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Modern outlines of the Taman Peninsula & Phanagoria location.

In the 1<sup>st</sup> millennium BC it was an archipelago in the delta of the Kuban river.

Phanagoria was founded in the VI<sup>th</sup> century BC by Greek colonists from Teos and existed until the X<sup>th</sup> century AD.

In the IV<sup>th</sup> century BC - III<sup>rd</sup> century AD Phanagoria was one of the capitals of the Bosporan kingdom.



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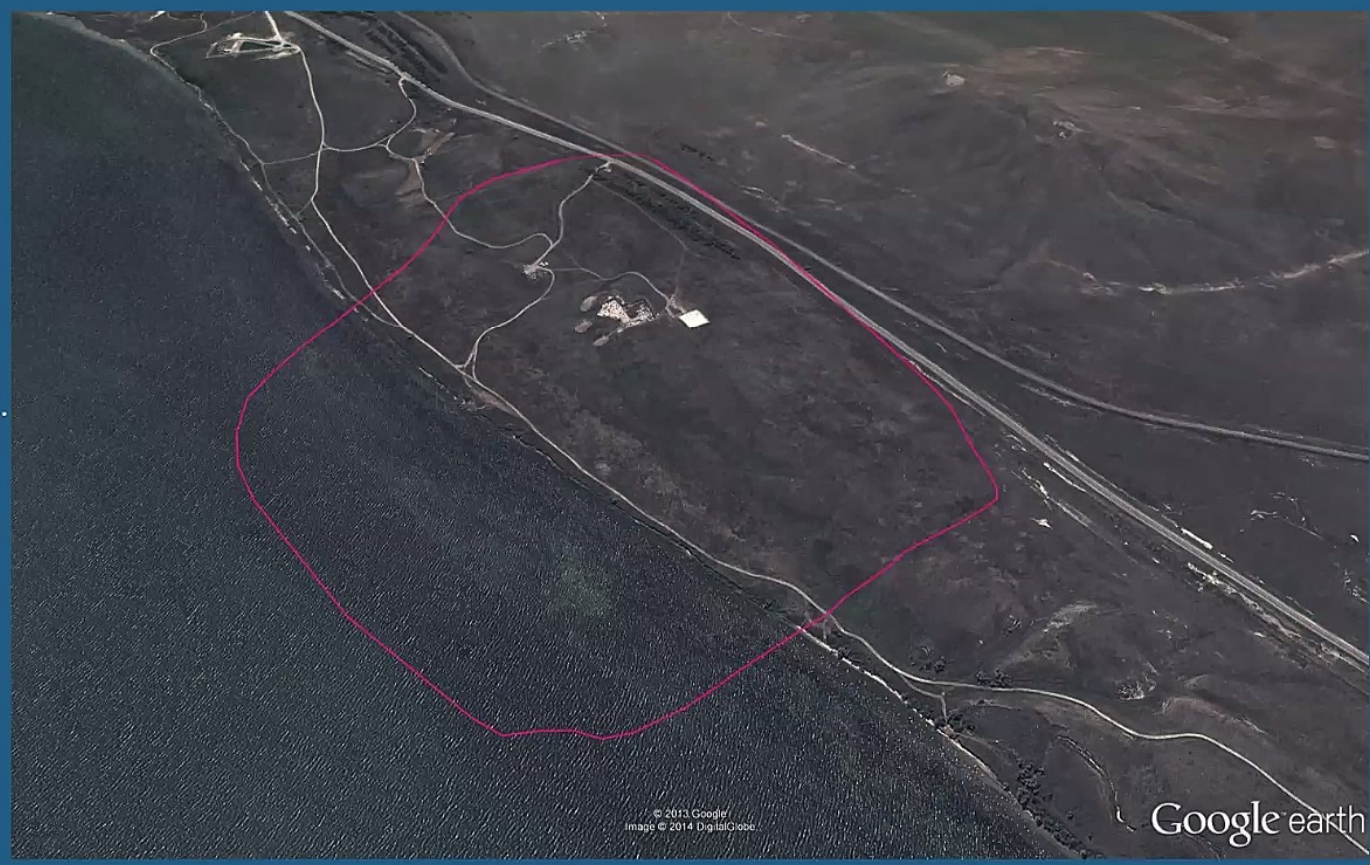


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As a result of a sea level transgression in 1<sup>st</sup> mil. BC part of the city was flooded.

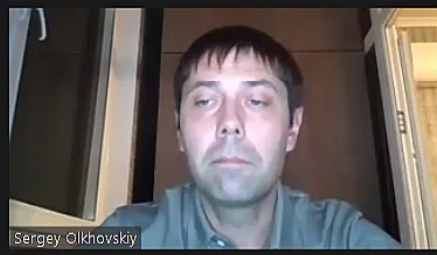
Pink line: estimated limits of the settlement, port structures, nearest anchorages.

The water area: about 40 hectares



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Google earth



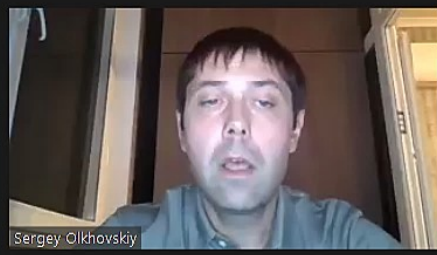


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There are no modern buildings and infrastructure on the territory of the city and the adjacent water area.

This allows us to perform large-scale remote studies and excavations.

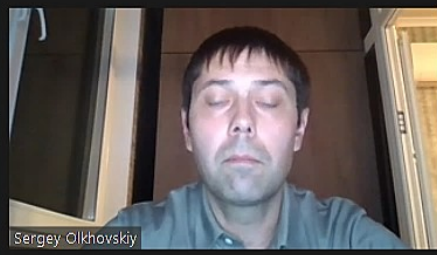




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Due to long-term coastal cliff erosion and storms, all the ancient remains are covered with sand and are invisible on the sea bottom.

Therefore, in order to identify archaeological sites on a large water area, it is advisable to use remote non-destructive methods and identify promising areas for further examination.

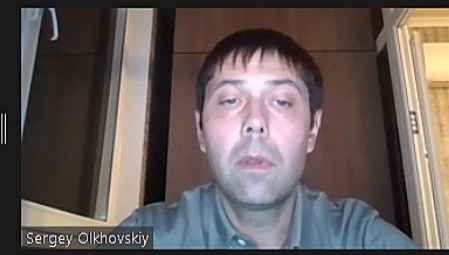
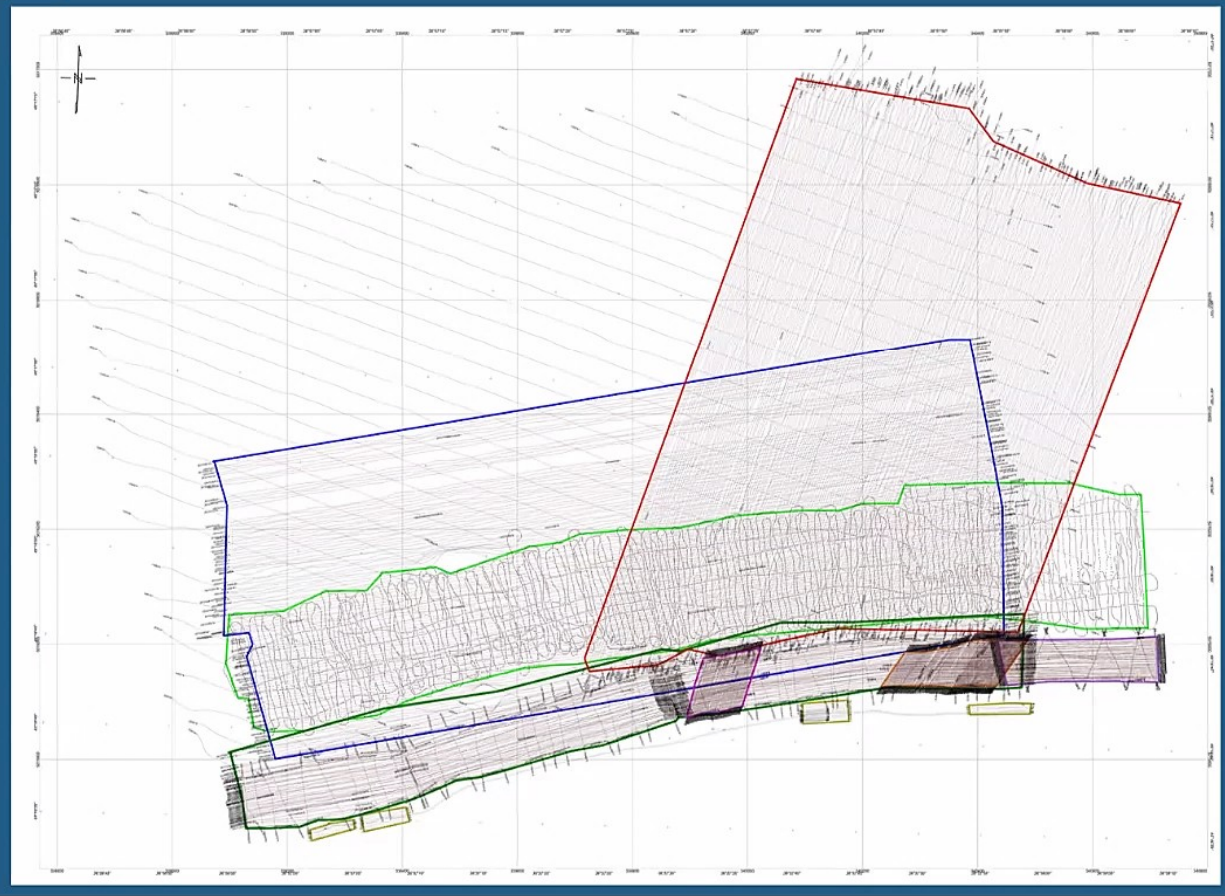


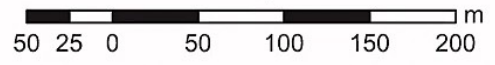
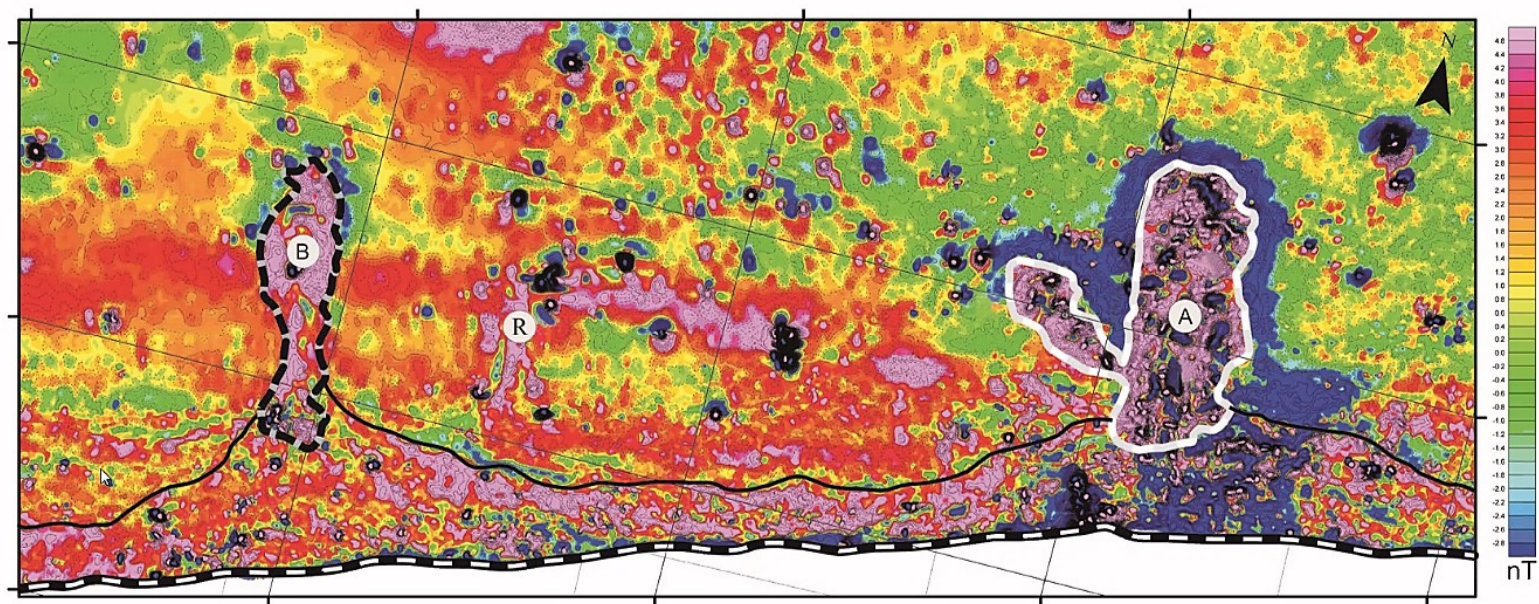


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In 2011-2021 a lot of remote studies were done in the water area: hydromagnetic surveys, acoustic profiling, side-scan sonar, bathymetry.

All surveys are made with high-precision coordinate reference, which allows us to integrate the data into a GIS and correctly compare the results of different types of research.





Magnetic map analysis: localization of the contour of the flooded coastal terrace of the city and port facilities.

-  - the contour of the modern coastline
-  - the contour of the coastline in the I mil. BC.
-  - the contour of the port structure of the V-III cent. BC.
-  - the contour of the port structure, dating has not been determined yet.
-  - the central part of the port structure of the III-VI centuries AD.





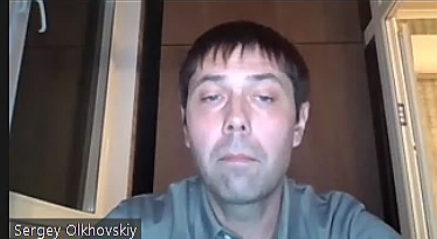
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Port structures «A» and «B» are stone embankments up to 200 m long and up to 2.5 m high (height at present).

The embankments mainly consist of boulders of igneous and plutonic rocks brought to Phanagoria from the Mediterranean and the Aegean Sea.

The date of construction of the embankment «A» (V-III cent. BC) is identified thanks to ceramics found in the backfill of the mound.

There is no doubt that by the end of the I mil. BC, due to the rise of the water level by 2-2.5 m, both embankments could no longer be used as berths for ships – the depths around them became too small.





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In 2004, a strong storm blew away the top layer of sand deposits, and an accumulation of treated and untreated stones was noticed between embankments «A» and «B».





One of the first finds: a marble pedestal of the statue of Tiberius Julius Sauromat, king of the Bosporus in 173-210 AD.





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After removing the top layer of sand deposits, it turned out that we found a rectangular structure, the upper surface of which is covered with a partially preserved stone layout. Around the structure we found a disorderly stone blockage.





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Upon further clearing, it turned out that the structure has a frame of several layers of horizontally laid logs, between which stones are tightly stacked.





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The perimeter of the structure is surrounded by a dense row of vertical piles





In the corner of the stone structure was a marble pedestal of the statue with the inscription:

«Hysicrates, wife of King Mithridates Eupator Dionysus, farewell»

Plut. Pomp. 32:

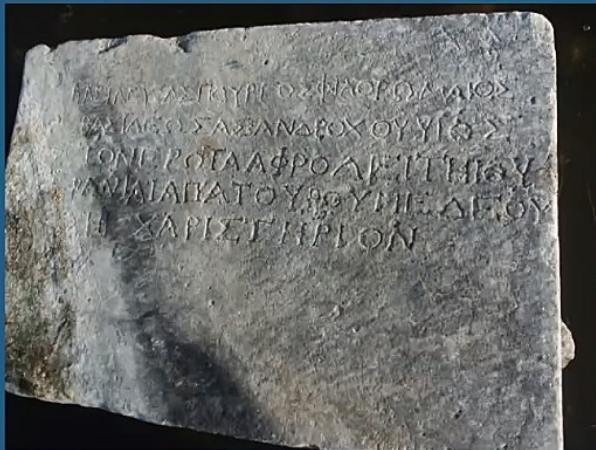
«Mithridates himself, however, at the outset, cut and charged his way through the Romans with eight hundred horsemen; but the rest were soon dispersed and he was left with three companions. One of these was Hysicrateia, a concubine, who always displayed a right manly spirit and extravagant daring (for which reason the king was wont to call her Hysicrates), and at this time, mounted and accoutred like a Persian, she was neither exhausted by the long journeys, nor did she weary of caring for the king's person and for his horse, until they came to a place called Sinora...»

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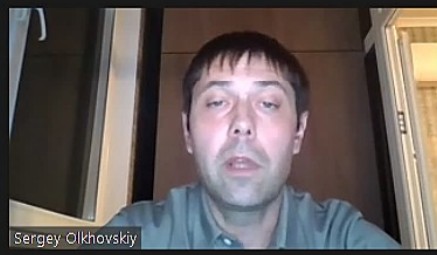
A marble building block with a dedicatory inscription «King Aspurgus, a friend of the Romans, son of King Asander, dedicated the statue of Eros to Aphrodite Urania, Lady of Apatura, as a thank-you gift»

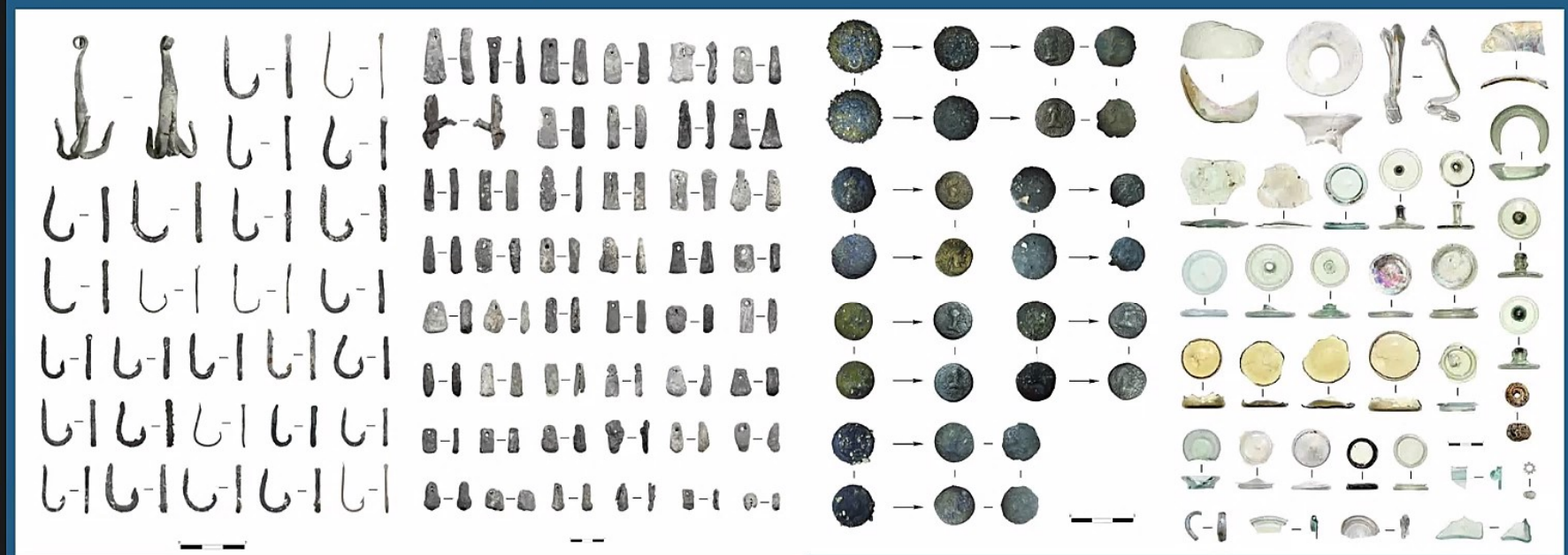




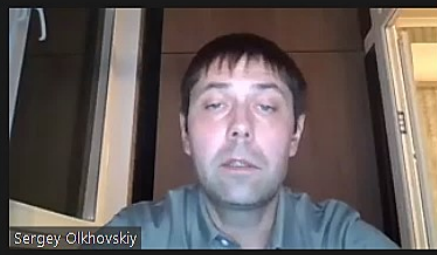
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The eastern side of the structure after clearing the adjacent blockage.





Thousands of finds have been found in the blockage around the structure: Roman-time amphorae and tableware, glassware, Bosporan bronze coins, fish hooks and sinkers, animal bones, wooden products, fragments of ropes, olive bones, grapevine, nuts, cones etc.

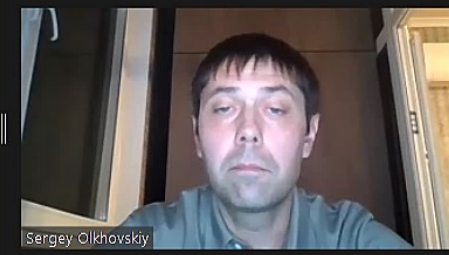


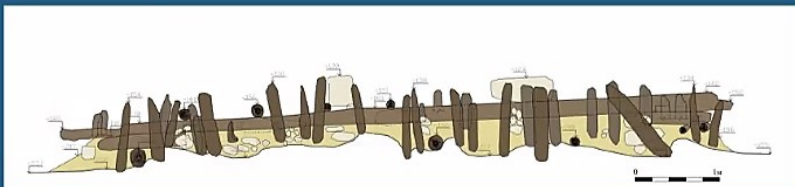
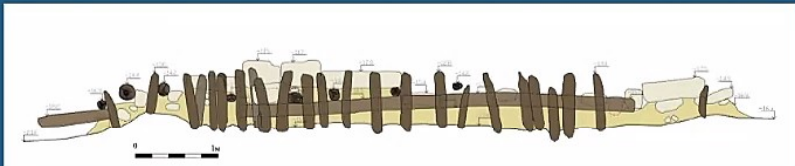
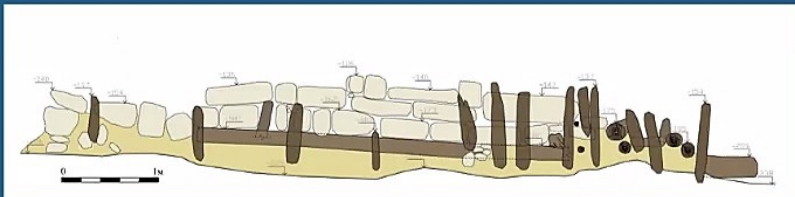




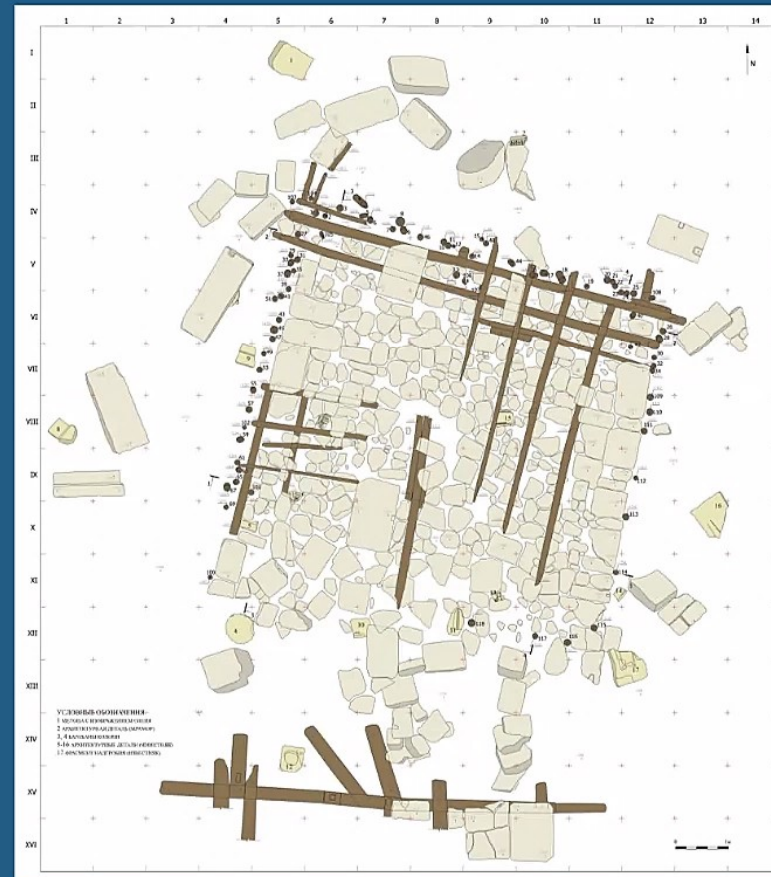
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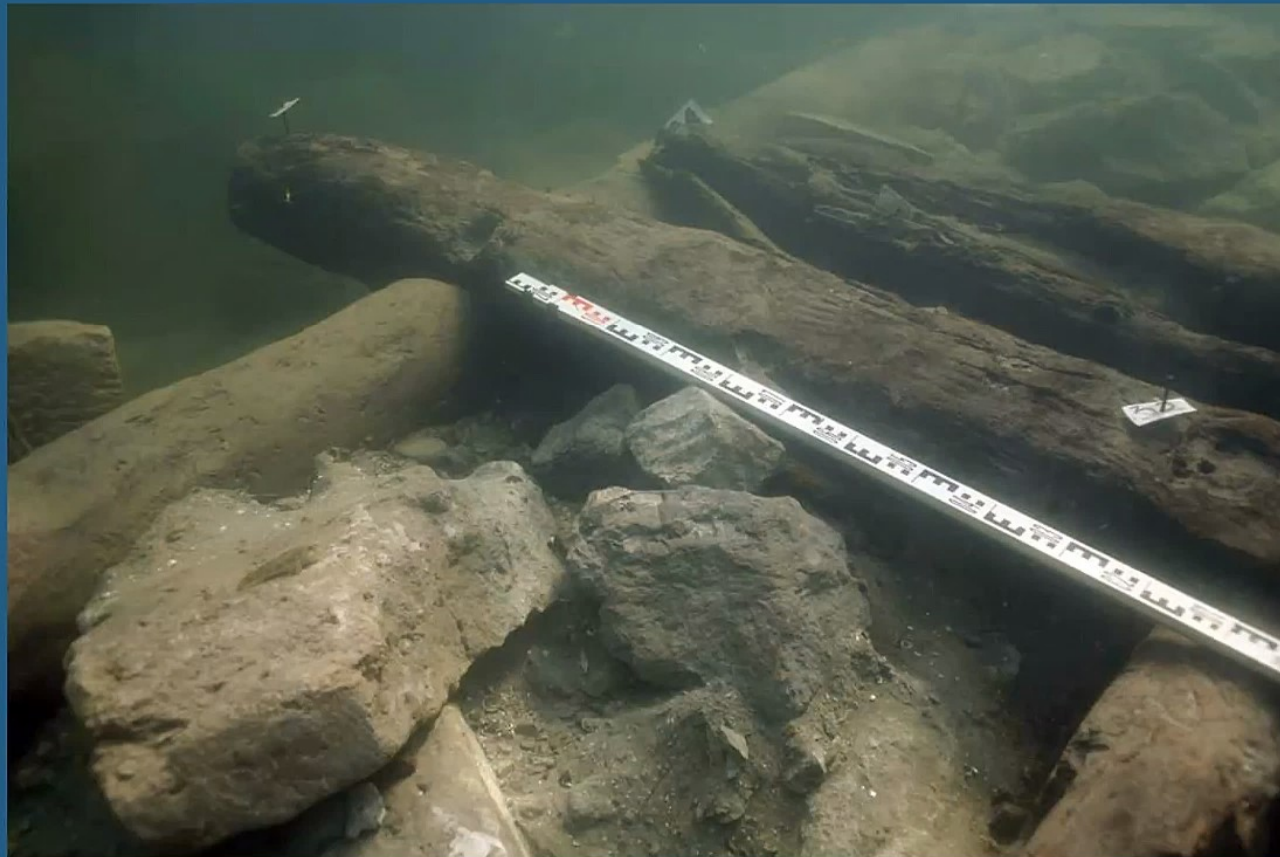
A reference network has been created for accurate 3D fixation of structural elements of the construction. Measurements of distances were performed using the trilateration method (each measurement was performed from 3 reference points), the results were checked and recorded in the Autocad. Altitude marks are tied to coastal reference points.





The size of the structure is 8 x 7.5 m, the supporting frame is made of thin logs, the perimeter of the structure is reinforced with a stockade of piles. When clearing the structure, it turned out that there was another one to the south of it.

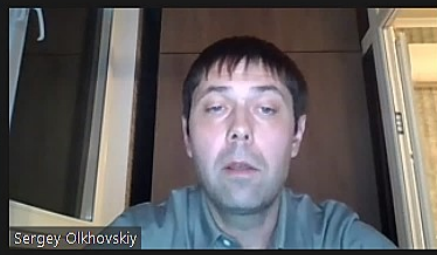
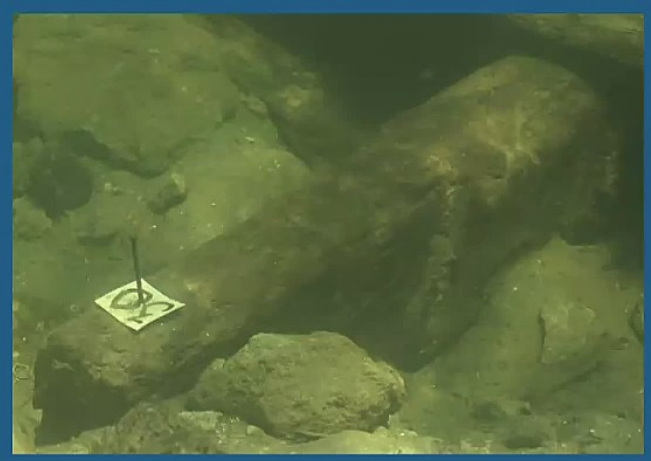
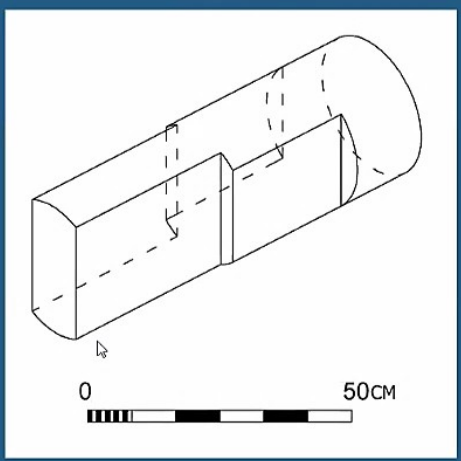
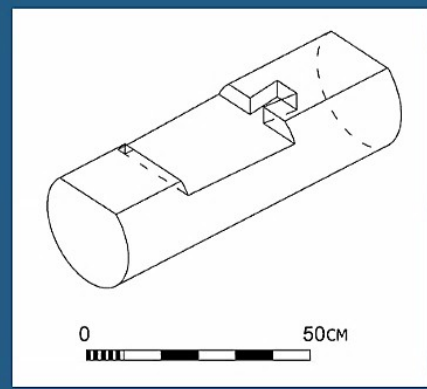
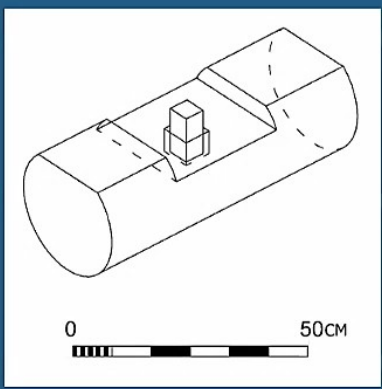




The second (central) structure: massive logs connected by spike joints were used.

There is no stockade of piles around this structure.

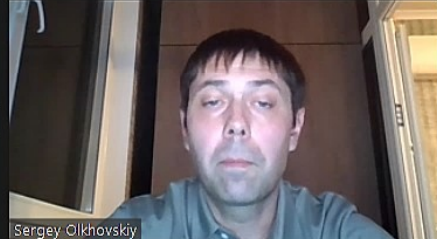




The size of the central structure is 8,5 x 7,5 m, the supporting frame is made of massive logs, connected by spike joints.

On the eastern side the upper surface has been preserved, built from reused blocks and tombstones.

When clearing the structure, it turned out that there was next one to the south of it.

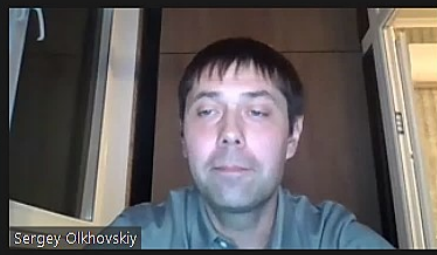




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A section of the preserved upper surface on the eastern side of the central structure.





The third (southern) structure: 19 x 3 m, one tier of logs with a partially preserved stone layout. On the extreme southern logs, traces of erosion are noticeable due to being near the water's edge.

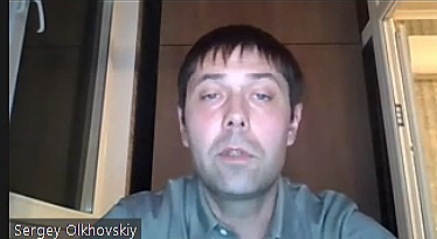




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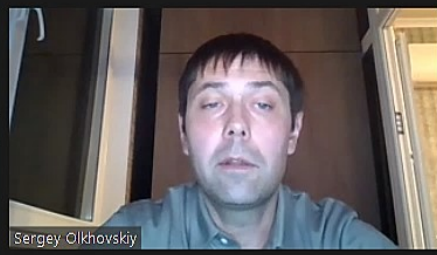
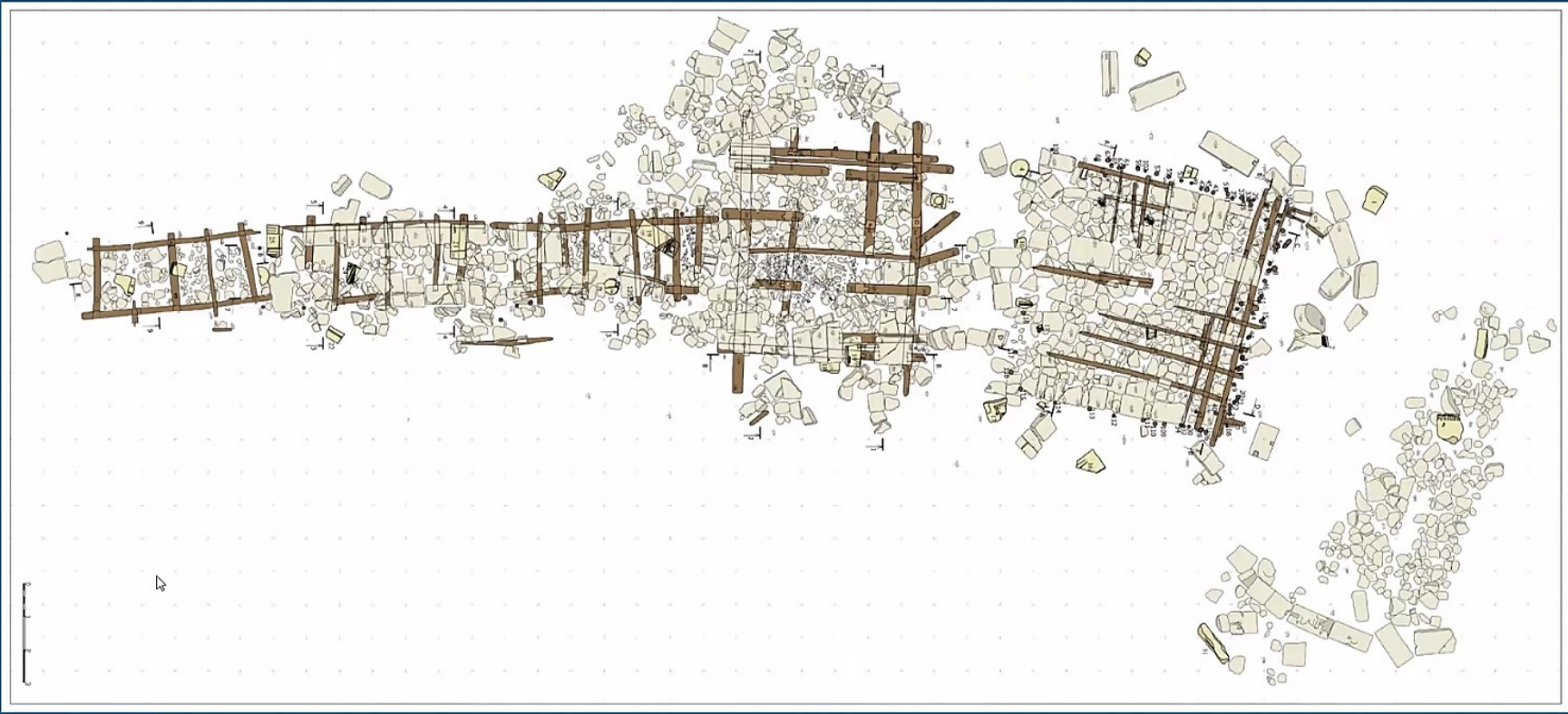
Tombstone, reused in the southern structure



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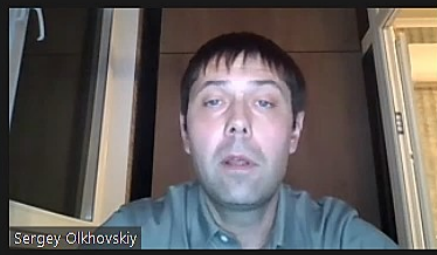


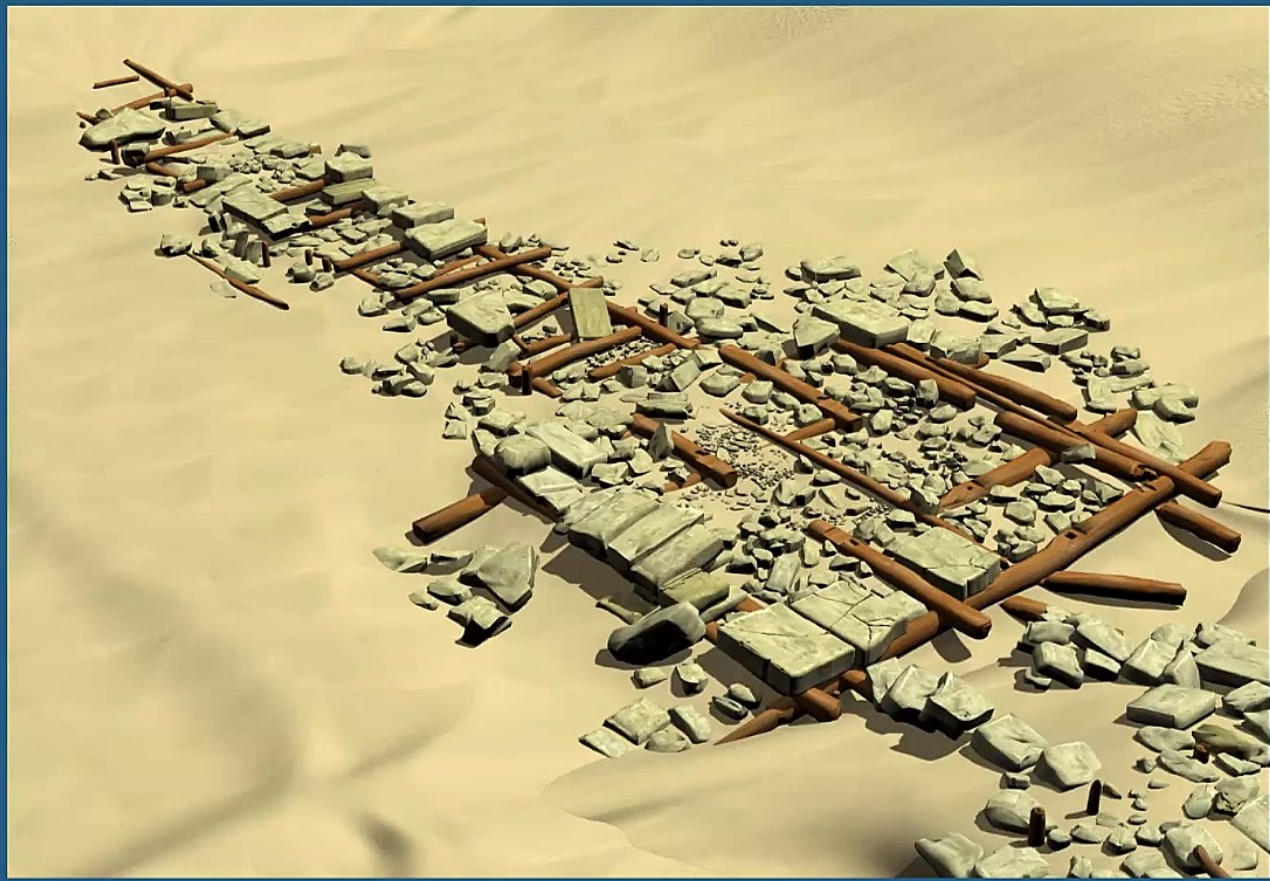


General drawing of the facility

A convenient way to visualize the appearance of the facility when a spectator cannot see the object in situ: 3D modeling (2010).

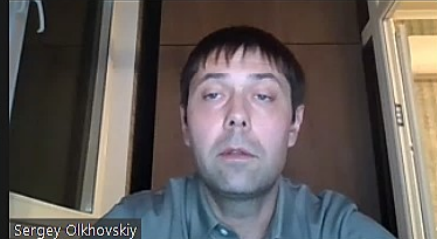
First (northern) structure, the sea-end.





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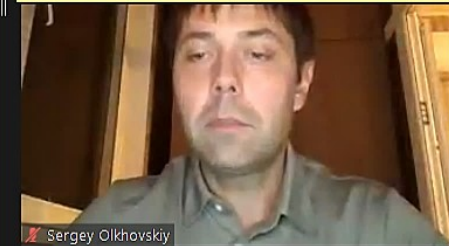
Central and southern structures.





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# A ROMAN TIME PIER IN PHANAGORIA



General interpretation: the facility is a berth to which vessels with a draft of up to 1 m could approach.

The previous berthing facilities of Phanagoria could no longer be used due to the shallow water around them.

The facility was built in 2 stages: the central structure + the southern structure first, and later – the northern structure.

The new facility was built after the war: the new? residents were very limited in resources and did not respect the burials of the necropolis and temples on the acropolis.

A huge complex of finds defines the period of its construction as the III cent. AD and functioning until the VII-VIII cent. AD.

