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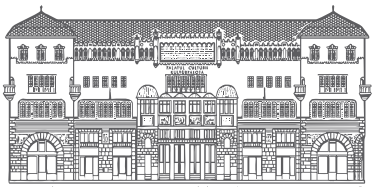

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THE RESEARCH OF ROMAN STONE GATE TOWERS IN DACIA POROLISSENSIS

Péter SIMON*

The current paper presents the researched stone gates from the Roman auxiliary forts of Dacia Porolissensis. The shape of the gate towers and the size of their protrusion have dating significance, which in our case suggest two major rebuilding phases: the construction of the stone precincts and their improvement from a defensive, tactical point of view.

Keywords: Dacia Porolissensis, auxiliary forts, gates, gate towers, dating
Cuvinte-cheie: Dacia Porolissensis, castre auxiliare, porţi, turnuri de porţi, datare

1. RESEARCH HISTORY

In the past two centuries the systematic research of Roman auxiliary forts has commenced, with the excavation of several elements of their defensive systems, including the different gates and gate towers. In more fortunate cases, the research results were published in the form of articles or monographs, but we can also name numerous syntheses, which present and analyse them.

Most of these studies were published in the second half of the 20th century and were trying to identify the similarities between the different gates of different Roman auxiliary and legionary forts. Some of the papers also tried to establish a chronological dating system which was mainly based on the form of the gate towers and the extent of their protrusion from the curtain wall.

The first synthesis was published by T. Bechert in 1971, in which the author presents multiple gate types together with their building inscriptions. Based on the results, T. Bechert defined a chronological dating system for these gate towers, covering the time period from Emperor Claudius to Severus Alexander.[1] In the following few decades the discussion of the different types and architectural development of Roman gate towers continued, with numerous authors discussing this topic to a certain extent, such as: I. B. Cătăniciu in 1981,[2] S. Johnson in 1983,[3] J. Lander in 1984,[4] A. Johnson in 1987[5] and D. A. Welsby in 1990.[6] Two Romanian researchers have published articles which present and discuss certain aspects of Dacian gate towers: D. Alicu[7] and D. Isac.[8]

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[1] Bechert 1971, 201–287.
[2] Cătăniciu 1981, 4–53.
[3] Johnson 1983, 9–30.
[4] Lander 1984, 5–313.
[5] Johnson 1987, 93–114.
[6] Welsby 1990, 113–129.
[7] Alicu 1973, 107–125.
[8] Isac 2006, 131–163.

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For the dating of the gates from the forts in Dacia Porolissensis (Pl. I) we can rely on various articles, but also on the monographs which were published for the 17. Limes Congress held in Zalău. Starting at the western part of the *limes* in Dacia Porolissensis, three gates were excavated at the *castrum* of Gilău: the *porta principalis dextra*,[9] the *porta decumana*[10] and the *porta principalis sinistra*.[11] Heading north, at Bologa, the *porta principalis dextra* was partially excavated in 1936,[12] while the other gates were unveiled in the campaign that lasted from 1967 to 1976.[13] The *porta praetoria* was re-excavated in 2013[14] in order to clarify its ground plan, which unfortunately remained unpublished. Between 1963 and 1976, in a similar type of excavation series, all of the gates of the Buciumi *castrum* were unveiled.[15]

At Românaşi / Largiana the *porta praetoria* was the first to be excavated,[16] the second being the *porta principalis dextra*.[17] Next up, at Romita / Certiae the *porta praetoria* and the *porta principalis sinistra* were unveiled in the two year period of 1996–1997.[18] In 2004[19] and 2013[20] geophysical measurements took place at the fort, which allowed to define the approximate size of the remaining gates.

At Porolissum, with the exception of the *porta principalis dextra*, every gate on Pomăt-Hill was excavated in 1943.[21] Between 1979 and 1989 these gates were unveiled again, together with the previously unresearched gate: the *porta principalis dextra*.[22] At Porolissum, systematic archaeological excavations also took place at Citera-Hill in 1958, which presented the two *principales* gates of the fortification, among others.[23]

Unfortunately at Tihău we can only speak of a geomagnetic survey,[24] based on which some estimations[25] were made concerning the size of its gate towers. At Căşeiu / Samum we can mention several excavations. In the interwar period E. Panaitescu managed to unearth the *porta praetoria*, *porta decumana* and *porta principalis sinistra*.[26] Half a century later D. Isac re-excavated the *porta praetoria*,[27] along with the *porta principalis sinistra*[28] and unveiled the missing gate: the *porta principalis dextra*.[29]

At Ilişua / Arcobara all of the gate towers were excavated in the 1980s: the *porta principalis sinistra* in 1982,[30] the *porta praetoria* in 1983,[31] the *porta decumana* in 1984[32] and the *porta principalis dextra* in 1987.[33] At Orheiu Bistriţei the *porta principalis sinistra* was indeed

[9] Isac et al. 1981, 85–98.
[10] Isac 1997, 53.
[11] Isac 1997, 57.
[12] Macrea 1938, 195–233.
[13] Gudea 1997, 12–13.
[14] Marcu et al. 2014, 28–29.
[15] Gudea 1997a, 13–15.
[16] Tamba 1997, 12–13, 23.
[17] Tamba 1997, 23.
[18] Matei–Bajusz 1997, 18–19.
[19] Franzen et al. 2007, 161–177.
[20] Opreanu–Lăzărescu 2016, 71–74.
[21] Tóth 1978, 6–7, 72.
[22] Gudea 1997b, 17.
[23] Macrea et al. 1961, 374–376.
[24] Haalebos 1999.
[25] Bennett 2006, 279–299.
[26] Panaitescu 1929, 321–342.
[27] Isac 2003, 82.
[28] Isac 2003, 90.
[29] Isac 2003, 96.
[30] Protase et al. 1997, 16.
[31] Protase et al. 1997, 19.
[32] Protase et al. 1997, 22.
[33] Protase et al. 1997, 28.

researched to some degree,[34] but the results did not yield anything significant.

At Gherla two gates were partially uncovered: the *porta principalis dextra*[35] and the eastern tower of the *porta decumana,*[36] while the remaining ones were destroyed due to erosion and modern interventions. The *castrum* of Livezile doesn't have a stone phase, while at Sutoru / Optatiana the gates remain unexcavated.[37]

2. RESEARCH QUESTION AND METHODOLOGY

In the past two centuries a significant percentage of the gates from the auxiliary camps in Dacia Porolissensis have been excavated. These gates, or rather their towers, hold dating significance, which is mainly due to the shape, size of protrusion and actual extent of the gate towers. It is worth mentioning that the last comprehensive study about gates from Roman Dacia was published in 1973,[38] thus the re-evaluation of the topic seems overdue.

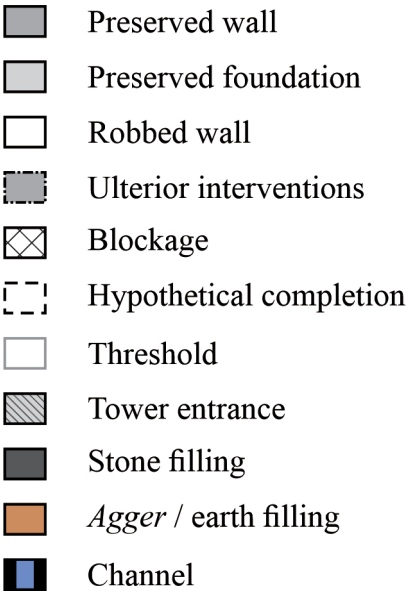

Fig. 1. Legend of the gate plans.

Beside the analysis, I find it not only important, but compulsory to present the examined gates in a standardised way, therefore the plans of these have been digitally redrawn following a consistent notation system (Fig. 1). Unfortunately, not every gate plan was published. In these cases, I'll be referring to the fortifications' plans, which were also redrawn, although after a slightly different notation system (Fig. 2).

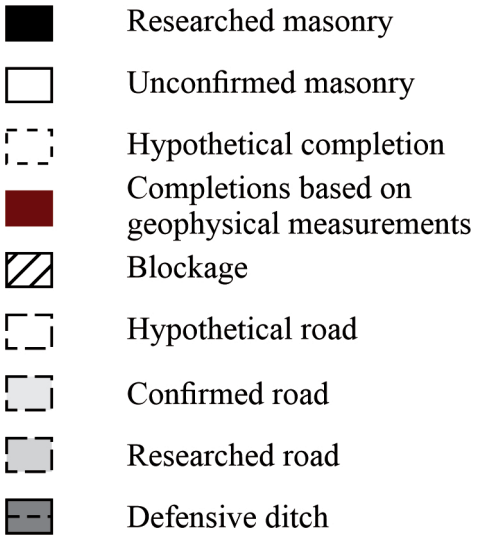

Fig. 2. Legend of the *castrum* plans.

[34] Protase 2008, 12, 16.
[35] Protase et al. 2008, 20–21.
[36] Protase et al. 2008, 23.
[37] After the completion of this paper, the north-western gate (*porta principalis sinistra*) of the fort was excavated and the results were published in a preliminary report (Cociş et al. 2024, 374–380).
[38] Alicu 1973.

3. ANALYSIS

3.1. The evolution of gate towers from the 1st to the 3rd century CE

Stone gates appeared in Roman architecture as early as the 1st century CE, more precisely during the reign of the Flavian dynasty and were initially used in the defence of cities.[39] In military architecture, namely in legionary camps, they were first used during the reign of Vespasian (69–79 CE). More than a decade later, during or shortly after the reign of Domitian (81–96 CE), auxiliary camps also started to incorporate stone gate towers into their precincts.[40]

In terms of shape, the first ones were rectangular, directed towards the interior of the camp and had minimal or no projection at all.[41] This form of construction was still common under Hadrian[42] (117–138 CE), but during the reign of Antoninus Pius it started to evolve:[43] although the shape remained unchanged, the outer walls were built with minor protrusions. The expansion of the Roman Empire was mostly halted at this point, the frontiers became permanent, more and more camps started to construct their stone precincts. These major reconstruction works didn't have tactical reasons, in the long run a stone defensive wall's maintenance was simply more cost effective compared to that of the turf-timber type.[44]

After the numerous crises that devastated the Empire during the Marcomannic Wars and the failure of the fortifications, due mostly to the fact that the gate towers had a structural logic,[45] a greater emphasis was put on tactical importance. At first, at the end of the reign of Marcus Aurelius (161–180 CE) large rectangular gate towers were built with greater protrusions. This concept was improved during the Severan dynasty with the implementation of rounded gate towers. These types of towers were not a new technology, but tactically they were far superior to their predecessors, as they proved to be structurally more robust[46] and they limited the so called dead zones[47] in front of them.[48]

3.2. Gate tower types from the 1st to the 3rd century CE

In the age of the Principate, the various changes in military architecture can be observed linearly and to some extent even on imperial level. These include the modernisation of the various gate towers, as well as the attempts to improve them. This fact recommends the

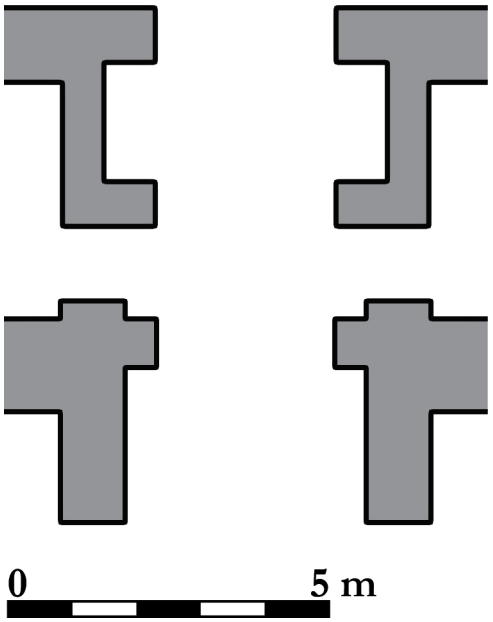

Fig. 3. Gates equipped with a single tower.

[39] Johnson 1983, 20.
[40] Bechert 1971, 236.
[41] Johnson 1987, 112.
[42] Johnson 1983, 24.
[43] Bechert 1971, 238.
[44] Lander 1984, 56, 299.
[45] Lander 1984, 104.
[46] Bechert 1971, 260–262.
[47] In military fortification the dead zones are defined as areas that are unintentionally sheltered from defensive fire. These spots are usually right in front of the precinct wall, the defender cannot shoot or throw projectiles here without putting his own life in danger, i.e. leaning out.
[48] Lander 1984, 304.

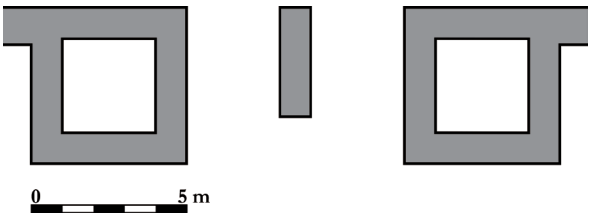

Fig. 4. Nonprotruding rectangular gate towers.

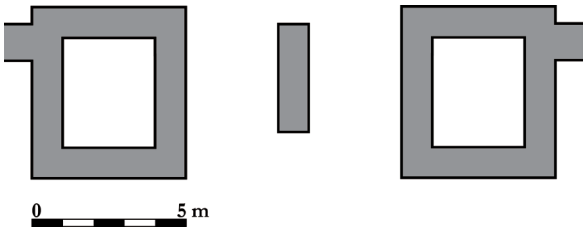

Fig. 5. Slightly protruding rectangular gate towers.

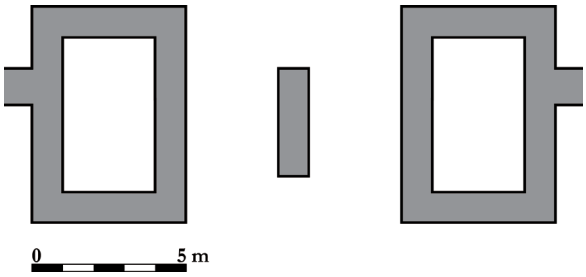

Fig. 6. Heavily protruding rectangular gate towers.

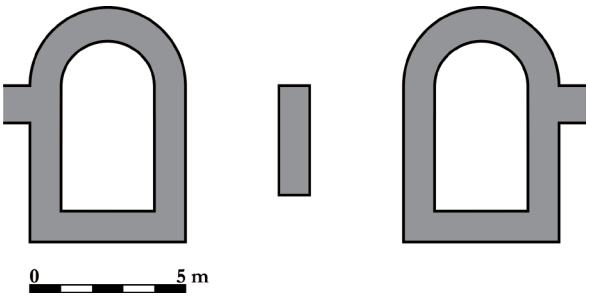

Fig. 7. Rounded gate towers.

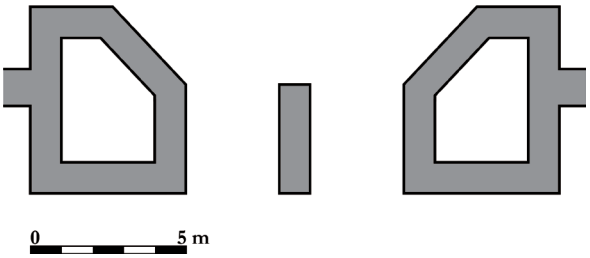

Fig. 8. Cut-away gate towers.

examination of the shape and the protrusion of these gate towers, as they have dating significance.

In the period from the 1st to the 3rd centuries CE we come across two types of gates: the gate equipped with one tower[49] (Fig. 3) and the one with two towers. At first the towers of the latter were built in rectangular shape, without any kind of protrusion (Fig. 4), over time however, more specifically and especially after the Marcomannic Wars,[50] the protrusions increased in size (Fig. 5 and Fig. 6). The evolution from the rectangular gate towers took place in two directions, more or less at the same time: at the end of the 2nd and the first quarter of the 3rd centuries. These towers had rounded (Fig. 7) and cut-away plans (Fig. 8).

From a tactical perspective J. Lander defines a few relevant points a gate tower should aim to achieve. Firstly, it should serve as a raised position for better observation and from which weapons or at least tossable objects can be thrown down on the attackers with greater force and even from the distance. Secondly, it should strive to be a position from which it is less difficult to combat attackers who already managed to scale the defensive wall of the fortification and on which considerable manpower and firepower can be concentrated. Thirdly, it should be an elevated position from which the defenders can combat attackers who have reached the gates or the gate towers and who might fire back, use mines or rams to breach the fortification's defences. Last but not least a tower should provide a stable position for heavy artillery.[51]

The first consideration was already present in the timber-turf phase of the fortifications. In the stone phase, a gradual evolution can be observed, which mainly meant that the towers were built with greater protrusion and in larger size. After the crisis of the Marcomannic Wars, much more emphasis was put on the second point, after which, during the Severan dynasty,

[49] In these types of gates, a single tower was built directly above the gate entrance and the traffic was carried out on the ground floor of the tower.
[50] Lander 1984, 104.
[51] Lander 1984, 302.

the rounded gate towers became the standard.[52] This type was able to reduce the so called dead zones or rather the third point was incorporated. This last consideration was only explored in the following centuries.[53]

The currently available archaeological data reveals that two types of gate towers are observable in Dacia Porolissensis: the rectangular and the rounded ones.

3.3. Stone gates in Dacia Porolissensis

Apart from the auxiliary camp of Sutoru / Optatiana, where none of the gates have been excavated, and the *castrum* of Livezile, which was only a temporary turf-timber type fortification, all the other camps of the province have gates or gate towers that have been researched.

Gilău: the towers of the three researched gates are rectangular in shape and were built with protrusions exceeding one metre. Based on the type of gate towers, D. Isac dated their construction and that of the stone precinct to the second half of the 2nd century.[54]

Bologa: archaeological results have revealed that all four gates of the fortification were equipped with rounded towers. Based on their plan, N. Gudea dates their construction to the beginning of the 3rd century CE, more precisely to the joint reign of Septimius Severus and Caracalla.[55] This presumption is mainly based on their type, which corresponds to the relative chronological development of the gate towers.

The construction of the rounded gate towers represents a rebuilding phase. This is also indicated by the results of the *porta praetoria*'s reexcavation, in which F. Marcu states that the walls of the towers are not connected to the fortification's defensive wall.[56] The construction of the camp's stone precinct should be dated earlier, to the 2nd century CE.

Buciumi: N. Gudea is uncertain about the time of construction of the fortification's stone precinct and its *porta praetoria*, but notes that the other gates of the camp (the *porta decumana*, *porta principalis sinistra* and *porta principalis dextra*) have rounded plans. He dates these to the beginning of the 3rd century, or rather to the reign of the Severan dynasty.[57] The rebuilding from stone of certain internal buildings within the *castrum* was dated to the middle or the second half of the 2nd century.[58] If we take into consideration the shape and the protrusion of the *porta praetoria*, it can be assumed that a larger scale reconstruction was taking place at that time, during which the stone precinct and the stone phase *porta praetoria*[59] were erected.

Românași / Largiana: Based on the shape and protrusion of the *porta praetoria,* D. Tamba dates the construction of the stone precinct to the last years of Hadrian's rule or to the reign of Antoninus Pius.[60] This presumption seems inappropriate or unlikely at the least, the towers' considerable size and protrusions[61] indicate the middle or second part of the 2nd century CE.

Romita / Certiae: the towers of the *porta praetoria* have prodigious size, are rectangular in shape and were built with protrusions that exceed 2 metres. Due to the strategically important location of the camp, and with reference to some archaeological finds,[62] the stone

[52] Lander 1984, 303.
[53] Lander 1984, 303.
[54] Isac 1997, 50.
[55] Gudea 1997, 40.
[56] Marcu et al. 2014, 28–29.
[57] Gudea 1997a, 54.
[58] Gudea 1997a, 53.
[59] Although the researchers don't mention any kind of earlier stone phase of the *portae principales* and the *porta decumana*, I find it highly unlikely that these were not rebuilt during this extensive reconstruction period. Most certainly these gates had at least two stone phases, unfortunately only their latest one is identifiable.
[60] Tamba 1997, 26–27.
[61] During Hadrian and Antoninus Pius the protrusions were either non-existent or minor. The gate towers researched at the *castrum* of Românași had sizeable protrusions of 1.85 metres, which suggests a later period of construction.
[62] Here I'm referring to coins of Emperor Hadrian. These have *terminus post quem* significance, their accurate dating aspects are debatable.

construction of the camp is dated to the first half of the 2nd century.[63] The fortification's reconstruction in stone may have happened in said period, but, considering its characteristics, I think the *porta praetoria* was built the earliest in the middle, the latest in the last two decades of the 2nd century. The latter seems more feasible, as considerably large rectangular gate towers like these were created as a result of the Marcomannic Wars.

Also, if we accept the assumptions based on the geophysical measurements (Fig. 40) that the *portae principales* of the camp are rounded in shape, then it can be presumed that they were rebuilt within the series of repairs at the beginning of the 3rd century. Repairs proven by archaeological excavations were also simultaneously carried out on the *porta praetoria*.[64]

Porolissum-Pomăt: the gate towers of the fortification are rounded and roughly the same in dimensions and size of protrusions, meaning they were most certainly built at the same time. Concerning the dating of the gates we are highly fortunate, as multiple building inscriptions[65] have been found on the gates, which date their construction to the exact year of 213 CE. N. Gudea assumes incorrectly that the construction of the rounded gate towers happened simultaneously with the erection of the fortification's stone precinct. In reality and unsurprisingly, not just because the auxiliary fort is arguably the most important in the province, the stone precinct's construction began much earlier, in 129 CE, and was completed under Antoninus Pius.[66] The first stone gate towers of the *castrum* must have had a rectangular shape, but during the reign of Caracalla they were transformed into rounded ones.

Porolissum-Citera: the towers of the *portae principales* are rectangular and have protrusions slightly exceeding one metre. Based on this data, the towers could be dated to the middle or second half of the 2nd century CE. This dating is supported by a coin of Marcus Aurelius Caesar, which was found in the mortar of the northwestern tower of the *porta principalis dextra*.[67]

Tihău: the results of the geophysical measurements carried out at the end of the 20th century made it possible to create the plan of the *castrum*. Unfortunately, the shape and the protrusion, if there was any, of the gate towers are unclear and cannot be identified. Nevertheless, J. K. Haalebos and J. Bennett claim that the towers of the *porta decumana* were rounded and built with protrusions.[68]

Căşeiu / Samum: the gate towers of the fortification are the largest of the province's auxiliary camps. Their shapes are rounded and each protrusion exceeds four metres. Based on the results of the archaeological excavations, D. Isac dates them to the beginning of the 3rd century CE.[69]

Ilişua / Arcobara: the researchers date the strongly projecting and square-shaped gate towers to the reign of Marcus Aurelius, which is also supported by archaeological finds.[70]

Gherla: the researched gate towers are rectangular in shape and have a projection of less than one metre. The previous dating of the fortification's reconstruction in stone, together with its stone precinct, was based on an inscription dating from 143 CE, found during the excavations led by J. Ornstein at the beginning of the 20th century. In the recently published monograph, the researchers define a wider period of time for the construction of the stone precinct,

[63] Matei–Bajusz 1997, 57.
[64] Matei–Bajusz 1997, 42–57.
[65] Gudea 1989, 761.
[66] Tóth E. presents two fragmentary inscriptions from the excavation of Radnóti A.: the first was found in the *porta principalis sinistra*, which dates the construction of the gate (or the stone precinct) to 129 CE, while the second is from the *porta praetoria*, dating it to 140/144 CE. Based on these discoveries, Tóth E. states that the stone construction of the fortification's walls began in 129 CE and was completed during the reign of Antoninus Pius. Tóth 1978, 9, 17–19; Opreanu–Lăzărescu 2016, 61–62.
[67] Macrea et al. 1961, 375–376.
[68] Haalebos 1999, 204–205; Bennett 2006, 289.
[69] Isac 2003, 85.
[70] Protase et al. 1997, 46.

namely the last years of Hadrian's rule or the beginning of the reign of emperor Antoninus Pius.[71] The gate towers' characteristics correspond to the latter dating, the camp was certainly built in stone in the first half of the 2nd century CE.

4. CONCLUSIONS

The reconstruction of the Roman fortifications in stone was not without good reason. Unlike a medieval castle, the main purpose of a *castrum* was not to defend itself against sieges. Generally speaking, a Roman military unit was trained to fight its battles in open air, whilst the fortification was considered a logistical and administrative headquarters, a kind of base camp that provides safe accommodation and stable living conditions for its soldiers.[72]

Still, a few decades after the conquest of Emperor Trajan, almost every single one of the auxiliary camps' defensive elements were enhanced in Dacia Porolissensis. The Empire sought not only to maintain, but to consolidate its presence in the newly conquered provinces. This brought certain developments, one of which was the construction of stone precincts for the fortifications that protected and supervised the frontier. The main idea behind these extensive reconstructions was basically financial: although a stone fortification's expenses are considerable at first, in the long run the maintenance costs are significantly lower than those of a turf-timber type defensive system, which deteriorates faster. It's also worth mentioning that these stone walls had the symbolic meaning of definitising the frontier and inspiring awe with their high defensive towers. These precincts were generally built with protruding rectangular gate towers (Pl. XVI).

The rounded gate towers (Pl. XVI–XVII) offer a slightly different interpretation, mainly because they are structurally sturdier and limit the so called dead zones more effectively. The defensive system of the Empire started to get heavily tested in the second part of the 2nd century CE, due to the numerous crises, namely the Marcomannic Wars and different plagues. Needless to say, these factors had a negative impact on the population and thus on the military as well. Change, in the sense of evolution, was unavoidable: in the light of fewer soldiers, the forts' defensive systems were upgraded, among others, rounded gate towers replaced the rectangular ones. Evidently these changes were made in camps where it made more sense, in other words which were more susceptible to attacks, like the northwestern frontier of Dacia Porolissensis. The rounded gate towers were the norm during the Severan dynasty, and are dated to the first quarter of the 3rd century CE.

Based mostly on the shape and the protrusion size of these gate towers, two major reconstruction phases can be identified in the province. The first, with the use of rectangular gate towers, marks the period of around the middle of the 2nd century CE, representing the construction of the fortifications' stone precincts. The second one happened in the first quarter of the 3rd century CE with the building of rounded towers, indicating a series of tactical improvements in the defensive elements of the military camps.

5. CATALOGUE

5.1. Gilău

5.1.1 Gilău, *porta principalis sinistra*

The single-portalled *porta principalis sinistra* (Fig. 9) is located on the northern side of the fortification (Pl. II). Due to the preserved state of the ruins, the exact width of its entrance

[71] Protase et al. 2008, 41.
[72] Goldsworthy 1996, 25–26.

cannot be precisely defined, D. Isac estimates it to 3.5 metres.

The gate towers were built in rectangular shape and have protrusions of 1.3 metres. The left tower's dimensions are 5.25 × 7.5 m, while the right tower measures 6 × 7.75 m. The walls were built from quarried stone in the *opus incertum* technique, with a general width of 1.1–1.2 metres.

Presumably the gate wasn't used for passage, which is implied by the absence of a road and the fact that it was built on the top of a relatively steep slope. For structural reinforcement the eastern wall of the right gate tower was widened to 2.5 metres.[73] The stone phase was dated to the second part of the 2nd century CE.[74]

5.1.2. Gilău, *porta principalis dextra*

The *porta principalis dextra* is located on the southern side of the military fortification (Pl. II). The overall width of the gate entrance measured 8.6 metres. The gateway is double-portalled, a central wall[75] divides the entrance into two equal entry points.

The rectangular towers protrude slightly outwards from the defensive wall by 1.1–1.3 m. The left tower has a surface area of 5 × 7.6 m, while the right one measures 4.75 × 7.1 m. The walls of these towers have a width of 1.15–1.5 m and were built from quarried stone in *opus incertum* technique.

Two main construction phases were identified in the interval of use at these towers. In the first, the walls facing the gate opening were equipped with a total of five buttresses: one external pair, one middle pair, and an additional buttress on the inner side of the left gate tower (Fig. 10). In the second phase, the towers were rebuilt, meaning that the foundation of the walls facing the gate entrance were thickened, including the buttresses (Fig. 11). Upon this foundation the newly built walls were erected (Fig. 12). Its first phase can be dated to the middle of the 2nd century CE, while its second phase to the first quarter of the 3rd century or rather the Severan Dynasty.[76]

5.1.3. Gilău, *porta decumana*

The *porta decumana* (Fig. 13) is located on the western side of the *castrum* (Pl. II). The gate is single-portalled and according to its plan, the width of the entrance measures 4.5 metres.

The gate towers are rectangular and have protrusions of 1.1–1.3 metres. The surface area of the left tower is 4.7 × 7.6 m, while that of the right tower is 4.5 × 8 m. The walls have a width of 1.2 metres and were built from quarried stone in *opus incertum* technique. The walls facing the gate opening were equipped with one pair of buttresses, with a distance of 3.7 metres between them. Later repairs can be observed on the right tower, on the wall facing the interior of the camp.[77]

The reconstruction of the gate from stone happened in the second part of the 2nd century CE.[78] Its structural repairs were presumably carried out in the middle of the 3rd century, just like the reconstruction of the *porta principalis dextra*.

[73] Isac 1997, 57.
[74] Isac 1997, 50.
[75] Although D. Isac does not mention its size, it can be determined from the plan of the gate, on which it is 1.2 m wide and 5.6 m long.
[76] Isac 1997, 54–56.
[77] Isac 1997, 53–54.
[78] Isac 1997, 50.

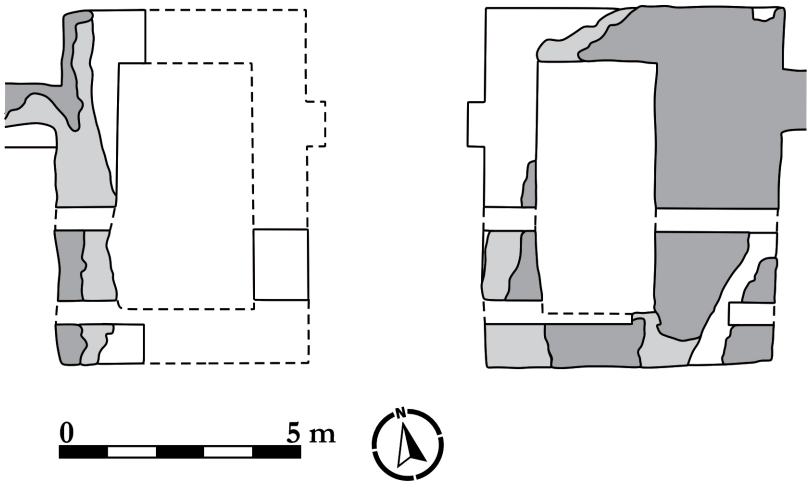

Fig. 9. Gilău, *porta principalis sinistra* (after Isac 1997, 99, pl. XVIII).

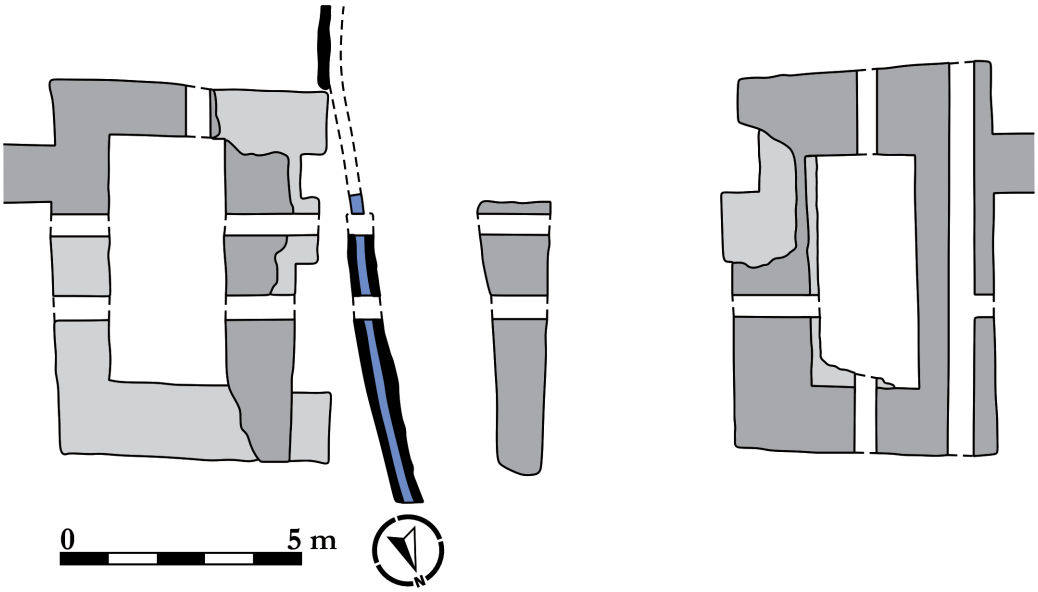

Fig. 10. Gilău, *porta principalis dextra* 1st phase (after Isac 1997, 96, pl. XV).

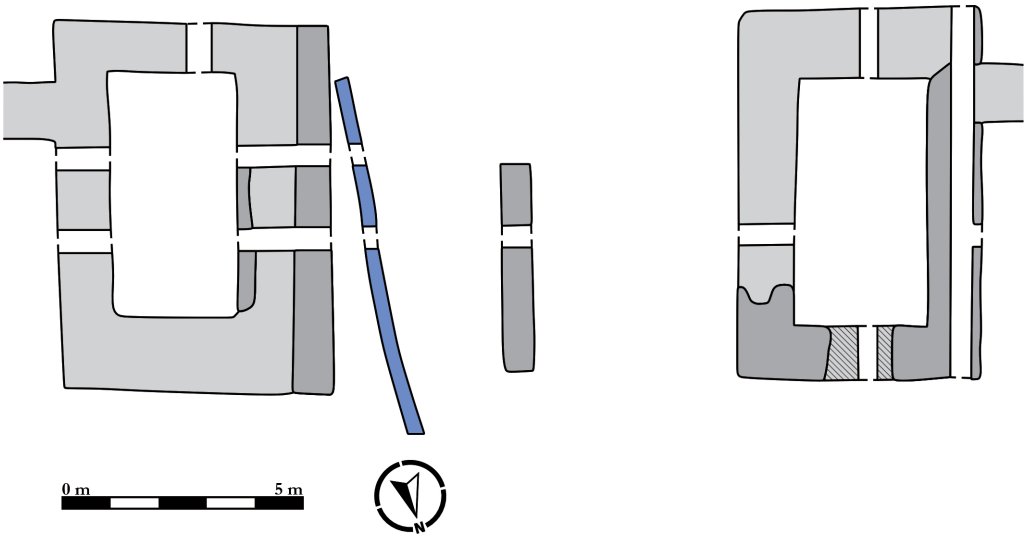

Fig. 11. Gilău, *porta principalis dextra* 2nd phase foundation (after Isac 1997, 97, pl. XVI).

5.2. Bologa

5.2.1. Bologa, *porta praetoria*

The *porta praetoria* (Pl. III) is located on the northern side of the *castrum* (Fig. 36). The gate is single-portalled with an opening of 7.3 metres.

The towers are rounded and were built with protrusions of 1.9–2 metres. The left tower's surface area is 4.85 × 8.25 m, while the right one measures 4.35 × 7.25 m. Its walls were built of quarried stone and river cobbles using the *opus incertum* technique and are 1–1.15 metres wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.[79]

The walls of the towers without a ground floor enclose the *agger*. Their semicircular projections were filled with stone, up to the first floor. The walls of the towers facing the gateway had two pairs of buttresses, that supposedly supported a bridge connecting the towers.[80]

According to F. Marcu, the doorway was blocked along the line of the outer pair of buttresses. He also believes that the towers were not built at the same time as the stone precinct,[81] which also indicates their later construction. The gate is dated to the beginning of the 3rd century.[82] The purpose of the reexcavation was to clarify the arguably incorrect floor plan. Unfortunately, the updated version hasn't been published yet, the current ground plan should be viewed with adequate criticism.

5.2.2. Bologa, *porta principalis sinistra*

The *porta principalis sinistra* (Fig. 15) is located on the western side of the fortification (Pl. III). The overall width of the gate entrance measured 7.5 metres. The gateway is double-portalled, a central wall (0.75 × 4.5 m) divides the entrance into two equal entry points.

The towers are rounded in shape and protrude 1.8–2 metres from the stone precinct. The left tower's dimensions are 4.65 × 7.15 m, while the right tower measures 4.8 × 7.5 m. Its walls were built of quarried stone using the *opus incertum* technique and are 1.2–1.5 metres wide. The roofing is indicated by *tegulae* and *imbrex* fragments.

The walls of the towers enclose the ends of the *agger*, their entrance was most certainly on the first floor, from the defensive wall. Their semicircular projections were filled with stone, up to the first floor. The walls of the towers facing the gateway had two pairs of buttresses, that probably supported a bridge connecting the towers. Only the *portae principales* were used for passage.[83] The gate is dated to the beginning of the 3rd century.[84]

5.2.3. Bologa, *porta principalis dextra*

The *porta principalis dextra* (Fig. 16) is located in the eastern part of the fortification (Pl. III). The width of the gate entrance is 7.5 metres. The gateway is double-portalled, a central wall (1.3 × 5.1 m) divides the entrance into two entry points.

The towers are rounded in shape and protrude 1.8–2 metres from the stone precinct. The left tower's dimensions are 4.5 × 7.9 m, while the right tower measures 4.45 × 7.85 m. Its walls were built of quarried stone, using the *opus incertum* technique and are 1.2–1.5 metres wide. The roofing is indicated by *tegulae* and *imbrex* fragments.

Like the *porta decumana*, the ground floor was inhabited and the entrances were made at the level of the wall. The walls of the towers facing the gateway had two pairs of buttresses that probably supported a bridge connecting the towers. Only the *portae principales* were used for passage.[85] The gate is dated to the beginning of the 3rd century.[86] The currently available

[79] Marcu et al. 2014, 28–29.
[80] Gudea 1997, 31–34.
[81] Marcu et al. 2014, 28–29.
[82] Gudea 1997, 40.
[83] Gudea 1997, 31–34.
[84] Gudea 1997, 40.
[85] Gudea 1997, 31–34.
[86] Gudea 1997, 40.

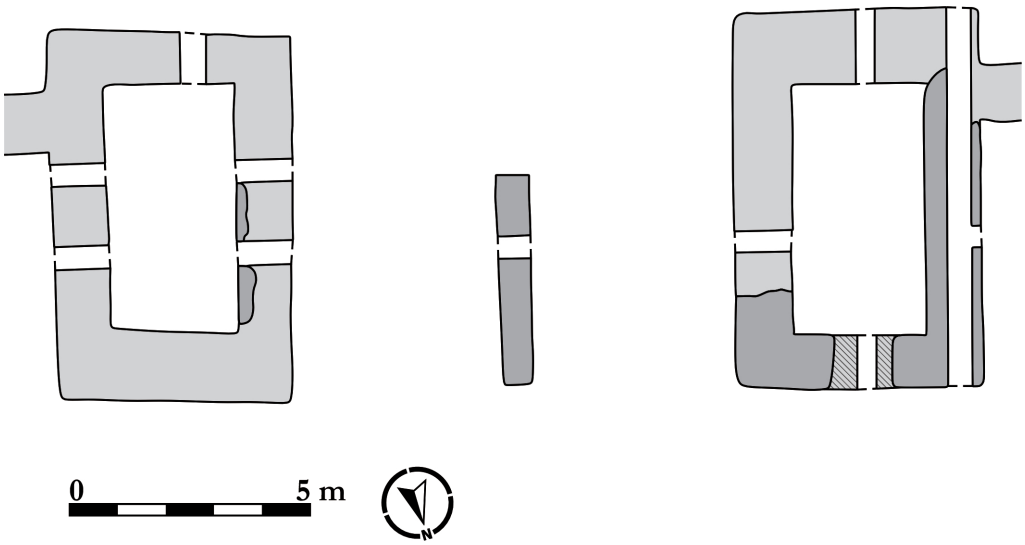

Fig. 12. Gilău, *porta principalis dextra* 2nd phase walls (after Isac 1997, 98, pl. XVII).

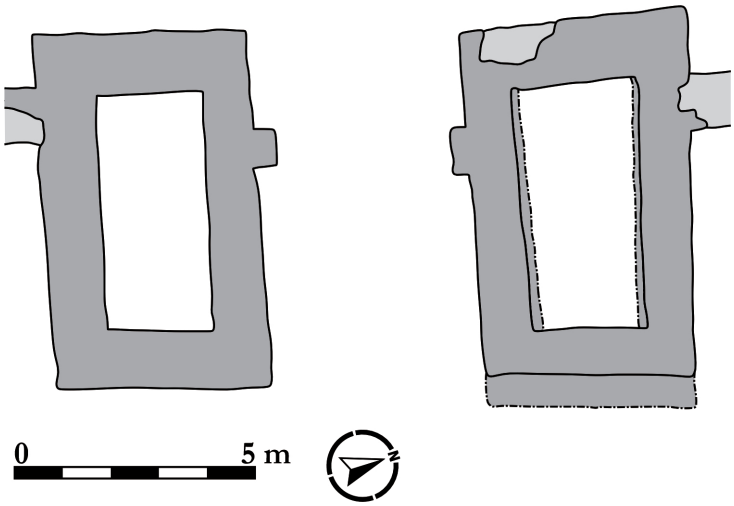

Fig. 13. Gilău, *porta decumana* (after Isac 1997, 95, pl. XIV).

ground plan is arguably incorrect, it should be viewed with adequate criticism.

5.2.4. Bologa, *porta decumana*

The *porta decumana* (Fig. 17) is located in the southern part of the fortification (Pl. III). The gate is single-portalled, with a width of 7.6 metres.

The towers are rounded and were built with protrusions of 2.15 metres. The left tower's surface area is 4.45 × 7.15 m, while the right tower measures 4.5 × 7.5 m. Its walls were built out of quarried stone using the *opus incertum* technique, and are generally 1.5–1.6 metres wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.

The ground floor of the towers was inhabited, but the entrances were most certainly at the level of the wall, on the first floor. Two pairs of buttresses were identified in the gate opening, which served as a support for the connecting bridge above the passage. The gate passage was blocked in a later period of use of the fortification.[87] The construction of the gate is dated to the beginning of the 3rd century.[88]

[87] Gudea 1972, 127–128; Gudea 1997, 31–34.
[88] Gudea 1997, 40.

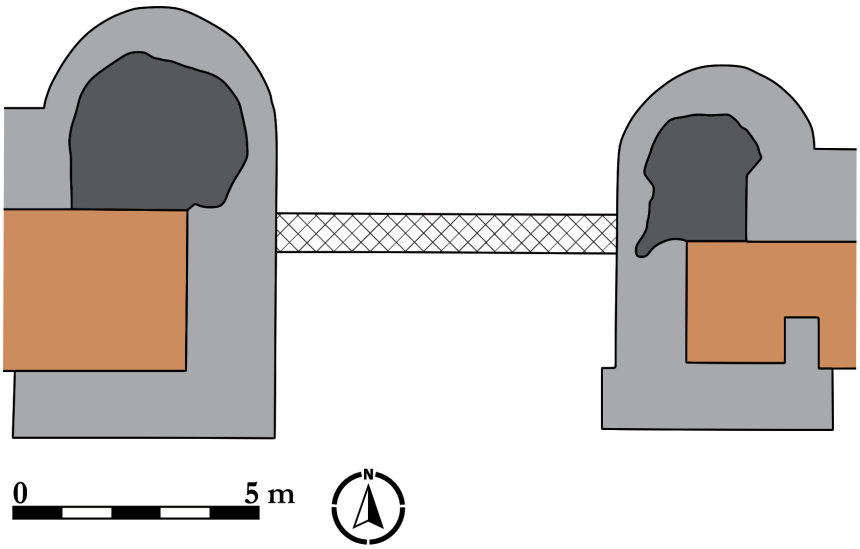

Fig. 14. Bologa, *porta praetoria* (after Chirilă–Gudea 1973, 120, fig. 4).

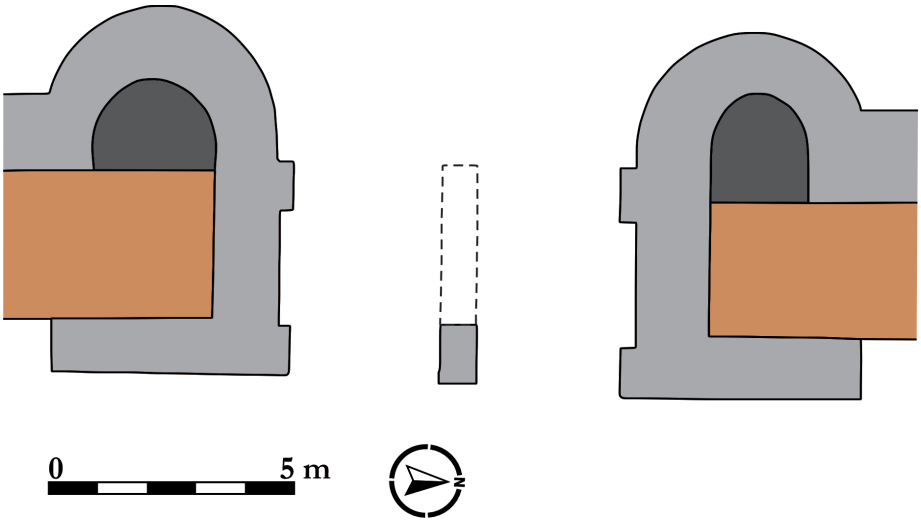

Fig. 15. Bologa, *porta principalis sinistra* (after Gudea 1997, 86, fig. 18/2).

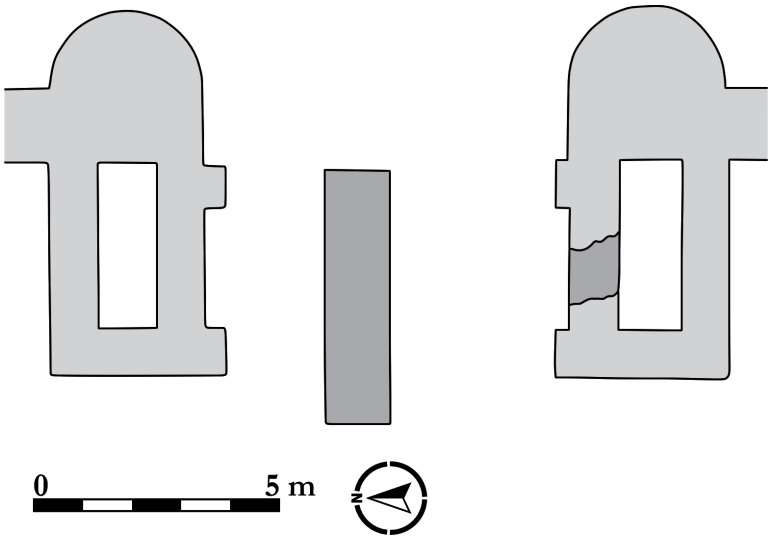

Fig. 16. Bologa, *porta principalis dextra* (after Alicu 1973, 125, pl. III/7).

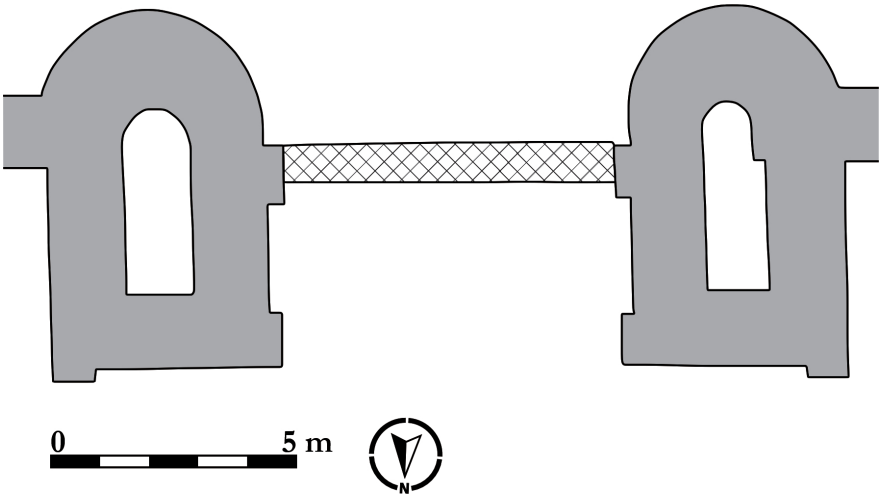

Fig. 17. Bologa, *porta decumana* (after Gudea 1997, 86, fig. 18/1).

5.3. Buciumi

5.3.1. Buciumi, *porta praetoria*

The *porta praetoria* (Fig. 18) is located in the southeastern part of the fortification (Pl. IV). The overall width of the gate entrance measured 8 metres. The gateway is double-portalled, a central wall (1.05 × 5.8 m) divides the entrance into two equal entry points.

The towers were built in rectangular shape and protrude 1.5 metres from the fortification's wall. The tower's dimensions are identical, both measuring 5 × 7 m. The walls were built of quarried limestone using the *opus incertum* technique and are generally 0.9–1 metre wide. The roofing is indicated by *tegulae* and *imbrex* fragments.

Its construction style differs from the camp's other gate towers (presumably built in stone in the middle of the 2nd century). The entrance to the towers was on the ground floor, but it is unmarked on the original floor plan. The *porta praetoria*, together with the *porta principalis sinistra*, was used to enter the *castrum*.[89]

5.3.2. Buciumi, *porta principalis sinistra*

The *porta principalis sinistra* (Fig. 19) is located in the northeastern part of the fortification (Pl. IV). The overall width of the gate entrance measured 8.8 metres. The gateway is double-portalled, a central wall (1.1 × 5.8 m) divides the entrance into two equal entry points.

The towers are rounded in shape and have sizeable protrusions of 3.25 metres. Their dimensions are practically the same, the left measuring 6 × 8.5 m, while the right 6.5 × 8.5 m. The walls were built of quarried limestone using the *opus incertum* technique and are 1.1–1.25 metres wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.

The entrance to the towers was certainly on the ground floor, although it isn't marked on the original ground plan. The *porta principalis sinistra*, together with the *porta praetoria*, was used to enter the *castrum*.[90] The gate is dated to the beginning of the 3rd century CE or the reign of Caracalla.[91]

5.3.3. Buciumi, *porta principalis dextra*

The *porta principalis dextra* (Fig. 20) is located in the southwestern part of the fortification (Pl. IV). The gate is single-portalled, its entrance measures 6.3 metres.

The gate towers have rounded plans and protrude 3 metres from the stone precinct. The dimensions are virtually the same, the left tower measures 6 × 8 m, while the right tower 6.3 × 8 m. The walls were built of quarried limestone using the *opus incertum* technique and are 0.8–1

[89] Gudea 1997a, 40–44.
[90] Gudea 1997a, 40–44.
[91] Gudea 1997a, 54.

metre wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.

The entrance to the towers was on the ground floor. The gate was not used for passage.[92] Its construction is dated to the beginning of the 3rd century CE or the reign of Caracalla.[93]

5.3.4. Buciumi, *porta decumana*

The *porta decumana* (Fig. 21) is located in the northwestern part of the fortification (Pl. IV). The gate is single-portalled and is 3.6 metres wide.

The towers are rounded in shape and have protrusions of 1.35 metres. They are identical in dimensions, both measuring 4.15 × 7.3 m. The walls were built of quarried limestone using the *opus incertum* technique and are 1–1.25 metres wide. The roofing of the towers is indicated by fragments of *tegulae* and *imbrex*.

The gate was not used for passage, no *via decumana* has been identified in the area. During the excavations, a channel was identified between the towers through which water flowed into the *castrum*.[94] While this is a possibility,

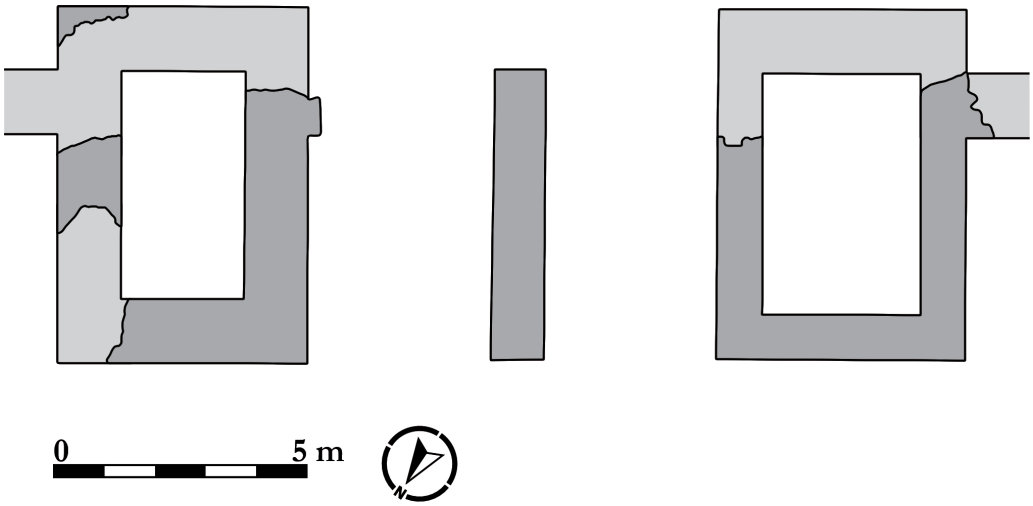

Fig. 18. Buciumi, *porta praetoria* (after Chirilă et al. 1972, fig. 20).

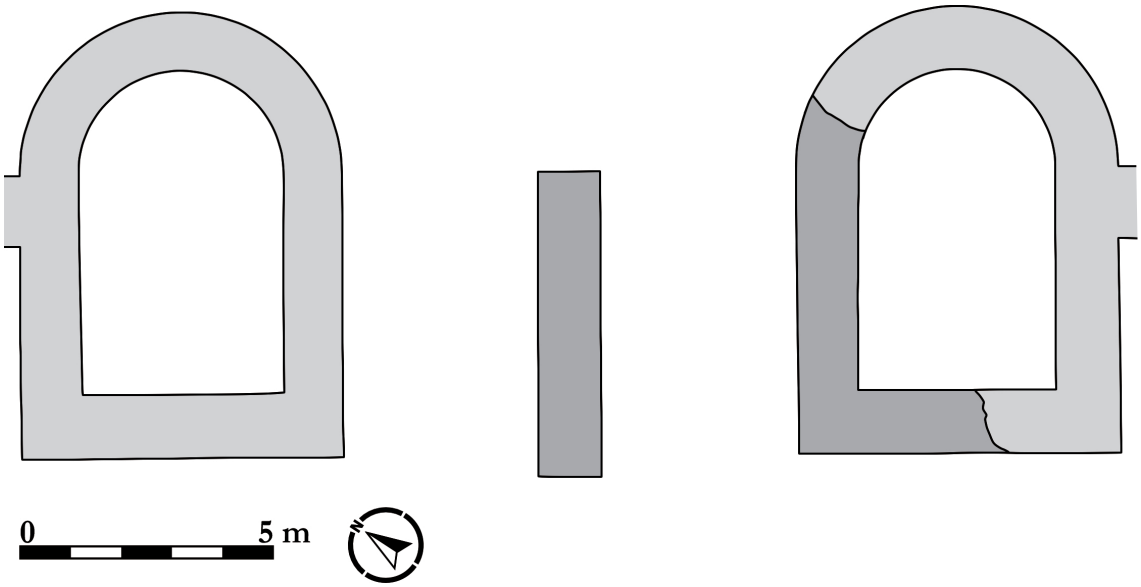

Fig. 19. Buciumi, *porta principalis sinistra* (after Chirilă et al. 1972, fig. 16).

[92] Gudea 1997a, 40–44.
[93] Gudea 1997a, 54.
[94] Gudea 1997a, 40–44.

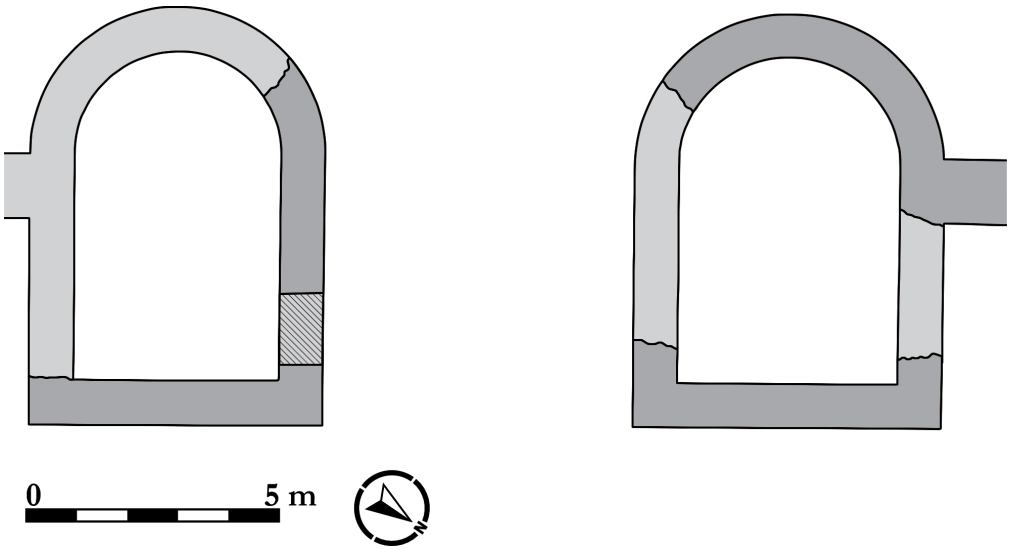

Fig. 20. Buciumi, *porta principalis dextra* (after Chirilă et al. 1972, fig. 17).

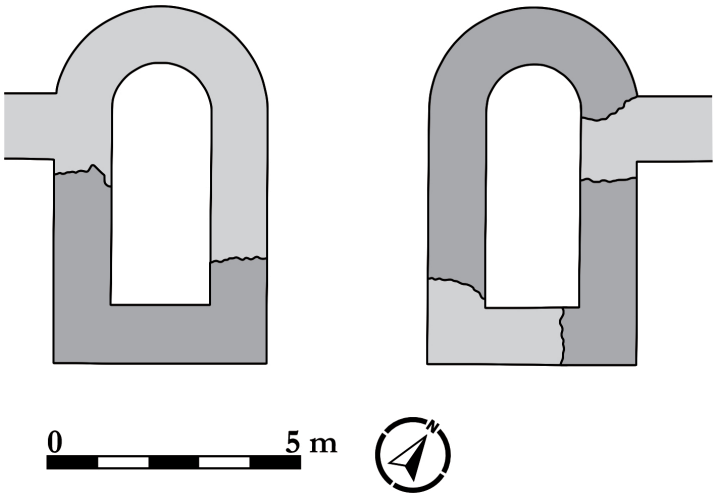

Fig. 21. Buciumi, *porta decumana* (after Chirilă et al. 1972, fig. 18).

it should also be considered that the channel may have served as a drainage system. The entrances to the towers were in all likelihood on the ground floor, however, neither of these were marked on the original ground plan. The construction of the gate is dated to the beginning of the 3rd century CE or the reign of Caracalla.[95]

5.4. Românași / Largiana

5.4.1. Românași, *porta praetoria*

The *porta praetoria* is located on the eastern side of the fortification (Pl. V). The gateway is single-portalled and has a width of 4.3 metres.

The towers are rectangular and have notable protrusions of 1.85 metres. The left tower's surface area is 4.2 × 7.3 m, while the right is 5.3 × 7.3 m. Its walls were made of river cobbles and quarried stone using the *opus incertum* technique, with the general width of 1.2 metres. The roofing of the towers is indicated by *tegulae* fragments.

Its towers were built on the levelled *agger* of the previous phase. The gate was only partially excavated, but most of the stone material of the walls had already been robbed.[96] The construction should be dated to the middle or the second part of the 2nd century CE.

[95] Gudea 1997a, 54.
[96] Macrea et al. 1962, 499–500; Tamba 1997, 23.

5.5. Romita / Certiae

5.5.1. Romita, *porta praetoria*

The *porta praetoria* (Fig. 22) is located in the northern part of the fortification (Pl. VI). The overall width of the gate entrance is 10.6 metres. The gateway is double-portalled, a central wall (2 × 5.5 m) divides the entrance into two equal entry points.

The towers are rectangular in plan and are built with protrusions of 2.2 metres. The left tower's width is unknown, but its length is 9 metres. The right tower's dimensions are 5.65 × 9.5 m. The walls were built of quarried, worked stone using the *opus incertum* technique, and are 1.4–1.6 metres wide. The roofing is indicated by *tegulae* fragments.

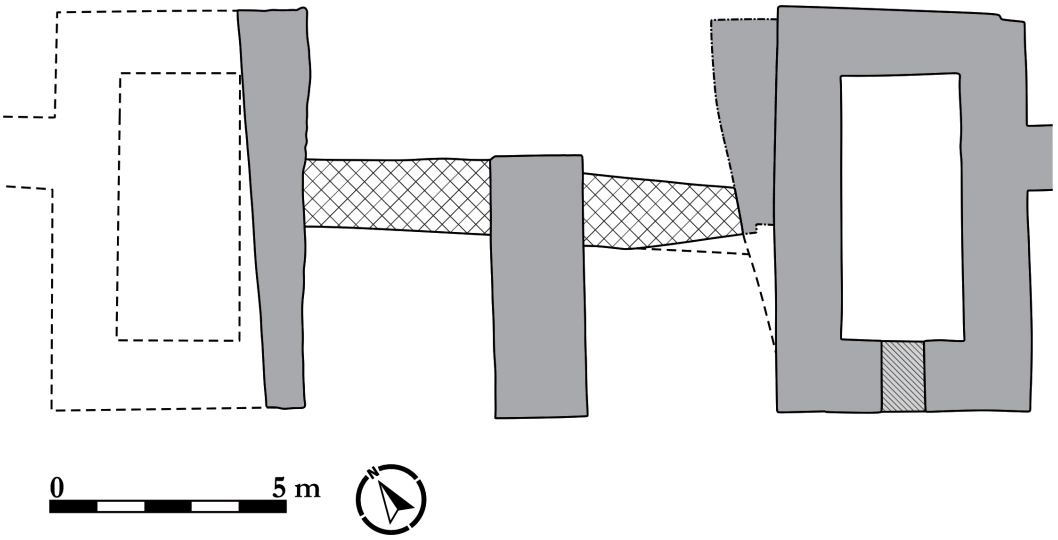

Fig. 22. Romita, *porta praetoria* (after: Matei–Bajusz 1997, 170, pl. XVII).

According to the researchers, the stone gate was built in the first part of the 2nd century. The gateway was blocked relatively early, in the first part of the 2nd century,[97] with a 1.4–1.6 metres wide wall. After the gateway blockage, traces of a dwelling were identified in the eastern entrance.

The entrance to the right tower was on the ground floor through a one-metre-wide door. The tower's northern wall was built directly above the centre of the earlier, timber-turf fortification's first defensive ditch, which in time caused its collapse. As a result, the northern wall was rebuilt and the western wall was widened: the wall thickness on the northernmost side was increased to 2.95 metres. The researchers date the repairs to the second half of the 3rd century and presume that following the retreat from Porolissum, the gateway was reopened.[98]

5.5.2. Romita, *porta principalis sinistra*

The *porta principalis sinistra* is located on the western side of the fortification (Pl. VI). The overall width of the gate entrance measured 10 metres. The gateway is double-portalled, a two-metre-wide central wall divides the entrance into two equal entry points.

The towers have rounded shapes. Their dimensions are identical, both have a surface area of 5.5 × 9.5 m. The walls were built of quarried, worked stone, and are 1.45 metres wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.

The gateway was blocked for an extended period of time. While the southern entry was reopened, in the northern half a dwelling area with *cocciopesto* flooring was identified. Relatively late repairs can also be observed, which reused even monuments from the Roman cemetery.[99]

[97] This dating is based on monetary finds, namely a few coins of Emperor Hadrian and Empress Sabina.
[98] Matei–Bajusz 1997, 42–58.
[99] Matei–Bajusz 1997, 38–42.

The original plan from the monograph (Pl. VI) proposed rectangular gate towers for the *portae principales*, but the more recent geophysical survey (Pl. VII) indicates rounded ones.

5.6. Porolissum-Pomăt

5.6.1. Porolissum-Pomăt, *porta praetoria*

The *porta praetoria* (Fig. 23) is located in the northeastern part of the *castrum* (Pl. VIII–IX). The width of the gate entrance is 7.5 metres. The gateway is double-portalled, a central wall[100] divides the entrance into two equal entry points.

The towers have rounded shapes and protrude 2 metres from the stone precinct. Their dimensions are practically identical, the left tower measures 4.8 × 9 m, while the right tower is 4.9 × 9 m. The walls were built of quarried, worked stone in the *opus incertum* technique and are 0.9–1 metre wide.[101]

The inside of the towers was divided into two parts by a central wall. Their semicircular projections were filled with soil similar to that of the *agger*, structurally reinforcing the towers. The walls facing the gate opening are equipped with 2 pairs of buttresses: an outer and an inner one. Of the two towers only the southeastern one was inhabited.[102] According to E. Tóth, after a certain point the gate entrance was blocked.[103] The construction of the gate can be precisely dated to the year 213 CE.[104]

5.6.2. Porolissum-Pomăt, *porta principalis sinistra*

The *porta principalis sinistra* (Fig. 24) is located in the northwestern part of the fortification (Pl. VIII–IX). The width of the gate entrance measured 7.5 metres. The gateway is double-portalled, a central wall[105] divides the entrance into two equal entry points.

The towers have rounded plans and were built with protrusions of 2 metres. Their dimensions are practically identical, the left measures 5.09 × 9.3 m, while the right 5 × 9.25 m. The walls were built of quarried stone using the *opus incertum* technique and are 1 metre wide.

The inside of the towers was divided into two parts by a central wall. Their semicircular projections were filled with soil similar to that of the *agger*, structurally reinforcing the towers. The walls facing the gate opening are equipped with 2 pairs of buttresses: an outer and an inner one.[106] According to E. Tóth both openings of the gate were blocked, in which fragments of inscriptions and monuments were also used.[107] The gates of the *castrum* are dated to 213 CE.[108]

5.6.3. Porolissum-Pomăt, *porta principalis dextra*

The *porta principalis dextra* is located in the southeastern part of the *castrum* (Pl. VIII–IX). The width of the gate entrance is 7 metres. The gateway is double-portalled, a central wall (0.75 × 5.5 m) divides the entrance into two equal entry points.

The towers are rounded and they protrude 2 metres from the stone precinct. The left tower's dimensions are 5.2 × 9 m, while the right tower measures 5.75 × 9.75 m. The walls were built of quarried stone using the *opus incertum* technique, with a width varying between 1.3–1.5 metres.

The inside of the towers was divided into two parts by a central wall. Their semicircular projections were filled with soil similar to that of the *agger*, structurally reinforcing the towers.

[100] Although the exact dimensions are not given, they can be determined from the plan of the gate, on which it has a width of 1.1 metres and a length of 4.5 metres.
[101] Chirilă et al. 1980, 86–87.
[102] Gudea 1989, 69; Gudea 1997b, 33–35.
[103] Tóth 1978, 6–7.
[104] Gudea 1997b, 35.
[105] Although the exact dimensions are not given, they can be determined from the plan of the gate, on which it has a width of 0.86 metres and a length of 5.8 metres.
[106] Chirilă et al. 1980, 87; Gudea 1997b, 33–35.
[107] Tóth 1978, 7–8.
[108] Gudea 1997b, 35.

Both of the towers were inhabited.[109] The gate can be dated to the year 213 CE.[110]

5.6.4. Porolissum, *porta decumana*

The *porta decumana* (Fig. 25) is located in the southwestern part of the fortification (Pl. VIII–IX). The gate is single-portalled with an entrance width of 4.25 metres.

The gate towers are rounded in shape and were built with protrusions of 2 metres. They are nearly identical in size, the left extends on a surface area of 4.95 × 9.18 m, while the right on 4.85 × 8.45 m. The walls were built of quarried, worked stone and bricks in the *opus incertum* technique, and are 0.85 – 0.95 m wide.[111]

The inside of the towers was divided into two parts by a central wall. Their semicircular projections were filled with soil similar to that of the *agger*, structurally reinforcing the towers. The walls facing the gate opening are equipped with 2 pairs of buttresses: an outer and an inner

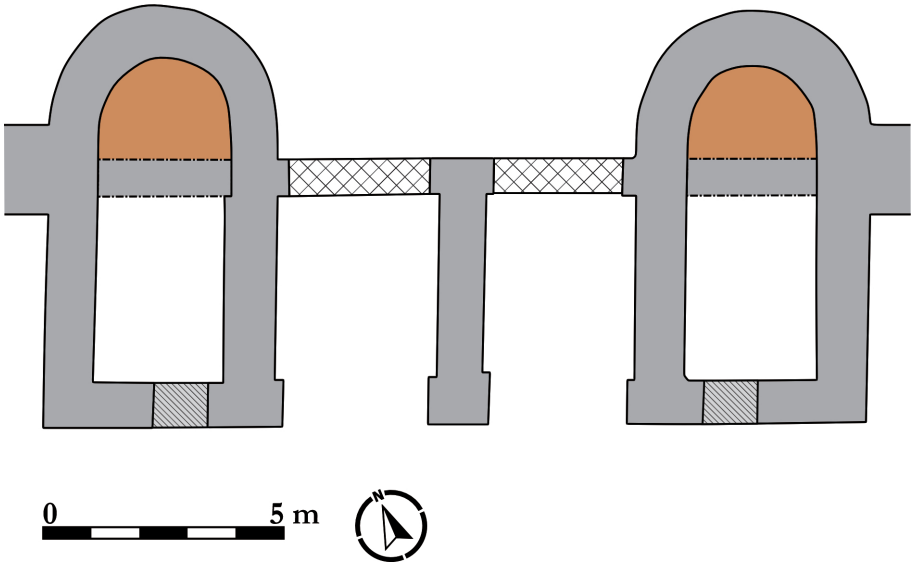

Fig. 23. Porolissum-Pomăt, *porta praetoria* (after Gudea 1989a, 9, fig. 11).

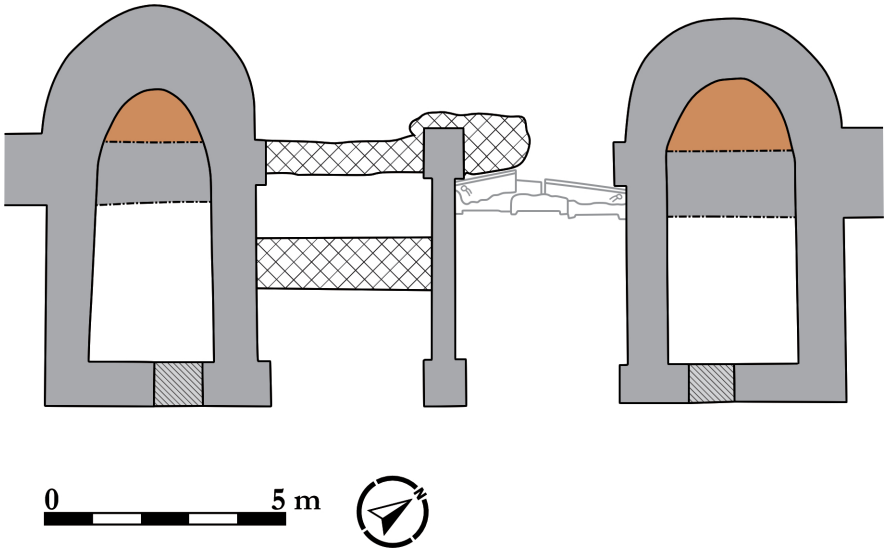

Fig. 24. Porolissum-Pomăt, *porta principalis sinistra* (after Tóth 1978; Fig. 3).

[109] Chirilă et al. 1980, 87; Gudea 1997b, 33–35.
[110] Gudea 1997b, 35.
[111] Chirilă et al. 1980, 87.

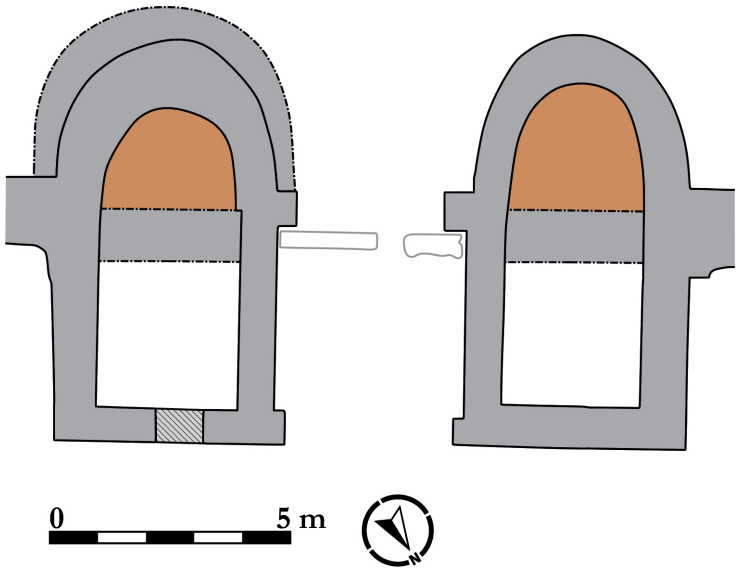

Fig. 25. Porolissum-Pomăt, *porta decumana* (after Tóth 1978; Fig. 4).

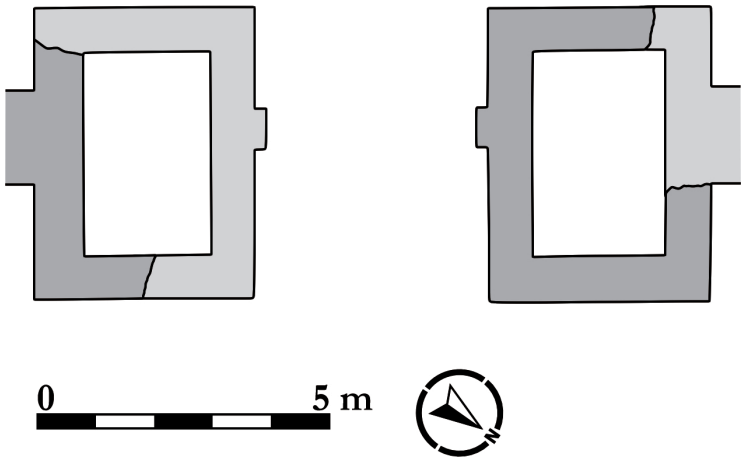

Fig. 26. Porolissum-Citera, *porta principalis sinistra* (after Macrea et al. 1961, 376, fig. 13).

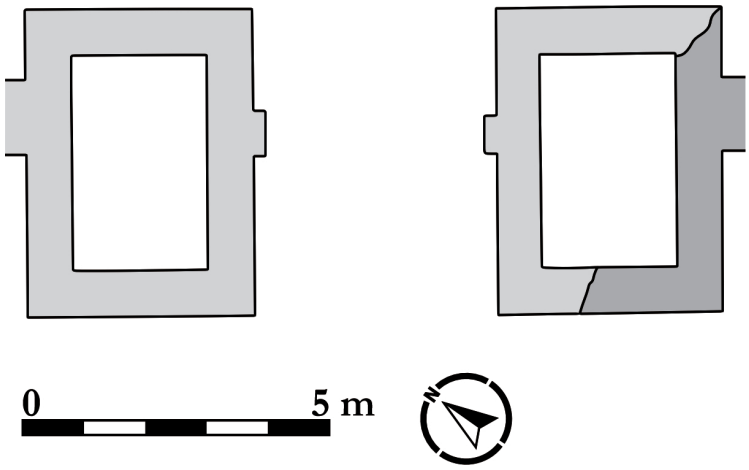

Fig. 27. Porolissum-Citera, *porta principalis dextra* (after Gudea 1989, 372, fig. 26).

one. Both towers were inhabited.[112] The gates of the *castrum* are dated to 213 CE.[113]

5.7. Porolissum-Citera

5.7.1. Porolissum-Citera, *porta principalis sinistra*

The *porta principalis sinistra* (Fig. 26) is located in the southwestern part of the fortification (Pl. X). The gate is single-portalled with a width of 4 metres.

The rectangular gate towers were built with protrusions of 1.4 metres. Their dimensions are identical, both measure 3.7 × 5 m. The walls were built of quarried stone using the *opus incertum* technique, and are 0.8 metres wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.[114]

There is no detectable road at the entrance to the gate, so its use is questionable. The towers were built on the *agger* of the earlier phase. The walls facing the gateway had a pair of buttresses, the distance between them being 3.5 metres.[115] The gate is dated to the middle or the second part of the 2nd century CE.[116]

5.7.2. Porolissum-Citera, *porta principalis dextra*

The *porta principalis dextra* (Fig. 27) is located in the northeastern part of the fortification (Pl. X). The gate is single-portalled and is 4 metres wide.

The towers are rectangular and were built with a protrusion of 1.15 metres. Their dimensions are identical, both have a surface area of 3.7 × 5 m. The walls were built of quarried stone using the *opus incertum* technique and are 0.7 – 0.75 metres wide. The roofing of the towers is indicated by *tegulae* and *imbrex* fragments.[117]

The walls facing the gateway had a pair of buttresses, the distance between them being 3.5 metres.[118] The gate is dated to the middle or the second part of the 2nd century CE.[119]

5.8. Tihău

5.8.1. Tihău, *porta praetoria*

The *porta praetoria* is located in the southeastern part of the fortification (Pl. XI). The gate entrance has a width of 9 metres, it was most certainly double-portalled.

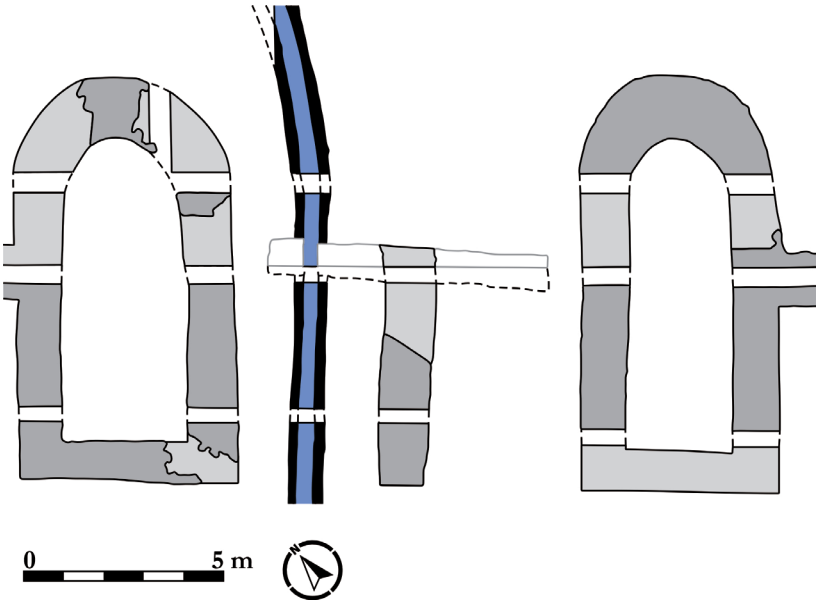

Fig. 28. Căşeiu, *porta praetoria* (after Isac 2003, 215, fig. 7–7a).

[112] Gudea 1997b, 33–35.
[113] Gudea 1997b, 35.
[114] Gudea 1989, 90–91.
[115] Gudea 1989, 90–91.
[116] Macrea et al. 1961, 375–376.
[117] Gudea 1989, 90.
[118] Gudea 1989, 90.
[119] Macrea et al. 1961, 375–376.

The exact shape and type of the towers cannot be determined, but their dimensions are approximately 6 × 6 m.[120] The construction material is presumably similar to that of the stone precinct, which was built of river and quarried stone in *opus incertum* technique.[121]

5.8.2. Tihău, *porta principalis sinistra*

The *porta principalis sinistra* is located in the southwestern part of the fortification (Pl. XI). The gate entrance has a width of 9 metres, it was most certainly double-portalled.

The exact shape and type of the towers cannot be determined, but their dimensions are approximately 6 × 6 m.[122] The construction material is presumably similar to that of the stone precinct, which was built of river and quarried stone in *opus incertum* technique.[123]

5.8.3. Tihău, *porta principalis dextra*

The *porta principalis dextra* is located in the northeastern part of the fortification (Pl. XI). The gate entrance has a width of 9 metres, it was most certainly double-portalled.

The exact shape and type of the towers cannot be determined, but their dimensions are approximately 6 × 6 m.[124] The construction material is presumably similar to that of the stone precinct, which was built of river and quarried stone in *opus incertum* technique.[125]

5.8.4. Tihău, *porta decumana*

The *porta decumana* is located in the northwestern part of the fortification (Pl. XI). The gate entrance has a width of 4 metres, it was most certainly single-portalled.

Based on geophysical measurements, J. Bennett assumed that the projection of the towers is semicircular which date from the Severan dynasty.[126] The construction material is presumably similar to that of the stone precinct, which was built of river and quarried stone in *opus incertum* technique .[127]

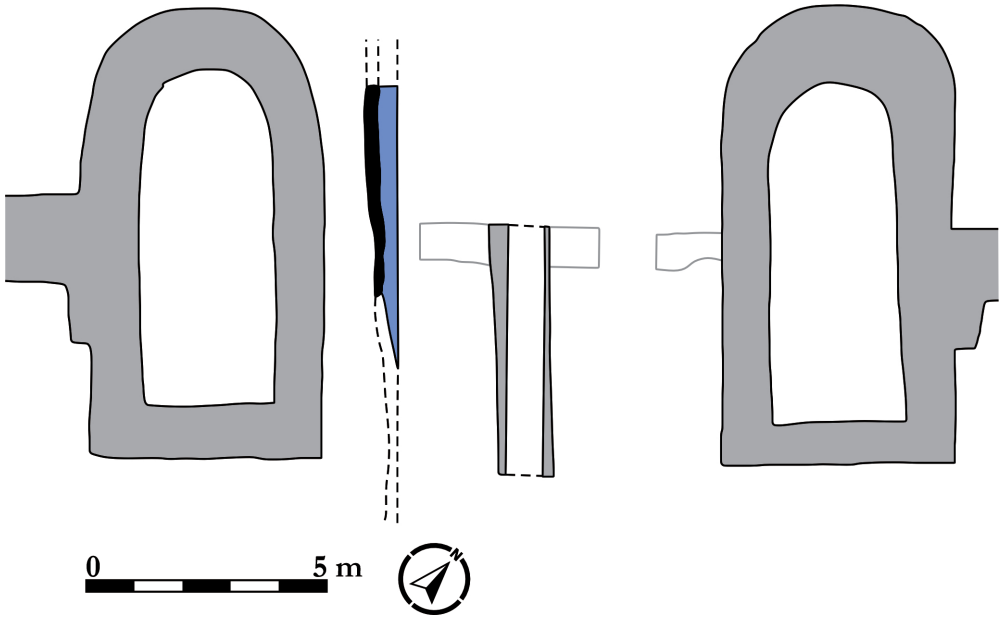

Fig. 29. Căşeiu, *porta principalis sinistra* (after, Isac 2003, 217, fig. 8).

[120] Bennett 2006, 279–289.
[121] Protase 1994, 80–81.
[122] Bennett 2006, 279–289.
[123] Protase 1994, 80–81.
[124] Bennett 2006, 279–289.
[125] Protase 1994, 6.
[126] Bennett 2006, 289.
[127] Protase 1994, 6.

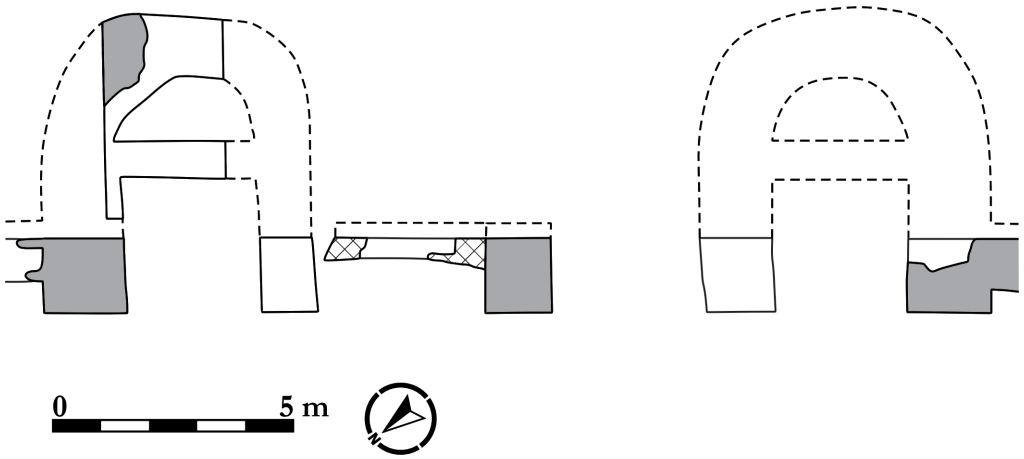

Fig. 30. Căşeiu, *porta principalis dextra* (after Isac 2003, 215, fig. 6–6a).

5.9. Căşeiu / Samum

5.9.1. Căşeiu, *porta praetoria*

The *porta praetoria* (Fig. 28) is located in the northeastern part of the Roman fortification (Pl. XII). The overall width of the gate entrance is 8.7 metres. The gateway is double-portalled, a central wall (1.2 × 6 m) divides the entrance into two equal entry points.

The rounded towers have a substantial protrusion of 4.2–4.4 metres. The left tower's dimensions are 5.5 × 10 m, while the right tower measures 5 × 10.5 m. The walls were built of river cobbles in the *opus incertum* technique, and are between 1.2–1.25 metres wide. The roofing is suggested by *tegulae* fragments.

The ground floor of the towers was inhabited. The entrances couldn't be identified due to the current state of the remains. The *porta praetoria* of Căşeiu was the largest of the province's auxiliary camps. The construction of the gate is dated to the beginning of the 3rd century CE.[128]

5.9.2. Căşeiu, *porta principalis sinistra*

The *porta principalis sinistra* (Fig. 29) is located in the northwestern part of the fortification (Pl. XII). The overall width of the

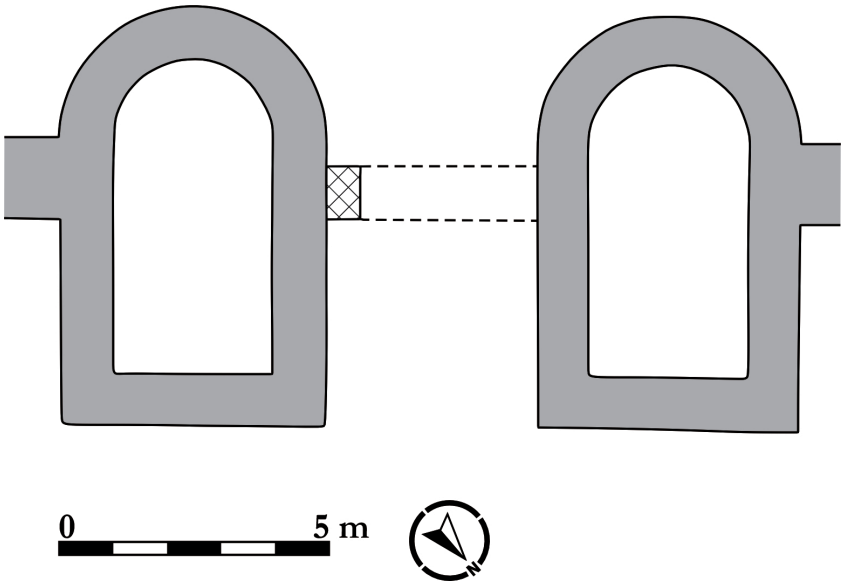

Fig. 31. Căşeiu, *porta decumana* (after Alicu 1973, 125, pl. III/8).

[128] Isac 2003, 82–89.

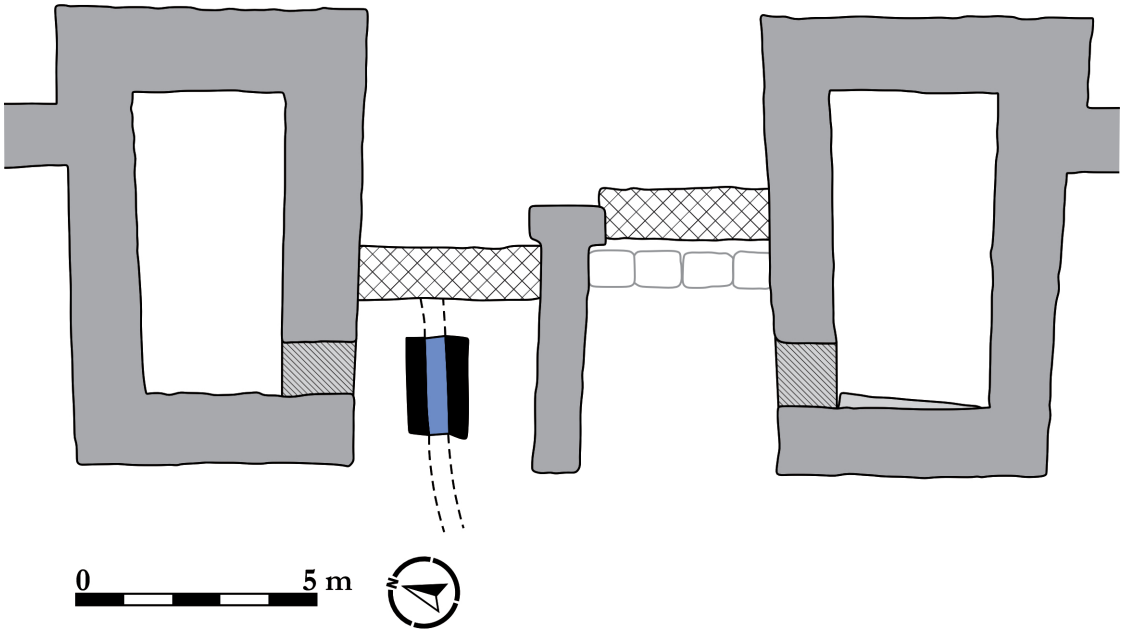

Fig. 32. Ilișua, *porta praetoria* (after Protase et al. 1997, 99, pl. XIV).

gate entrance is 8.6 metres. The gateway is double-portalled, a central wall (1.15 × 5.3 m) divides the entrance into two equal entry points.

The rounded towers protrude 3.9–4.6 metres from the stone precinct. Their dimensions are identical, both measure 5 × 10 m. The walls were built of river cobbles using the *opus incertum* technique and are 1–1.2 metres wide. The roofing is indicated by *tegulae* fragments.

No *via principalis* has been discovered in the gate area, so it wasn't used for passage. In a later chronological period a dwelling was identified in its entrance. The ground floors of the towers were inhabited.[129] The gate is dated to the beginning of the 3rd century CE.

5.9.3. Căşeiu, *porta principalis dextra*

The *porta principalis dextra* (Fig. 30) is located in the southeastern part of the fortification (Pl. XII). The gate is double-portalled, its entrance is divided by a 1.15 metres wide central wall.

The towers are rounded in shape. Their dimensions probably match that of the *porta principalis sinistra*: 5 × 10 m. The walls were built using the *opus incertum* technique, of river cobbles. The roofing is indicated by *tegulae* fragments.

Most of the remains of the gate have been destroyed, mainly due to the robbing pits, but some of the wall imprints have been successfully identified. Towards the end of its use, the northern half of the gate opening was blocked. The towers were inhabited.[130] The gate is dated to the beginning of the 3rd century CE.

5.9.4. Căşeiu, *porta decumana*

The archaeological excavation of the gate was led by E. Panaitescu in the interwar period. Unfortunately, the results were only partially published.

The *porta decumana* (Fig. 31) is located in the southwestern part of the *castrum* (Pl. XII). The entrance is single-portalled, but its width wasn't specified. The towers are rounded and were built with protrusions of 3 metres.[131] The length of the towers is 8.2 metres.[132] The floor

[129] Isac 2003, 89–94.
[130] Isac 2003, 94–104.
[131] Panaitescu 1929, 321–328.
[132] E. Panaitescu states that the tower is 3 metres long on the outside of the stone precinct and 4 metres on the inside. Given that the stone precinct's general thickness is about 1.2 metres, the length of the tower should be estimated at 8.2 metres.

plan of the gate must be viewed with adequate criticism.

5.10. Ilişua / Arcobara

5.10.1. Ilişua, *porta praetoria*

The *porta praetoria* (Fig. 32) is located in the northeastern part of the fortification (Pl. XIII). The width of the entrance is 8–8.5 metres: the difference is due to the fact that it widens from the outside to the inside. The gate is double-portalled, a central wall (0.9 × 4.7 m) divides the entrance into two equal entry points.

The rectangular towers have a 1.7 metres long protrusion. The left tower's dimensions are 5.9–6.5 × 8.25 m, while the right tower measures 5.85–7 × 8.5 m. The walls were built of quarried stones, using the *opus incertum* technique, and are 1.25–1.5 metres wide. The roofing is indicated by *tegulae* and *imbrex* fragments.

The entrance of the gate was blocked in all probability in the 3rd century CE. The varying wall thickness of the towers is due to later repairs. The entrances into the towers' interiors were located in the walls facing the gate entrance.[133] Its construction is dated to the reign of Marcus Aurelius.[134]

5.10.2. Ilişua, *porta principalis sinistra*

The *porta principalis sinistra* is located in the northwestern part of the fortification (Pl. XIII). The 8.4 metres wide, double-portalled gate entrance is divided into two equal entry points by a 1 metre thick central wall.

The towers are rectangular in shape and have a protrusion of 1.3 metres. The left tower has an extent of 6.5–6.8 × 7.5 m, while the right tower is 6.5 × 7.1 m. The walls are built of quarried stone, using the *opus incertum* technique and are 1.1–1.25 metres wide.[135]

The researchers didn't mention any roof tiles from the gate's area. The fortification's other gate towers were roofed, presumably this one was too. Its construction is dated to the reign of Marcus Aurelius.[136]

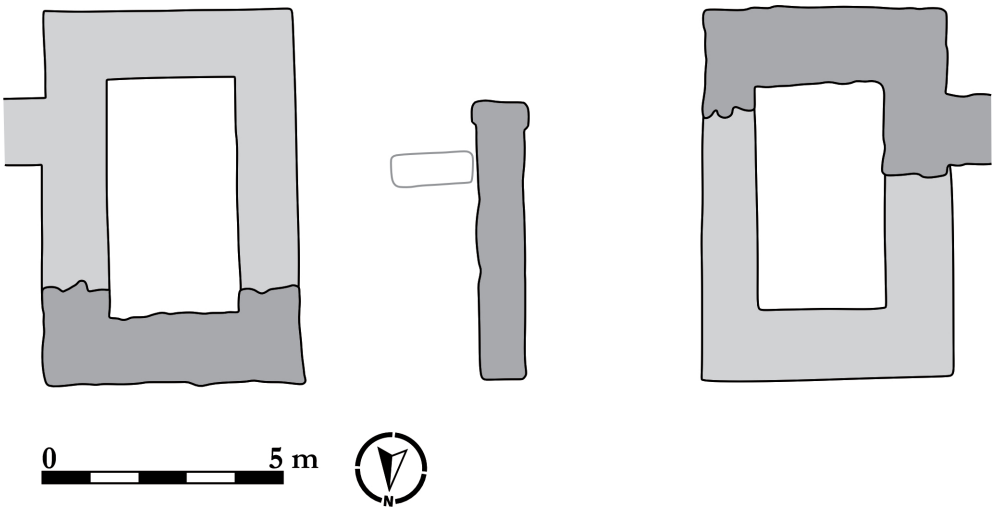

Fig. 33. Ilişua, *porta principalis dextra* (after Protase et al. 1997, 99, pl. XV).

5.10.3. Ilişua, *porta principalis dextra*

The *porta principalis dextra* (Fig. 33) is located in the southeastern part of the fortification (Pl. XIII). The width of the gate entrance is 7.75 metres. The gateway is double-portalled, a central wall (0.9 × 5 m) divides the entrance into two equal entry points.

The rectangular towers were built with a protrusion of 1.5 metres. Their dimensions are identical, both measuring 5.5 × 7.5 m. The walls

[133] Protase et al. 1997, 19–21, 47–48.
[134] Protase et al. 1997, 46.
[135] Protase et al. 1997, 16–18, 49.
[136] Protase et al. 1997, 46.

were built of river cobbles, using the *opus incertum* technique and are 1.3–1.4 metres wide. *Imbrex* fragments indicate the roofing of the towers.[137]

The archaeological excavations of K. Torma revealed that both entry points of the gate entrance were blocked.[138] Its construction is dated to the reign of Marcus Aurelius.[139]

5.10.4. Ilişua, *porta decumana*

The *porta decumana* is located in the southwestern part of the *castrum* (Pl. XIII). The gate is single-portalled, with a width of 4.7 metres.

The towers are rectangular and protrude 1.25 metres from the stone precinct. They differ in size, the left tower measures 4.4 × 6.5 m, while the right tower is 5.5 × 6.5 m. The walls were built of river cobbles, using the *opus incertum* technique and are 0.9 metres wide. The roofing is indicated by *tegulae* and *imbrex* fragments.

Substantial quantity of its stone material has been robbed. The researchers have identified two levels of inhabitancy in the southwestern tower.[140] The construction of the gate is dated to the reign of Marcus Aurelius.[141]

5.11. Orheiu Bistriţei

5.11.1. Orheiu Bistriţei, *porta principalis sinistra*

The *porta principalis sinistra* is located in the northwestern part of the fortification (Pl. XIV). The gate entrance's width is approximately 7.4 – 7.6 metres.[142] The walls of the towers measured 1.3 metres. Besides the *opus incertum* construction technique, the *opus quadratum* could also be observed: certain parts of the towers' walls were built of quadratic, quarried stone.[143]

5.12. Gherla

5.12.1. Gherla, *porta principalis dextra*

The *porta principalis dextra* is located in the eastern part of the fortification (Pl. XV). The width of the entrance is 10 metres. It is double-portalled, a 1 metre wide central wall divides the entrance into two unequal entry points: 4 and 5 metres.

The towers are rectangular, with identical dimensions: 6 × 10 m. Their walls were built of quarried stone, using the *opus incertum* technique. The width, based on the fortification's stone precinct, can be estimated at 1.1–1.25 metres.[144]

The construction is dated to the final years of Emperor Hadrian,[145] or the reign of Antoninus Pius.

5.12.2. Gherla, *porta decumana*

The *porta decumana* is located in the southern part of the *castrum* (Pl. XV). The gate entrance is single-portalled, its width can be estimated at 3.5 – 4 metres.

Only the eastern tower has been excavated, which is rectangular and has a protrusion of 0.8–1 metre. Its dimensions are roughly 6 × 10 m. Its walls were built of quarried stone, using the *opus incertum* technique. Based on the fortification's stone precinct, the width can be estimated at 1.1–1.25 metres.

During the 3rd century CE the north walls of the tower were reinforced with an additional 1.5 metres.[146] The construction is dated to the final years of Emperor Hadrian,[147] or the reign of Antoninus Pius.

[137] Protase et al. 1997, 29–30, 48–49.
[138] Torma 1864–1865, 14–15.
[139] Protase et al. 1997, 46.
[140] Protase et al. 1997, 23, 48.
[141] Protase et al. 1997, 46.
[142] Protase 2008, 15.
[143] Protase 2008, 43–44.
[144] Protase et al. 2008, 35–37.
[145] Protase et al. 2008, 41.
[146] Protase et al. 2008, 35–37.
[147] Protase et al. 2008, 41.

REFERENCES

Alicu 1973
D. Alicu, Turnuri de porţi la castrele romane din Dacia, *ActaMN* 10, 1973, 107–125.

Bechert 1971
T. Bechert, Römische Lagertore und ihre Bauinschriften. Ein Beitrag zur Entwicklung und Datierung kaiserzeitlicher Lagertorgrundrisse von Claudius bis Severus Alexander, *BJ* 171, 1971, 201–287.

Bennett 2006
J. Bennett, The cohors equitata fort at Tihau-Cetate, Romania: the results of geophysical survey and other research, *JRA* 19, 2006, 279–299.

Cătăniciu 1981
I. B. Cătăniciu, *Evolution of the system of defence works in Roman Dacia*, BAR IS 116 (Oxford 1981)

Chirilă et al. 1972
E. Chirilă – N. Gudea – N. Lucăcel – C. Pop, *Castrul roman de la Buciumi = Das Römerlager von Buciumi* (Cluj 1972)

Chirilă et al. 1980
E. Chirilă – N. Gudea – A. Matei – V. Lucăcel, Raport preliminar asupra cercetărilor arheologice de la Moigrad (Porolissum) din anii 1977–1979, *ActaMP* 4, 1980, 81–100.

Chirilă–Gudea 1973
E. Chirilă – N. Gudea, Şantierul arheologic Bologa, jud. Cluj (1967), *MCA* 10, 1973, 115–123.

Cociş et al. 2024
S. Cociş – V.-A. Lăzărescu – M. Bărbulescu – C. H. Opreanu – V. Bârcă – Sz. Ferencz – S. Socaciu – K. Vágó – C. Iov, Sutoru, com. Zimbor, jud. Sălaj. Punct: Valea Căpuşului. *CCAR – Campania 2023*, 2024, 374–380.

Feurdean et al. 2007
A. Feurdean – B. Wohlfarth – L. Björkman–I. Tantau – O. Bennike – K. J. Willis – S. Farcas – A. M. Robertsson, The influence of refugial population on Lateglacial and early Holocene vegetational changes in Romania, *Review of Palaeobotany and Palynology* 145, 2007, 305–320.

Franzen et al. 2007
P. Franzen – A. M. Matei – F. Marcu, The roman fort at Romita (Dacia). Results of the geophysical survey, *ActaMN* 41–42/1, 2004–2005 (2007) 161–177.

Goldsworthy 1996
A. K. Goldsworthy, *The Roman Army at War 100 BC – AD 200* (Oxford 1996).

Gudea 1972
N. Gudea, Castrul roman de la Bologa (Jud. Cluj)* 1968, *Apulum* 10, 1972, 121–150.

Gudea 1989
N. Gudea, Porolissum. Un complex arheologic daco-roman la marginea de nord a Imperiului Roman, *ActaMP* 13, 1989.

Gudea 1989a
N. Gudea, Porolissum. *Der Schlußstein des Verteidigungssystems der Provinz Dacia Porolissensis*, Kleine Schriften aus dem Vorgeschichtlichen Seminar Marburg 29 (Marburg 1989)

Gudea 1997
N. Gudea, *Das Römergrenzkastell von Bologa–Rescvlvm / Castrul roman de la Bologa–Rescvlvm*,

Führer zu archäologischen Denkmälern in Dacia Porolissensis 1 / Ghid al monumentelor arheologice din Dacia Porolissensis 1 (Zalău 1997)

Gudea 1997a
N. Gudea, *Castrul roman de la Buciumi/ Das Römergrenzkastell von Buciumi*, Führer zu archäologischen Denkmälern in Dacia Porolissensis 2 / Ghid al monumentelor arheologice din Dacia Porolissensis 2 (Zalău 1997)

Gudea 1997b
N. Gudea, *Das Römergrenzkastell von Moigrad–Pomet. Porolissum 1 / Castrul roman de pe vârful dealului Moigrad–Pomet. Porolissum 1*, Führer zu archäologischen Denkmälern in Dacia Porolissensis 5 / Ghid al monumentelor arheologice din Dacia Porolissensis 5 (Zalău 1997)

Gudea 1997c
N. Gudea, Der Dakische Limes. Materialen zu seiner Geschichte, *JbRGZM* 44/2, 1997 497–609 (1–113).

Haalebos 1999
J. K. Haalebos, *Nederlanders in Roemenië* (Nijmegen 1999)

Isac 1997
D. Isac, *Castrele de cohortă şi ală de la Gilău / Die Kohorten – und alenkastelle von Gilău*, Führer zu archäologischen Denkmälern in Dacia Porolissensis 6 / Ghid al monumentelor arheologice din Dacia Porolissensis 6 (Zalău1997)

Isac 2003
D. Isac, *Castrul roman de la SAMVM-Căşeiu I / The roman auxiliary fort SAMVM–Căşeiu*, Handbook of archaeological monuments from Dacia Porolissensis 9 / Ghid al monumentelor arheologice din Dacia Porolissensis 9 (Cluj–Napoca 2003)

Isac 2006
D. Isac, Reparaţii şi reconstrucţii în castrele Daciei romane în a doua jumătate a secolului III p. Chr. (O nouă analiză a fenomenului), *EphemNap* 14–17, 2006–2007, 131–163.

Isac et al. 1981
D. Isac – A. Diaconescu – C. Opreanu, Porta principalis dextra a castrului de la Gilău, *ActaMN* 18, 1981, 85–98.

Johnson 1983
S. Johnson, *Late Roman fortifications* (London 1983)

Johnson 1987
A. Johnson, *Römische Kastelle des 1. und 2. Jahrhunderts n. Chr. In Britannien und in den germanischen Provinzen des Römerreiches*, Kulturgeschichte der antiken Welt 37 (Mainz 1987)

Lander 1984
J. Lander, *Roman stone fortifications. Variation and change from the first century A.D. to the fourth*, BAR IS 206 (Oxford 1984)

Macrea 1938
M. Macrea, Castrul roman de la Bologa. Săpăturile din vara anului 1936, *Anuarul Comisiunii Monumentelor Istorice. Secţia pentru Transilvania* 4, 1938, 195–233.

Macrea et al. 1961
M. Macrea – D. Protase – M. Rusu, Şantierul arheologic Porolissum, *MCA* 7, 1961, 361–391.

Macrea et al. 1962
M. Macrea – M. Rusu – I. Mitrofan., Şantierul arheologic Porolissum, *MCA* 8, 1962, 485–504.

Marcu 2009
F. Marcu, *Organizarea internă a castrelor din Dacia = The internal planning of Roman forts of Dacia* (Cluj–Napoca 2009)

Marcu et al. 2014
F. Marcu – G. Cupcea – C. Filip – P. Ureche–X. Păuşan – I. Boda, Bologa, com. Poieni, jud. Cluj. Punct: Castrul Roman, *CCAR – Campania 2013*, 2014, 28–29.

Matei–Bajusz 1997
A. V. Matei – I. Bajusz, *Castrul roman de la Romita–Certiae / Das Römergrenzkastell von Romita–Certiae*, Führer zu archäologischen Denkmälern in Dacia Porolissensis 4 / Ghid al monumentelor arheologice din Dacia Porolissensis 4 (Zalău 1997)

Opreanu–Lăzărescu 2016
C. H. Opreanu – V. A. Lăzărescu, *Landscape archaeology on the northern frontier of the Roman Empire at Porolissum* (Cluj-Napoca 2016)

Panaitescu 1929
E. Panaitescu, Castrul roman de la Căşeiu. Din cercetările nouă, *Anuarul Comisiunii Monumentelor Istorice* 1, 1929 (1930), 321–342.

Protase 1994
D. Protase, Castrul roman de la Tihău (jud. Sălaj) în lumina cunoştinţelor actuale, *EphemNap* 4, 1994, 75–101.

Protase 2008
D. Protase, *Castrul roman de la Orheiu Bistriţei* (Cluj–Napoca 2008)

Protase et al. 1997
D. Protase – C. Gaiu – G. Marinescu, *Castrul roman de la Ilişua* (Bistriţa 1997) = D. Protase – C. Gaiu – G. Marinescu, Castrul roman de la Ilişua (jud. Bistriţa–Năsăud), *RevBis* 10–11, 1997, 27–110.

Protase et al. 2008
D. Protase – N. Gudea – R. Ardevan, *Din istoria militară a Daciei romane. Castrul roman de interior de la Gherla / Aus der Militärgeschichte des römischen Dakien. Das Römische Binnenkastell von Gherla* (Timişoara 2008)

Tamba 1997
D. Tamba, *Das Römergrenzkastell von Românaşi–Largiana / Castrul roman de la Românaşi–Largiana*, Führer zu archäologischen Denkmälern in Dacia Porolissensis 3 / Ghid al monumentelor arheologice din Dacia Porolissensis 3 (Zalău 1997)

Torma 1864–1865
K. Torma, Az Alsó-ilosvai római állótábor és műemlékei, *EMúz* 3/1, 1864–1865, 10–67.

Tóth 1978
E. Tóth, *Porolissum. Das Castellum in Moigrad. Ausgrabungen von A. Radnóti*, 1943 (Budapest 1978)

Welsby 1990
D. A. Welsby, Observations on the defences of Roman forts in North Africa, *Antiquités africaines* 26, 1990, 113–129.

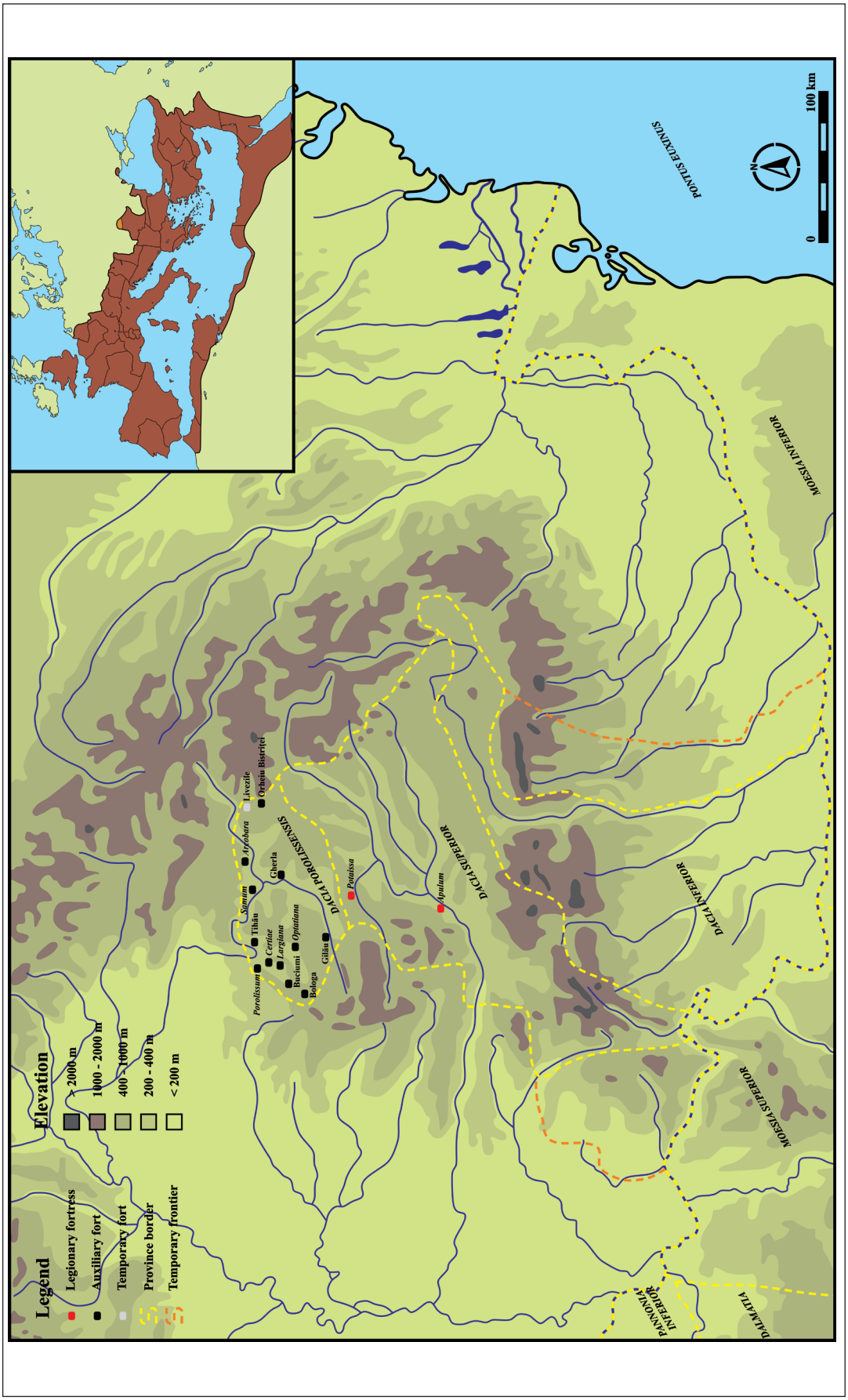

Plate I. Map of Dacia Porolissensis (base map after FEURDEAN ET AL. 2007, 307, fig. 1).

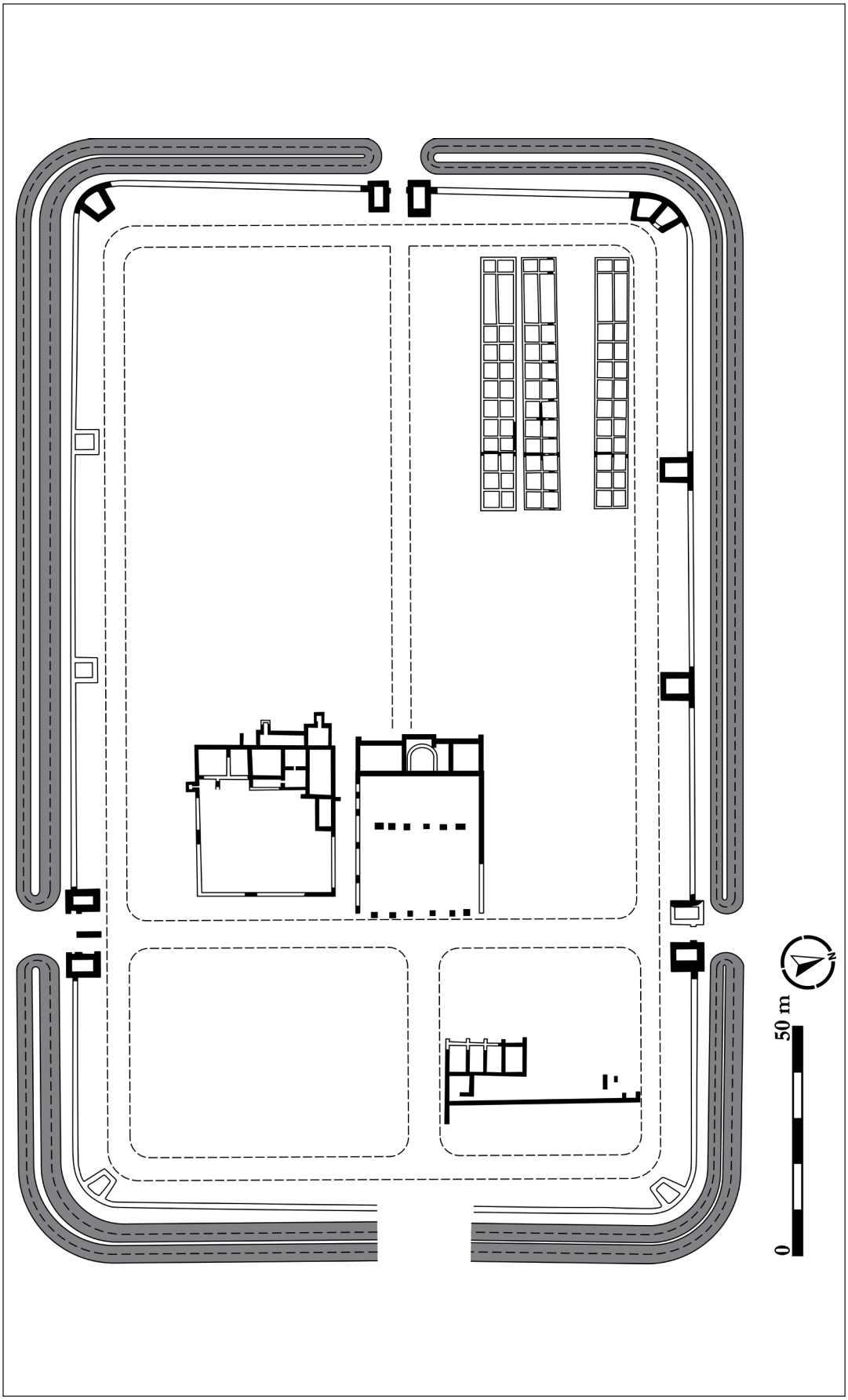

Plate II. Gilău stone phase (after Isac 1997, 92, pl. XI).

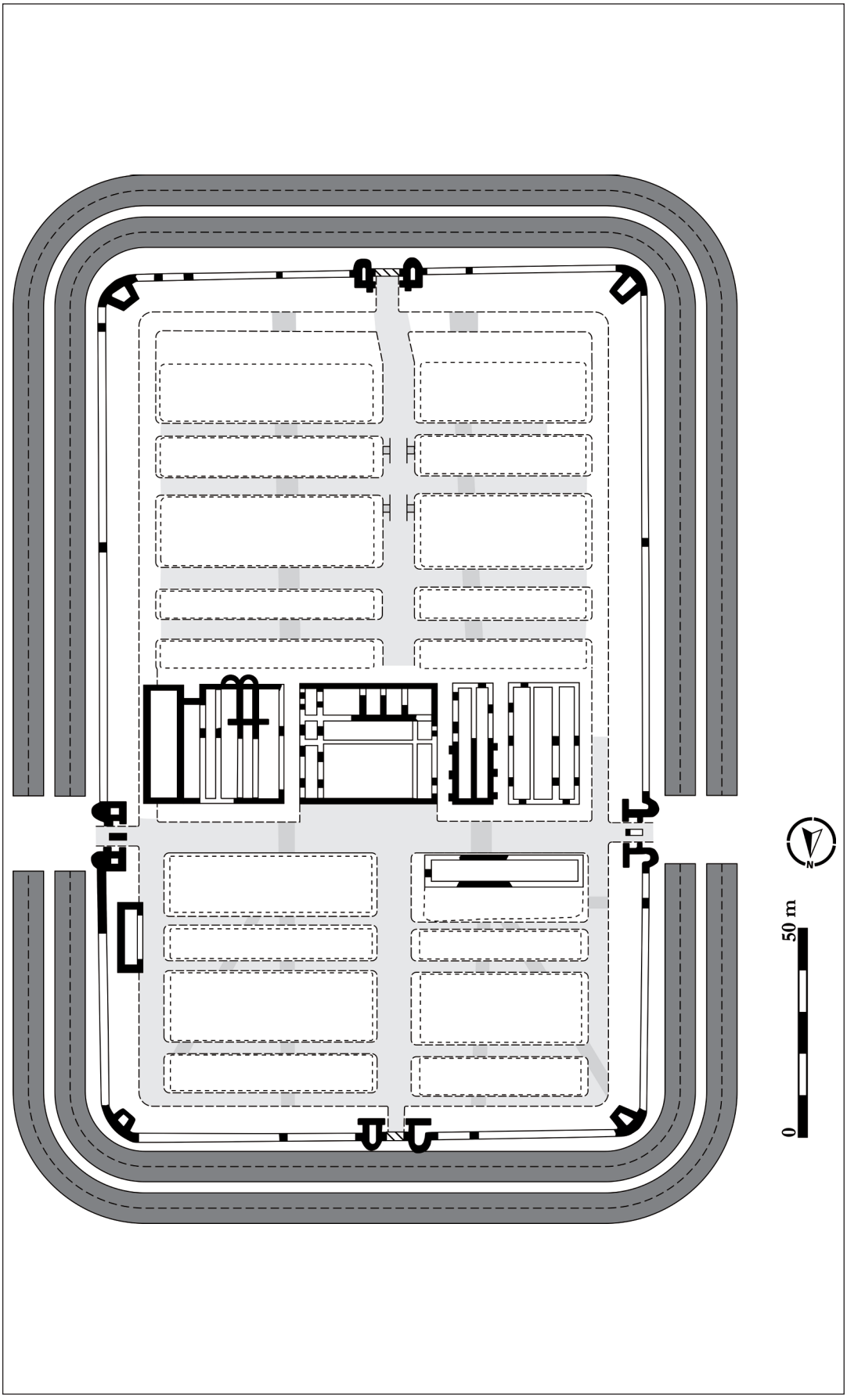

Plate III. Bologa stone phase (after Gudea 1997, 86, fig. 18).

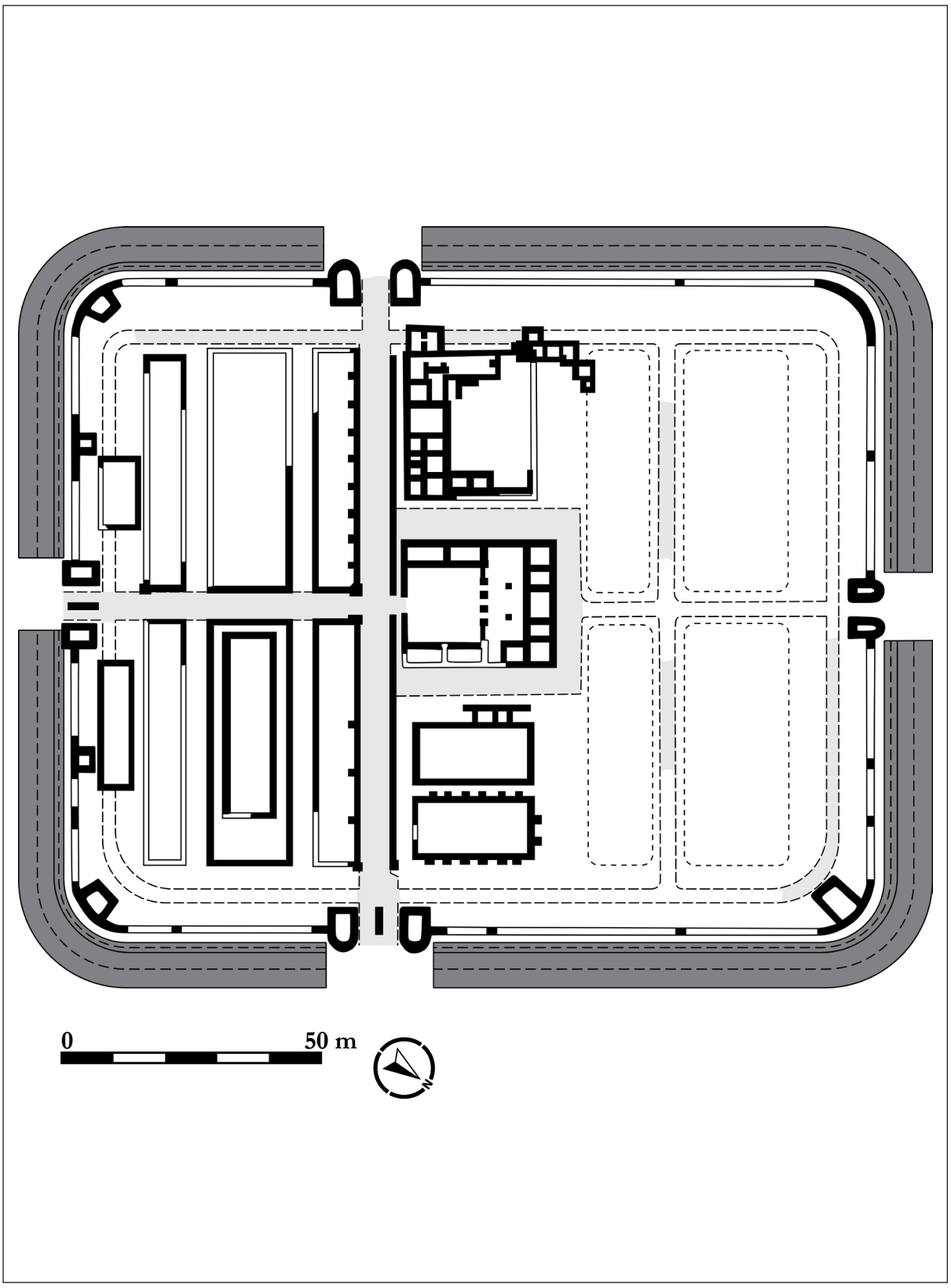

Plate IV. Buciumi stone phase (after Gudea 1997a, 91, fig. 8).

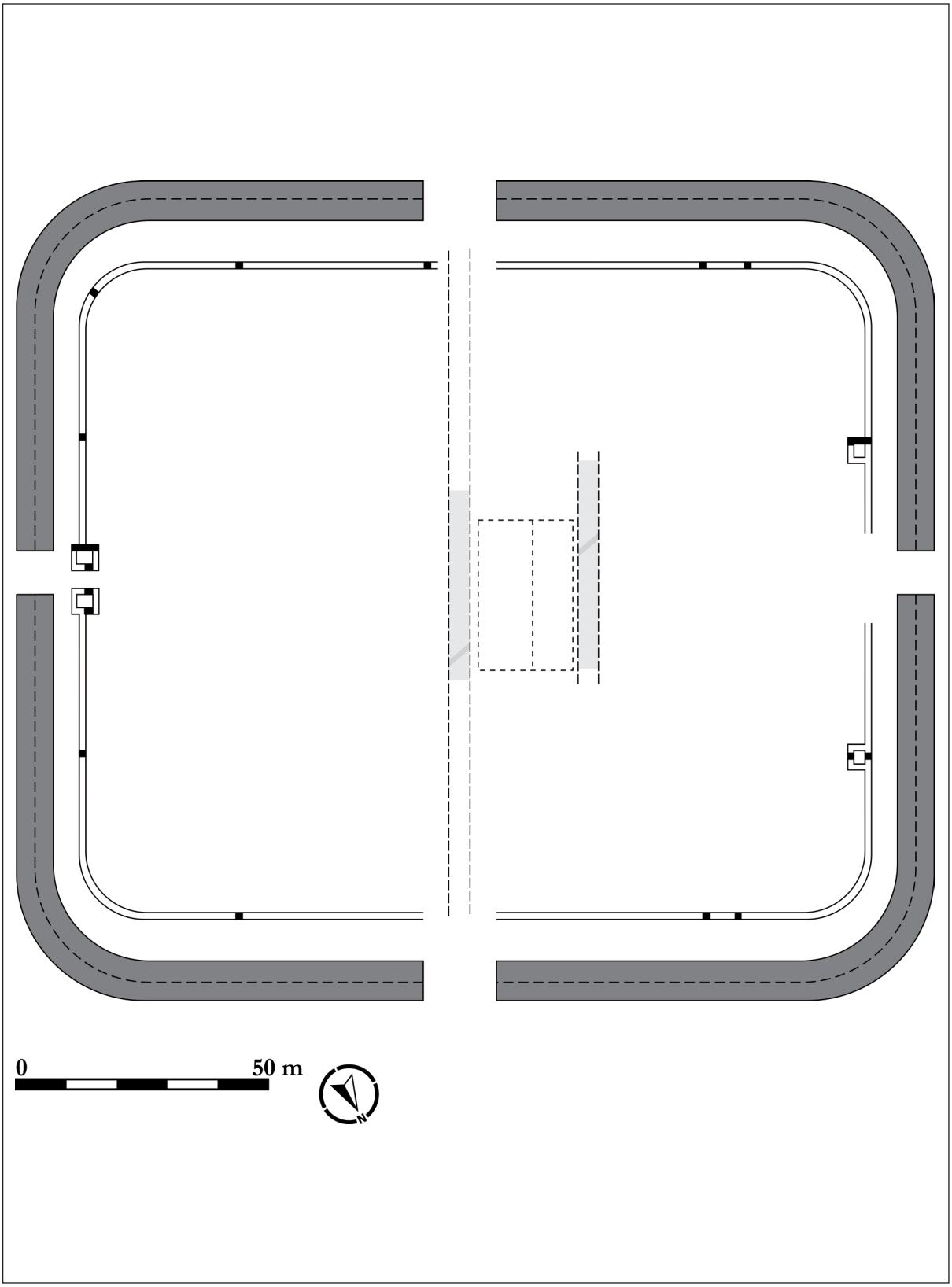

Plate V. Românași stone phase (after Tamba 1997, 49, fig. 10).

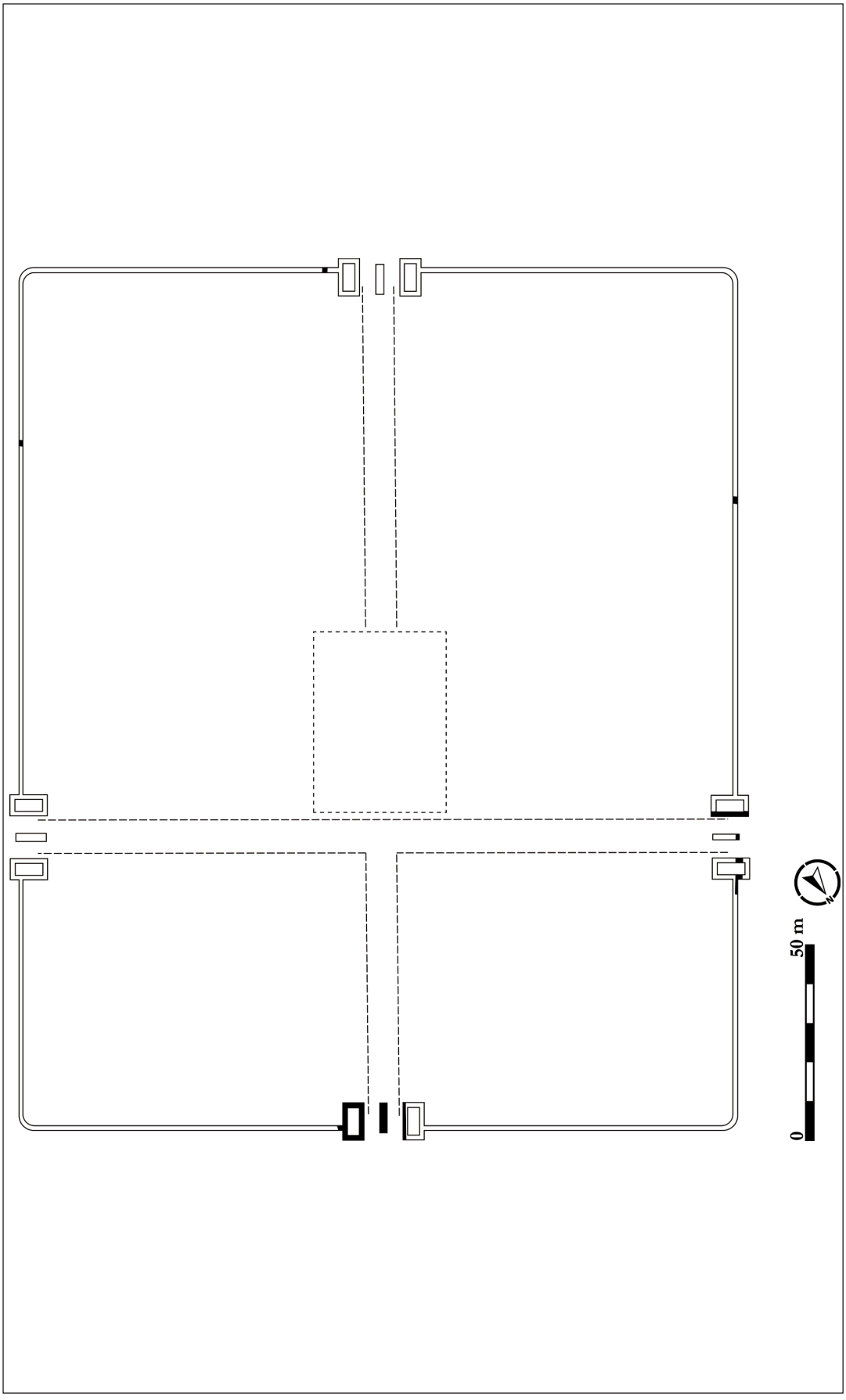

Plate VI. Romita stone phase (after Matei–Bajusz 1997, 169, pl. XI).

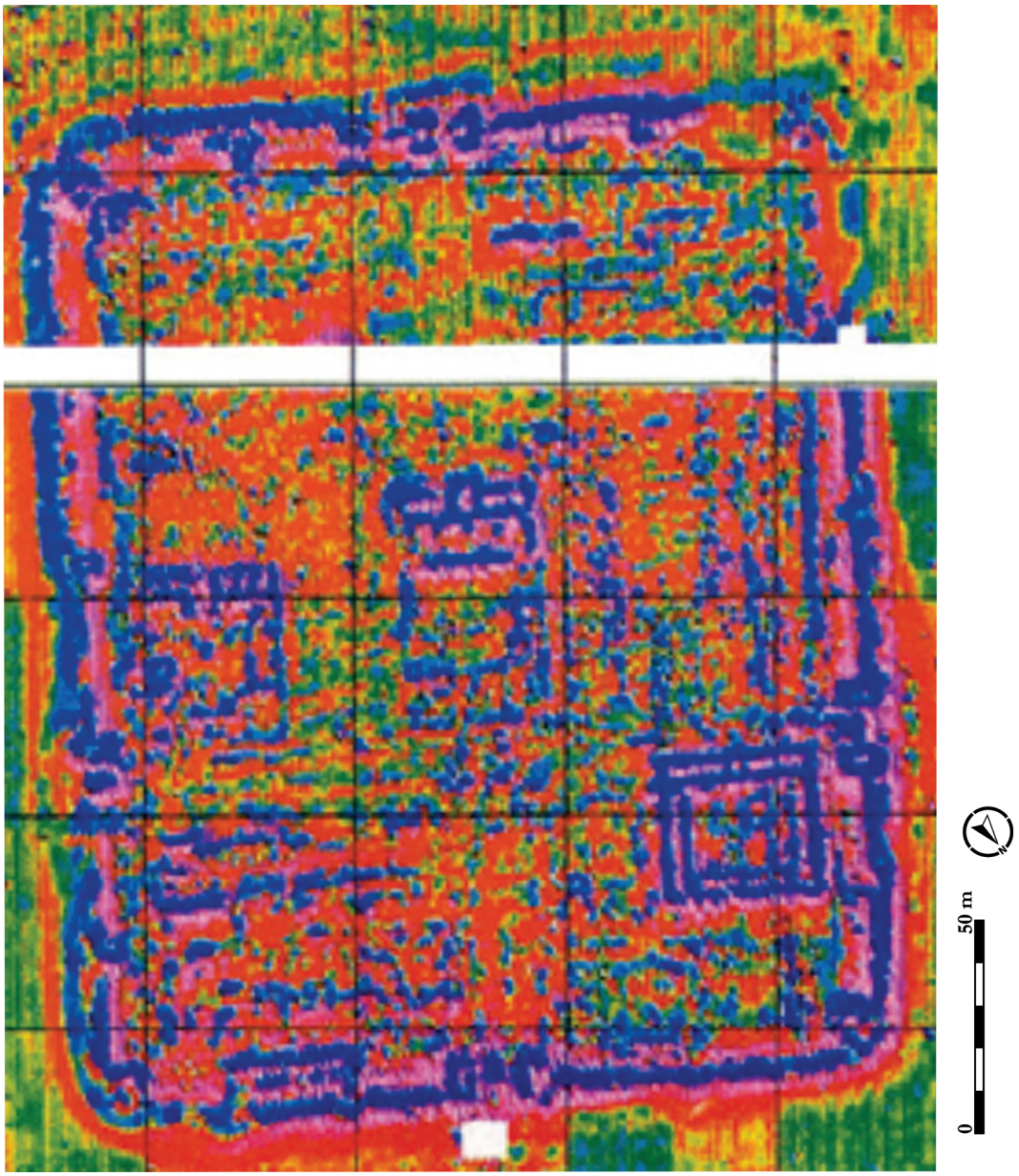

Plate VII. Romita geophysical survey (Franzen et al. 2007, 176, fig. 1; Marcu 2009, 282, pl. 14).

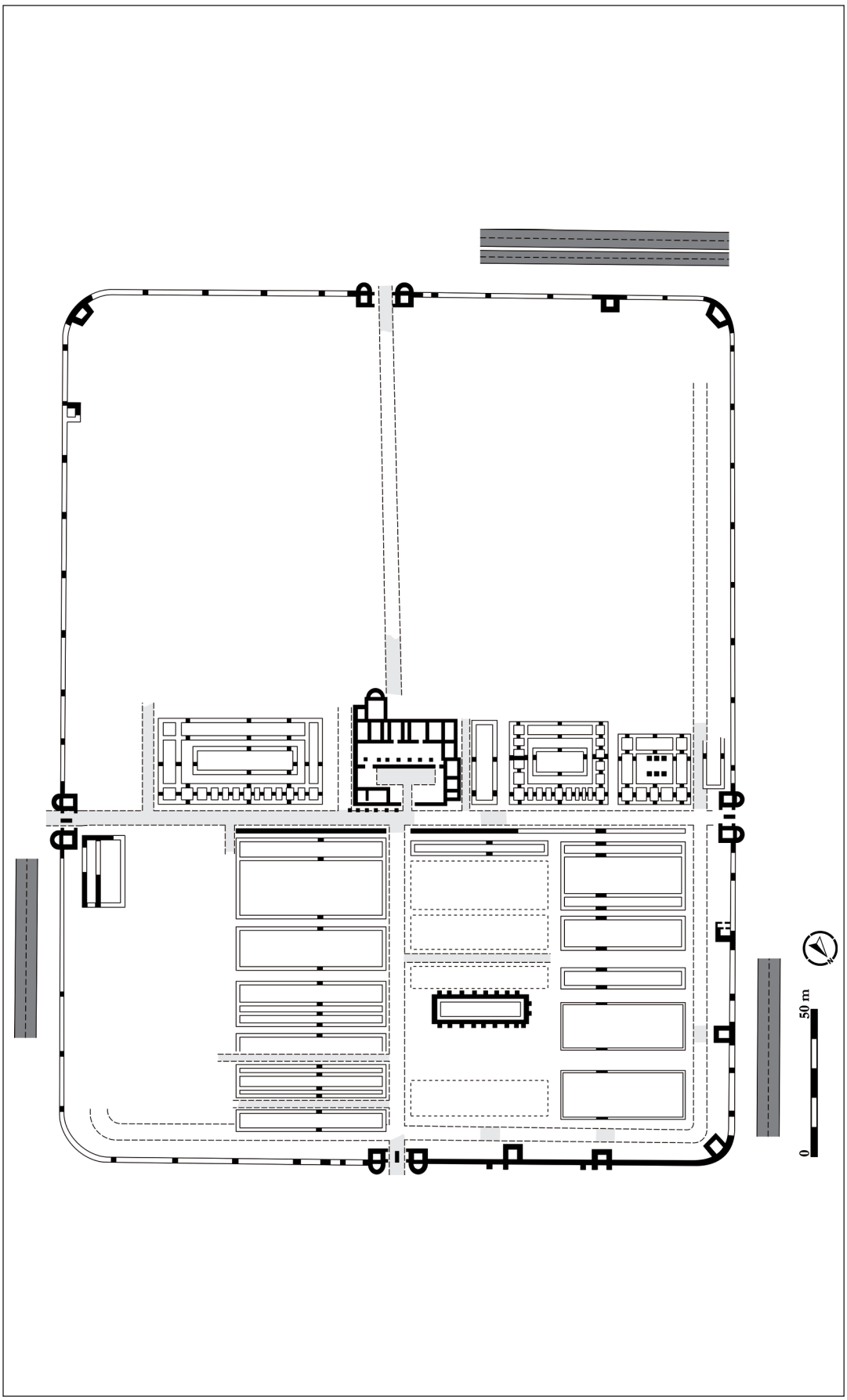

Plate VIII. Porolissum-Pomăt stone phase (after Gudea 1997c, 47, Nr. 25).

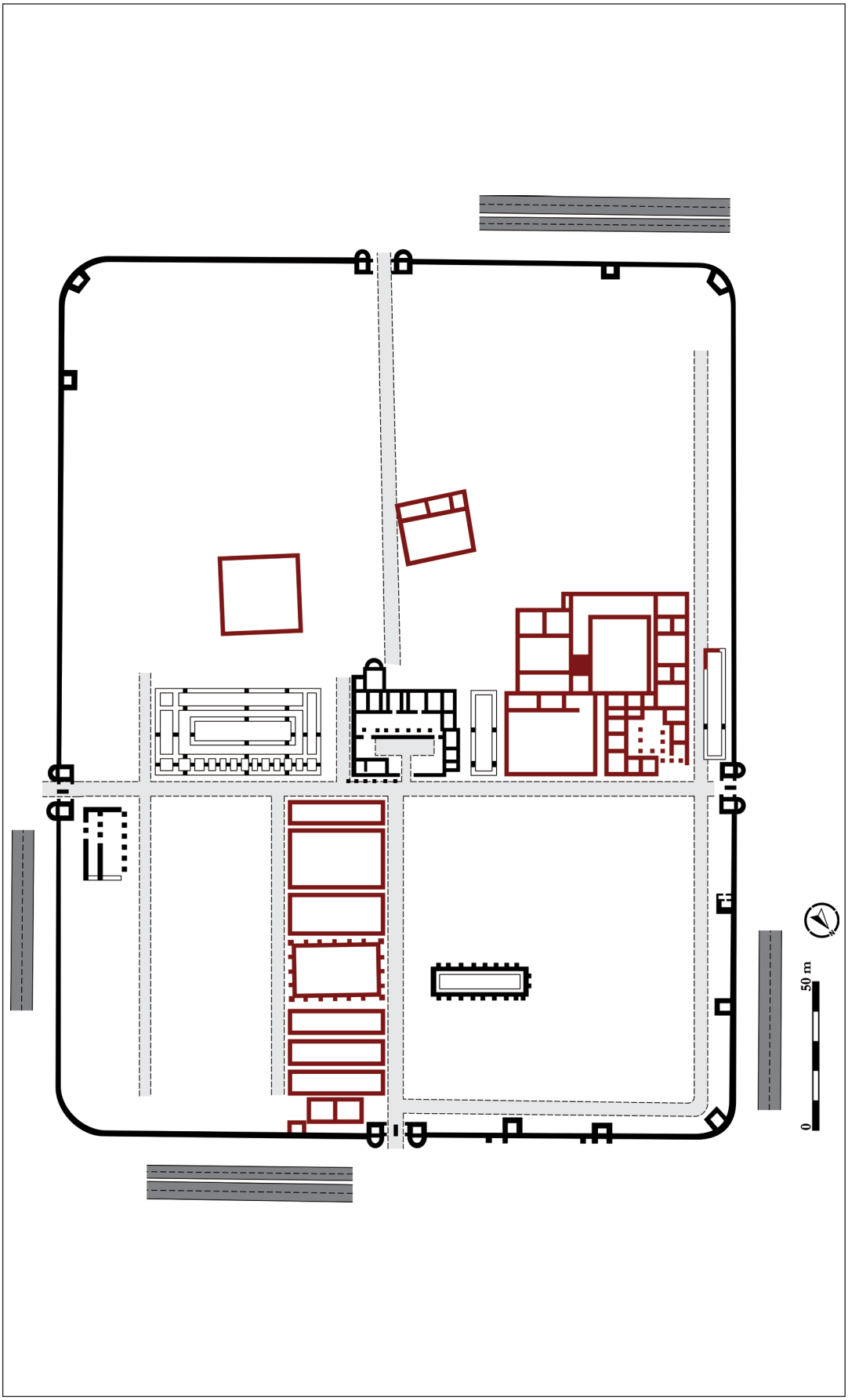

Plate IX. Porolissum-Pomăt stone phase (after Opreanu–Lăzărescu 2016, 78, fig. 33).

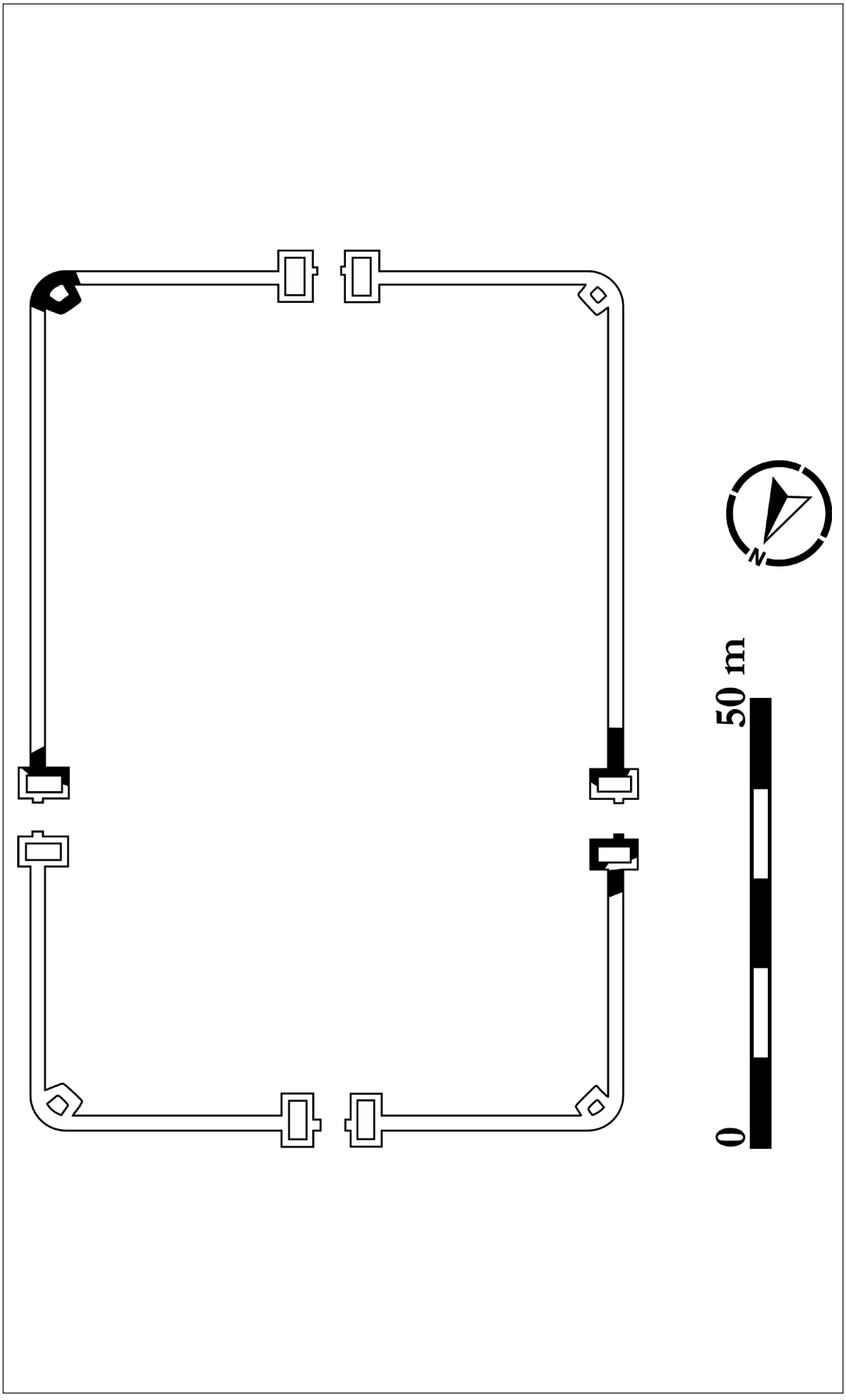

Plate X. Porolissum-Citera stone phase (after Macrea et al. 1961, 375, fig. 12.).

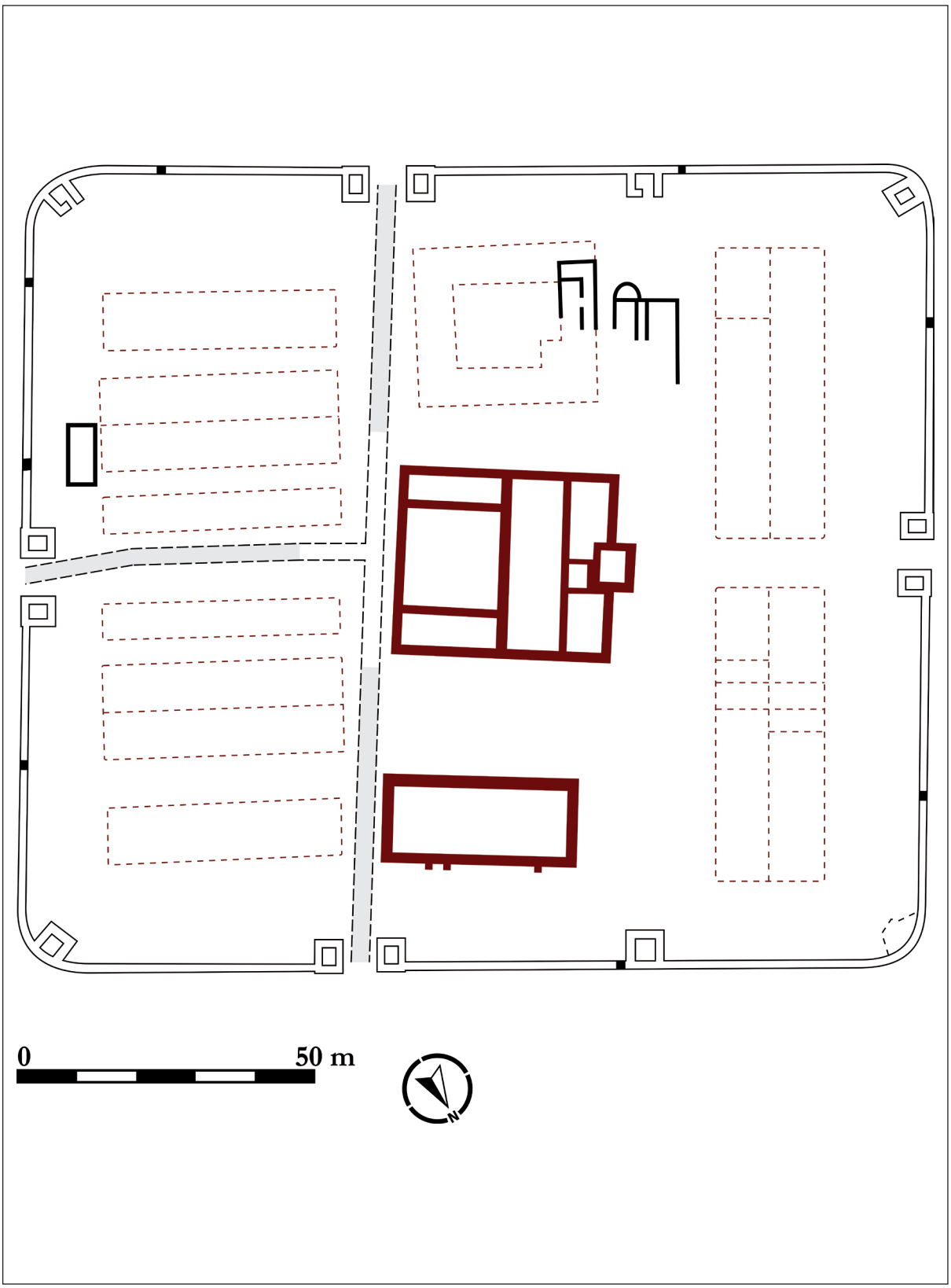

Plate XI. Tihău stone phase (after Opreanu–Lăzărescu 2016, 96, fig. 55).

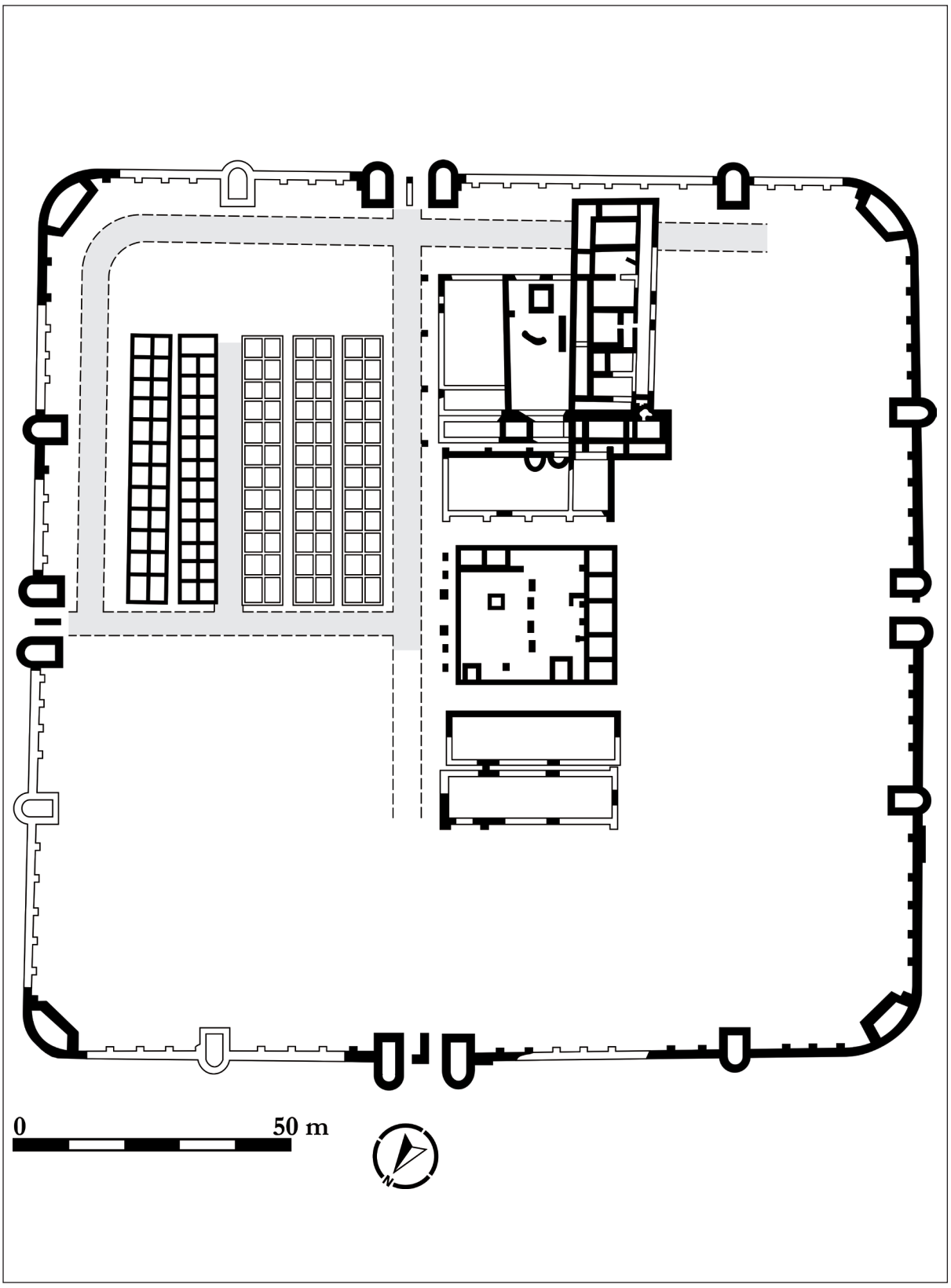

Plate XII. Căşeiu stone phase (after Isac 2003, 206, fig. 2).

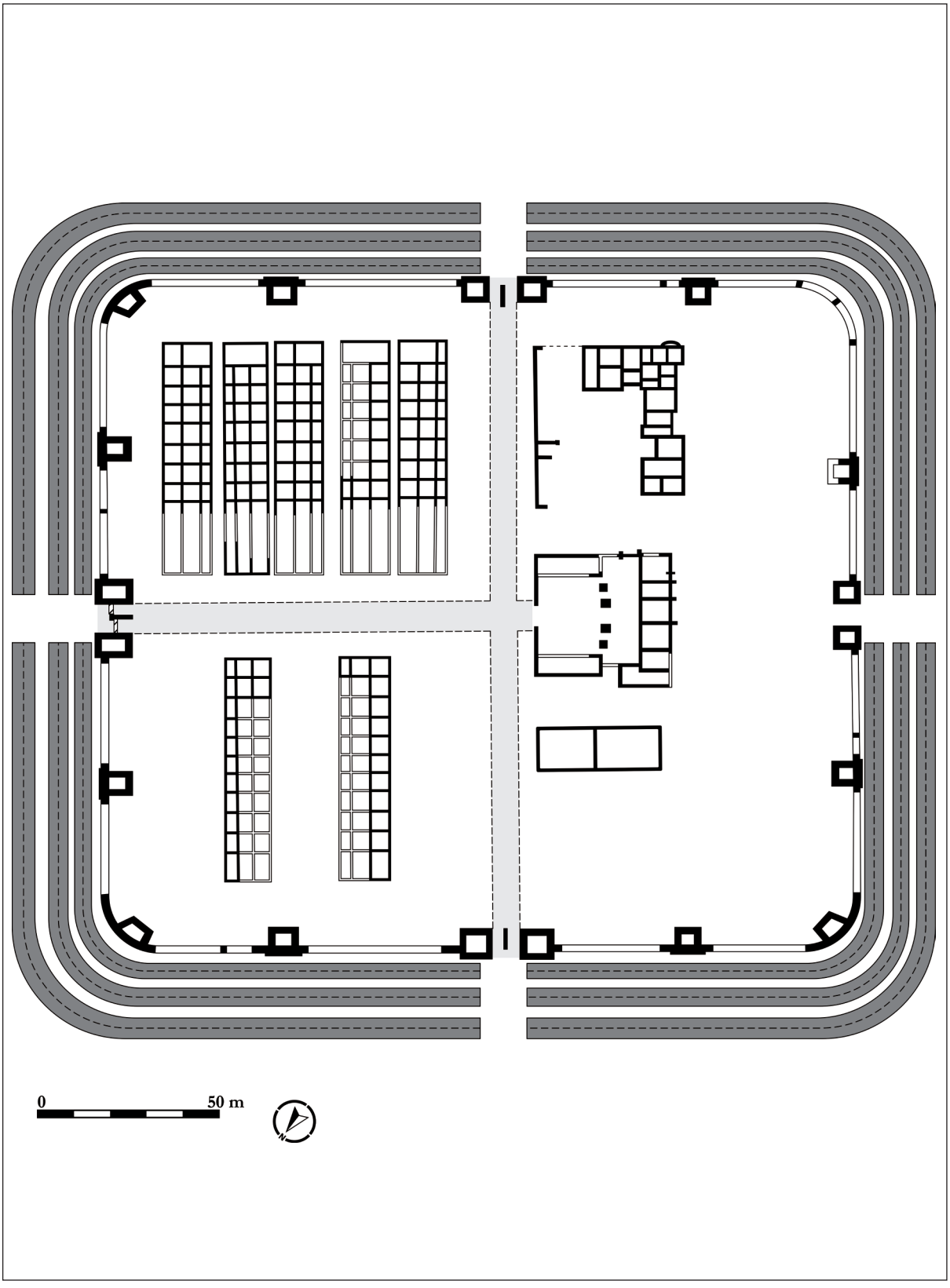

Plate XIII. Ilişua stone phase (after Protase et al. 1997, 95, pl. VII, 96, pl. VIII).

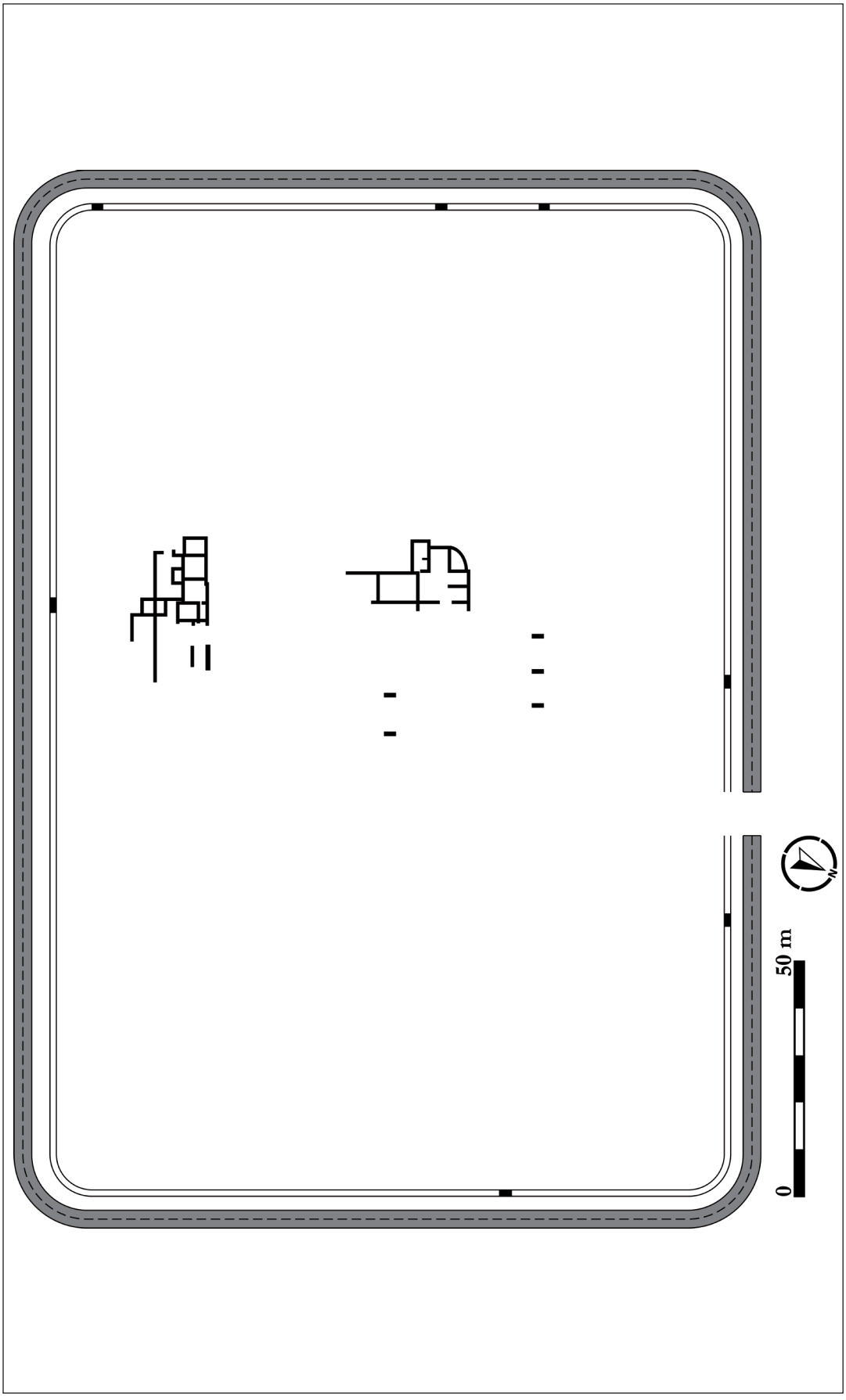

Plate XIV. Orheiu Bistriței stone phase (after Protase 2008, 15, Fig 3; Gudea 1997c, 56, Nr. 31).

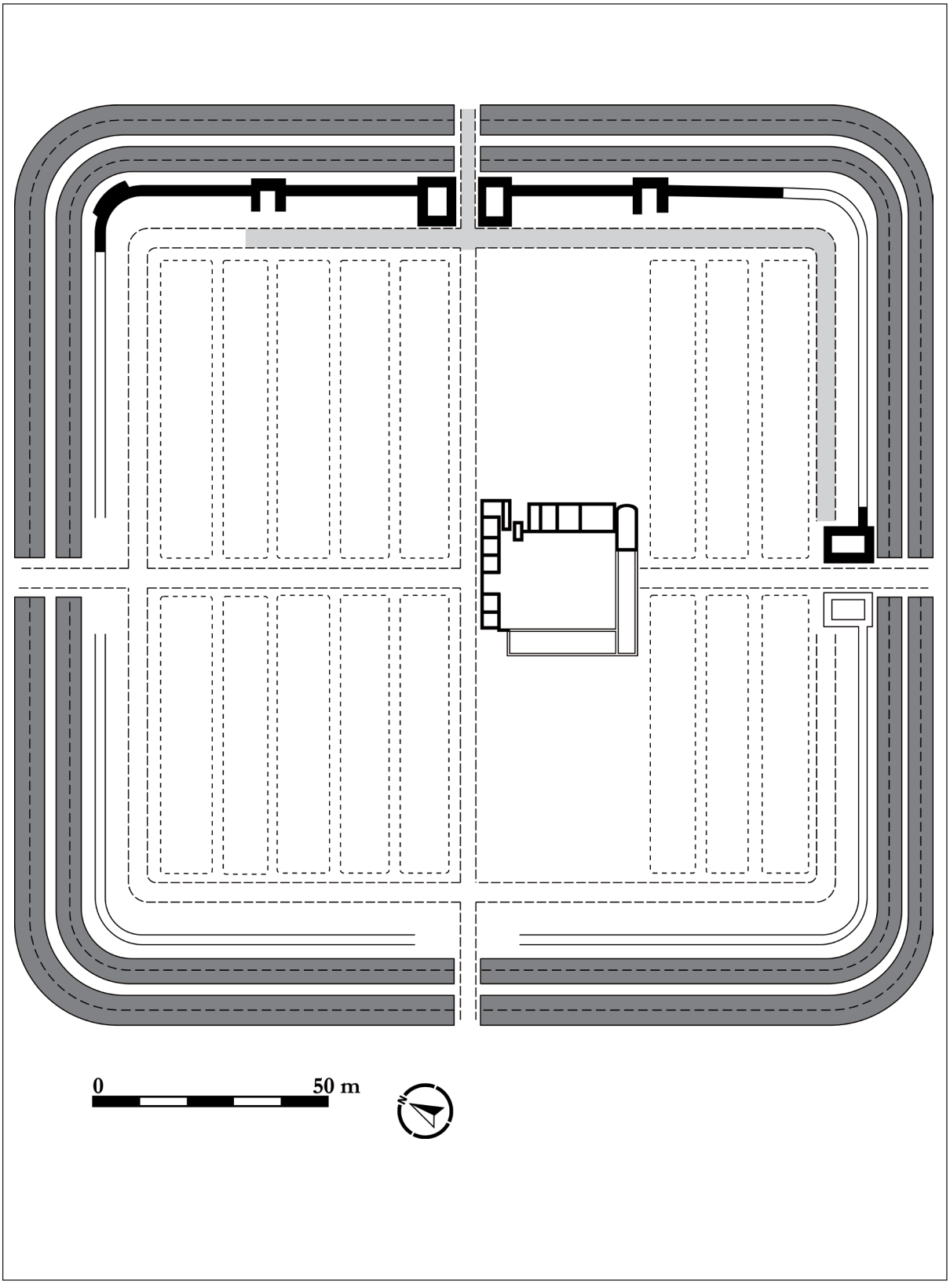

Plate XV. Gherla stone phase (after Protase et al. 2008, 406, fig. 33a).

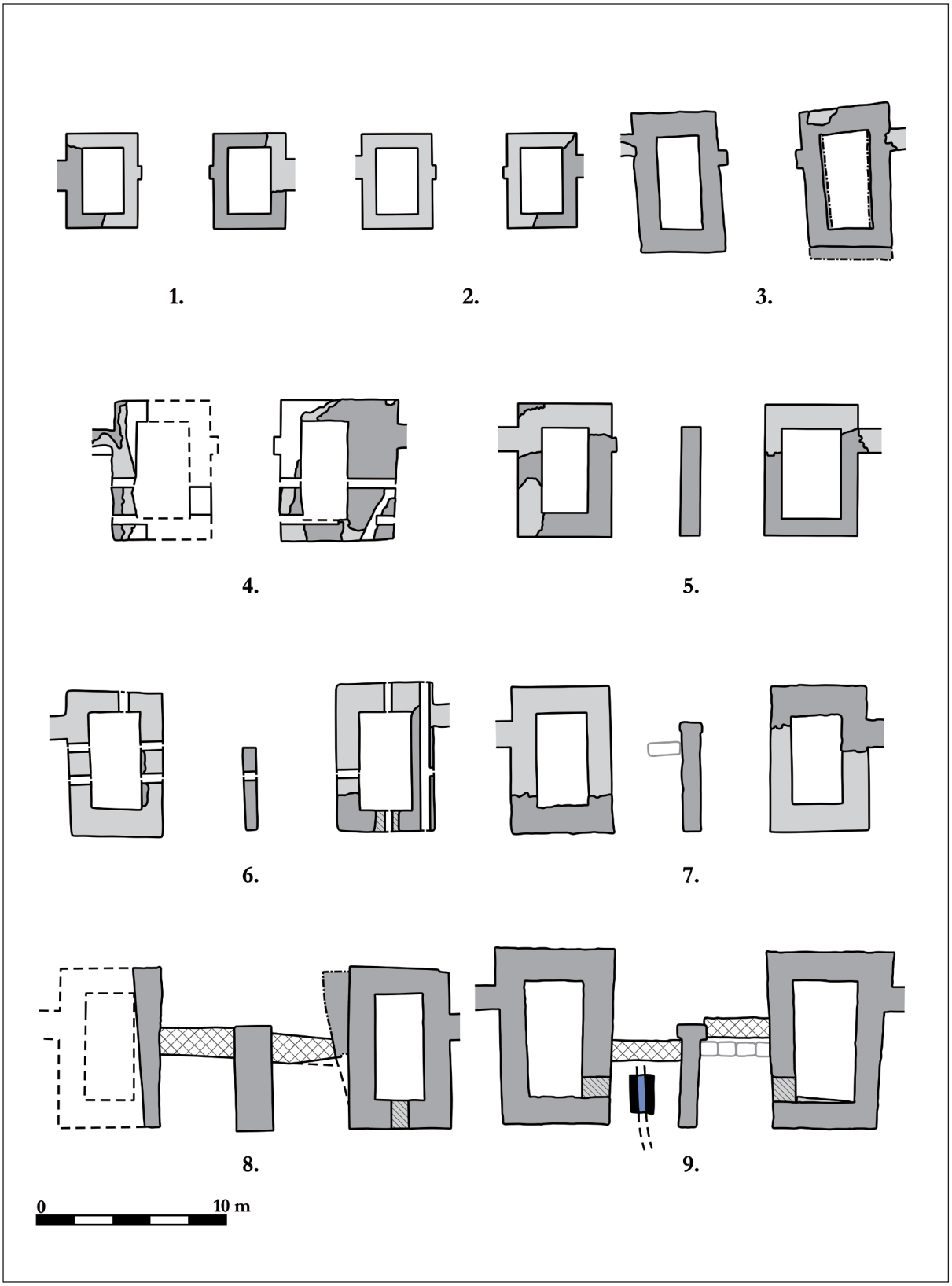

Plate XVI. Rectangular gate towers: 1. Porolissum-Citera, *porta principalis sinistra*; 2. Porolissum-Citera, *porta principalis dextra*; 3. Gilău, *porta decumana*; 4. Gilău, *porta principalis sinistra*; 5. Buciumi, *porta praetoria*; 6. Gilău, *porta principalis dextra*; 7. Ilișua, *porta principalis dextra*; 8. Romita, *porta praetoria*; 9. Ilișua, *porta praetoria*.

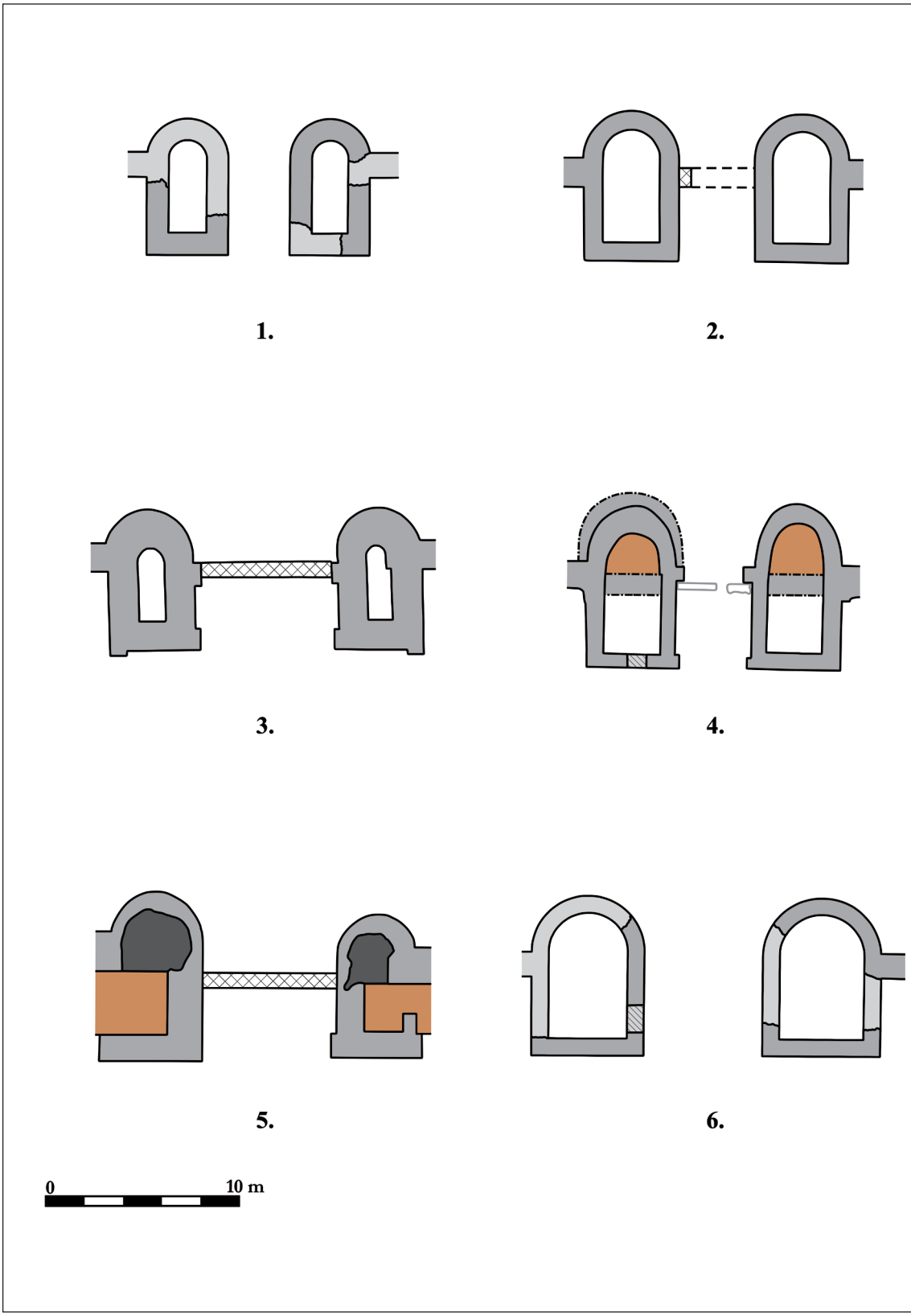

Plate XVII. Single-portalled rounded gate towers: 1. Buciumi, *porta decumana*; 2. Căşeiu, *porta decumana*; 3. Bologa, *porta decumana*; 4. Porolissum-Pomăt, *porta decumana*, 5. Bologa, *porta praetoria*, 6. Buciumi, *porta principalis dextra*.

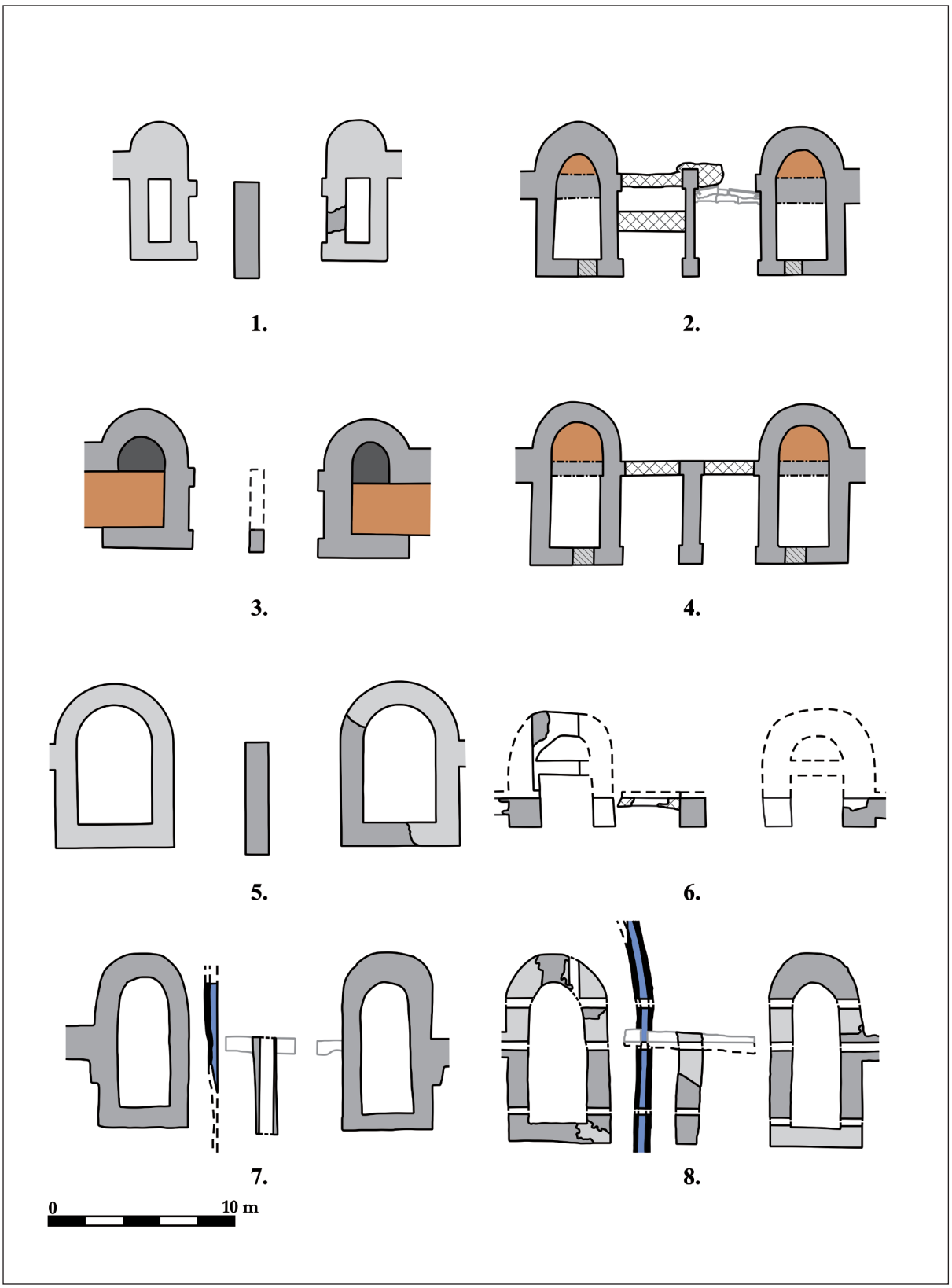

Plate XVIII. Double-portalled rounded gate towers: 1. Bologa, *porta principalis dextra*; 2, Porolissum-Pomăt, *porta principalis sinistra*; 3. Bologa, *porta principalis sinistra*; 4. Porolissum-Pomăt, *porta praetoria*; 5. Buciumi, *porta principalis sinistra*; 6. Căşeiu, *porta principalis dextra*; 7. Căşeiu, *porta principalis sinistra*; 8. Căşeiu, *porta praetoria*.

ABBREVIATIONS

ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae
ActaMN	Acta Musei Napocensis
Acta MP	Acta Musei Porolissensis
ActaTS	Acta Terrae Septemcastrensis
AIIA	Anuarul Institutului de Istorie și Arheologie "A. D. Xenopol". Iași
AJA	American Journal of Archaeology
Angustia	Angustia. Muzeul Carpaților Răsăriteni
Apulum	Apulum. Acta Musei Apulensis
ArchÉrt	Archaeologiai Értesítő
ArchKorr	Archäologisches Korrespondenzblatt
ArhMold	Arheologia Moldovei
Banatica	Banatica, Muzeul Banatului Montan
BAR (IS)	British Archaeological Reports (–International Series)
BHAUT	Bibliotheca Historica et Archaeologica Universitatis Timisiensis
BJ	Bonner Jahrbücher
BAI	Bibliotheca Archaeologica Iassiensis
BAM	Bibliotheca Memoriae Antiquitatis
BMA	Bibliotheca Musei Apulensis
BMM	Bibliotheca Musei Marisiensis
BMN	Bibliotheca Musei Napocensis
BMP	Bibliotheca Musei Porolissensis
BudRég	Budapest Régiségei
CA	Cercetări Arheologice
CCAR	Cronica Cercetărilor Arheologice din România
Dacia (N. S.)	Dacia. Recherches et décuvertes archéologiques en Roumanie, I–XII (1924–1948), Nouvelle série (N. S.): Dacia. Revue d'archéologie et d'histoire anciene
DolgKolozsvár (Ú.S.)	Dolgozatok az Erdélyi Nemzeti Múzeum Érem- és Régiségtárából, (Új sorozat 2006–)
EMúz	Erdélyi Múzeum
EphemNap	Ephemeris Napocensis
FolArch	Folia Archaeologica
JAHA	Journal of Ancient History and Archaeology
JbRGZM	Jahrbuch des Römisch-Germanischen Zentralmuseums
JRA	Journal of Roman Archaeology
KuBA	Kölner und Bonner Archaeologica
Lymbus	Lymbus. Magyarságtudományi Forrásközlemények
Marisia	Marisia (V–XXXV): Studii și Materiale
Marisia-AHP	Marisia: Archaeologia, Historia, Patrimonium
MCA	Materiale și Cercetări Arheologice
MFMÉ (–StudArch)	A Móra Ferenc Múzeum Évkönyve, (Studia Archaeologica 1995–)
ReiCretActa	Rei Cretariae Romanae Fautorum Acta

RevBis	Revista Bistriţei. Complexul Judeţean Muzeal Bistriţa-Năsăud
Sargetia (S.N.)	Sargetia. Acta Musei Devensis
SCIV(A)	Studii şi Cercetări de Istorie Veche (şi Arheologie 1974–)
StComSfGheorghe	Studii şi comunicări. Sfântu Gheorghe
StudiaAA	Studia Antiqua et Archaeologica. Iaşi

MARISIA. ARCHAEOLOGIA, HISTORIA, PATRIMONIUM

With a publishing tradition since 1965, in 2019 the annual of the Mureş County Museum initiated a new series entitled: *Marisia. Archaeologia, Historia, Patrimonium*. The publication provides a panel for new research results in archeology, architecture and material heritage of the history of arts and culture. The studies mainly focus on the inner Transylvanian region that encompasses also Mureş County. Beyond local valuable contributions, the annual aims at a regional and global concern that is relevant for the whole of Transylvania. Among the annual's missions is to provide mutual interpretation of the research results produced by the Romanian and Hungarian scientific workshops. Therefore, the annual articles are mainly in English but based on the field of research and the approached topic studies in German, Romanian or Hungarian are also accepted.

Cu o tradiție din anul 1965, anuarul Muzeului Județean Mureș s-a relansat în 2019 sub titlul *Marisia. Archaeologia, Historia, Patrimonium*. Această publicație se descrie ca o platformă științifică care cuprinde rezultatele cercetărilor în domenii precum: arheologia, arhitectura și patrimoniul material din zona istoriei artelor și a culturii, studii localizate în regiunea centrală a Transilvaniei, din care face parte județul Mureș. In extenso, anuarul își propune să ofere un spațiu unitar contribuțiilor științifice valoroase, relevante din perspectiva geografică a ceea ce înseamnă întreaga regiune a Transilvaniei. Una dintre misiunile publicației este aceea de a oferi tuturor celor interesați spațiul de schimb pentru cele mai noi rezultate din atelierele științifice românești și maghiare. Articolele anuarului sunt scrise în general în limba engleză, existând totodată articole scrise în germană, română și maghiară, în funcție de specificul domeniului și a temei abordate.

A Maros Megyei Múzeum 1965 óta megjelenő évkönyvének 2019-ben útjára bocsátott új sorozata, a *Marisia. Archaeologia, Historia, Patrimonium* elsősorban a mai Maros megyét is magába foglaló belső-erdélyi régió régészeti, épített és tárgyi örökségére, nemkülönben az ezekhez kapcsolódó művészettörténeti, művelődéstörténeti kérdésekre vonatkozó újabb kutatások tudományos fóruma. A lokális perspektíván túl igyekszik kitekinteni a regionális és univerzális összefüggésekre, így a tágan értelmezett Erdély területére nézve is közöl kiemelkedő értékkel bíró tanulmányokat. Küldetésének tekinti a hazai román és magyar tudományos műhelyekben született eredmények kölcsönös tolmácsolását. A dolgozatok nyelve főként az angol, de szakterülettől és témától függően német, román vagy magyar nyelven is közöl írásokat.