C). Also at the level of US22floor the entrance to the building from A75 was rearranged. The entrance from the street was marked by two sandstone stones. Crossing them, to the left the entrance to A51 was marked by three slabs. The walls of room A51 were now made of long sandstone slabs placed upright in two external sides. It was most probably an open hall with a light roof sustained by beams. The passage to enter the long corridor A60 was marked by three long steps made of long slabs. Wall M126 of BA6 was renovated.

Wall M185, between BA6 and BA12 was also renovated.

During this phase building BA12 was constructed (see Preliminary Report SUM15C).

The channel was documented in this phase also in the new trench.

US38floor = US833floor

US22floor = US804floor and US802floor

4. The 4th constructional phase

The 4th constructional phase is marked in A75 by the construction of **US29floor**. It is not documented in the sounding object of this report, because it was excavated in previous campaign and it is not preserved in A75.

5. The 5th constructional phase

The 5th constructional phases is marked by the construction of **US21floor**. In this phase began the partial abandonment of the area. US21floor is not documented in the sounding object of this report, because it was excavated in previous campaign and it is not preserved in A75.

Excavation in Area B, west of building BB4 (trench supervisor : Saeed Al-amri)

The main goals of this excavation are to find the western wall in A231 of the building BB4, to understand relationship among A231, A204 and A205 and to find the western wall of the room A204.

The first layers I removed it was US 508. It consisted of medium compact loamin some part, brown in color. The excavation of this layer preceded from the North towards the South. During the excavation some findings were collected, some pottery, little shells and bones. I found the floor of this layer at the elevation of 29.65m. After the removal of this layer I found a lot of stones big and medium in size. At this time of the excavations is still not clear if these stones are part of a wall closing the street southwards. Going down with excavations it is possible to affirm that these stones are only a collapse, coming from the surrounding structures, set on US516 floor. Among the collapsed stones there is a truncated cone-shaped limestone mortar.



Collapse with limestone mortar



Excavated area after the removal of the collapse

Below US 508 , US 516 was discovered. It consisted of medium compact ,grayish brown and reddish brown in color. US516 partially covers the collapse in the southern part of the trench. The collapse stops at the level of US516 floor, found at an elevation of 29.44m.

US 774 was the last layers I found in this campaign. It was reddish brown in color and consisted of medium compact loam. It rests on an earth packed soil reddish brown in color interpreted as floor. US774 floor was found at an elevation of 29.02 m and it is not preserved in all the trench, but only in its north western part.

After the removal of the US774, the trench was enlarged southwards. After the removal of the natural surface, US862 was excavated. It was brown in color. The consistence of this layer is not homogeneous. It is medium compact near the southern wall of A231, while it becomes more loose going southwards. US862 rests on a compact level interpreted as floor, found at an elevation of 29.42 m. Below this layer we found another time the US774. The excavations stops at an elevation of 29.02 m. In the southern part of the trench the US774 floor is not preserved. From this level near the southern wall of A231, there are some stones going down to the floor in A204, forming a kind of staircase.



Probable staircase in A204

The excavations in the area placed west of the building BB4 didn't return a large amount of materials, only few pottery sherds and some animal bones and two bronze coins from the US862. Further excavations will be useful to understand better the general plan of the area and the real extension of the building BB4.



Area west of BB4 after excavation

Excavation at Area F, square A20 and room A48 (trench supervisor Yuri Vinogradov)

During SUM16A campaign the deep soundings, which were cut at Area F in SUM15C, were joined together by new trenches. The investigations were carried out in northern and southern parts.

Northern part of the area (A20)

It's the square of the room A227. The original size of the investigated area was 3.60×1.60 - 2.40 m.



Square A20 before excavation (North-West view)

But later it was enlarged to reach the dimensions of 4.55×4.30 m.

It was delimited by wall M603 in the east, by the wall M600 in the south and by the deep sounding of SUM15C in the west. Aims of these investigations were:

- to join small soundings in one comparatively big area;
- to understand the remains of construction, found in soundings;
- to study all square of room A227;
- to study early layers of the area.



A20 during excavation (North-West view)



A20 during excavation (North-West view)

We started the works at A20 at the elevation of 26.72 m. Firstly was removed **US54 floor**, the current walking level in the square. It was a compact layer of reddish loam with stones of small sizes. The thickness of US54 floor here is 5-6 cm. Finds: pottery fragments, animal and fish bones, sea shells. US854 floor within room A227 covered the layer **US850**. We started to study this strata at the altitude of 26.67 m.

As it could be seen at the section of the previous season of excavations, the layer US850 consists of four “sub-layers” – loam brown, lime grey, loam brown and loam brown with numerous small stones. All of them fall to the east. The upper **US850a** was the sub-layer of light brown loam with stones. Finds: animal and fish bones, pottery fragments, sea shells, fragments of lime plaster (2 fragments of ornamented plaster) and 3 fragments of bronze objects.

This layer, the layer US850b and partly the layer US850c were cut with construction of a **primitive hearth**. This hearth was found at the altitude of 26.58 m. It's a semicircular pit (the diameter – 0.91 m, the depth – 0.30 m), situated near wall M754a. The trench was connected with this pit (the length – 0.62 m, the width – 0.34 m, the depth – 0.28 m). The filling of the pit and of the trench – **US852**. It was a layer of ash with small fragments of charcoals. Finds: animal bones, partly burned, and one fragment of cooking pot.

US850b was the compact grey lime layer mixed with sand, its thickness is 7 cm. This layer had fall in the north-east direction. The elevation in the south – 26.63 m, in the north – 26.52 m. Finds: animal and fish bones, 2 fragments of pottery.

US850c was the light layer of brown loam with small stones. The work was started here at an elevation 26.49 m. Finds: fragments of pottery, 2 fragments of bronze objects, fragments of lime plaster, numerous bones of animal and fishes, sea shells.

US850d was the layer of brownish loam with numerous stones of small and medium size and fragments of lime plaster. The excavations here were started at the elevation 26.42 m. From the level 26.00 m the excavations were carried out to the east till the wall M 603.

Finds from US850d are not numerous: 1 bronze coin, bones of animals and fishes, sea shells, fragments of pottery, 1 fragment of stone vessel, pieces of lime plaster.

In lower part of US850d, at the elevation 25.78 m, near the wall M 603 a fire-place **US852** was found.



Fire-place in room A227 (South-West)

It was the pit of an oval form ($0.90 \times 0.54\text{-}0.61$ m, the depth is 0.14 m). The bottom of this construction was covered with small stones; part of this cover survived in the western part of the pit. It was filled with ash with small pieces of charcoal. Two small fragments of burned animal bones were found in this filling.

At the elevation of 25.76 m **US850 floor** was reached. The thickness of this layer is 5 cm only. Bones of animals and some fragments of pottery were found here.

The **excavations of the room A227** were stopped at the elevation of 25.71 m.



A20 after excavation (North-West view)

The staircase M768 in the north-western corner of this room was opened in the deep sounding of SUM15C.



Staircase M768. View from the south-east

It was restricted by two walls – M754 and M766. The size of the staircase is 0.93×0.78 m, the height from US850 floor is 0.66 m. Three steps of the staircase were discovered during

SUM16A. They were made of dressed stone slabs. The width of the every step is 0.30-0.34 m, the height – 0.18-0.19 m. In the construction of the staircase one good dressed stone with the part of relief was used.



Wall M766 of the staircase. View from the south

Probably, it was the fragment of an earlier altar or another cult monument.

It is very important to emphasize that the eastern part of the wall M754 was investigated during SUM16A. It comes for the 1.98 m from the lower step of the staircase and has a junction with the wall M754a in the north.



Walls M754 and 754a. View from the north-west

They come together to the east for a distance of 0.74 m only. It's possible to suppose that M754a makes an angle to the north here.

The length of the wall 754a is 4.45 m, the width – 0.70 m, the height from the US 850 floor is 0.91 m. It consists of roughly dressed stones of medium size.

The room A227 is investigated completely now. It has the northern wall M754-754a, the eastern wall M603 and the southern wall M600.



Wall M600. View from the north-east

With the door in the wall M600 this room was connected with the southern room A228. Its length from the wall M603 till the angle of the walls M600-601 is 4.52 m. The width from the wall M600 till M754 is 3.41 m, but till the wall M754a is 4.31 m. As was said earlier, these two walls, M754 and M754a come in one direction, but M754a was built to the north from M754.

The room A227 has a passage to the north in the wall M754a.



Wall M754a, passage to the room A227. View from the south-west

The width of it is 0.89 m. The primitive staircase was built near this passage. It consists of two steps, made of undressed stone slabs. The width of the steps is 0.38 and 0.26 m, the height – 15 and 8 cm.

We didn't find the western wall of A227. It seems that this wall was never built, but **the primitive wall** situated between walls M600 and M766. This construction was erected in the latest period of habitation of this place. It consists of 4 big stones laid in one course, the foundation of the primitive wall is at the altitude of 26.26 m. The height of this wall is 0.22 m, the width is 0.23-0.34 m. It was removed for the better study of the earlier strata.

If the room A227 hadn't a western wall, it was open in this direction, to the Earlier Temple. We can suppose also that this area was the part of the Temple yard, situated near the staircase.

On the outside of this room, to the north from the wall M754 a part of layer **US841** (1.30×0.78 m) was studied. This layer was partly investigated in deep sounding during SUM15C. It consists of greasy soil, brownish in colour, loose consistence. The excavations were started at the elevation of 26.58 m and were finished at the elevation of 26.32. Finds: two bronze coins, a fragment of bronze vessel, an iron ring, fragments of pottery, animal bones.

Part of the platform of the Early Temple survived in the angle of the walls M36 and M40. It's clear now that all walls and staircase M768, discovered during SUM15C, belong to the construction of the platform of the Early Temple, which was covered by the platform of the Later Temple.



Platform of the Earlier Temple. View from the north-west



Platform of the Earlier Temple. View from the south

The size of this part is 4.10×3.05 m, the height from the bedrock – 1.41 m. The curvilinear wall M766 created the external façade of this part of the platform. The inner space of it was filled with stones of medium size, but the lower part of it (thickness – 0.35 m) consists of clay.



Platform of the Early Temple. View from the south-west

The planning of the area adjacent to the platform from the south will be described lower.

Southern part of the area (A48)

The size of the investigated area is 6.40×4.25 m.



The area of investigation at the square A48 before excavations. View from the north-west

It was delimited by wall M48 in the north, M601 in the east, M93 (BF5) in the south and M86 (the Later Temple wall) in the west. It included the square of the deep sounding, which was excavated in SUM15C in the corner of walls M48 and M86. In all the square of the southern part the level of the bedrock was reached.

Aims of these works were the same stated above for the northern part of the area.

The works at A48 were started at an elevation of 27.04 m. Firstly was removed **US54 floor**, the current walking level in the square. It was a rather compact layer of reddish loam with stones of different size. The thickness of US54 here is 18 cm. Finds: fragments of pottery, animal and fish bones, 2 fragments of mill stones, primitive querns. Fragments of cooking ports are especially numerous among pottery finds. The bottom of the big stone basin of round form was found to the west from the wall M100.



Pile of stones near the wall M100. View from the north-west

Once removed the US54 floor, we reached the new layer **US817**. It was brownish and reddish in colour and rather soft in consistence with stones of small and medium size, fragments of mudbricks and charcoals. The thickness of this layer is about 15 cm. Finds: numerous fragments of pottery, 1 fragment of glass vessel, animal and fish bones, sea shells. Three bronze coins were found also.

After the removal of US817, we discovered **US820**. It was rather hard and compact, reddish brown in colour with crumbled mudbricks. We found here numerous fragments of pottery (1 fragment of the storage vessel with graffito), 12 bronze coins (2 of them are of big size), 1 bronze nail, small fragments of bronze objects, many bones of animals and fishes, sea shells.

From the altitude of 26.43 we started to study new layer **US 853**. It was rather soft, brown in colour, with big stones and small charcoals. Finds: 13 bronze coins, 2 coins of a big size, fragments of bronze objects, a pendant from a shell, a bead of the violet stone. Numerous fragments of pottery were found in this layer, 1 fragment of the storage vessel has a graffito. Some examples of storage vessels of the Hadramawt type are especially significant.

Part of the incense-burner of round form was found also. It has ornamentation in a form of incised triangles. But the best find of this layer is the big incense-burner covered with the red paint with good incised decoration. The wild goat (*ibex*) and the palm-tree are represented on the side of it.



Incense burner from US853



US854 was the loam strata with numerous big stones near the wall M66. It had the altitude of 26.25 near this wall, the thickness of it gradually became smaller to the east. It came to an end in the distance of 1.80 m from the wall in the altitude of 25.72 m. Finds: fragments of pottery (one fragment of a storage vessel with graffito), bones of animals and fishes, sea shells.

After removal of US 854, we started to study **US855** in the altitude of 26.12 m in all southern part of the area. It was rather compact strata, brown in colour with a lot of stones of small and medium size.

Finds: 2 bronze coins, fragments of storage vessels with graffito, the stone incense-burner of round form on the round stand. In the lower part of this layer four good dressed stone slabs were found.



Stone slabs near the wall M100 (US855). View from the north-west

Two good dressed slabs are the fragments of the big slab ($0.85\text{-}0.93 \times 0.47\text{-}0.49$ m, the thickness – 10 cm) with the hollow in the central part (diameter – 14.5 cm).



Stone slab with hollow

Another good dressed slab (0.72×0.41 m, the thickness – 10 cm) has a spout in the central part (width is 3.5 cm, depth – 1 cm). One stone ($0.22 \times 0.22 \times 0.73$ m), dressed from two sides, has

the spout in these two sides (width of the spout is 3.5 cm, depth – 1 cm). Perhaps, it was the support of a certain construction. In all probability these slabs belonged to the construction of the toilet.

US 853, US 854 and US 855, as we can suppose, are the constructing layers of the temple. All incense-burners and perhaps the good dressed slabs of the toilet belonged to the earlier building of the temple.

After removal of the construction layers of the temple, we started to study **US859** in the altitude of 25.91 m. It was rather soft reddish brown in colour with crumbled mudbricks and small stones.

Finds: 2 bronze coins, spindle ware, fragments of pottery of different types, numerous bones of animals and sea shells. The neck of the amphora was found in the lower part of this layer.



US859: Amphora's neck

From the altitude 25.63 m we started to excavate the layer **US861**. It was a soft strata of brownish-grey loam with ash sub-layers. Finds: 1 bronze coin, a baseless incense-burner of round form, a stone axe, a bead of red stone, a pendant from the shell, fragments of pottery, animal and fish bones. There was an amphora's leg among pottery finds in this strata.



US861: Amphora's toe

The underlaying layer at the altitude 25.59 m was **US861 floor**. It was a compact layer of the red-brownish loam. The depth of it was 7 cm. The finds: bronze coin, fragments of pottery, animal bones, sea shells.

In the corner between the walls M93 and M785 the ash pit was found – **US863**.



Ash pit in the corner of the walls M93 and M785 (US863). View from the north

It had an oval form (0.92×0.68 m), a depth 7 cm. The filling of the pit consisted of ash with small pieces of charcoal. Finds: 3 fragments of cooking pots and small fragments of animal bones.

From the altitude of 25.72 we started to excavate the layer **US864**. It was a soft grey-brownish strata. The number of finds became scanty: fragments of pottery, animal bones, sea shells. This strata covered the bedrock.

At the altitude of 25.51 we reached **the bedrock** near the walls M66 and M93.



A48, surface of the rock. View from the north

Its level falls to the northern and eastern directions. Its altitude in the north, near wall M48 is 25.33 m. Directly on the surface of bedrock **three stones** of different size were found. The first is the base of a column (0.33×0.30 m, height – 0.27 m).



Base of column, view from the north

It was put in the place, specially cut in the rock. The second is the fragment of stone slab, that could be the base of column (0.33×0.31 , height – 0.12 m).



Stones in the corner of the walls M48 and M66. View from the south-east

The third is a big roughly dressed stone (0.36×0.28 , height – 0.39 m), which was put vertically. All these details could belong to the construction of the Early Temple only. In the eastern part of the area at the altitude of 25.55 cultural debris with a lot of undressed stones was found. It's the layer **US866**.



US866, concentration of stones. View from the north-east

It consists of reddish loam with stones of big and medium size. Finds: 2 bronze coins, a shell bead, a semi-finished mill-stone, fragments of pottery, animal bones, big sea shells.

At the altitude of 25.32 we started to study the layer **US869**, overlaying the bedrock here. It was a soft grey-brownish strata with scanty finds – the fragment of iron nail, some fragments of pottery and animal bones.

To the layer M869 the part of **the wall M783** belongs.

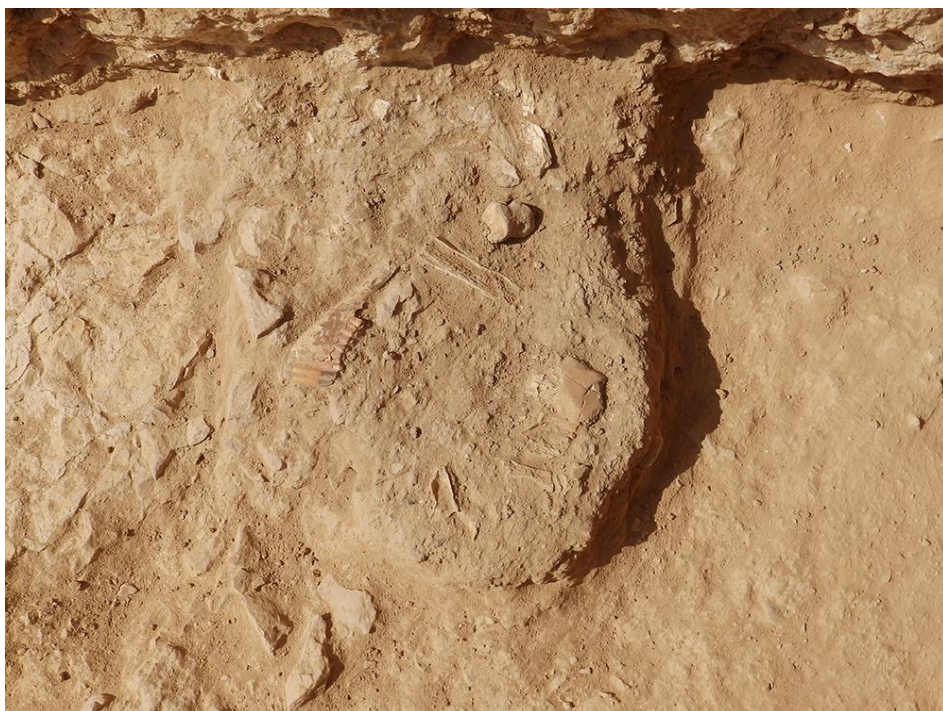


Wall M783, view from the south-west



Wall M783, view from the north-east

Its length is 0.80 m only, the width – 0.48 m, the height – 0.22 m. The wall is made of small undressed stones. No archaeological contexts connected with this construction were found. In this strata near the northern façade of the wall M100, in 1.60 m to the south-east from M783, at the altitude of 25.31 m a concentration of animal bones was found.



US871, place of concentration of animal bones

This concentration (**US871**) had a size 0.40×0.37 m. The level of the bedrock was reached here at the altitude 25.25 m.

The wall M100 was partly discovered in the season of SUM15C, now it's opened completely.



Wall M100, view from the south-west

The wall was built on the bedrock, the length of it is 3.30 m, the width – 0.63 m, the height – 2.25 m. The wall divides this area on two parts – northern and southern. It is hard to believe that

such a high wall belongs to the early time, but M100 makes the angle with the **wall M784**, which comes to the north, under the platform of the Later Temple.



Angle of the walls M784 and M100. View from north-west

The length of this wall is 0.64 m, the width – 0.40 m, the height – 0.61 m. The foundation of M784 partly lays on the strata US869.

The unordinary structure was erected near the northern façade of the wall M93 of the Monumental Building–2 (2.85×1.87 m, the height is 1.56 m).



Construction near the wall M93 of the Monumental Building–2. View from the north-west

Two walls of it survived – the northern **M785** and the western **M786**. The foundations of both walls were built of roughly dressed stones (width – 0.40 m, height – 1.10 m). In spite of bad quality of this masonry, maybe, firstly it was designed like an ordinary room, because it has an entrance in the central part of M785 (the width – 0.66 m). But later the walls of mudbrick and loam were erected over this foundation (the width of these walls are about 0.30-0.35 m), and all inner space of the construction was filled with loam with stones. This filling we left unexcavated. In all probability, this construction had continuation to the east till the similar structure M634, which was investigated during previous archaeological seasons. The function of these unordinary structures is unclear.

The wall M48 of the Later Temple in its eastern part was supported with a special construction, it was the **wall M90**, which was partly opened in the season of SUM15C and fully investigated this year. **This supporting wall**, bent to M48, was made of roughly dressed stones in one course.



Wall M90, view from the east

It was erected on the bedrock. The length of the wall M90 is 1.82 m, the width – 0.18-0.39 m, the height – 1.82 m. It's necessary to note that long and short stones interchanged in this masonry. The space between walls M48 and M90 was filled with clay.

Small part of the **wall M787** was found to the north from the angle of the room A228 (walls M 600 and M 601).



Wall M787, view from the south

The size of it is 0.50×0.44 m, the height – 1.22 m. The wall was built on the bedrock. It's slightly inclined in northern direction. Maybe it was a supporting construction of the wall, which restricted the entrance to the area near the temple. There is a passage between M787 and the platform of the Earlier Temple, the width of it is about 1 m.



Passage between the platform of the Earlier Temple and the wall M787

Of course, this construction was connected with the Earlier Temple, and it was badly destroyed when the room A228 was erected.



Wall M787 and the room A228. View from the north-west

It seems that A228 existed in the late phase of this temple. The stones of the northern façade of the wall M 600 fell on the US850 floor.

List of layers in its connection with construction periods of the Temples

US54 floor, US817, US820 – period of existence of the Later Temple.

US850a-d, US853, US854, US855 – period of the construction of the Later Temple.

US841(?), US850 floor, US859, US861, US861 floor, US863, US866 – period of existence of the Earlier Temple.

US864, US869, US871 – the earliest period of the site (before Sumhuram).

Conclusion

Excavations at the Area F in 2016 gave materials for our understanding of construction activity at the area of the temple.

The earliest strata of the site is the grey colour layer, which covered the bedrock (US864, US869, US871). It's a very poor layer. We found here only some small fragments of pottery and animal bones. But part of the primitive wall and a place of concentration of animal bones were investigated. These remains are too poor to belong to the city Sumchuram. Maybe, there was a settlement (temporary?) of the local population before the foundation of the city. Quite possible that this strata can be dated with Hellenistic time (II–I centuries BC), anyway, it formed here before the foundation of Sumhuram .

The sequence of the construction activity at this part of Sumhuram is approximately clear. Monumental Building–2 was erected firstly. Then the complex of the Earlier Temple was built. The staircase M768 and all these curvilinear walls (M753, M754, M766) are parts of the platform of this complex. Bases of columns, which were found in the earliest strata, can be connected with construction of the Earlier Temple only.

It's strange, but the wall M100 belongs to the early period (the height of it is 2.25 m) , it makes an angle with another wall (M784), which comes under the platform of the Later Temple.

The building of this temple was not the only late construction at the trench of this year. It seems that room A228 is relatively late too. The early wall M787 was destroyed when it was built. We can suppose that before A228 was constructed, the room A227 had rather big size, and all this area between the wall M93 of the Monumental Building–2 and the wall 754a was opened to the west, to the earlier temple. Maybe, it was the territory of the temple yard of the Earlier Temple.

The room A228 was built in this area later, but it existed till the reconstruction of the complex of the temple. The stones of its destruction fell on the floor US850. After this destruction the space of both rooms (and of the room A224, situated to the east from A227, also) was filled with the layers of construction of the Later Temple.

**Area G, squares m-n/14-15, new square A260 and new rooms A261 and A262.
(trench supervisor: Cleto Carbonara)**

The Area G is placed in the north-eastern corner of the city. It is delimited by the city-wall on its northern and eastern sides. On its western side there is the residential quarter of the city. To the south there is the area with the storehouses.

The Area G was already object of archaeological investigations. In the 50's, the American Foundation for the Study of Man (AFSM) focused his works along the northern and the eastern side of the city-wall. Along the northern side they excavated a room of very large dimensions oriented east-west, named VI E 14. This room had an entrance on its eastern side through a staircase. Along the eastern side they excavated several rooms interpreted as apartments or kitchens.

The IMTO (Italian Mission To Oman) resumed the excavations in the Area G during the SUM08B campaign enlarging westward the trench along the northern city. Here three new rooms along the western side of the big room excavated by Americans have been discovered.

The SUM16A campaign in the Area G has the main goal to connect the previous trenches made by AFSM and IMTO, in order to better understand the layout of the whole area. The area to excavate has a natural slope from north-east to south-west. The starting level is at an elevation of 30.31 m along the eastern city wall, and at an elevation of 29.93 m along the western limit of the trench. We have chosen to start the excavations from the section left by the AFSM and IMTO in the northern part of the area and enlarge the trench southward. Here, after a general cleaning of the areas already excavated and the removal of the path for the tourists, we start to remove a layer made of sand and very loose loam reddish in color with small stones and shore cobble and pebbles. No finds from this layer. It has been interpreted as the natural surface formed during the years. It covered another layer, US851, made mainly of limestone blocks and sandstone blocks and slabs mixed with loose reddish loam. It has been interpreted as the collapse of the walls surrounding the big room along the northern city-wall and the collapse of part of the eastern city-wall. It is mainly concentrated along the eastern city-wall. The collapse has two main orientations: NE-SW and SE-NW. Its thickness raises up from 0.23 m in the western part of the trench, to 0.96 m in the eastern one.

The US851 covers US279 in the western part of the trench. Along the eastern city wall the collapse rests on US279 floor. US279 starts at an elevation of 29.56 m and consists of loam brownish-gray in color and loose in consistence. It is characterized by the presence of a lot of charcoals and ashy lenses. The US279 returned some fragments of table and storage pottery, a bronze coin (Co1005), a bronze nail (MB957), a stone vessel (S2841), a multifunctional tool (S2842), and a whetstone (S2847).

After the partial removal of US279, it is possible to see the external face of M294, and the south-eastern corner of VI E 14. It looks like that this large room had a second entrance from its southern side.

US279 floor was unearthed at an elevation of 29.20 m. It consists of a packed soil grayish in colour with a slope from south-east to north-west. Its elevation in the southern and eastern part of the trench is 29.30/29.35 m.



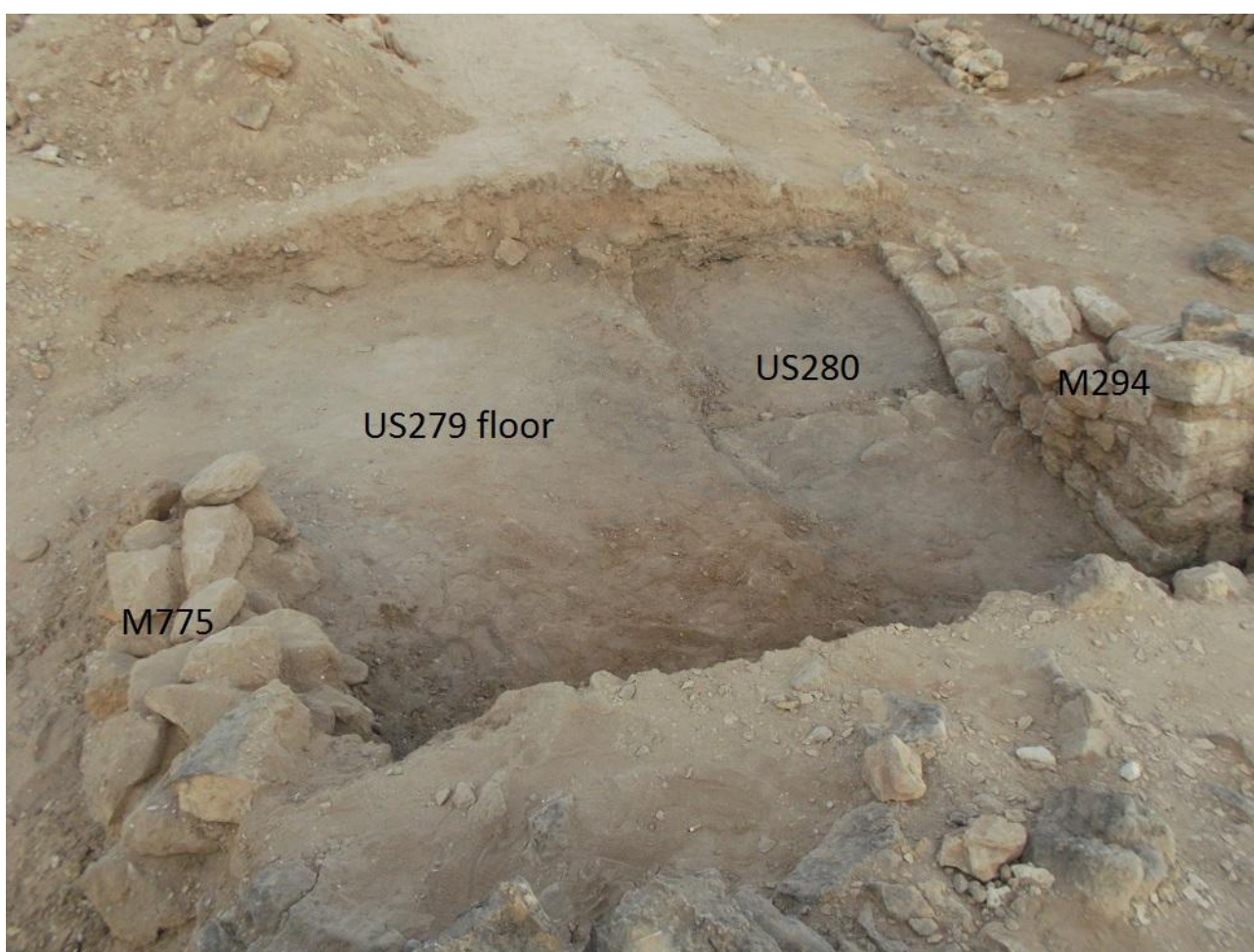
Area G before excavation from East



Probable entrance in M294



US279 floor northern part (from East)



US279 floor southern enlargement (from east)

The excavation of US279 brought to light a wide open space south of VI E 14. This square, named A260, during SUM16A campaign, was divided in two parts by a wall, M775, oriented east-west leaning on the eastern city wall.

Below US279, US280 was excavated. It consists of light reddish brown loam with a medium compact consistence. The layer has a clayish matrix. US280 floor is an earth packed soil compact in consistence and grayish brown in color. Along M294 a large pit with irregular shape cuts US280 floor. It is filled by loose loam and some stones small in size. Two fireplaces have been recognized during excavation of US280. One is along the eastern limit of the trench. The other one is along the western limit of the trench. US280 returned a large amount of iron slags.



US 280 floor northern part of the square A260 (east view)

US280 was excavated also in the southern part of the square A260. Here it is the first layer that we recognized. In particular near the wall M775, US280 shows a more loose consistence and there are some sandstone blocks small and medium in size in it.



US280 in A260 southern part before excavation.

US280 floor has a slope from north to south. Its elevation raises up from 28.52 m. in the southern part of the square A260, to 28.80 m. in the northern part. In the south-western corner of the square A260, US280 floor is cut by a rectangular and regular pit that can be interpreted as a trench made during the American excavations. US280 returned two bronze coins (Co1019 and Co1040), two incense burners (S2849 and S2852), three soft-stone vessels (S2853, S2854 and S2866), a bone pendant (B107) and a limestone container decorated with a bull-head (S2855).



US280 floor in the southern part of A260



American trench in US280 floor



US280 floor in the northern part of square A260 with limestone basin.

By the presence of several fireplaces along the eastern and western section boundary of the trench, and by the finding of a large amount of iron slags, it is possible to think that the square A260 was dedicated to metal working. It is also reasonable to think that the square in more ancient times was a wide open space with no partition wall. The foundation of M775 is not set on the level of US280 floor but it is at an higher one.

Excavation in squares m-n/14-15, new rooms A261 and A262

After the complete removal of US280 from the square A260, we started to investigate the area placed immediately west of A260. Here there are some structures and walls emerging. In order to understand better the plan of the area we decided to enlarge the trench westward.



Area G, west enlargement before excavation

The excavations started in the area between the two walls M779 and M780 both oriented north-south. After the removal of the natural surface made of sand and very loose loam light brown in color with small stones and shore cobble and pebbles, another wall was unearthed, M778, oriented east-west. This wall divides the area in two rooms, A261 to north and A262 to south.



A261 and A262

A261

It is a room oriented east-west, delimited by the walls M776 to the North, M777 to the East and M778 to the South. The real extension westward of the room it is still unclear. Its western part was interested by the presence of a collapse of limestone blocks medium and large in size, US868.

In the eastern part of the room the US865 was excavated. It starts at an elevation 29.48 m. and consists of loam with clayish matrix mixed with several crumbled mudbricks. US865 has a slight slope from East to West. It rests on a very compact earth packed soil whitish gray in colour interpreted as floor. In the south-eastern corner of the room, US865 floor is cut by a pit small in dimensions filled by loose and burnt loam. US865 floor was found at an elevation of 29.30 m.

The layer returned a whetstone (S2876) and a stopper (C177). Pottery from US865 consists of four sherds belonging to storage vessels.



A261: US865 floor with collapse US868

A262

It is a long room, probably a corridor, delimited by the walls M778 to north, M779 to west, and M780 to east. Only the northern part of the room was excavated during the SUM16A campaign. The first layer excavated in A262 is US867. It is an accumulation layer located in the room A262. It consists of loam light brown in colour and loose in consistence, mixed with calcareous stones small in size and several crumbled mudbricks. No floors have been recognized related with this layer. US867 starts at an elevation of 30.15 m. and returned nine pottery sherds. Seven fragments belong to storage vessels and two to table vessels.

Below US867, US870 was excavated. It is an accumulation layer made mainly of loam with clayish matrix reddish brown in colour and medium compact in consistence. It is characterized by the presence of several traces of burnt, lenses of ashes and charcoals. Also stones small in size and a good amount of animal bones and shells have been found in it. US870 rests on a floor consisting of an earth packed soil not preserved in all the excavated part of the room. US870 floor was found at an elevation of 29.35 m. US870 returned three bronze coin and 24 storage, 6 table and 18 kitchen pottery sherds.



US870 in A262



Area G western enlargement after excavation.

Excavation area H, square m/8 (trench supervisor: Giulia Pizzato)

In this area a white flat square-shaped stone was already exposed. During the excavation to create an easy passage for the tourists another similar stone was found. The soil between the two stones was excavated and some stones have been exposed covered by a base of mortar for three flat square stones. This is M774 wall, orientated NE/SW, which I think should continue in a South direction in parallel to M596, but it was destroyed in ancient time. The wall is at an elevation of 29,47 m. US856 is the layer between the two stones and is characterized by a grayish very compact soil with little white stones and reddish spots. The same US was found also under US 860 in the area behind. US 856 begins at the elevation of 29,62 m and ends at 29,27m. US 857 covers US858. US857 (elevation of 29,36 m) surrounded flat stones and it is composed of medium compact soil and big stones. It returned animal bones, shells, few fragments of pottery, a fragment of coin and a stone tool. US858 consists of compact grayish soil and its elevation is 29,19 m.



Us 858 and wall M774 from the east view

This layer was removed to level the area in front of the wall M774. US 612 floor at 29,13 m elevation was exposed, while behind, the area was excavated to reveal the US856 floor under US 856, at 29,26 m elevation. This layer is a floor made of plaster, there are also some holes (elevation of 29,26/ 29,29/ 29,28 m). I think it should extend also in a western direction. I began to inspect the area behind the wall in a southern direction and the floor is not preserved but the presence of a layer of well-trod soil for the floor was evident. Also the excavation of M596 in north direction revealed that the wall continues in the same course, lots of stone are lost


and only a row of limestone covered by plaster is visible. The highest point is 29,82 m elevation, while the plaster is at 29,05 m of elevation.

All layers returned bones, pottery fragments and shells. In US 856 coins, little bronze objects, some pieces of irons, and a half of an incense burner were recovered.




Us 612 and wall M596 from East


Object Index Card

Registration Nr. SUM16A, US853, 20 S2856			
Provenance Area F, A48			
Drawing code Nr.			
Definition Incense burner Type I.2	State of preservation Good	Measures l. w. h. th. diam.	Shape
Material Limestone	Preserved part		Section
Description SUM16A, US853, 20; S2856 Limestone incense burner. It is composed by two elements. A truncated pyramid-shaped base well smoothed (h. 7.3; l. 12; w. 11.4). The upper cubic element that has the function of receptacle. The frontal face is higher than the back one (h. from 16 to 12.5; w. 14.1; l. 12.7). the recess on the top is squared in shape and trapezoidal in section. It has a squared rim and a flat bottom. The frontal rim is decorated with merlons. The lateral sides have three steps from the frontal face to the back one. The object is covered by a red paint. The frontal face has the crescent moon with the disc on a trapezoidal base in bas relief between two horizontal bands of crossed incised oblique lines. At the sides of this motif there are two false windows in bas relief. At the bottom of this face there is a frieze of triangles in bas-relief. The left face is decorated by crossed incised oblique lines divided in three horizontal panels. In the upper right corner of this face there is a false window. The back face also has three panels of crossed incised lines but disposed in vertical sense. The right face has at the top an horizontal band of crossed incised lines with a false window to the left. Below it there are two vertical panels. In the left one there is a palm tree. In the right one there is an ibex with the body facing left and the head facing right. Below them there are two horizontal frieze of triangles. The higher one is taller than the lower one. Below there is a horizontal band of crossed incised lines. Also the base is decorated. The frontal face has a horizontal band of crossed incised lines at the bottom and two vertical bands with the same decoration at the sides. The other three faces have the same decoration. It consists of two parallel horizontal incised lines along the bottom and two parallel vertical incised lines along the sides.			
Responsible C.C.		Date 11/03/16	


Object Index Card

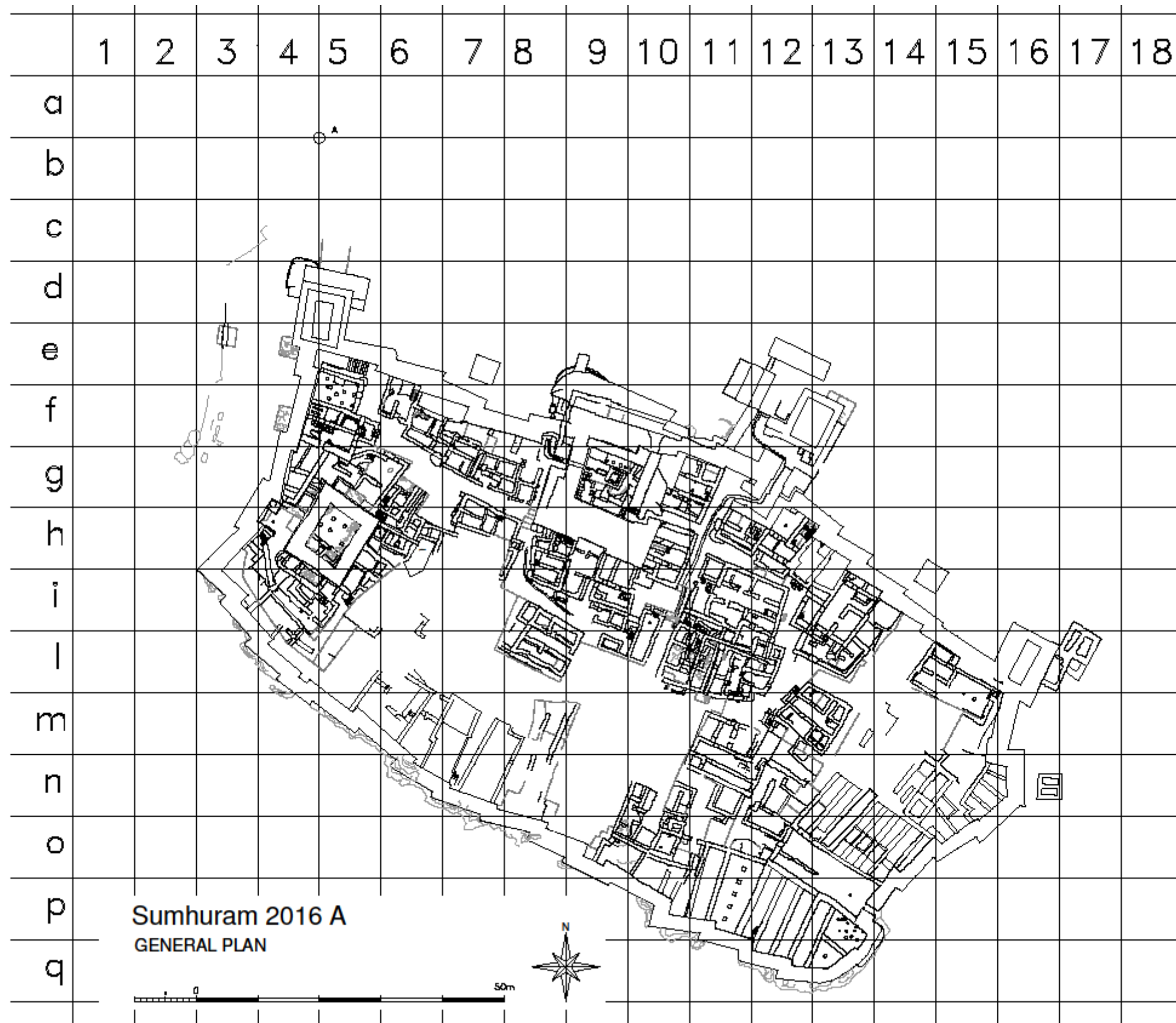
Registration Nr. SUM16A, US280, 6 S2855				
Provenance Area G, m/15				
Drawing code Nr.				
Definition Limestone container	State of preservation Fair	Measures l. w. h. th. 1.8 diam. 20	Shape	
Material Limestone	Preserved part Fragmentary		Section	
Description SUM16A, US280, 6, S2855 Rim and wall fragment of a limestone container. Rim is squared with its upper part flattened. External wall has a convex profile. External and internal surfaces are well smoothed. Traces of a probable red paint are on the internal surface. Projecting from the external wall there is a bull's head with U-shaped horns. The final part of the horns is not preserved. Snout has a cylindrical shape with two parallel incisions to indicate nose and mouth. Two slightly triangular elements between the horns indicate the eyes. It is not clear if the bull's head was used as handle or it is only a decorative element.				
Responsible C.C.		Date 09/03/2016		

Object Index Card

Registration Nr. SUM16A, US280, 2 S2849			
Provenance			
Area G, m/15			
Drawing code Nr.			
Definition Incense burner	State of preservation Fair	Measures l. w. 11.6 h. 14.2 th. 9.8 diam.	Shape
Material Limestone	Preserved part		Section
Description SUM16A, US280, 2, S2849 Composite incense burner. The base is missing. The base had to be composed by four small squared pillars resting on a kind of plinth squared in shape (for comparisons see Hassel 2002; pp. 162-3, fig. 10). Only the beginning of the four pillars is preserved. The upper element is rectangular in shape. At its top there is a rectangular recess with trapezoidal section. Its bottom is characterized by intensive chipping marks and by the presence of a burnt substance. The squared rim of the recess is not very well preserved and had to have three merlons for each side. All the four faces of the object are decorated. The decoration of the back face and of the two lateral ones consists of oblique incised lines forming a series of lozenges. The same motif is visible also on the merlons. The frontal face has a more elaborate decoration. In the centre there is the motif of the crescent moon with solar disc resting on a trapezoidal base. The trapezoidal base is decorated by oblique lines forming lozenges. On the left and right side of the frontal face there is the motif of the false windows. False windows are also on the frontal face of the merlons. Between the upper element and the four pillars there is a rectangular element decorated with a frieze of dentils.			
Responsible C.C.		Date 21/02/16	

Pottery Card

Index Nr. SUM16A US853, 21				
Provenance Area F A48				
Photo				
Drawing code Nr.				
Category Storage				
Shape Closed	Type Jar	Preserved part Rim and wall	State of preservation	
Measures. cm Diam. 32 Th. 2	Color inter. Surface 7.5YR 7/4 Pink	Color ext. Surface 7.5YR 7/4 Pink	Color section Dark core	
Characteristic of paste Medium compact	Inclusions Mica. Steatite temper.		Method manufacture Hand made	
Surface treatment (ext.) Smoothing	Surface type (ext.) Plain		Decoration (ext.)	
Surface treatment (int.) Smoothing	Surface type (int.) Plain		Decoration (int.)	
Description/observations SUM16A, US853, 21 Rim and wall fragment of a storage jar. Late Raybun type (for comparisons see Sedov 2003, pl. 61; 1). ASA letters incised below the rim. "h" and "r" are completely visible. Two "m" are partially preserved. These letters could indicate the name of the city "S ₁ mhrm".				
Date 13/03/16		Responsible C.C.		

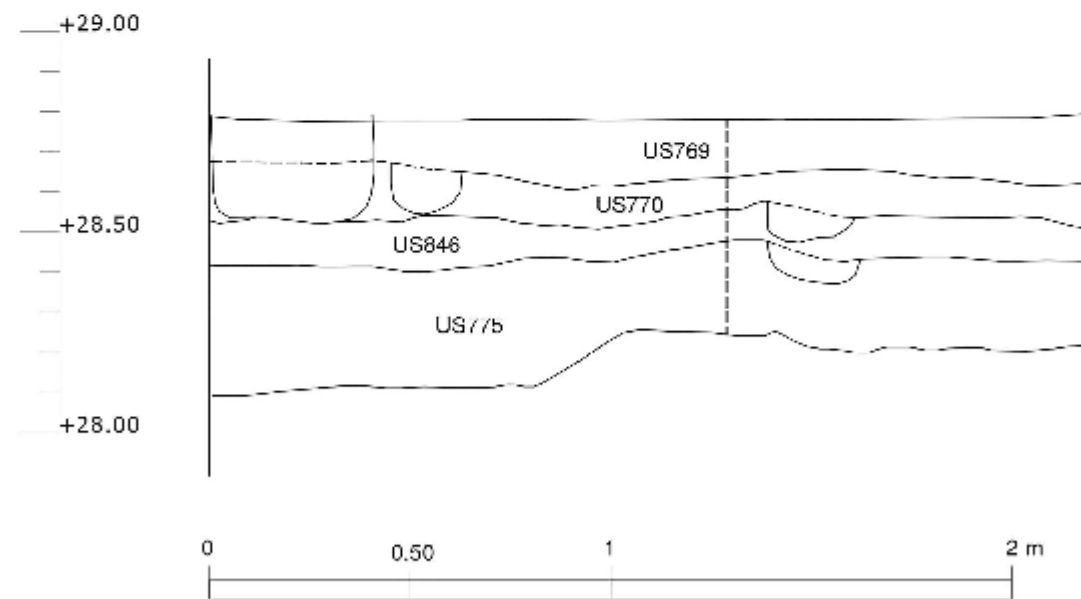






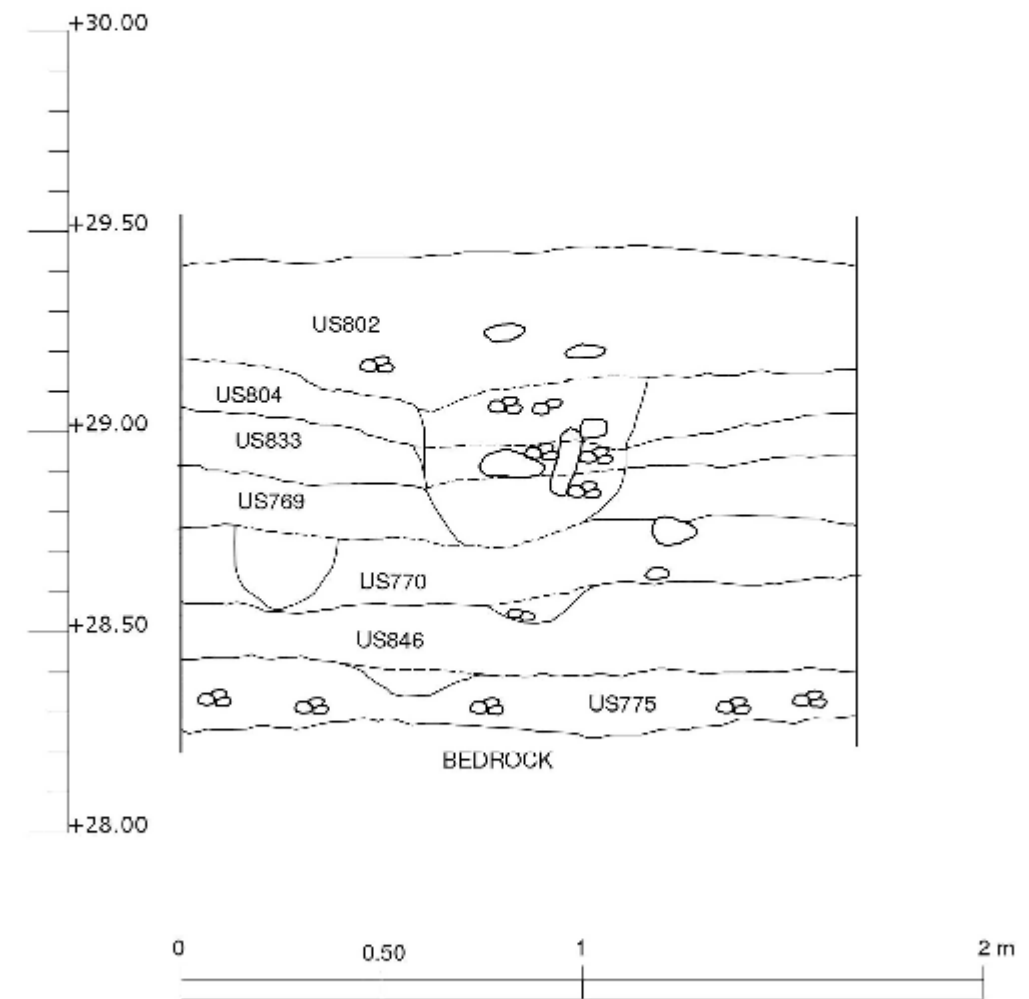
Sumhuram 2016A

A75 - section E-W (North)



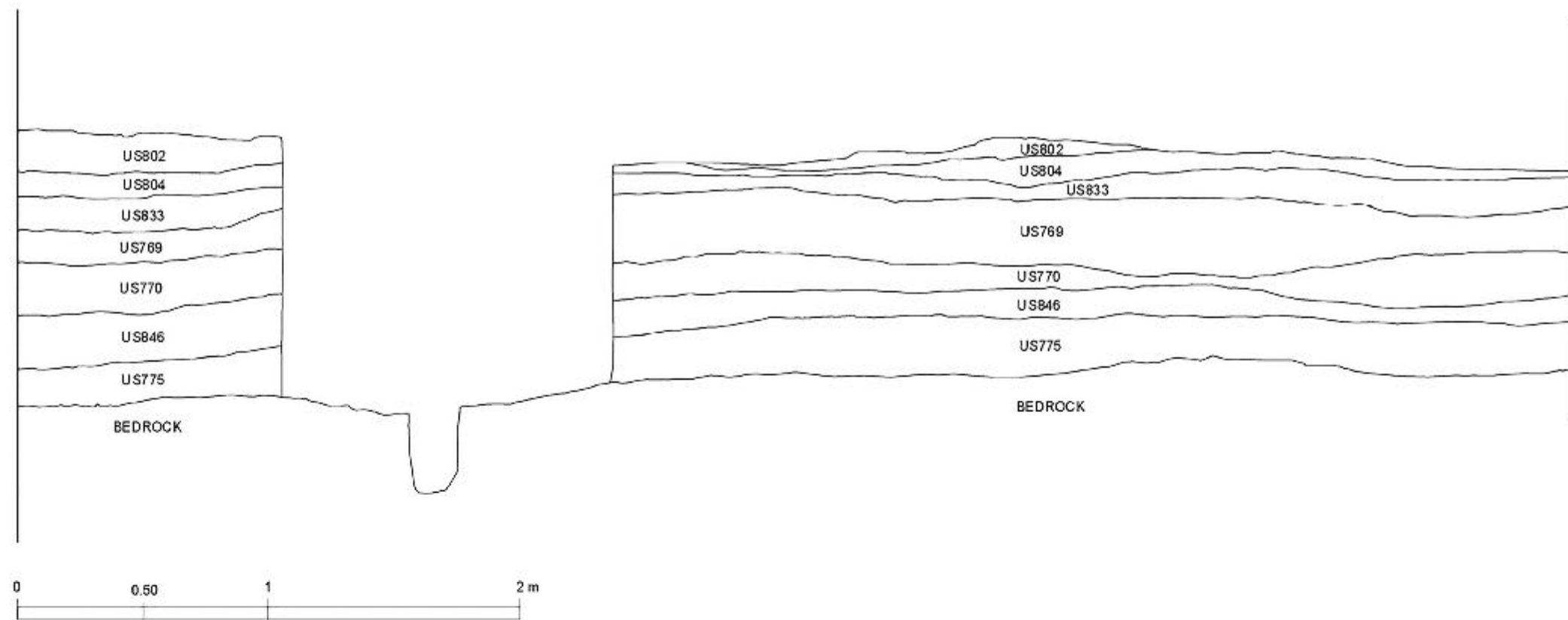
Sumhuram 2016A

A75 - section E-W (South)



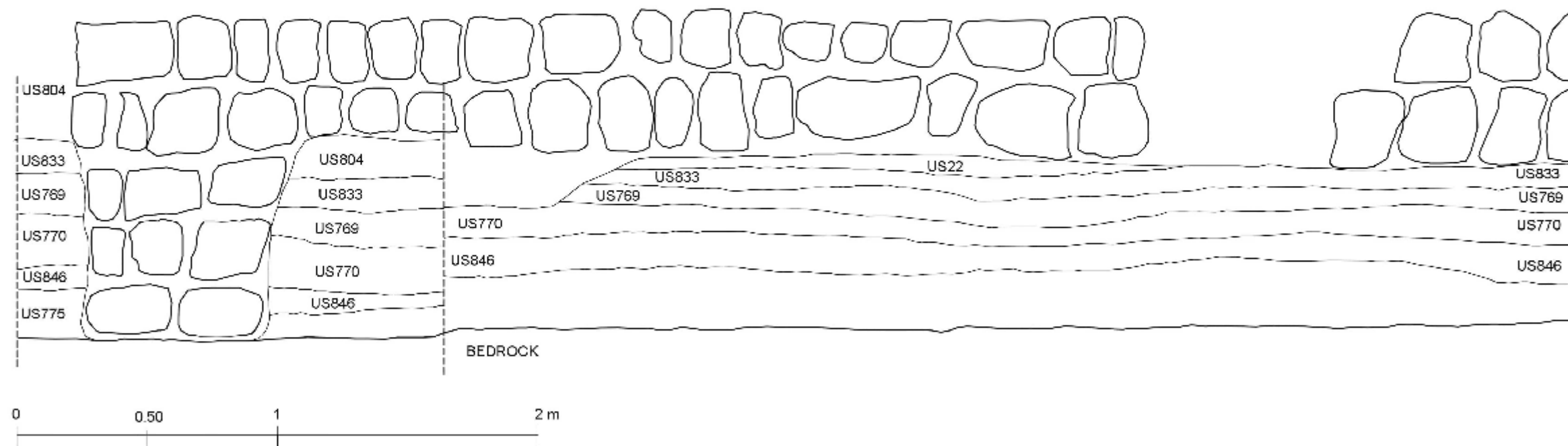
Sumhuram 2016A

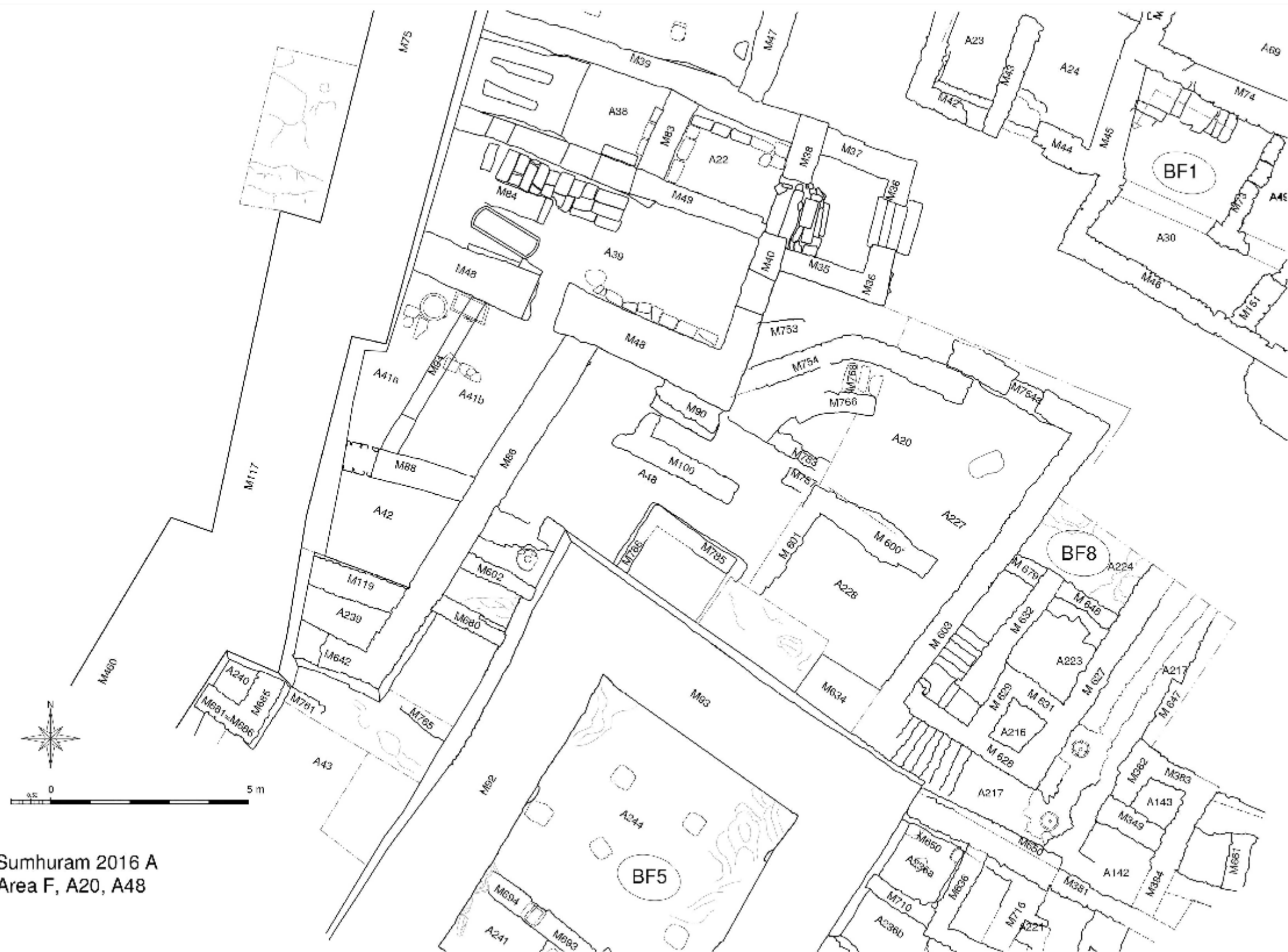
A75 - section N-S (South)



Sumhuram 2016A

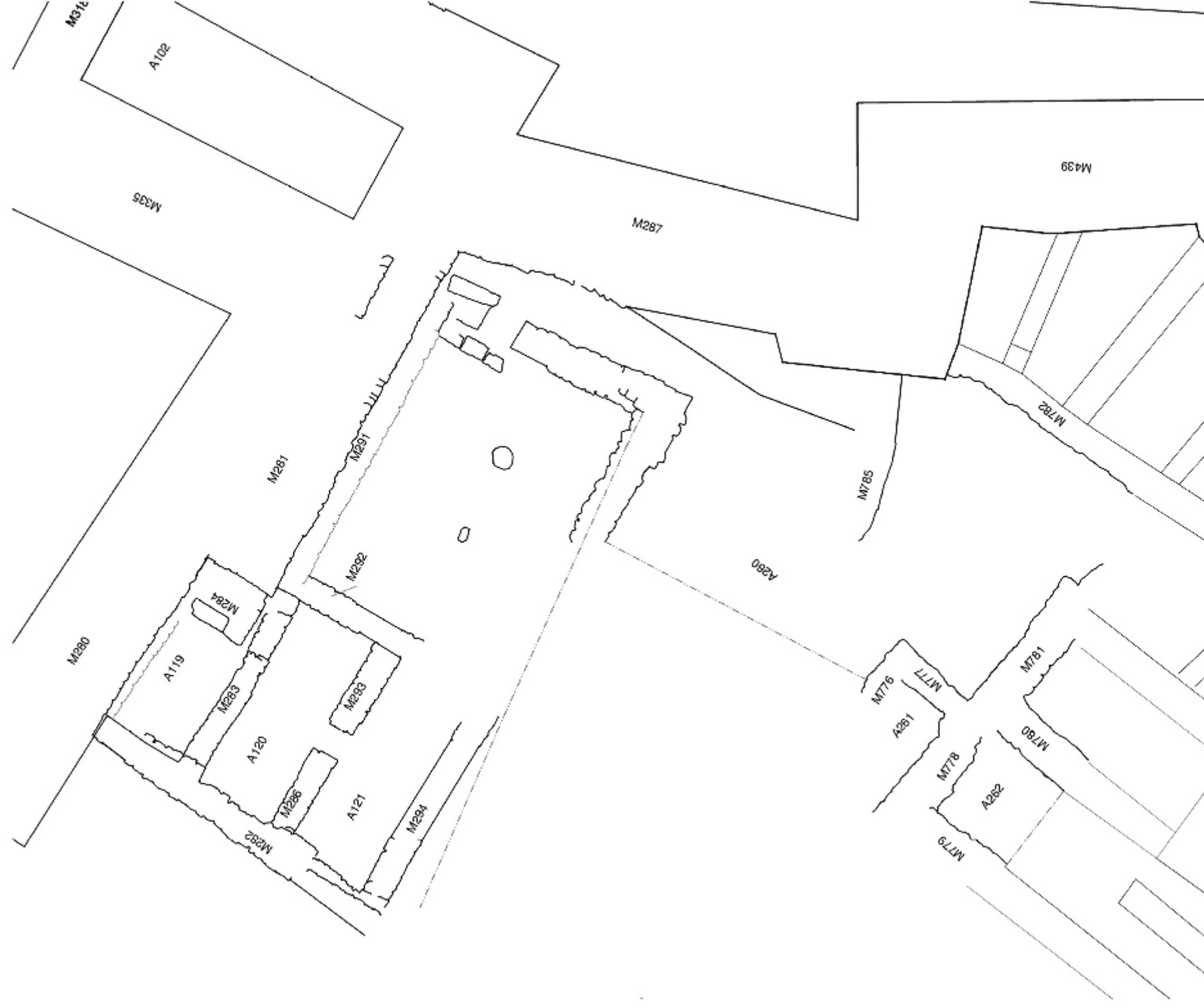
A75 - section N-S (North)



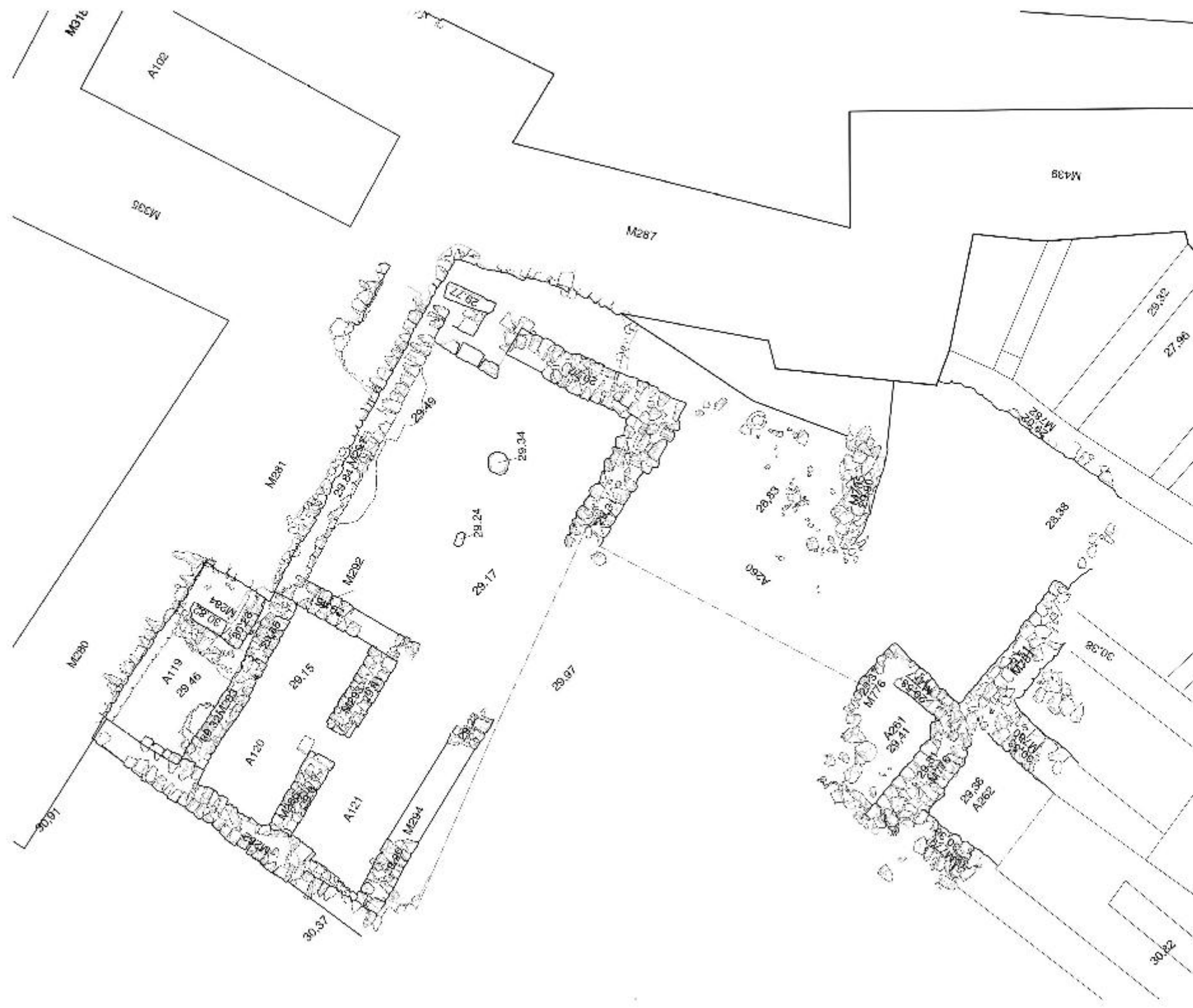


Sumhuram 2016 A
Area F, A20, A48

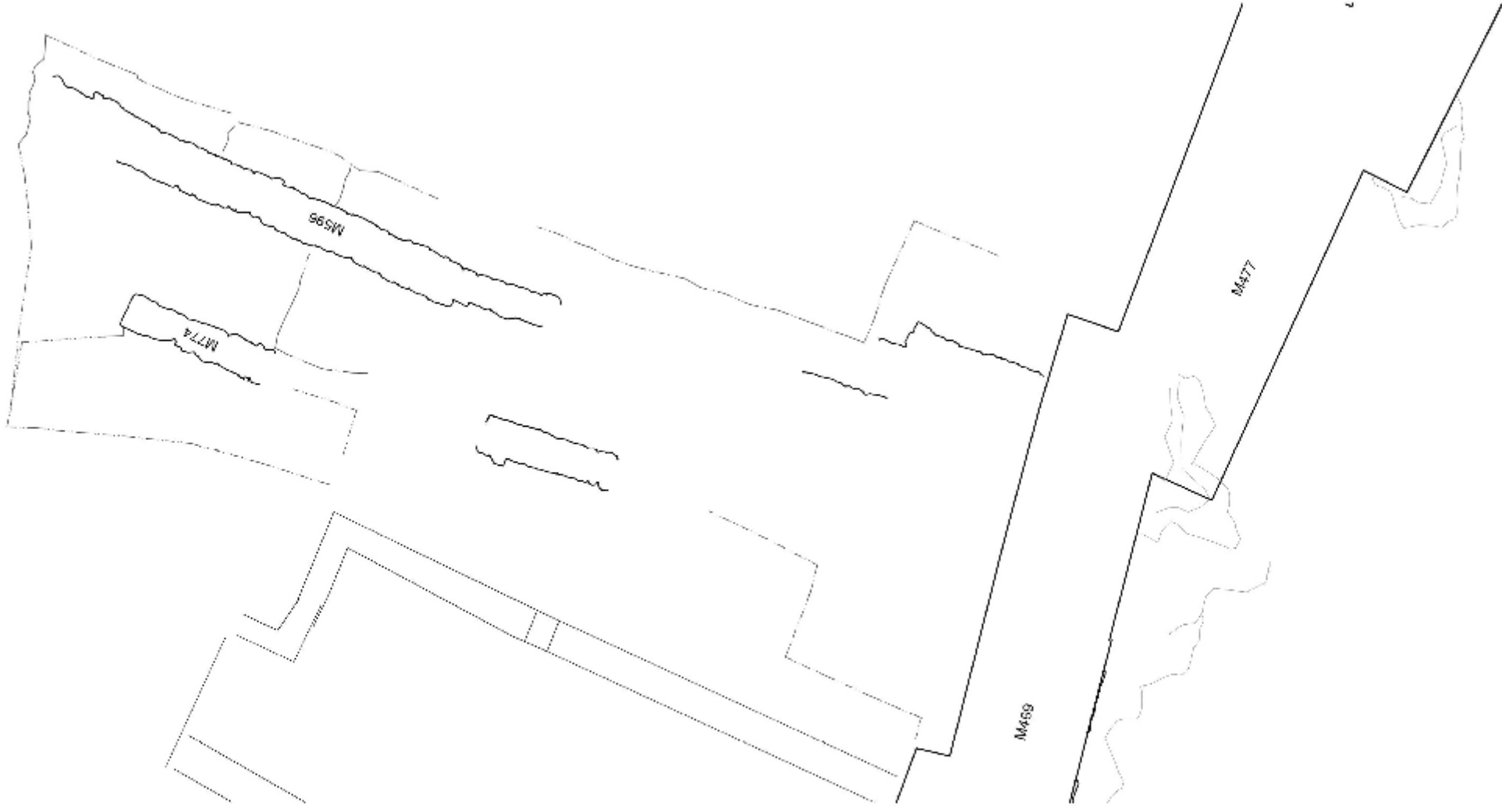




Sumhuram 2016 A
Area G

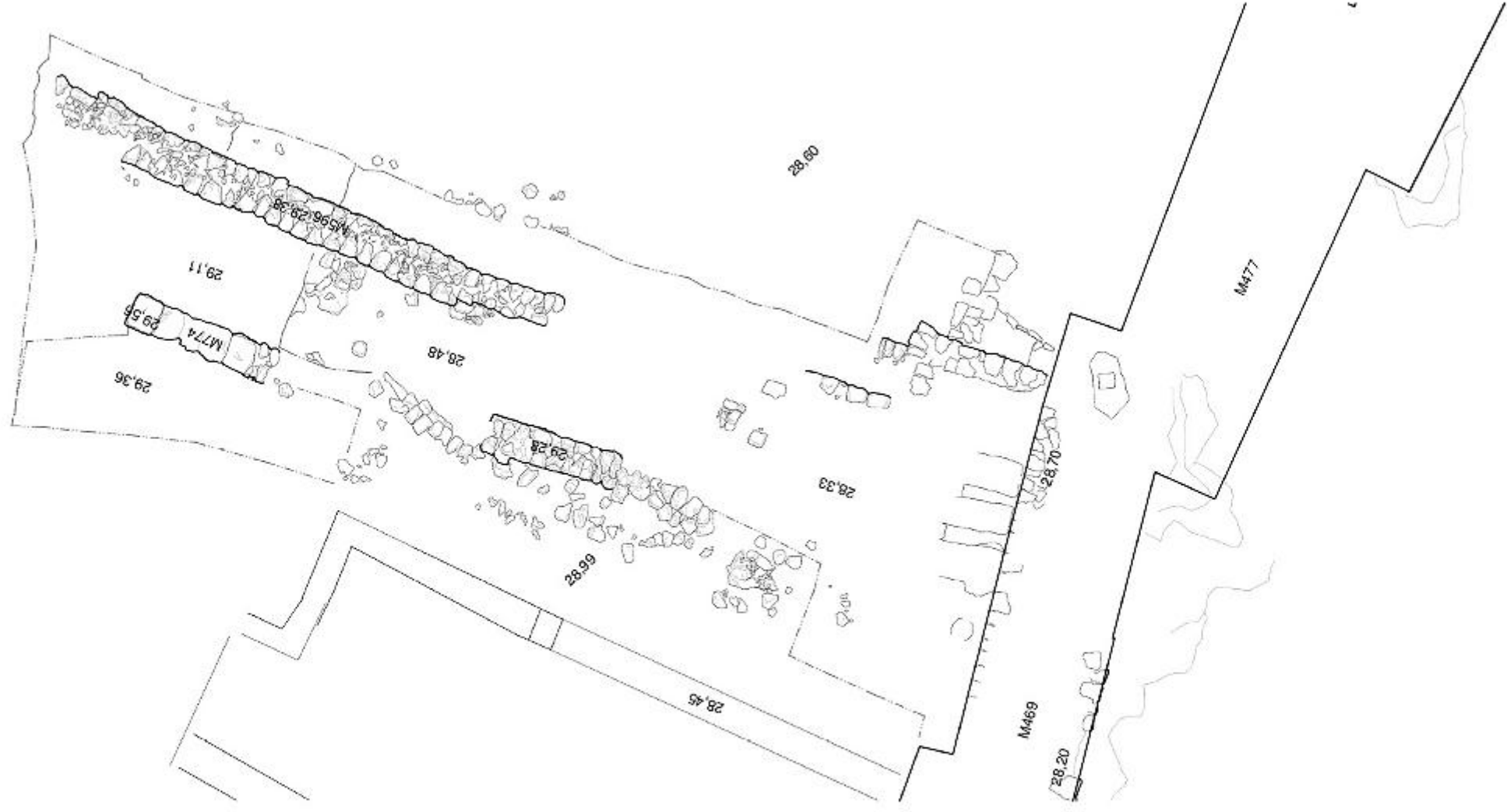


Sumhuram 2016 A
Area G



0 5 m

Sumhuram 2016 A
Area H



Sumhuram 2016 A
Area H

**RESTORATION WORKS AT SUMHURAM
(ARCHAEOLOGICAL PARK OF KHOR RORI)**

(Sultanate of Oman)

CAMPAIGN February-March 2016

IMTO

Italian Mission To Oman



**Technical Report
06th February – 24th March 2016**

Emiliano Mura

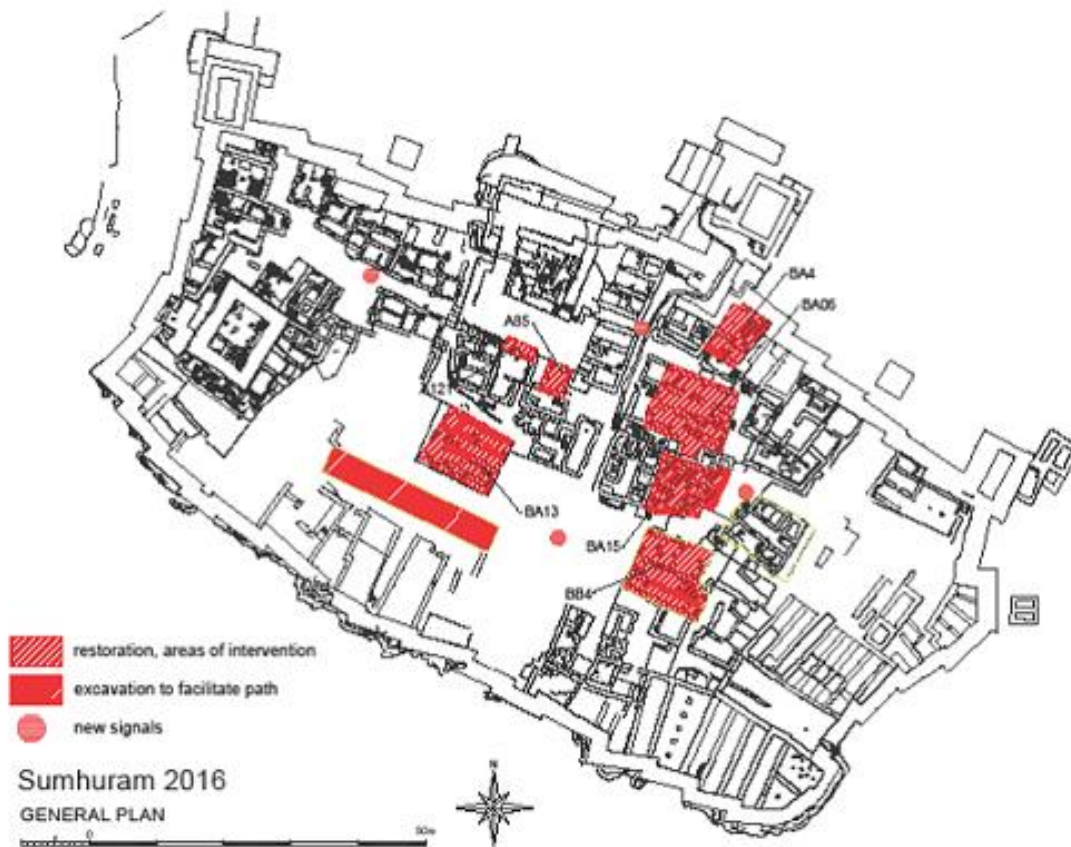
Miriam Rossetti

Introduction

During excavations in February- March 2016 the restoration works were carried out within the city:

- Building BA13. The restoration of the walls M485, M494, M569, M562, M567.
- Building BA15. The restoration of the walls M635-M484.
- Room A85. The restoration of the wall M193.
- Building BB4. The restoration of the wall M582.
- Building BA4. The restoration of the walls M70, M77, M62, M63, M69.
- Building BB2. The restoration of the wall M529.

The following map shows all the locations:



Worker Teams

Two teams of workers have engaged to work out all the eighteen operations to complete the reconstruction of the above-mentioned areas. One team of five people was engaged to prepare the mortar and the second one of thirteen people has engaged for the restoration of the walls.

Working progress status

In order to check the advancement of the works, we daily took a significant number of pictures of the areas. The number of the pictures and the point of viewing from which they are taken from, are those considered necessary for a good comprehension about the working progress status.

Mortar preparation

The mortar we used for the connection between the stones is the same used during the previous campaigns:

- **80** grams of brown colour with **200** grams of yellow colour.

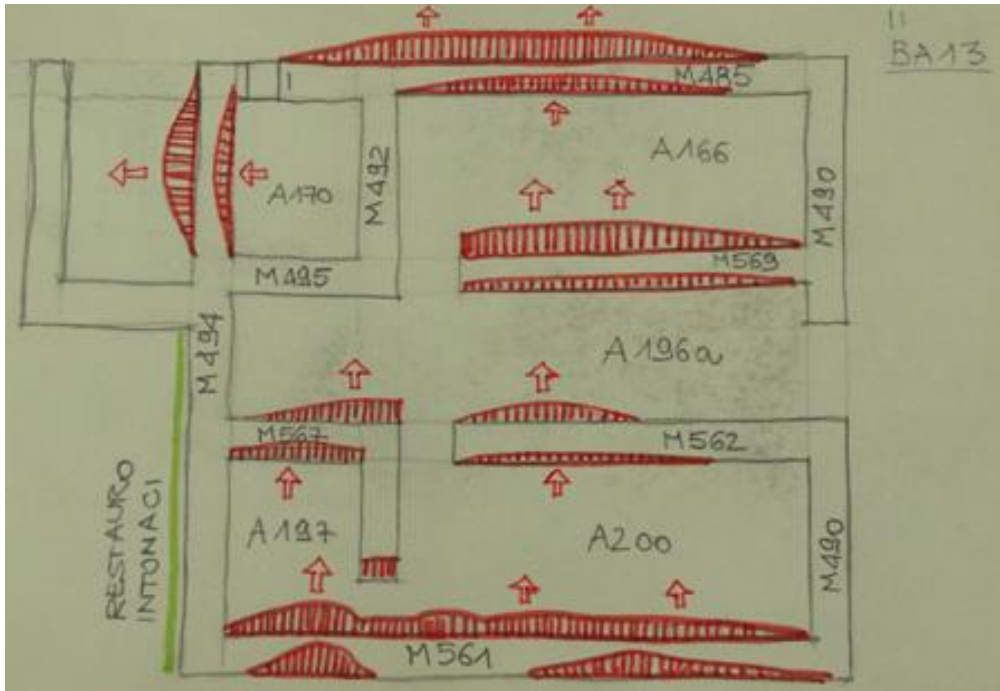
The oxide colours, mentioned above, plus 4 buckets of sand composes the mix of the mortar with eight scoops (**600grams**) of lime powder.

The percentage of lime on sand is 1:6, and then we have two different kinds of mortar:

- **Stone mortar**, used for the external leaves of stones, obtained by the mix of sieved sand, hydrated lime, brown and yellow oxides for the chromatic tone.
- **Filling mortar**, used for the back filling of the structure, made with the same components, except the use of raw sand instead of sieved sand without any brown and yellow oxides.

Building BA13

The building had a large part of the walls collapsed. The restoration was done by giving the priority to the walls on the tourist route and then those inside. The work is proceeded with the disassembly of some parts of the masonry, the cleaning and the replacement with the same stones as not to alter the original shape.



Sketch area BA13. Plan with collapsing walls

Restoration of the wall M485



M485, south front wall, before the restoration.



M485, south front wall, during removing stones.



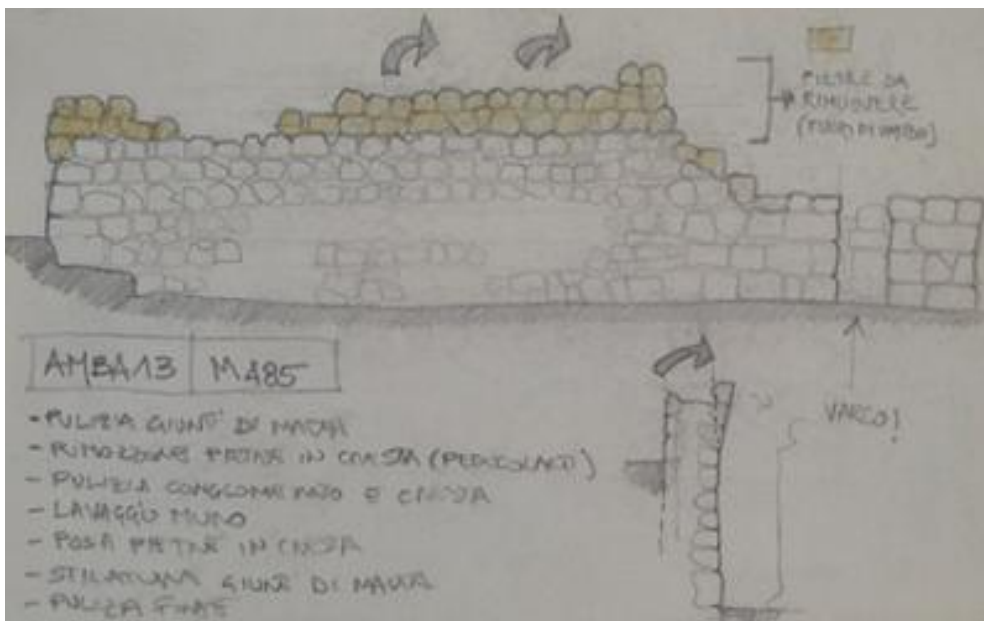
M485, south front wall, after the restoration.



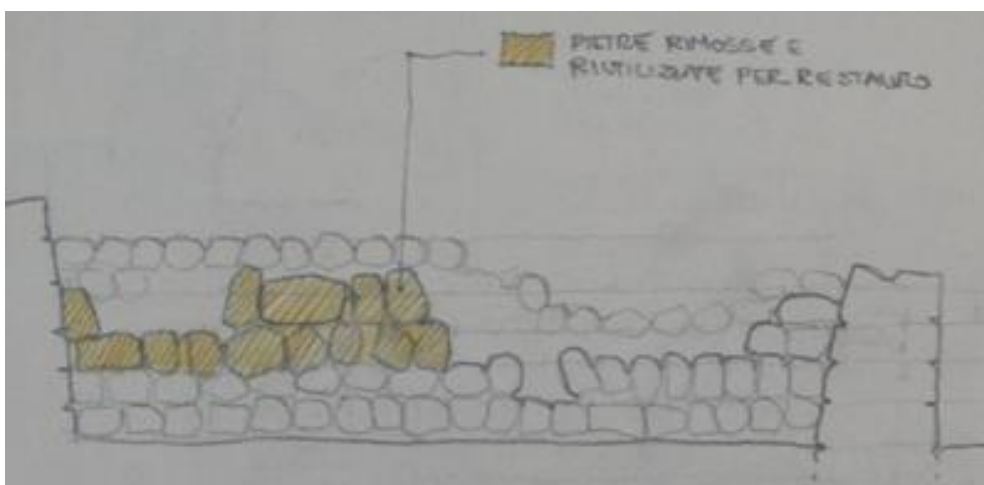
M485, north front wall, before the restoration.



M485, north front wall, after the restoration.



M485, south front wall. Stones to remove highlighted with hatch



M485, north front wall. Stones to remove highlighted with hatch

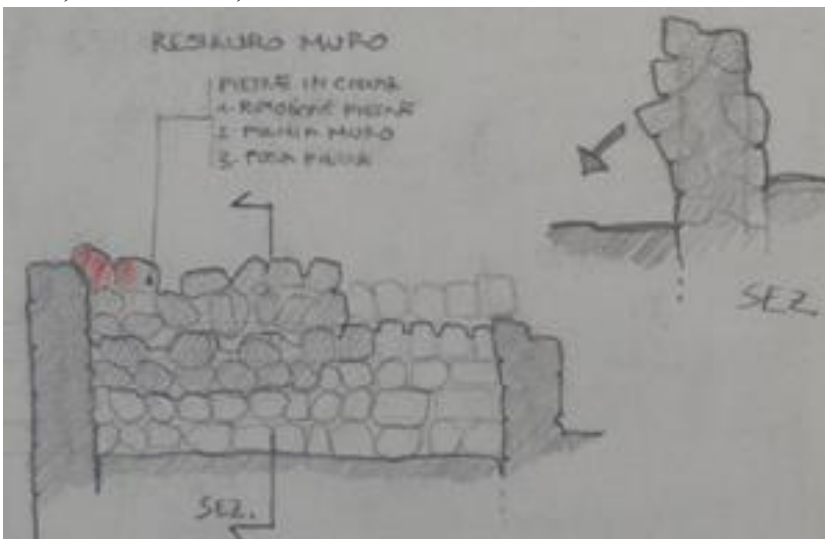
Restoration of the wall M494



M494, west front wall, before the restoration.



M494, west front wall, after the restoration.



M494, west front wall. Stones to remove highlighted with hatch

Restoration of the wall M569



M569, north front wall, before the restoration.



M569, north front wall, after the restoration.

Restoration of the wall M562



M562, north front wall, before the restoration.



M562, north front wall, after the restoration.

Restoration of the wall M567



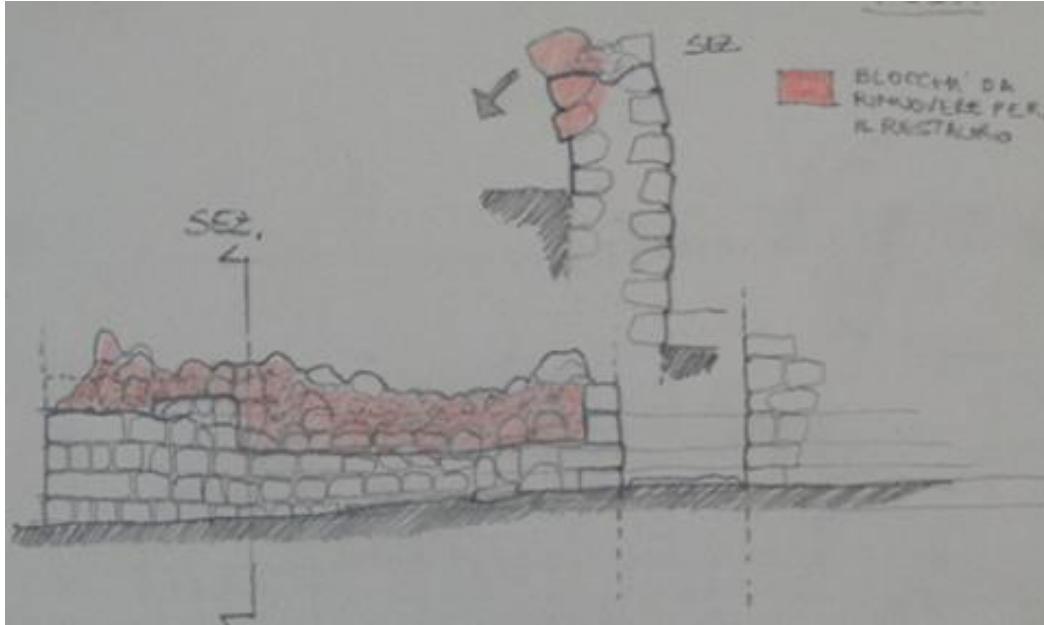
M567, south front wall, before the restoration.



M567, south front wall, after the restoration.

Building BA15

The restoration was done by giving the priority to the walls on the tourist route. The work is proceeded with the disassembly of some parts of the masonry, the cleaning and the replacement with the same stones as not to alter the original shape.



M635, south facing wall. Stones to remove highlighted with hatch

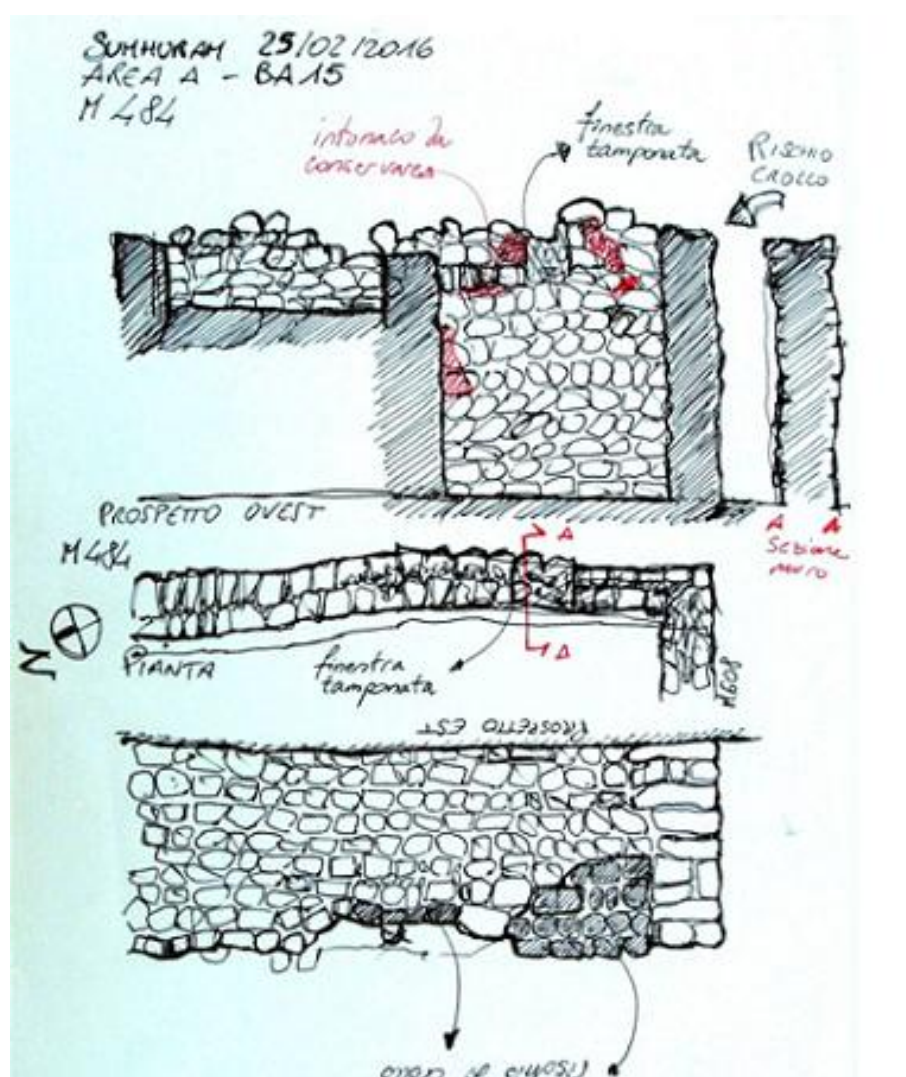
Restoration of the wall M635



M635, south front wall, before the restoration.



M635, south front wall, after the restoration



Restoration of the wall M484



M484, east front wall, before the restoration.

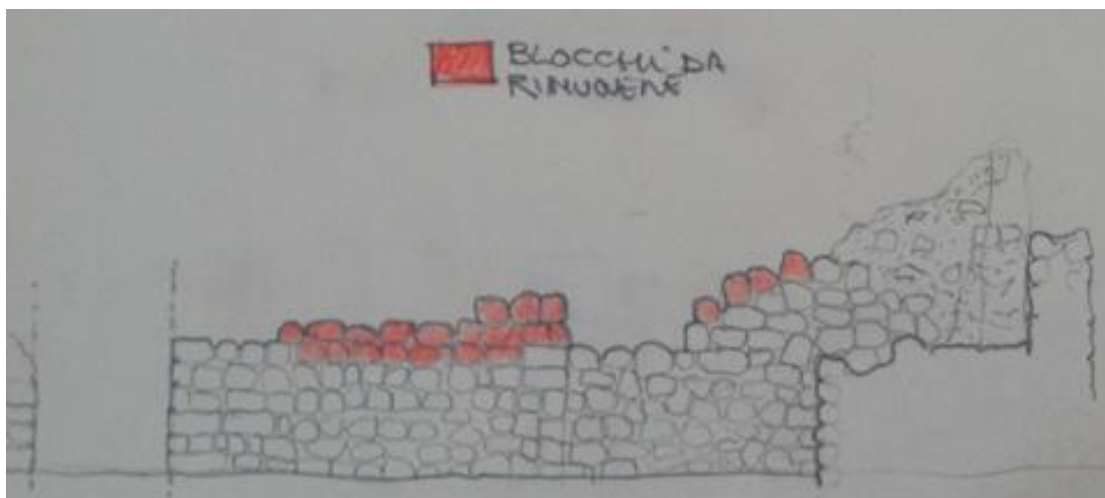


M484, east front wall, after the restoration.

Building BB4

The restoration was done by giving the priority to the walls on the tourist route. The work is proceeded with the disassembly of some parts of the masonry, the cleaning and the replacement with the same stones as not to alter the original shape.

Restoration of the wall M581



M581, south front wall. Stones to remove highlighted with hatch



M581, south front wall, before the restoration.

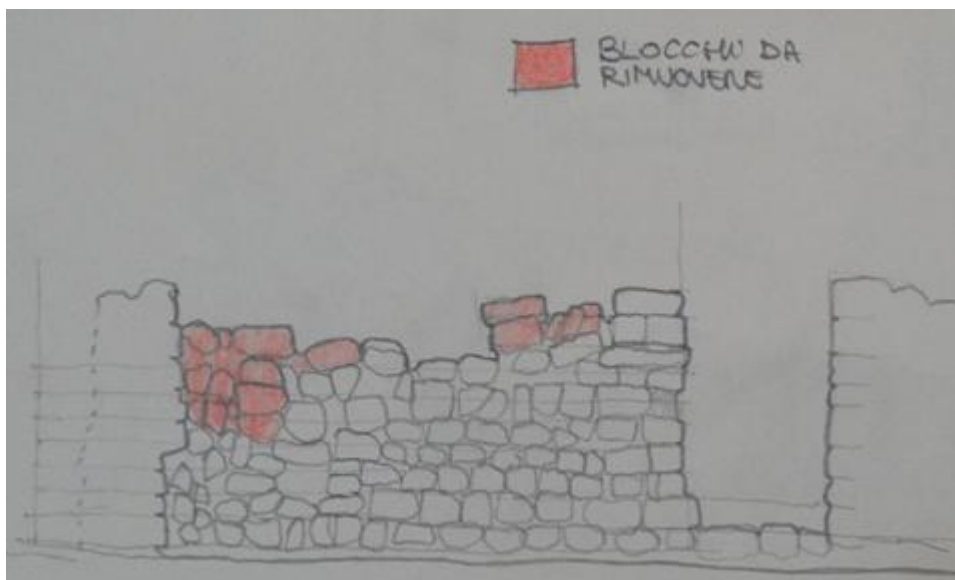


M581, south front wall, after the restoration.

Building BA4

The restoration was done by giving the priority to the walls on the tourist route. The work is proceeded with the disassembly of some parts of the masonry, the cleaning and the replacement with the same stones as not to alter the original shape.

Restoration of the wall M70



M70, south front wall. Stones to remove highlighted with hatch



M70, south front wall, before the restoration.



M70, south front wall, after the restoration.



M70, south front wall, before the restoration.



70, south front wall, after the restoration

Restoration of the wall M77



M77, north front wall, before the restoration.



M77, north front wall, after the restoration.

Restoration of the wall M69



M69, south front wall, before the restoration.



M69, south front wall, after the restoration.



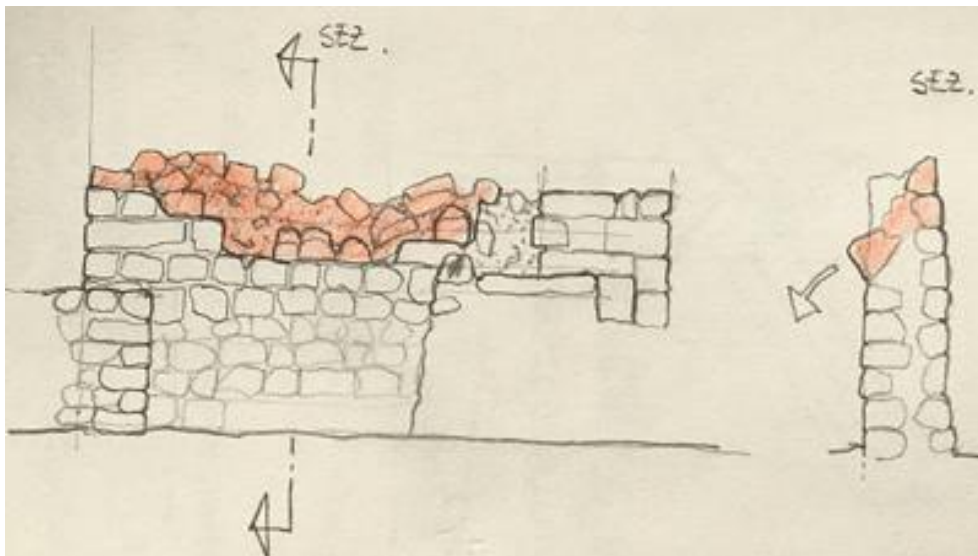
M63, south front wall, before the restoration.



M63, south front wall, after the restoration

Building BB2

Restoration of the wall M521



M521, east front wall. Stones to remove highlighted with hatch

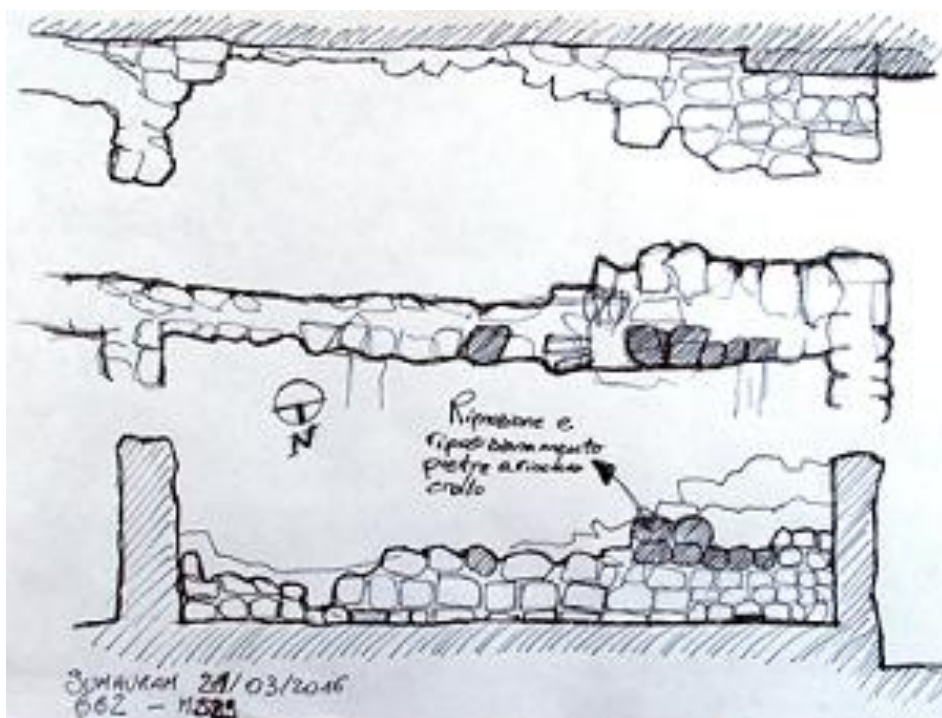


M521, west front wall, before the restoration



M521, west front wall, after the restoration

Restoration of the wall M529



M529, north front wall. Stones to remove highlighted with hatch



M529, north front wall, before the restoration

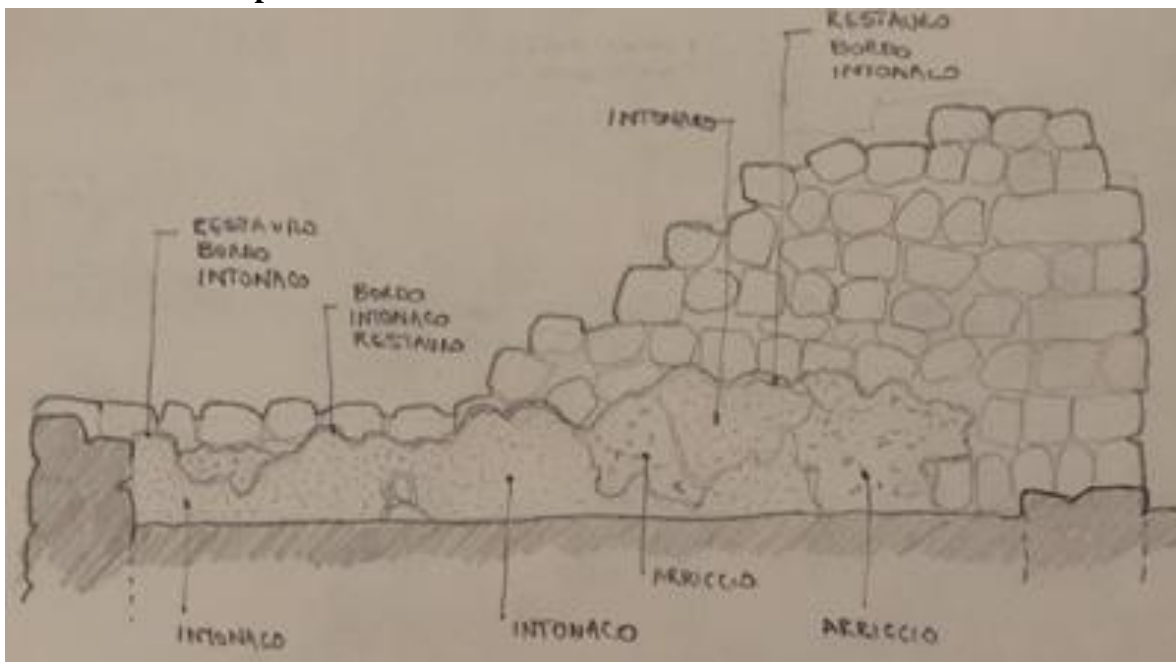


M529, north front wall after the restoration

Restoration of plaster

During the restoration of the walls we have personally run the consolidation of the plaster wall of the M494 (BA13) and the wall M17 (A121). Execution phases: cleaning with brushes and water, laying of a new mortar in the edges.

Restoration of the plaster wall M494



M494 (BA13). Plaster, intervention of restoration



M494 (BA13), west wall, façade. before the restoration



M494 (BA13), west wall, façade. before the restoration



Dust removal



Cleaning



Laying of new plaster



Setting of new plaster

Restoration of the plaster wall M17



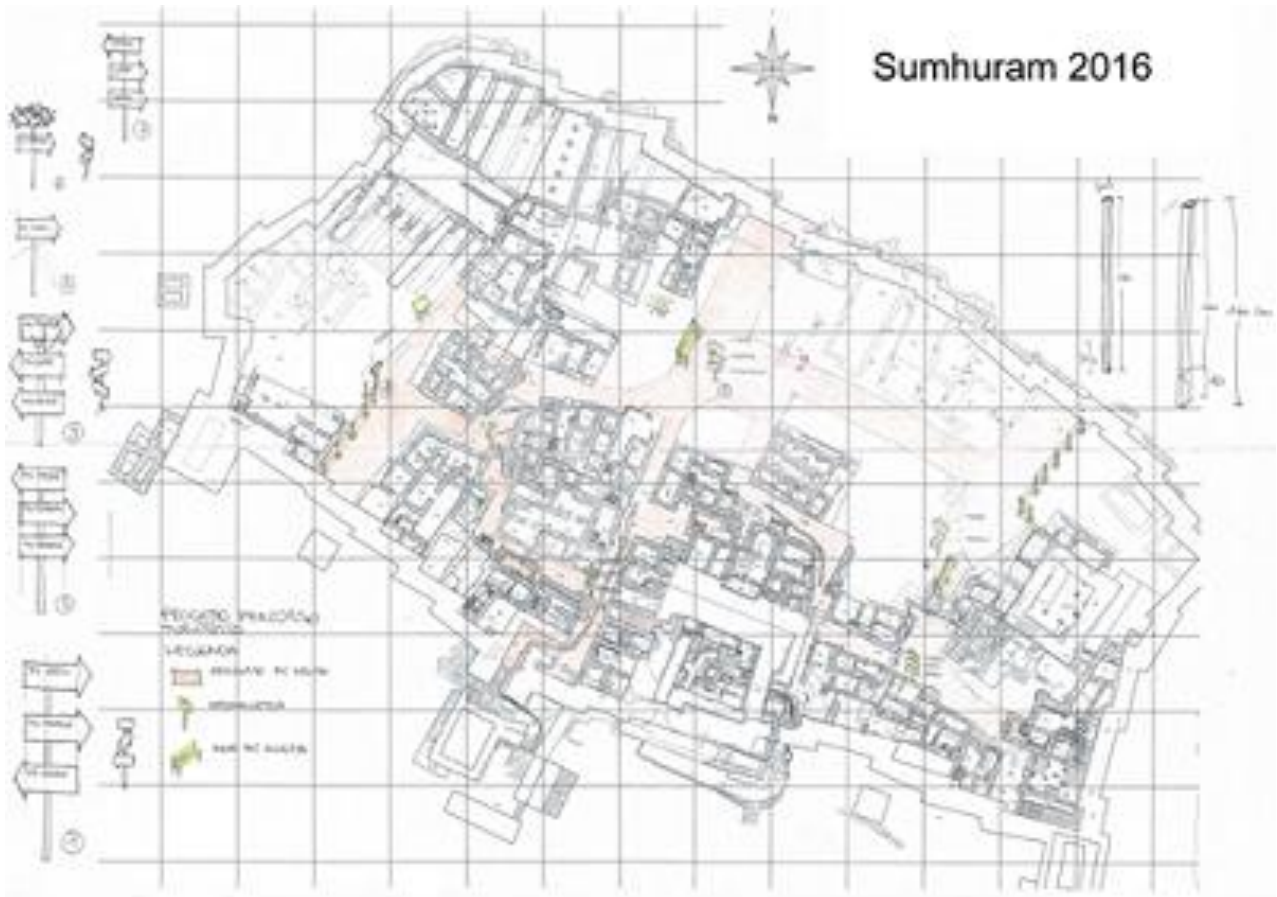
M17 (A121), south wall, façade. before the restoration



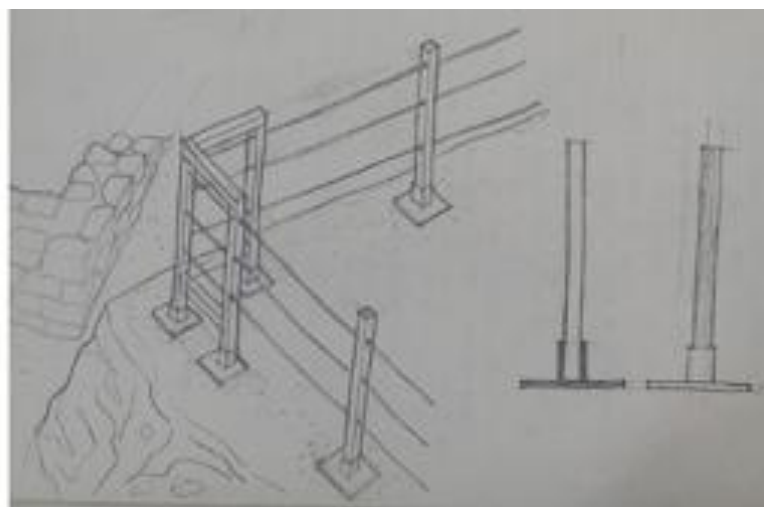
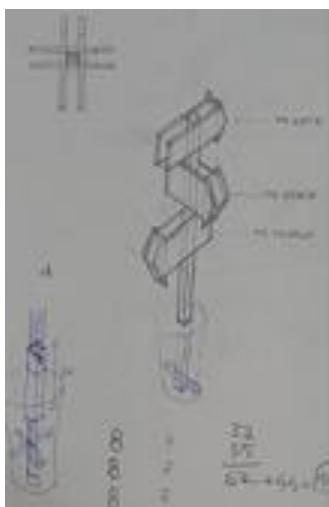
M17 (A121), south wall, façade. after the restoration

Tourist route project

Along the tour route I have designed and built the signs useful to direct visitors during the visit. The panels were made of brown painted wood, in total are n.4 and positioned along the crossings in order to signal the presence of the main monuments.



Plan of tourist path with signage and deterrents



Project indication signs and deterrents



Arrows signs in site

Change of the old explanatory panels

It has been decided to change three panels and their support in the archaeological park, out of the city wall, and exactly in the site of necropolis, the houses near the gallery, and for the wall of Inqitat.

The new support have the same design of the new panels put inside the city of Sumhura during the campaign of October-November 2012 (SUM12C).

The support is composed as follow:

- A base (monolite) made by concrete;
- A steel frame three millimeter in thk;
- An Aluminium plate on which is attached the info panel.

For this mission we decided to make only the monolite base, made by the means of white concrete adding yellow and brown oxide colours in order to get the sand colour. To make the monolite stronger we used steel for reinforcement. This operation will be finished during the next mission.

Here you can see the phases sequences of the installation



Removing the existing panel



New foundation



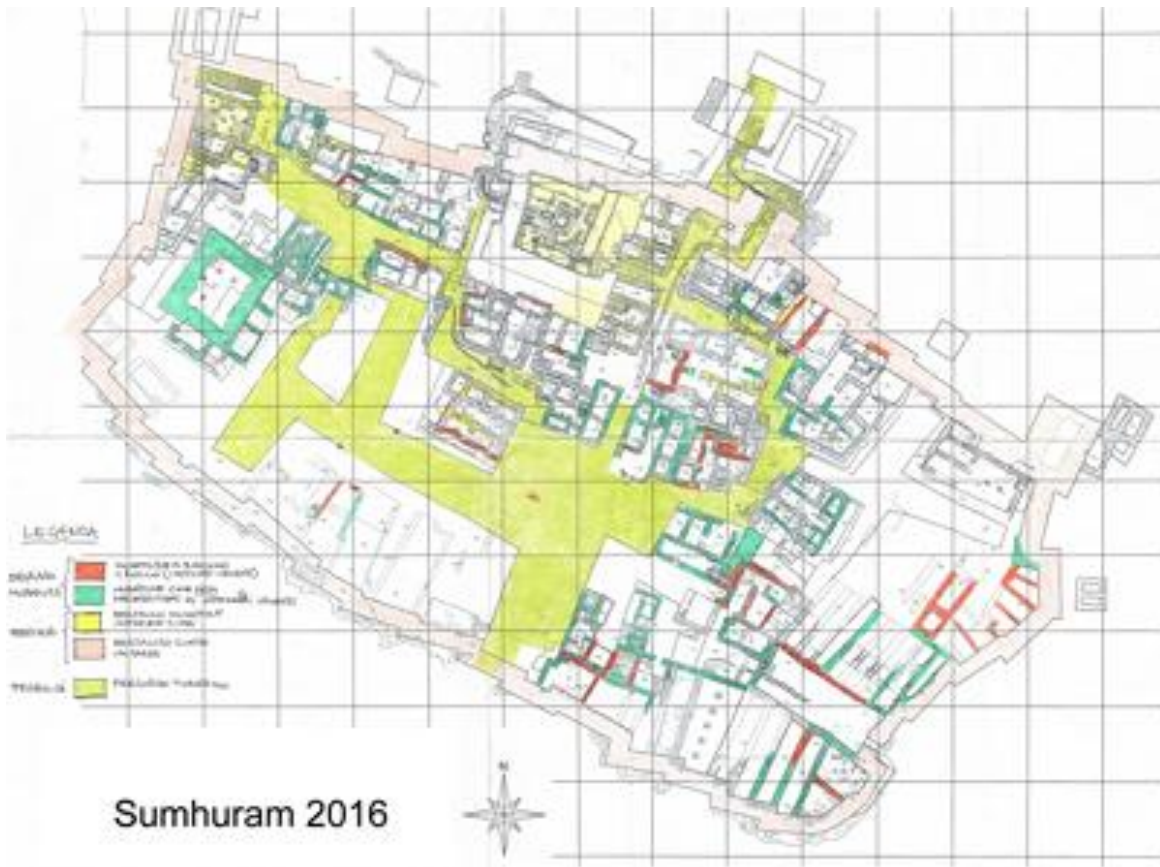
Formwork



Monolite made by couloured concrete

Archaeological risk's map

The risk map is useful to the identification of risk masonry collapse (red) and then to the most urgent restoration. Green degraded walls that do not require urgent action, in yellow walls restored, light green the visit route. The risk map allows the defining of guidelines aimed to further restoration planning.



Plan with a risk collapse highlighted walls

RESTORATION WORKS AT HAMR AL-SHARQIYA

(Sultanate of Oman)

CAMPAIGN February-March 2016

IMTO

Italian Mission To Oman



Technical Report
06th February – 24th March 2016

Andrea Moretti

Antonio Salvi



Promontory of site Al Hamr Sharqyia (Inqitat) north side



View from the top of the site Hamr al-Sharqyia (Inqitat)



Introduction

In the archaeological site Hamr al-Sharqyia (Inqitat) there is a bronze settlement, indicated by round, stone and megalithic-style structures at the top of the promontory. The wall of a large Islamic settlement emerge on the easternmost point of the promontory. The wall has a length of 700 m with towers every 25 m and one door between two principal towers located in the middle of the wall. The preliminary phase analyzed the conservation of the site and the understanding of the structural problems. The intervention of reconstruction has been designed by focusing on these different points:

- New access path
- The two towers at sides of the main gate
- Reconstruction of the first 20mt of the wall (close to the gate)

The methodological approach

Checking of the existing structures, cleaning removing the sand, estimating the amount of damage and verifying which parts could be preserved. Then start with the consolidation and restoration.

Index

Step One: Site visit, understanding of the site, assessment of the conservation status, assessment of problems.

Step Two: Detection area of intervention, photographic survey, metric survey, sketches of existing wall.

Step Three: Reconstruction project

Step Four: Work development

Step Five: Final situation

Step One: Site visit, understanding the site, assessment of the conservation status, assessment of problems.

The archaeological site of Hamr al-Sharqiya is situated on the promontory. The long wall (700m) delimits archaeological area. The entrance is surrounded by two towers.

Along the west wall alternating zones of collapse and evident and well preserved areas. Near the tower there was a big collapse and the opening of a passage of recent construction.

Along the east wall alternating zones of collapse and evident and well preserved areas. Near the tower there was a big crash and the wall is almost completely collapsed.

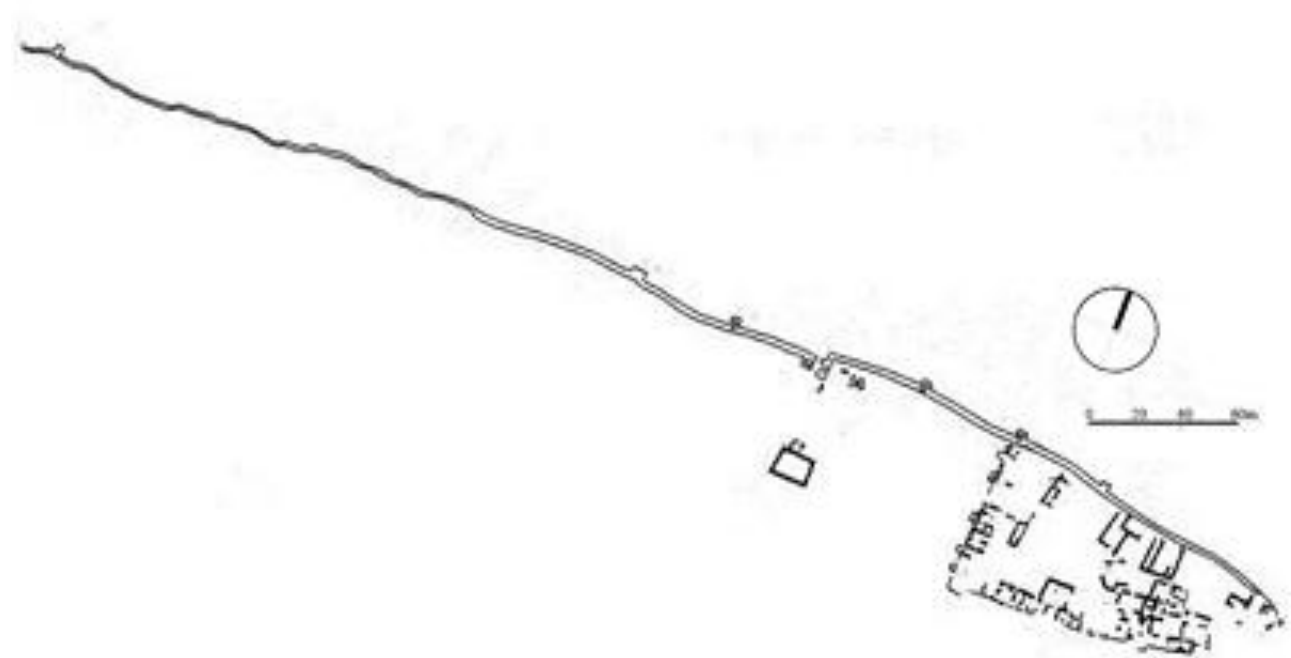
Along the west wall and the east wall, there are many zone that had many wind sand accumulation.

The west tower is in poor condition, there are many collapses and many unsafe and unstable stones.

Inside the tower there are many debris and a lot of wind sand.

The east tower is in the best storage conditions, despite being required many interventions of consolidation, the wall portions have the most stable and best preserved. Inside the tower there are many debris and a lot of wind sand.

Step Two: Photographic survey, metric survey, design of existing wall, detection area of intervention.



Plan of the site Hamr al-Sharqiya (Inqitat)



View of north side, tower east, tower west, the principal door and the walls



East wall in bad condition



East wall in good condition



West wall in bad condition



West wall in good condition



Principal door north side



Principal door south side



West tower, east side



West tower, south-west side



East tower, west side



East tower, south side



East tower, west tower and principal door south side



West wall, view from above

Metric Survey East Tower (Supervisor: Arch. Andrea Moretti)



East tower north-east side



East tower east side



East tower east-south side



East tower west side

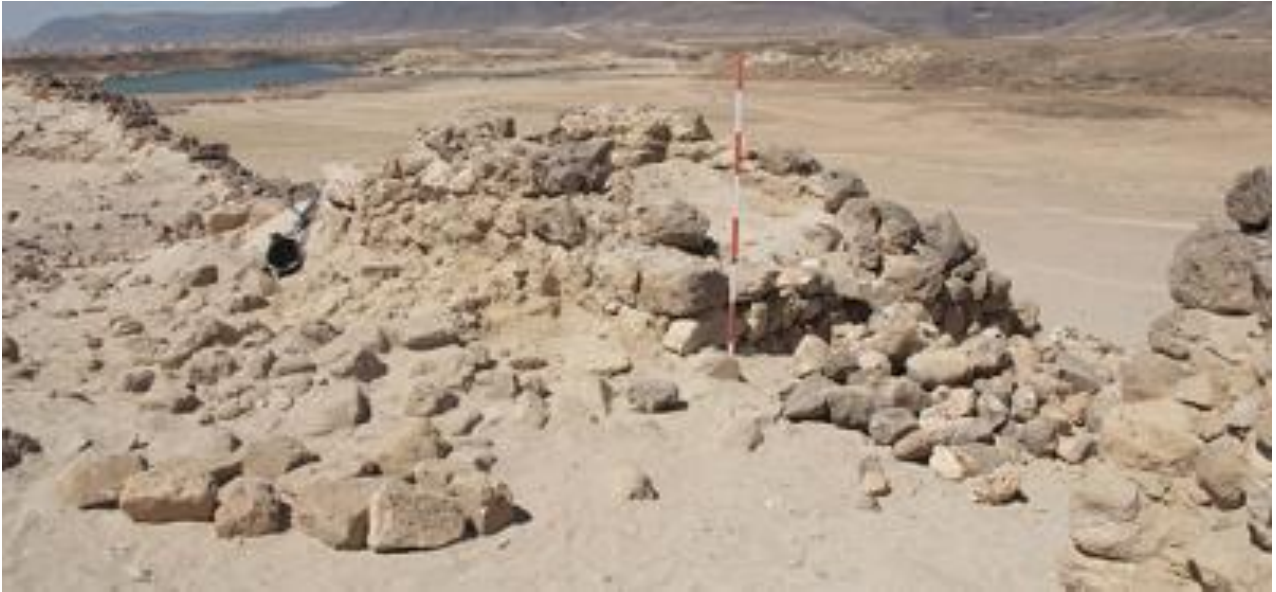
Metric Survey West Tower (Supervisor: Arch. Andrea Moretti)



West tower north side



West tower west side



West tower west-south side



West tower south side

Metric Survey West Wall (Supervisor: Arch. Antonio Salvi)



West wall south side



West wall north side

1440
van den ghe...



Sketch of existing wall

STEP THREE_Project intervention area.

The restoration focuses on the two towers and the main gate and on the reconstruction of the first 20mt of the wall (close to the gate)

.Addition to the restoration of the towers we will proceed with the creation of a way of access to facilitate access to the site for visitors.

The West tower is in bad condition.

It is necessary a step of removing the stones of collapse, a consolidation of unstable stones, a thorough cleaning and finally restore four front walls with the restoration of the original part.

The East tower is in a better state of preservation.

It is necessary a consolidation of unstable stones, a thorough cleaning, the partial re-building the four face walls and restoration of corner and original stonework.

The construction technique chosen for the restoration is to drywall.

Inside the two facing walls will proceed with the filling thorough the use of mixed particle size varies stones, sand and ground.

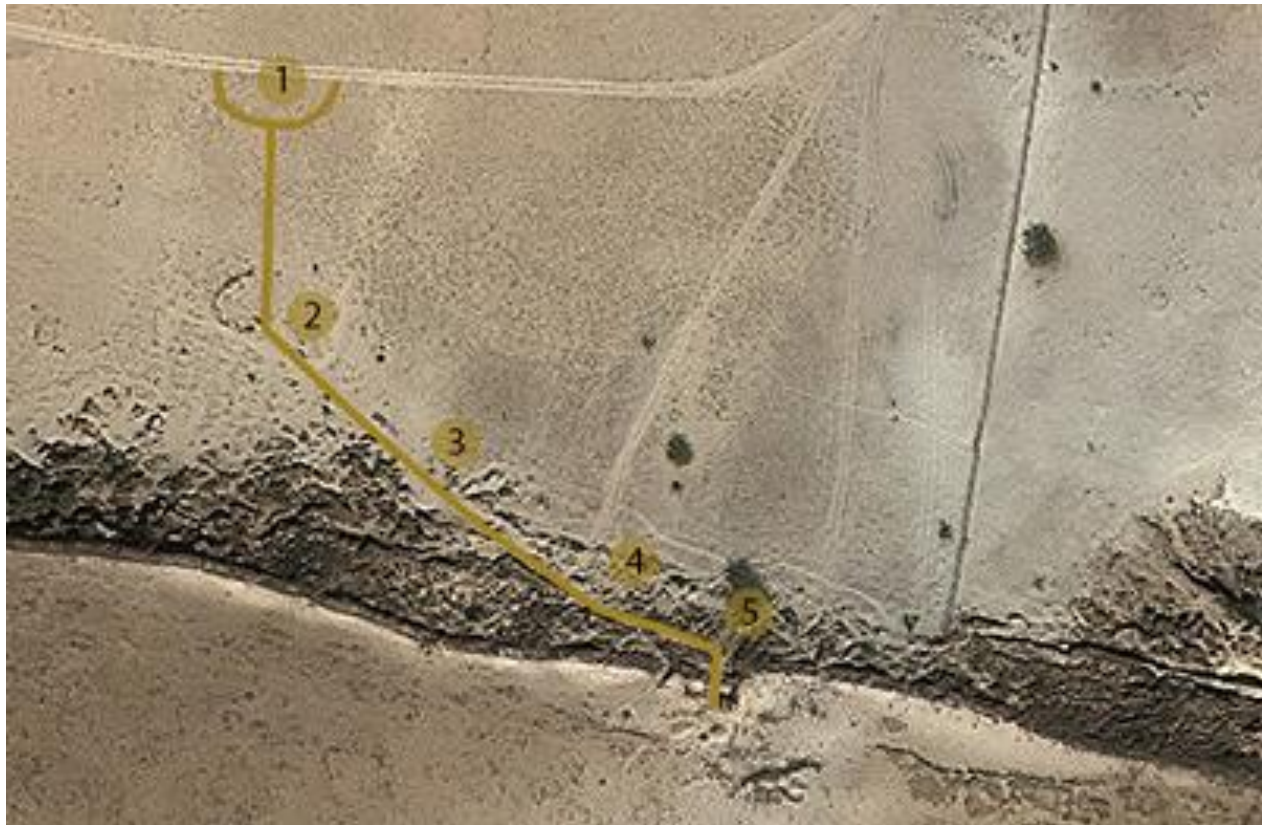
Other operations that are deemed necessary during the restoration work are:

- Removal of accumulation of soil to release part of the submerged wall.
- Construction of podiums jagged inside the wall to highlight the ridge and stabilize the building.
- Cleaning of stretches of the wall that showed encrustation.
- Consolidation at the base of the wall through new elements graft.

Time Schedule at the beginning



STREET PROJECT (Supervision: Arch. Andrea Moretti and Arch. Antonio Salvi)



Street project



Street before



Street after zone 1



Street after zone 2



Street after zone 3

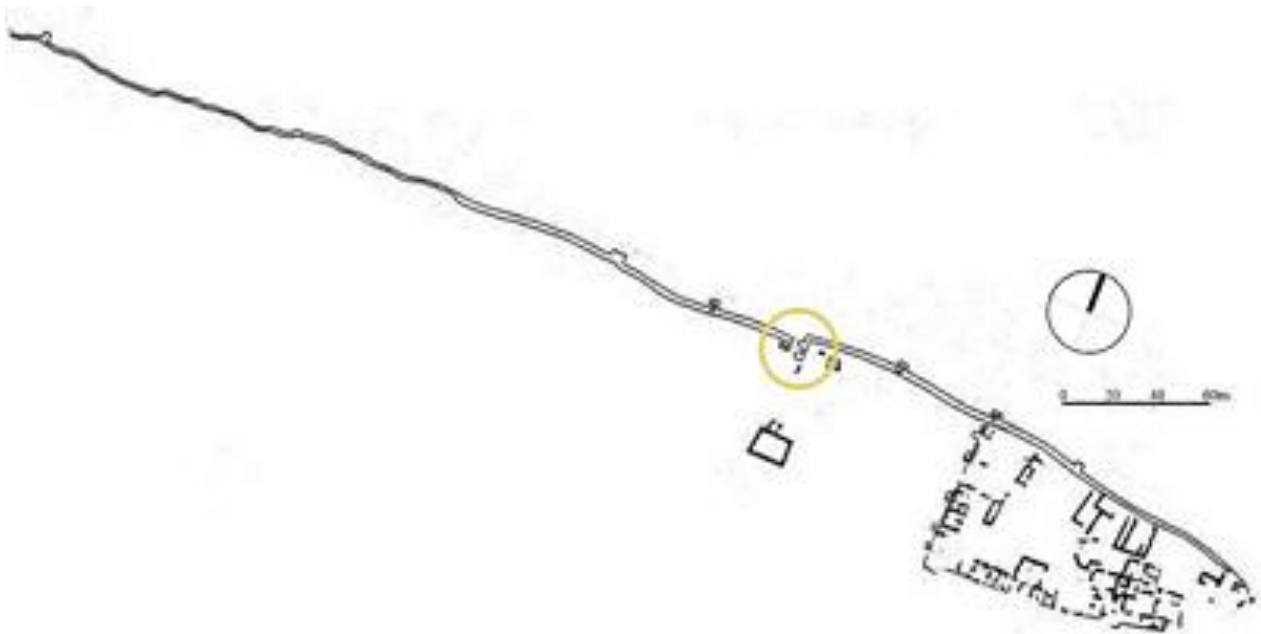


Street after zone 4



Street after zone 5

PRINCIPAL DOOR PROJECT (Supervision: Arch. Andrea Moretti)



Plan of detection area of intervention



Principal door north side before restoration



Principal door north side after restoration



Principal door south side before restoration



Principal door south side after restoration

East Tower Project and Restoration (Supervision: Arch. Andrea Moretti)

The restoration of the tower was carried out using the technique of dry wall , with a filling of different grain of stones and ground.

The height reached during the restoration of the walls is demonstrated by the survey of archaeological remains clean and secured .

The interior of the tower has been emptied from the debris and clean .

The ground and sand present on the sides of the tower removed to allow cleaning and consolidation of the original stone.



View on the down street after restoration



View on the up street before restoration



View on the up street after restoration



View north-west side before restoration



View north side after restoration



View east side before restoration



View east side after restoration



View east-south side before restoration



View east-south side after restoration



View south side before restoration



View south side after restoration



View south-west side before restoration



View south-west side after restoration



View west side before restoration



View west side after restoration

East Wall Project and Consolidation (Supervision: Arch. Andrea Moretti)

In the last job I worked to consolidate the beginning of the east wall.

This consolidation will serve for the continuation the restoration of walls in future missions .



View north side before restoration



View north side after restoration

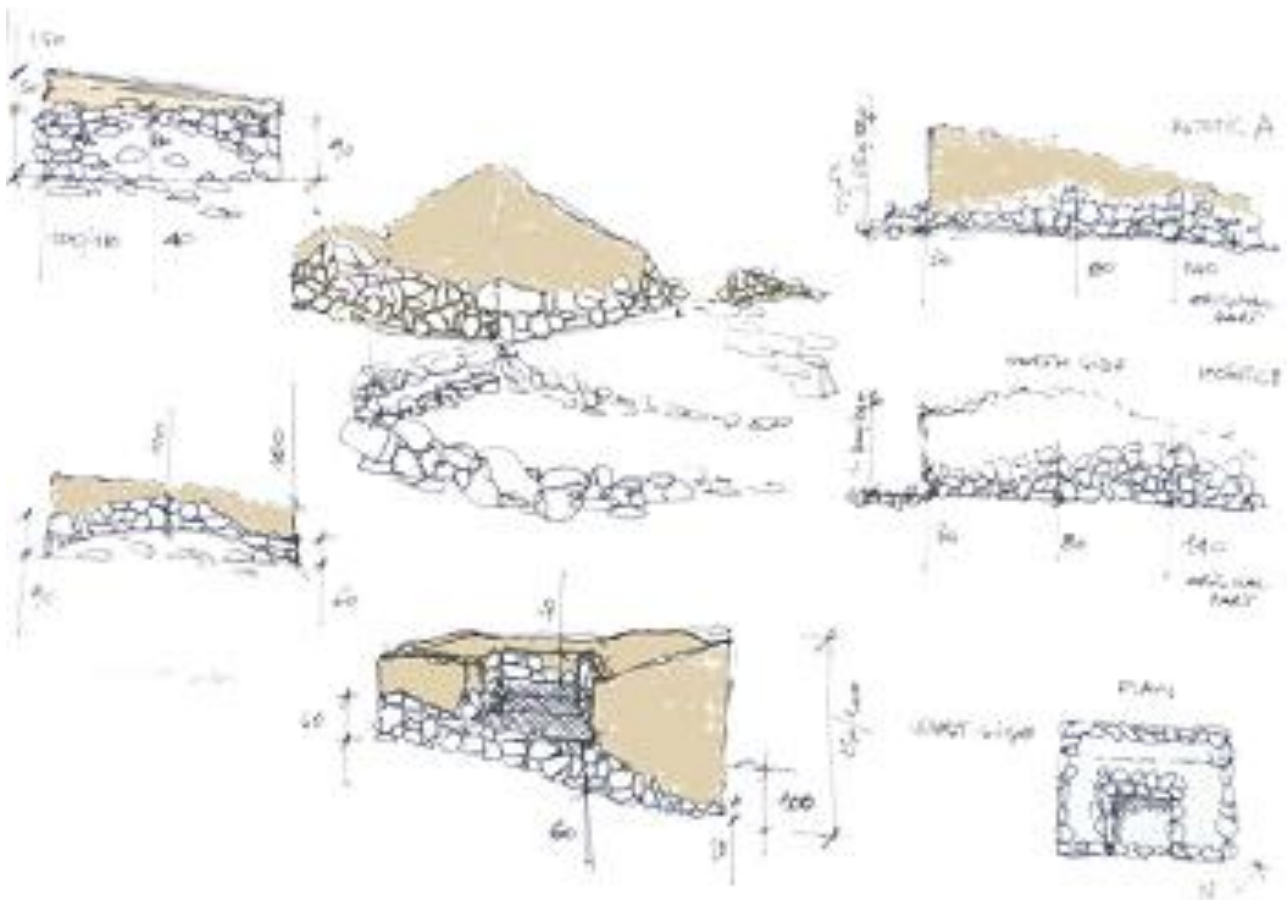
West Tower Project and Restoration (Supervision: Arch. Andrea Moretti)

The restoration of the tower was carried out using the technique of dry wall , with a filling of different grain of stones and ground.

The height reached during the restoration of the walls is demonstrated by the survey of archaeological remains clean and secured .

The interior of the tower has been emptied from the debris and clean .

The ground and sand present on the sides of the tower removed to allow cleaning and consolidation of the original stone.



Project for west tower



View on the down street before restoration



View on the down street after restoration



View on the up street before restoration



View on the up street after restoration



North side before restoration



North side after restoration



West side before restoration



West side after restoration



South side before restoration



South side after restoration



South - East side before restoration



South - East side after restoration

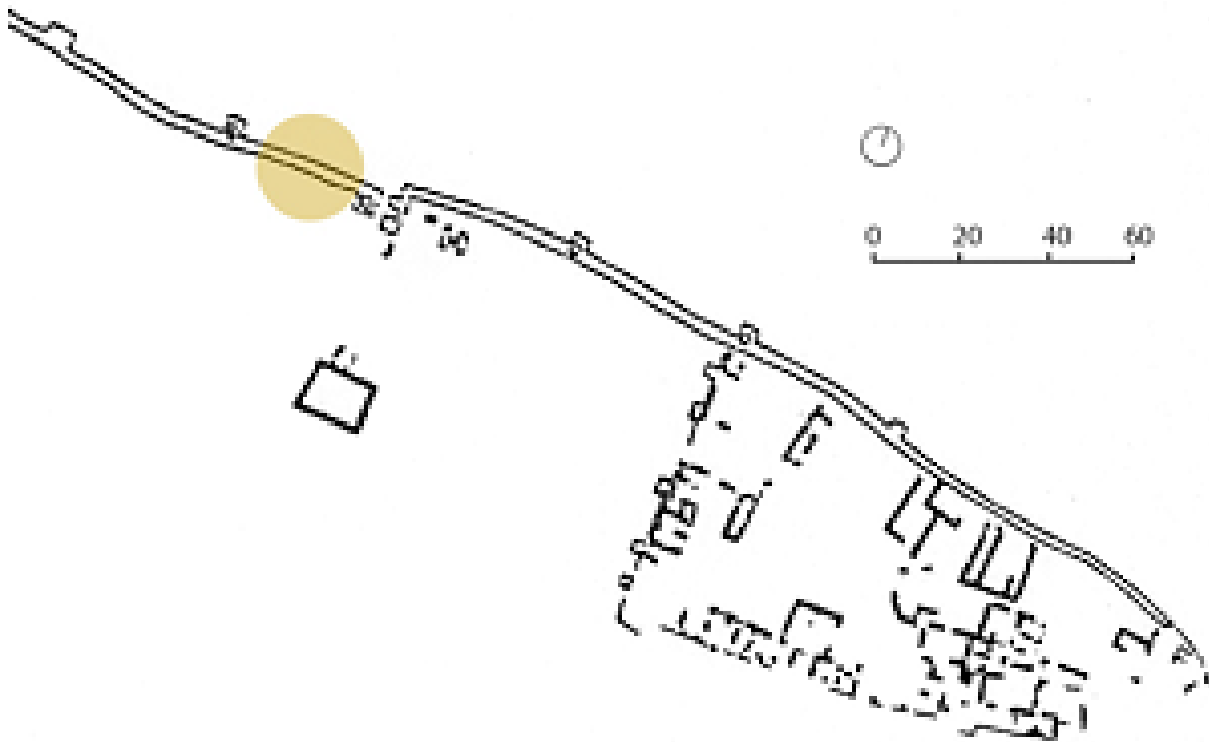


East side before restoration



East side after restoration

Reconstruction of the first 20 m of the West Wall, close to the gate (Supervision: Arch. Antonio Salvi)



Plan of the site Hamr al-Sharqia (Inqitat) with the intervention area



Consolidation of basement



North face, connection with west tower



Construction of regular rows



Geo-textile pose



Filling



Northern face during restoration



Terraced steps, in accordance with the existing southern front



East view, first half complete



Northern face



Cleaning of the southern face



Finish the filling with the soil



Terraced steps towards the walls better preserved

Step Five: Final situation



North side before cleaning



Project area after cleaning north side



Project area after cleaning north side



South side, the wall and the towers



West wall and towers from South-West



Connection with tower



Terraced steps



South Side



View on the principal street, north side east wall, east tower, west tower and west wall