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Research paper

RESTORATION OF THE SOUTH GATE AT THE ROMAN CASTRUM TIMACUM MINUS

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Abstract

The late antique site of Timacum Minus near Knjaževac (eastern Serbia) has been archaeologically investigated for almost 50 years. At the end of the nineties of the last century, a gate was discovered on the southern rampart of this Roman castrum, which was protected by two towers on its eastern and western ends. The gate and towers were built using large pieces of stone, so massive granite was used in the foundation parts, while the ground part of the towers, together with the gate itself, was built from polygonal hewn blocks (ashlar). The wall of one of the towers provided valuable information about the architecture of the gate itself and its towers. However, already during the excavation, it was noticed that the mentioned wall had a five-degree lean from the vertical axis towards the north, which is why there was a danger of it falling over. In three campaigns, a project was created and conservation and restoration works were conducted on the gate itself, its towers, and its surroundings, which saved the 1700-year-old monument. The paper presents a project carried out in cooperation with three institutions, which led from the endangered state of the monument of our cultural heritage to a tourist attraction that is now presented to the scientific, professional, and general public.

Key words: *Restoration, Timacum Minus, Late Antique Architecture, Roman Castrum*

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1. INTRODUCTION

Timacum Minus is a late-antique archaeological site, located near the village of Ravna, 8 km north of the small town of Knjaževac in Eastern Serbia. In Roman times, it was on the main road which connected the town of Lissus on the Adriatic-Ionian shore (modern Lješ in Albania) and the towns of Bononia and Ratiaria on the Danube (modern Vidin and Arčar in Bulgaria). Between these towns, there were many towns (Ulpiana, Naissus) and smaller Roman fortresses and settlements [1, 2]. Timacum Minus was one of them, and it consisted too of a Roman military fortress (lat. castrum) and a nearby civil settlement. The first data about it is related to the stay of the cohort *I Thracum Syriaca* during the 1st century. Back then, this fortification consisted of wooden earthen ramparts. From the middle of the 2nd century until the end of the 3rd century, a special territorial military unit – *cohort II Aurelia Dardanorum*, was situated in it. During the 4th century, *Pseudocomitatenses Timacenses Auxiliarii* resided in the castrum. From the second half of the 4th century, castrum and the settlement were under periodical attacks by the Goths and the Huns. Goths attacked in 378, while the Huns got a final stroke in 445, after which the castrum and the settlement never recovered [3, 4].

The first systematic excavations of Timacum Minus began thanks to the efforts of Petar Petrović, the head of the Institute of Archaeology in Belgrade. Back in 1975, he started with the archaeological research on the site Kuline near the village of Ravna. He identified this site as the castrum Timacum Minus mentioned in Tabula Peuntengeriana, the famous map from the Roman period. One of the main goals of the excavations was to define the perimeter of the castrum area. In that sense, walls and towers on the western rampart have been investigated, as well as some towers on the northern rampart. The excavations have been followed with the simultaneous conservation of the walls' masonry.

2. THE STATE OF THE EXCAVATED SOUTH GATE

The first archaeological excavations of the South Gate were conducted in 1997 [5]. It consisted of the Gate passage itself and two almost rectangular towers on both sides of the passage - one on the west and the other one on the east side (Figure 1.). Soon after the initial investigations of the gate, first deformations and cracks emerged. However, after the excavations, there was no conservation work for more than two and a half decades. The Institute for the Protection of Cultural Monuments in Niš was responsible for this site and this institution asked for a new project cycle after two decades. That meant new revision archaeological excavations would have to be conducted so the Institute of Archaeology in Belgrade and the Homeland Museum of Knjaževac concluded a new joint project for the excavations of this site in a period from 2019 until 2023 [6, 7][4]. Three phases of the gate have been discovered (Figure 2.). The first phase of the walls (from the 2nd century) is done using the pebbles in a hot lime mortar both at the foundation as well as at the aboveground level. The second phase (from the 3rd century) is the most representative. Large monolithic ashlars of sandstone (among which some were polygonal in shape) and spolia – ancient gravestones (Figure 3.) have been used for its aboveground construction. These ashlars are connected by hot lime mortar. At the foundation level, huge granite stones, pebbles and hot lime mortar

[4] The leader of joint project is PhD Sofija Petković, Principal Research Fellow from the Institute of archaeology in Belgrade.

were used. The third phase (from the IV century) can be noticed by the walls which are made by the combination of several rows of pebbles and other types of stones and rows of bricks, as usual for this period.

Figure 1. The excavated South gate of Timacum Minus from the South side (the photo of I. Bjelić)

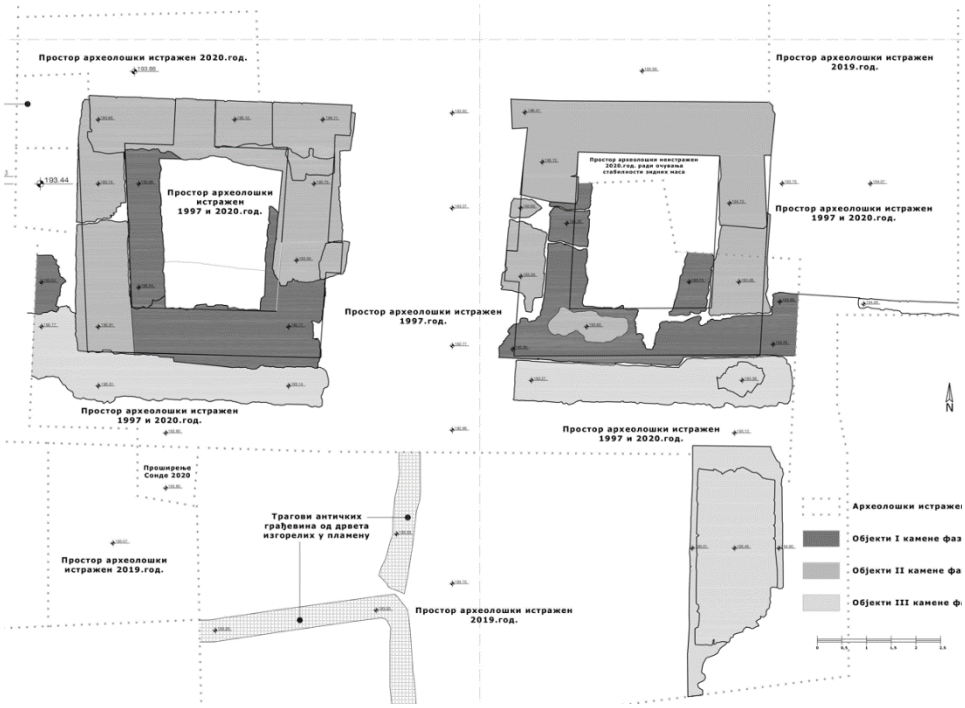

Figure 2. Plan of the excavated state of the South gate of Timacum Minus (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

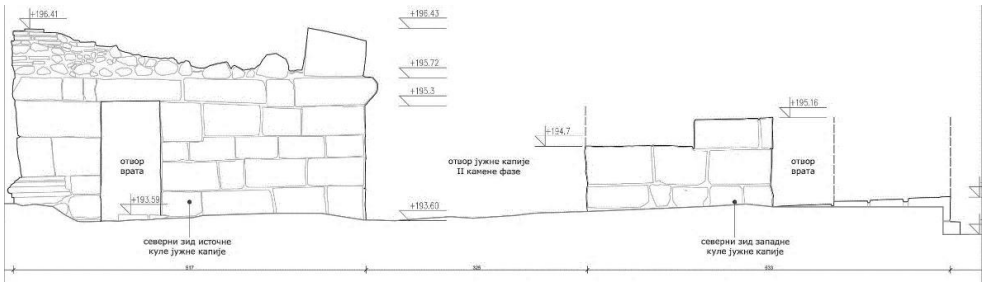

Figure 3. North façade of discovered South gate of Timacum Minus (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

Deformations of the excavated masonry structures have become more visible in the meantime – the whole north wall tilted towards north, numerous cracks emerged, and the most distinctive one was on the architrave beam above the tower door (Figures 3 - 5). These structural failures indicated that a danger from a final collapse have become more plausible, and that there is a need for an intervention from a civil engineering point of view at the foundation level.

There were other problems on which project addressed. The north wall of the east tower is 3m high in a preserved state, while its south wall was noticed only at the foundation level, at the depth of 1,5m below the threshold of the tower's door. The difference of 4,5 m was at the distance of 4,7m which corresponded to the length of the tower itself. Beside this, at the site, three phases of masonry are preserved, but not in a whole at all positions (lengths) of the walls.

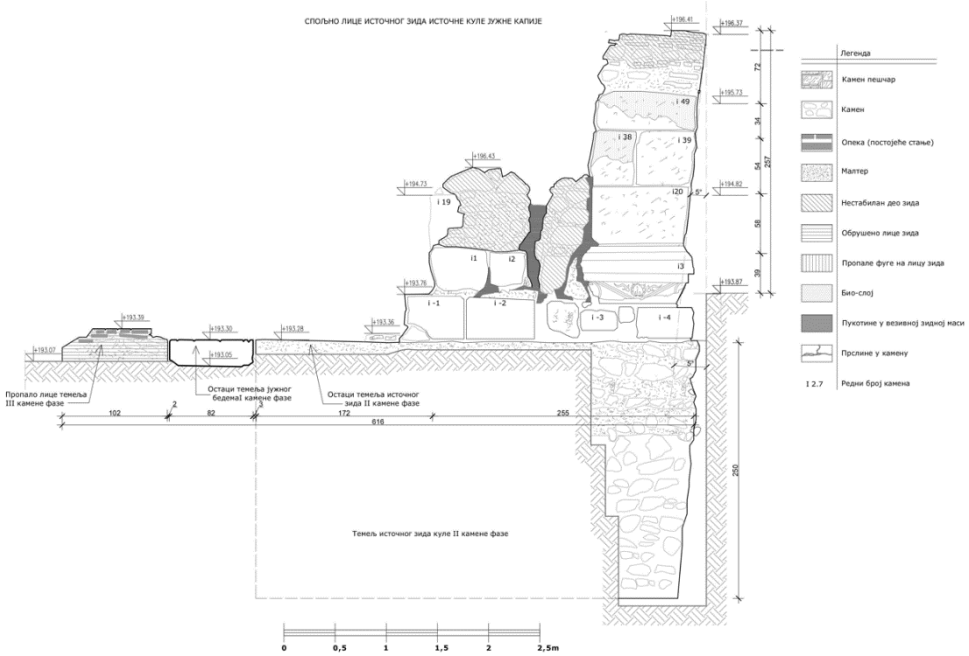

Figure 4. East façade of the East tower of the South gate of Timacum Minus (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

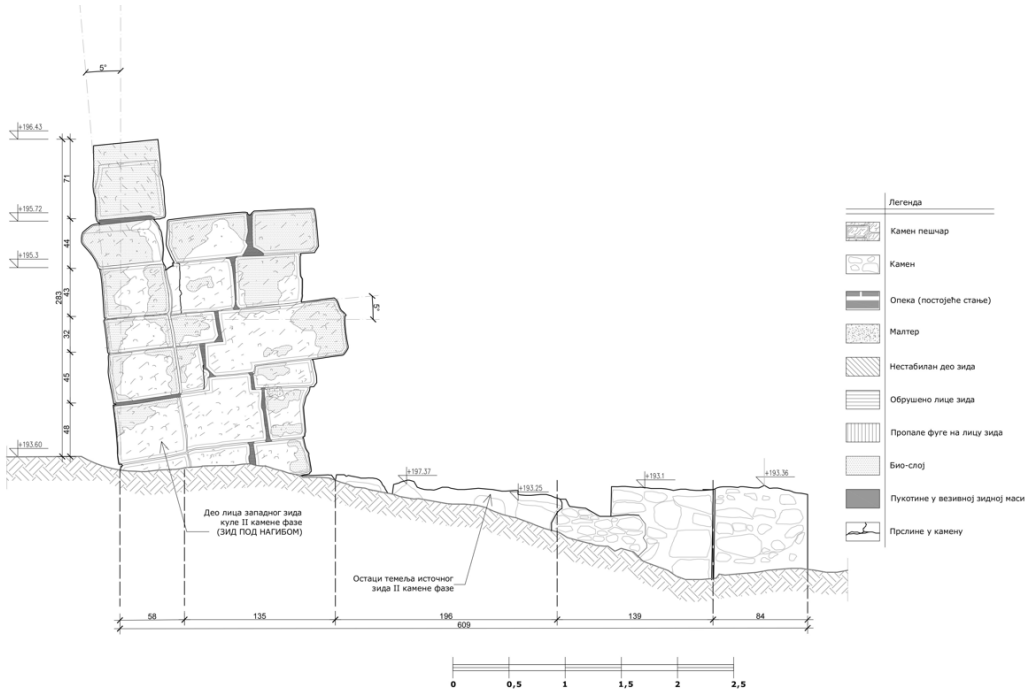

Figure 5. West façade of the East tower of the South gate of Timacum Minus (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

3. METHODOLOGY

One of the most important principles in the conservation of masonry walls at archaeological sites is that an architect-conservator shouldn't project the amount of masonry that would jeopardize the original masonry, the original state, and the shapes that are excavated. On the other hand, we got most of the elements for the reconstruction of one of the arches above the Gate itself, since there was an abutment preserved at the original level and the first ashlar (voussoir) at the springing level of this arch. This specially shaped stone had an upper edge cut under the angle, which was close to the center of the arch. All the differences between the heights of the preserved walls had to be reconciled in the sense that a state of presentation should be clear to any visitor who would come to this site. However, reconciliation between the heights was a hard task since the three phases of masonry (from the II, III, and IV centuries) are at some positions in very close proximity.

4. RESULTS

The Ministry of Culture of the Republic of Serbia has financed the new project for the restoration of the gate, and the Homeland Museum of Knjaževac was the investor. Project under the name: *Preliminary design for restoration works on the southern gate with the tower towers at the archaeological site of Timacum Minus*, has been done by the Institute for the Protection of Cultural Monuments in Niš. Three architects participated in it: Goran Radosavljević (Senior conservator from the Institute for the Protection of Cultural Monuments in Niš), Mile Veljković (retired conservator from the Institute for the Protection of Cultural

Monuments in Niš), and Igor Bjelić (Research Associate from the Institute of the archaeology in Belgrade). The architects from the Institute for the Protection of Cultural Monuments in Niš defined the methodological approach of restoration and the applied materials, while a Research Associate Architect from the Institute of Archaeology defined the shapes of the restored walls.

The first level of the project is intended to bring back the original shapes of the excavated monument state. It meant that the axis of the north wall of the east tower must be at the right (vertical) angle. In that sense, for the needed interventions on the foundation level, we consulted several experts: Nenad Šekularac from the Faculty of Architecture in Belgrade as well as Dragan Zlatkov and Predrag Petronijević from the Faculty of Architecture and Civil Engineering in Niš. The first expert suggested that the structure of the tilted north wall should be restored at the vertical angle above the ground level by using the grid net of wooden beams from both sides of the wall. Thus, a crack would be opened between the foundation level and the aboveground part of the wall, which would be then filled with special connecting masses for dilatation (made by company Sika or Mapei). The original foundation should be reinforced by reinforced concrete beams, which would take a huge part of the loading of the aboveground structures. The point of view of other experts was a traditional one, where all the aboveground structures of the wall would be first dismantled in a process, that involved recording each of the sandstone ashlars from the wall. A new strip foundation from reinforced concrete would be set in the mass of the original foundation. After that, the old ashlars would be set on their old prerecorded positions. The Institute for the Protection of Monuments in Niš agreed with the second proposition since the first complex method had never been applied on the territory of the Institute's jurisdiction, and there was a great possibility that extra financial resources would be needed for it.

In the restoration approach, we observed the Gate at the wider plan of castrum Timacum Minus. Plans for presentation shaped the previous excavating approach, so the edges of the archaeological trench were defined at a distance of min 5m from the remains of the Gate to avoid water residues around the discovered walls. We count on that the Gate will be the future starting point for the gathering of the visitors groups at the site. Therefore, the terrain around the gate should be as flat as possible, without traces of archaeological trenches nearby. Also, according to that fact, all the walls should be visible above the ground level, including those which at the moment of excavation were preserved only at the foundation level. That was the case with those on the south edges of the towers. Nothing of the foundation structures should be exposed to climate change.

As we pointed out earlier, there was a great difference (4,5 m) between the north and south walls of the east tower, so we decided to make the west and east walls stepped in a way that these acted as abutments starting from the south to the most preserved north wall of the East tower (Figure 6.).

One of the most important artistic elements of the Roman Gate is the arch above its passage. The cornice on the abutment level marked the starting point – the so-called impost for the arch – it was preserved on the north wall of the east tower. Besides this, the specially carved stone (ashlar) – voussoir of the arch was preserved *in situ* (in an original state and position). That voussoir was the first ashlar within the structure of the arch – the so-called springer. The outer and inner curved edges of that ashlar – extrados, and intrados, determined the position of the center point of curvature of the arch. However, the upper bed edge of the voussoir was under the angle that pointed at another center by which a

stonemason marked the beds between separate voussoirs of the arch. This second center was higher than the first one (Figure 7.). From the data presented here, we decided there were enough elements for the restoration of the arch. The mass of the wall above the arch could theoretically be defined according to the remains next to the springer.

There was a great question about whether the north wall of the west tower should be restored and on which level (proposed levels of restoration are marked in dark and light tones in Figure 8.). The same question applied to the whole west tower. The response to this question depended on a decision on whether we have enough elements for the restoration of the arch above the Gate. Since the arch should be restored, the north wall of the west tower, which played a role as another abutment of the gate 'arch, should be restored too. At this stage of the project, there was also a question about whether a whole north wall of the west tower should be shaped as a symmetrical replica of the north wall of the east tower (proposed light tone in Figure 8.) or whether the level of restoration should be limited only to the section of the wall, which played a role as the abutment of the arch (proposed dark tone at Figure 8.)?

To distinguish the phases, but simultaneously not lose the appearance of the Gate as a whole, we had to have whole units of restored walls from each of the phases, but in a way where the state of presentation would be clear for the understanding by any visitor. To make a clear presentation of the already complex order of chronological phases and the number of walls in a small space, we decided to make the west tower a symmetrical structure to the east tower (light grey shade in Figure 8, Figure 9.).

According to the project presented here, the works on the restoration of the Gate were conducted in three campaigns. Institute for the Protection of Cultural Monuments in Niš was controlling the process, and the company "Mitre Tasić doo" from Smederevo did works on the site as a construction contractor (Figure 10.).

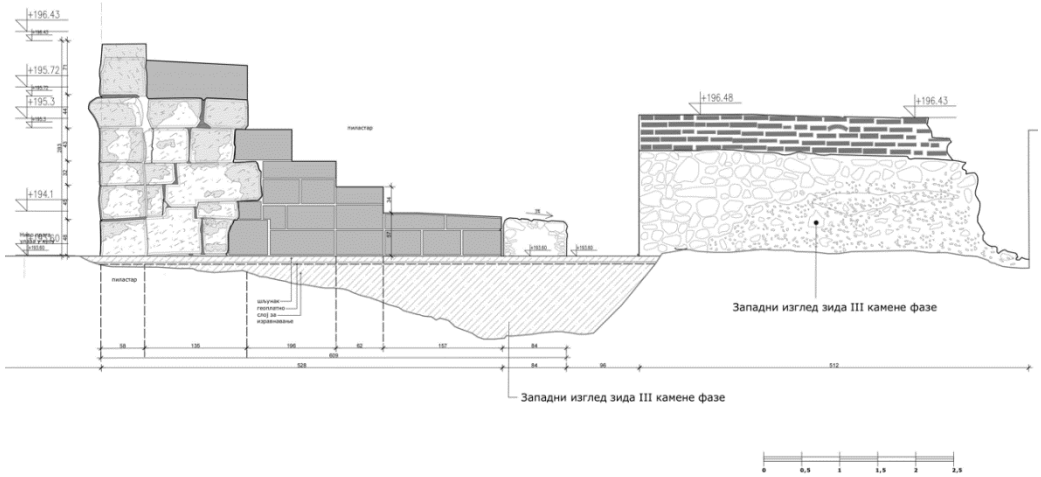

Figure 6. West façade of the East tower and the wall from the fourth phase according to the project of restoration (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

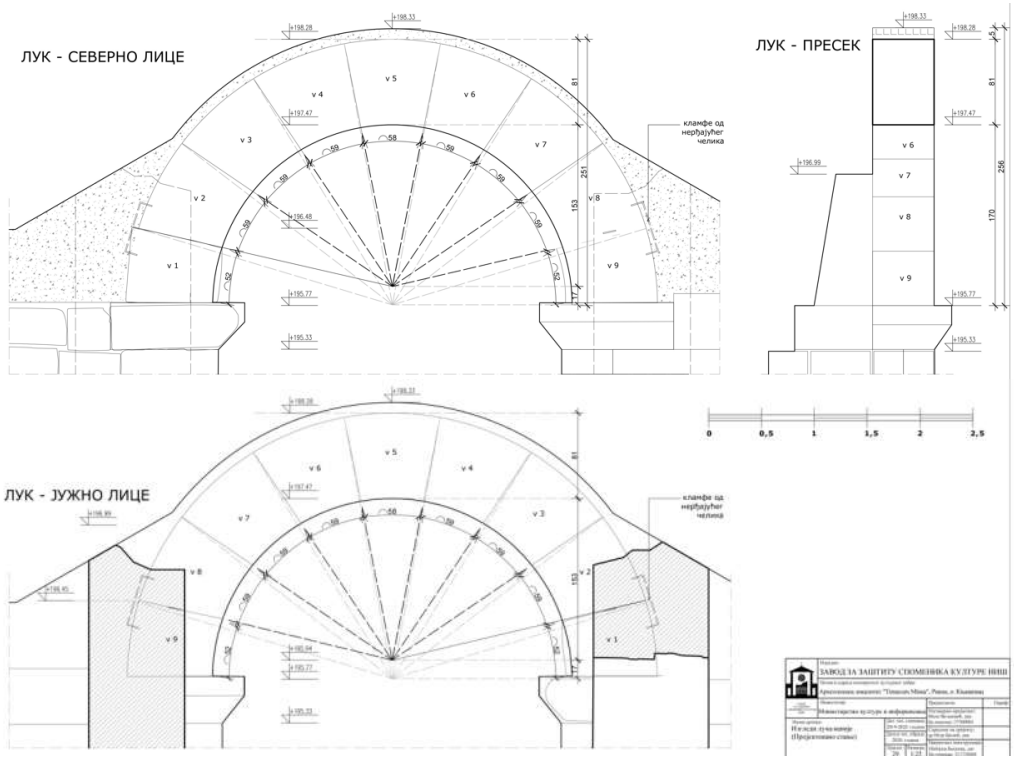

Figure 7. The detail of the arch of the gate according to the project of restoration (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

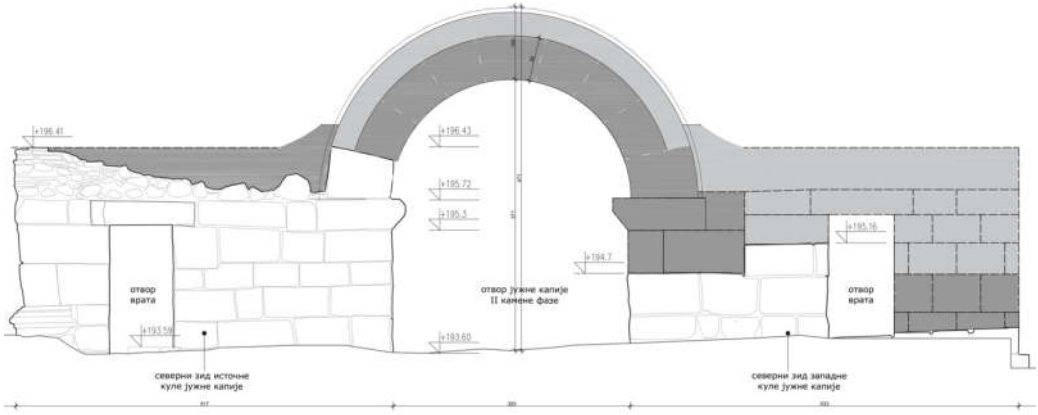

Figure 8. North façade of the restored South gate of Timacum Minus Minus according to the project of restoration (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

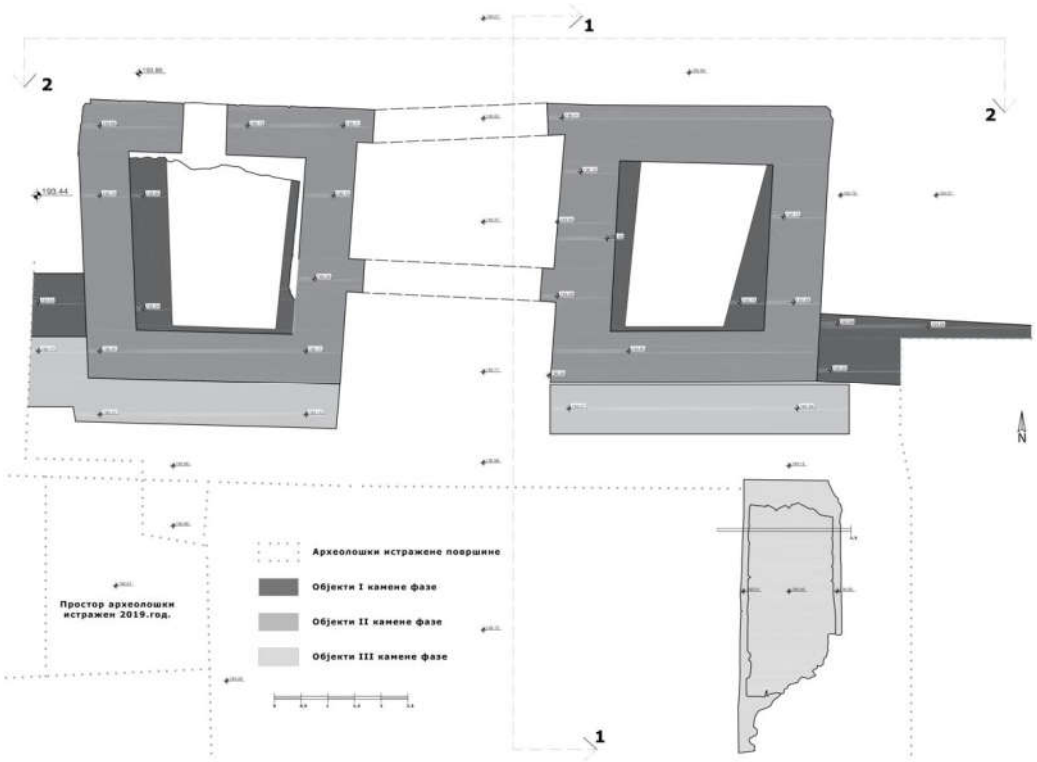

Figure 9. Plan of the South gate of Timacum Minus according to the project of restoration (the documentation of the Institute for the Protection of Cultural Monuments in Niš)

Figure 10. South Gate after the restoration (photo of I. Bjelić)

5. DISCUSSION

Two questions mentioned before were the subject of continuous debates among scholars, architects, and even masons. The first question was a proposition made by Nenad Šekularac about the method of intervention on the foundation part of the north wall of the east tower. That proposition was good in a way that it guaranteed the protection of the original structure and material of the wall above the ground level contra the proposition which involved the dismantling of the wall, no matter how expensive it would be. However, since our country's government gives financial resources for the culture, which are 0.68% of GDP, and only a small percentage of it can be used for the protection of immovable cultural monuments. Recently, because of the highly increased level of construction of buildings in towns, most endangered monuments are those in urban areas, so the archaeological sites are in most cases the last on the list for the approvals of financial resources. This reason was crucial for the experts from the regional Institutes for the protection of cultural monuments. Therefore proposition, which demanded high financial resources, is not appropriate for the archaeological site, which is not in an urban area, which is just the case of Timacum Minus. Also, in the masons ' opinion, the first proposition was too demanding for their skills and given opportunities on site.

The second big question was the level of restoration of the west tower. Namely, if we observe only the west tower, its north wall is not as high in a preserved state as that is the case with its counterpart on the east tower. The level where it would be shaped as a symmetrical replica of the north wall of the east tower meant that more than 50% of its structure would be restored. That approach is not a custom in the methodology of restitutions of cultural monuments, especially if those are so old (in our case from the late antiquity). However, this tower should be not observed uniquely, but as a part of the wider situation of Gate. The answer to this question was connected to the state of presentation of the Gate as a whole. Archaeological excavations provided data about the width of the entrance door to the west tower, as well as the level of the threshold, while the architectural analysis showed that the level of the architrave beam above that door should be at the same level as that one on the east towel – at the same horizontal as the impost cornice of the arch above the Gate. Therefore, the north wall of that tower was only one part of the north façade of the Gate, where we had more than enough data to restore the façade of ground-level structures. In other cases, if an east tower is presented in one way, and a west tower in another one, according to the state of the remains of each of them, then it would not be clear to visitors that those are symmetrical structures by which Gate has been controlled. This state of presentation would make succeeding problems with the level of presentation of separate phases too. Therefore, we concluded that there is firm evidence that the north wall of the west tower should be restored as a symmetrical replica of its counterpart on the east tower.

6. CONCLUSION

Project under the name "Preliminary design for restoration works on the southern gate with the tower towers at the archaeological site of Timacum Minus" has been conducted by the Regional Institute for the Protection of Cultural Monuments in Niš. However, the job of the restitution is a joint effort of three institutions. Besides the mentioned Institute from Niš, the participants of the project (direct or indirect) were also the Homeland Museum in

Knjaževac, as well as the Institute of Archaeology in Belgrade. A joint effort not only rescued the monument from the disintegration of a precious 1800-year-old Gate but created a new landmark in the area of archaeological site which was the main scope for the architects and archaeologists involved in this project.

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